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DOE/RL-88-37  
Revision 3

Copy No. \_\_\_\_\_

# 2727-S Nonradioactive Dangerous Waste Storage Facility Closure Plan

1112-462CM6

ATTACHMENT 17 TO THE DANGEROUS WASTE  
PORTION OF THE RESOURCE CONSERVATION AND  
RECOVERY ACT PERMIT FOR THE TREATMENT,  
STORAGE AND DISPOSAL OF DANGEROUS WASTE  
(Second Draft)



United States  
Department of Energy  
Richland, Washington

Approved for Public Release

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STATE ENVIRONMENTAL POLICY ACT (SEPA)  
ENVIRONMENTAL CHECKLIST FORMS

FOR

2727-S NONRADIOACTIVE DANGEROUS WASTE  
STORAGE FACILITY RCRA CLOSURE PLAN

REVISION 1

January 1992

WASHINGTON ADMINISTRATIVE CODE  
ENVIRONMENTAL CHECKLIST FORMS  
[WAC 197-11-960]

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A. BACKGROUND

1. Name of proposed project, if applicable:

Closure of the 2727-S Nonradioactive Dangerous Waste Storage (NRDWS) Facility under the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, and Chapter 173-303 of the Washington Administrative Code.

2. Name of applicants:

U.S. Department of Energy, Richland Operations Office (DOE-RL); and Westinghouse Hanford Company (WHC)

3. Address and phone number of applicants and contact persons:

U.S. Department of Energy  
Field Office, Richland  
P.O. Box 550  
Richland, Washington 99352

Westinghouse Hanford Company  
P.O. Box 1970  
Richland, Washington 99352

Contact Persons:

R. D. Izatt, Program Manager  
Office of Environmental Assurance,  
Permits and Policy  
(509) 376-5441

R. E. Lerch, Manager  
Environmental Division  
(509) 376-5556

4. Date checklist prepared:

February 24, 1988.  
Revised: January, 1992

5. Agency requesting the checklist:

State of Washington  
Department of Ecology  
Mail Stop PV-11  
Olympia, Washington 98504-8711

6. Proposed timing or schedule: (including phasing, if applicable):

All stored wastes have been removed from the 2727-S NRDWS Facility. A schedule of 180 days following approval of the closure plan has been proposed to complete closure of the facility.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

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1 The 2727-S NRDWS Facility will be permanently closed pending the approval  
2 of the closure plan, which will be submitted to the Washington State  
3 Department of Ecology (Ecology) concurrently with this checklist.  
4  
5

- 6 **8. List any environmental information you know about that has been prepared,  
7 or will be prepared, directly related to this proposal.**  
8

9 This SEPA environmental checklist is being submitted to Ecology  
10 concurrently with the Interim Status Closure Plan for the facility, which  
11 describes the steps necessary for closure of the 2727-S NRDWS Facility in  
12 accordance with the regulations promulgated by the Environmental  
13 Protection Agency (EPA) and Ecology as authorized by the Resource  
14 Conservation and Recovery Act (RCRA) of 1976, as amended, and the  
15 Hazardous and Solid Waste Amendments of 1984 (42 United States Code 6901-  
16 6987). Pursuant to the National Environmental Policy Act (NEPA) of 1969,  
17 an Environmental Evaluation (EE) specific to the 2727-S NRDWS Facility  
18 was prepared and submitted to DOE-RL for approval. Approval of the EE  
19 was given on October 17, 1988.  
20

21 Additional environmental information regarding the Hanford Site and the  
22 200 West Area can be found in the Hanford Defense Waste - Environmental  
23 Impact Statement. (U.S. Department of Energy. 1987. Final Environmental  
Impact Statement - Disposal of Hanford Defense High-Level, Transuranic  
and Tank Wastes, DOE/EIS-0113, Richland, Washington).

27 General environmental information on the Hanford Site is found in Hanford  
28 Site National Environmental Policy Act (NEPA) Characterization, PNL-6415  
29 Rev.3, (Pacific Northwest Laboratory, 1990, Richland, Washington).  
30

31 Archeological information for the 200 Areas is contained in Archeological  
32 Survey of the 200 East and the 200 West Areas, Hanford Site, Washington,  
33 PNL-7264, (Pacific Northwest Laboratory, 1990, Richland, Washington).  
34

- 35  
36 **9. Do you know whether applications are pending for government approvals of  
37 other proposals directly affecting the property covered by your proposal?  
38 if yes, explain.**  
39

40 No applications are pending for government approvals of other proposals  
41 directly affecting the 2727-S NRDWS Facility.  
42

- 43  
44 **10. List any government approvals or permits that will be needed for your  
45 proposal, if known.**  
46

47 Ecology is the only agency authorized to approve or permit closure of the  
48 2727-S NRDWS Facility under requirements authorized by RCRA, and Chapter  
49 173-303 of the Washington Administrative Code. Although the regulatory  
authority for the Hazardous and Solid Wastes Amendments of 1984 is the  
EPA's, Ecology will evaluate compliance with these amendments.

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- 1 11. Give brief, complete description of your proposal, including the proposed  
2 uses and the size of the project and site. There are several questions  
3 later in this checklist that ask you to describe certain aspects of your  
4 proposal. You do not need to repeat those answers on this page.  
5

6 The 2727-S NRDWS Facility, located in the 200 West Area of the Hanford  
7 Site, consists of a building, a concrete storage pad, and surrounding  
8 soils. The extent of this facility measures approximately 165 by 300  
9 feet.

10 The 2727-S NRDWS Facility was used from 1983 to 1986 for container  
11 storage of nonradioactive dangerous and extremely hazardous wastes  
12 generated in the research and development laboratories, process  
13 operations, construction, maintenance, and transportation functions  
14 throughout the Hanford Site. All waste previously stored in the facility  
15 has been removed and sent to an offsite RCRA Treatment, Storage, and/or  
16 Disposal (TSD) site.  
17

18 The metal building measures 20 by 40 feet and is set over two main cubed  
19 concrete cells which segregate the oxidizing waste from corrosive,  
20 organic, ignitable, and other waste types. The floor of the building is  
21 part of a concrete storage pad which extends beyond the building in all  
22 four directions. The concrete storage pad measures approximately 65 feet  
23 by 105 feet. Waste was stored both inside the building and outside on  
24 the concrete pad on pallets. During a very short operating period, waste  
25 drums were also stored on pallets on the soil surrounding the pad.  
26

27 The proposed activity is closure of the 2727-S NRDWS Facility, which  
28 consists of the following: the building, the concrete pad directly under  
29 the building, the exterior concrete pad, and six inches of soil directly  
30 under the interior concrete pad will be demolished, removed and shipped  
31 to an off-site RCRA landfill. Characterization of the 2727-S NRDWS  
32 Facility waste will be performed by the receiving RCRA landfill.  
33 Exterior surface soil and soil underneath the exterior concrete pad will  
34 be sampled to analyze for the presence of contaminants above approved  
35 regulatory limits. Soil showing evidence of contamination above those  
36 levels will be removed and shipped to an off-site RCRA landfill. After  
37 the initial disposal action, verification sampling will be performed at  
38 the 2727-S NRDWS Facility to ensure all waste constituents have been  
39 removed.  
40

- 41  
42  
43 12. Location of the proposal. Give sufficient information for a person to  
44 understand the precise location of your proposed project, including a  
45 street address, if any, and section, township, and range, if known. If a  
46 proposal would occur over a range of area, provide the range or  
47 boundaries of the site(s). Provide a legal description, site plan,  
48 vicinity map, and topographic map, if reasonably available. While you  
49 should submit any plans required by the agency, you are not required to  
duplicate maps or detailed plans submitted with any permit applications  
related to this checklist.

50  
51  
52  
53 The 2727-S NRDWS Facility is located in the southeast portion of the of  
54 the 200 West Area of the Hanford Site. The facility is located near an

1 asphalt roadway (Beloit Avenue) within the 200 West Controlled Access  
2 Area. Maps and detailed location plans are contained in the closure plan  
3 submitted with this checklist. A legal description not available at this  
4 time but will be provided in the documentation for final closure  
5 certification.  
6  
7  
8

9 **B. ENVIRONMENTAL ELEMENTS**

10  
11 **1. Earth**

- 12  
13 a. **General description of the site (circle one): Flat, rolling, hilly,**  
14 **steep slopes, mountainous, other \_\_\_\_\_.**

15  
16 Flat.

- 17  
18  
19 b. **What is the steepest slope on the site (approximate percent slope)?**

20  
21 The approximate slope of the land at the 2727-S NRDWS Facility is  
22 less than two percent.  
23

- 24  
25  
26 c. **What general types of soils are found on the site? (for example,**  
27 **clay, sandy gravel, peat, muck)? If you know the classification of**  
28 **agricultural soils, specify them and note any prime farmland.**

29  
30 The general soil type found at the 2727-S NRDWS Facility is fine  
31 sand. No farming is permitted on the facility.

- 32  
33 d. **Are there surface indications or history of unstable soils in the**  
34 **immediate vicinity? If so, describe.**

35  
36 No.

- 37  
38  
39 e. **Describe the purpose, type, and approximate quantities of any**  
40 **filling or grading proposed. Indicate source of fill.**

41  
42 If contaminated soils are found at the 2727-S NRDWS Facility as a  
43 result of the sampling and analysis program, the contaminated soils  
44 will be removed and backfilled with noncontaminated native soil.  
45 The soil will then be compacted and graded. No site has been chosen  
46 yet as a source of backfill soil.  
47

- 48  
49 f. **Could erosion occur as a result of clearing, construction, or use?**  
**If so, generally describe.**

50  
51 The potential for erosion at this site during closure is minimal.  
52 The combination of arid climate, high evapotranspiration rates, and  
53 minimal slope at the 2727-S NRDWS Facility make damage from  
54

1 precipitation, excluding rare high-intensity rain events, very  
2 unlikely. Possible wind erosion of exposed soil resulting from the  
3 replacement of contaminated soils will be mitigated by revegetation.  
4

- 5  
6 **g. About what percent of the site will be covered with impervious**  
7 **surfaces after project construction (for example, asphalt or**  
8 **buildings)?**  
9

10 The building, the interior concrete pad, and the exterior concrete  
11 pad will be removed and disposed of in a RCRA landfill. No  
12 impervious surfaces will be left on the site after completion of  
13 closure activities.  
14

- 15  
16 **h. Proposed measures to reduce or control erosion, or other impacts to**  
17 **the earth, if any:**  
18

19 If the soils at the 2727-S NRDWS Facility are found to be  
20 contaminated they will be removed. The backfilled soil will be  
21 compacted, graded, and revegetated.  
22  
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49 **2. Air**

- 50 **a. What types of emissions to the air would result from the proposal**  
51 **(i.e., dust, automobile, odors, industrial wood smoke) during**  
52 **construction and when the project is completed? If any, generally**  
53 **describe and give approximate quantities, if known.**

54 The trucks transporting contaminated material from the 2727-S NRDWS  
Facility, and earthmoving equipment used for facility demolition,  
will generate dust and gaseous emissions such as carbon monoxide.  
Removing portions of the concrete pad will create additional dust.

- b. Are there any off-site sources of emissions or odors that may affect**  
**your proposal? If so, generally describe.**

No.

- c. Proposed measures to reduce or control emissions or other impacts to**  
**the air, if any?**

None.

**3. Water**

- a. Surface**

- 1) Is there any surface water body on or in the immediate vicinity  
of the site (including year-round and seasonal streams,

1 saltwater, lakes, ponds, wetlands)? If yes, describe type and  
2 provide names. If appropriate, state what stream or river it  
3 flows into.

4  
5 No. The closest year-round body of surface water is the  
6 Columbia River, which is approximately 7 miles north of the  
7 facility. The closest intermittent, seasonal stream is Cold  
8 Creek, which is located approximately 3 miles south of the  
9 facility.

- 10  
11  
12 2) Will the project require any work over, in, or adjacent to  
13 (within 200 feet ) the described waters? If yes, please  
14 describe and attach available plans.

15  
16 No.

- 17  
18  
19 3) Estimate the amount of fill and dredge material that would be  
20 placed in or removed from surface water or wetlands and  
21 indicate the area of the site that would be affected. Indicate  
22 the source of fill material.

23  
24  
25 Does not apply.

- 26  
27 4) Will the proposal require surface water withdrawals or  
28 diversions? Give general description, purpose, and approximate  
29 quantities if known.

30  
31 No.

- 32  
33 5) Does the proposal lie within a 100-year floodplain? If so, note  
34 location on the site plan.

35  
36 No.

- 37  
38 6) Does the proposal involve any discharges of waste materials to  
39 surface waters? If so, describe the type of waste and  
40 anticipated volume of discharge.

41  
42 No.

43  
44  
45  
46  
47 b. Ground

- 48 1) Will ground water be withdrawn, or will water be discharged to  
49 ground water? Give general description, purpose, and  
50 approximate quantities if known.

51  
52 No.

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- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Does not apply.

c. Water Run-off (including storm water)

- 1) Describe the source of run-off (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Does not apply.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

No.

d. Proposed measures to reduce or control surface, ground, and run-off water impacts, if any:

Does not apply.

4. Plants

a. Check or circle the types of vegetation found on the site.

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- deciduous tree: alder, maple, aspen, other  
 evergreen tree: fir, cedar, pine, other  
 shrubs  
 grass: sagebrush/cheatgrass-Sandberg's bluegrass  
 pasture  
 crop or grain  
 wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other  
 water plants: water lily, eelgrass, milfoil, other  
 other types of vegetation

1 b. What kind and amount of vegetation will be removed or altered?

2  
3 A small sparsely vegetated area of sagebrush/cheatgrass-Sandberg's  
4 bluegrass at the 2727-S NRDWS Facility may be affected by closure  
5 activities. All areas denuded of vegetation as a result of removal  
6 of contaminated soils will be revegetated.  
7

8  
9 c. List threatened or endangered species known to be on or near the  
10 site.

11  
12 No state- or federally-listed endangered species are known to be on  
13 or near the 2727-S NRDWS Facility. No species of plant or animal,  
14 that is federally registered as sensitive, rare, threatened or  
15 endangered, is known to depend on the habitats unique to the Hanford  
16 Site. Additional information concerning threatened and endangered  
17 species on the Hanford Site can be found in the documents referred  
18 to in the answer to checklist question A.8.  
19

20  
21 d. Proposed landscaping, use of native plants, or other measures to  
22 preserve or enhance vegetation on the site, if any:

23  
24 Wheatgrass vegetation will be used to revegetate the area when  
25 contaminated soil is removed as part of the closure effort.  
26

27  
28 **5. Animals**  
29

30 a. Circle any birds and animals which have been observed on or near the  
31 site or are known to be on or near the site:

32  
33 birds: hawk, heron, eagle, songbirds, other:.....  
34 mammals: deer, bear, elk, beaver, other:.....  
35 fish: bass, salmon, trout, herring, shellfish, other:.....  
36

37 Passerine birds, pigeons, ravens, raptors, small animals, and  
38 coyotes have been observed on the Hanford Site. Additional  
39 information on animals found on the Hanford Site can be found in the  
40 documents referred to in the answer to checklist question A.8.  
41

42  
43 b. List any threatened or endangered species known to be on or near the  
44 site.

45  
46 No state- or federally-listed endangered species are known to be on  
47 or near the 2727-S NRDWS Facility. No species of plant or animal,  
48 that is federally registered as sensitive, rare, threatened or  
49 endangered, is known to depend on the habitats unique to the Hanford  
Site. Additional information concerning threatened and endangered  
species on the Hanford Site can be found in the documents referred  
to in the answer to checklist question A.8.  
50  
51  
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54

2727-S NRDWS

- 1 c. Is the site part of a migration route? If so, explain.

2  
3 The Hanford Site and the adjacent Columbia River are part of the  
4 Pacific Flyway for waterfowl migration; other birds also migrate  
5 along the river.  
6

- 7  
8 d. Proposed measures to preserve or enhance wildlife, if any:

9  
10 None.  
11

12  
13 6. Energy and Natural Resources

- 14  
15 a. What kinds of energy (electric, natural gas, oil, wood stove, solar)  
16 will be used to meet the completed project's energy needs? Describe  
17 whether it will be used for heating, manufacturing, etc.

18  
19 None.  
20

- 21  
22 b. Would your project affect the potential use of solar energy by  
23 adjacent properties? If so, generally describe.

24  
25 No.  
26

- 27  
28 c. What kinds of energy conservation features are included in the plans  
29 of this proposal? List other proposed measures to reduce or control  
30 energy impacts, if any:

31  
32 Does not apply.  
33

34  
35 7. Environmental Health

- 36  
37 a. Are there any environmental health hazards, including exposure to  
38 toxic chemicals, risk of fire and explosion, spill, or hazardous  
39 waste, that could occur as a result of this proposal? If so,  
40 describe.

41  
42 Decontamination and transportation equipment may be exposed to  
43 hazardous materials in the building, concrete storage pad, or soils.  
44 Precautions will be taken to prevent exposure of personnel and the  
45 environment to any hazardous material. Personnel will receive  
46 hazardous waste training and be cognizant of applicable health and  
47 safety measures.  
48

- 49  
50 1) Describe special emergency services that might be required.

51  
52 Hanford Site security, fire response, and ambulance services  
53 are on call at all times in the event of an onsite emergency.  
54

- 1 2) Proposed measures to reduce or control environmental health  
2 hazards, if any:  
3

4 All samples collected, including decontamination rinseate, that  
5 are deemed contaminated will be sent to a TSD facility. At no  
6 time will waste materials be discharged directly to the ground.  
7

8  
9 **b. Noise**

- 10  
11 1) What type of noise exists in the area which may affect your  
12 project (for example: traffic, equipment, operation, other)?  
13

14 None.  
15

- 16  
17 2) What types and levels of noise would be created by or  
18 associated with the project on a short-term or a long-term  
19 basis (for example: traffic, construction, operation, other)?  
20 Indicate what hours noise would come from the site.  
21

22 Clean up activities such as implementation of demolition and  
23 earthmoving equipment may increase the noise levels during  
24 normal day shift hours. This activity has a short duration of  
25 less than two weeks. The completed project will have no effect  
26 on noise levels.  
27

- 28  
29 3) Proposed measures to reduce or control noise impacts, if any:  
30

31 None.  
32

33  
34 **8. Land and Shoreline Use**

- 35  
36 **a. What is the current use of the site and adjacent properties?**  
37

38 The 2727-S NRDWS Facility is part of the Hanford Site owned by the  
39 U.S. Government. The facility provided storage for hazardous wastes  
40 generated at the Hanford Site from 1983 to 1986. All waste stored  
41 at the 2727-S NRDWS Facility has been shipped to a TSD facility.  
42 The Hanford Site encompasses 570 square miles used for a variety of  
43 DOE-RL projects including waste management and special nuclear  
44 materials production.  
45

- 46  
47 **b. Has the site been used for agriculture? If so, describe.**  
48

49 No portion of the Hanford Site, including the site of the proposed  
50 facility, has been used for agricultural purposes since 1943.  
51

1 c. Describe any structures on the site.

2 A 20 by 40 foot metal building and a 65 by 105 foot concrete storage  
3 pad presently occupy the site.  
4

5  
6  
7 d. Will any structures be demolished? If so, what?

8 During the closure process the building and the concrete pad will be  
9 demolished and removed.  
10

11  
12  
13 e. What is the current zoning classification of the site?

14 The Hanford Site is zoned by Benton County as an Unclassified Use  
15 (U) district.  
16

17  
18  
19 f. What is the current comprehensive plan designation of the site?

20 The 1985 Benton County Comprehensive Land Use Plan designates the  
21 Hanford Site as the "Hanford Reservation." Under this designation,  
22 land on the Site may be used for "activities nuclear in nature."  
23 Non-nuclear activities are authorized "if and when DOE approval for  
such activities is obtained."  
24

25  
26  
27 g. If applicable, what is the current shoreline master program  
28 designation of the site?  
29

30 Does not apply.  
31

32  
33  
34 h. Has any part of the site been classified as an "environmentally  
35 sensitive" area? If so, specify.  
36

37 No.  
38

39  
40 i. Approximately how many people would reside or work in the completed  
41 project?  
42

43 None.  
44

45 j. Approximately how many people would the completed project displace?  
46

47 None.  
48

49 k. Proposed measures to avoid or reduce displacement impacts, if any:

50 Does not apply.  
51  
52

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23
1. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

See answer to checklist question B.8.f.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

- c. Proposed measures to reduce or control housing impacts, if any:

Does not apply.

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10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Does not apply.

- b. What views in the immediate vicinity would be altered or obstructed?

None.

- c. Proposed measures to reduce or control aesthetic impacts, if any:

Does not apply.

50  
51  
52  
53

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None.

1 b. Could light or glare from the finished project be a safety hazard or  
2 interfere with views?  
3

4 Does not apply.  
5  
6

7 c. What existing off-site sources of light or glare may affect your  
8 proposal?  
9

10 None.  
11

12 d. Proposed measures to reduce or control light and glare impacts, if  
13 any:  
14

15 Does not apply.  
16  
17  
18

19 12. Recreation  
20

21 a. What designated and informal recreational opportunities are in the  
22 immediate vicinity?  
23

None.  
24  
25

26 b. Would the proposed project displace any existing recreational uses?  
27 If so, describe.  
28

29 Does not apply.  
30  
31  
32

33 c. Proposed measures to reduce or control impacts on recreation,  
34 including recreation opportunities to be provided by the project or  
35 applicant, if any?  
36

37 Does not apply.  
38  
39

40 13. Historic and Cultural Preservation  
41

42 a. Are there any places or objects listed on, or proposed for,  
43 national, state, or local preservation registers known to be on or  
44 next to the site? If so, generally describe.  
45

46 No places or objects listed on, or proposed for, national, state, or  
47 local preservation registers are known to be on or next to the  
48 2727-S NRDWS Facility. Additional information on the Hanford Site  
49 environment can be found in the environmental documents referred to  
in the answer to checklist question A.8.

- 1 b. Generally describe any landmarks or evidence of historic,  
2 archaeological, scientific, or cultural importance known to be on or  
3 next to the site.  
4

5 There are no known archaeological, historical, or Native American  
6 religious sites on or next to the 2727-S NRDWS Facility. Additional  
7 information on the Hanford Site environment can be found in the  
8 environmental documents referenced in the answer to Checklist  
9 question A.8.  
10

- 11  
12 c. Proposed measures to reduce or control impacts, if any:  
13

14 If any evidence of potential historic or cultural value is found  
15 when the soil is exhumed, all excavation work will cease pending  
16 evaluation of the significance of the find. If the find is  
17 determined to be significant, a plan will be devised to mitigate  
18 excavation impacts on the find.  
19  
20

21 14. Transportation  
22  
23

- 24 a. Identify public streets and highways serving the site, and describe  
25 proposed access to the existing street system. Show on site plans,  
26 if any.

27 The 2727-S NRDWS Facility lies within the controlled access area of  
28 the Hanford Site and is not publicly accessible.  
29  
30

- 31 b. Is site currently served by public transit? If not, what is the  
32 approximate distance to the nearest transit stop?  
33

34 The 2727-S NRDWS Facility is not publicly accessible and, therefore,  
35 is not served by public transit.  
36  
37

- 38 c. How many parking spaces would the completed project have? How many  
39 would the project eliminate?  
40

41 None.  
42  
43

- 44 d. Will the proposal require any new roads or streets, or improvements  
45 to existing roads or streets, not including driveways? If so,  
46 generally describe (indicate whether public or private).  
47

48 No.  
49

- 50 e. Will the project use (or occur in the immediate vicinity of) water,  
51 rail, or air transportation? If so, generally describe.  
52

53 No.  
54

1 f. How many vehicular trips per day would be generated by the completed  
2 project? If known, indicate when peak volumes would occur.

3  
4 None.

5  
6  
7 g. Proposed measures to reduce or control transportation impacts, if  
8 any:

9  
10 Does not apply.

11  
12  
13 **15. Public Services**

14  
15  
16 a. Would the project result in an increased need for public services  
17 (for example: fire protection, police protection, health care,  
18 schools, other)? If so, generally describe.

19  
20 No.

21  
22  
23 b. Proposed measures to reduce or control direct impacts on public  
services, if any:

24  
25  
26 Does not apply.

27  
28  
29 **16. Utilities**

30  
31 a. Circle utilities currently available at the site: electricity,  
32 natural gas, water, refuse service, telephone, sanitary sewer,  
33 septic system, other:

34  
35 The utilities available at the 2727-S NRDWS Facility are electricity  
36 and telephone. The utilities will be disconnected before closure  
37 activities commence at the facility.

38  
39  
40 b. Describe the utilities that are proposed for the project, the  
41 utility providing the service, and the general construction  
42 activities on the site or in the immediate vicinity which might be  
43 needed.

44  
45 A portable steam generator may be required for decontamination of  
46 sampling equipment and materials.  
47  
48  
49

SIGNATURES

The above answers are true and complete to the best of my knowledge. We understand that the lead agency is relying on them to make its decision.

  
R. D. Izatt, Program Manager  
Office of Environmental Assurance,  
Permits and Policy  
U.S. Department of Energy  
Field Office, Richland

2/5/92  
Date

  
R. E. Lerch, Manager  
Environmental Division  
Westinghouse Hanford Company

1-22-92  
Date

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1 THE 2727-S NONRADIOACTIVE DANGEROUS WASTE STORAGE  
2 FACILITY CLOSURE PLAN  
3  
4

5 FOREWORD  
6  
7

8 The Hanford Site is operated by the U.S. Department of Energy, Richland  
9 Field Office. The Hanford Site manages and produces mixed waste (containing  
10 both radioactive and dangerous components). The radioactive component of  
11 mixed waste is interpreted by the U.S. Department of Energy to be regulated  
12 under the *Atomic Energy Act of 1954*; the nonradioactive dangerous waste  
13 component of mixed waste is interpreted to be regulated under the *Resource*  
14 *Conservation and Recovery Act of 1976* (RCRA) and the state of Washington  
15 Department of Ecology *Dangerous Waste Regulations*.  
16

17 The Hanford Site is considered to be a single facility. The single  
18 dangerous waste permit identification number issued to the Hanford Site by the  
19 U.S. Environmental Protection Agency and the state of Washington Department of  
20 Ecology is U.S. Environmental Protection Agency/State Identification  
21 Number WA7890008967. This identification number encompasses a number of waste  
22 management units within the Hanford Facility. All waste management activities  
23 carried out under the assigned identification number are considered to be  
24 "onsite" as defined in the state of Washington Department of Ecology *Dangerous*  
25 *Waste Regulations*, Washington Administrative Code 173-303.  
26

27 Since 1987, Westinghouse Hanford Company has been a major contractor to  
28 the U.S. Department of Energy, Richland Field Office and has served as  
29 co-operator of the 2727-S Nonradioactive Dangerous Waste Storage Facility, the  
30 waste management unit addressed in this closure plan.  
31

32 Westinghouse Hanford Company is identified in the permit application as a  
33 "co-operator" and signs in that capacity. Any identification of Westinghouse  
34 Hanford Company as an "operator" elsewhere in this closure plan is not meant  
35 to conflict with Westinghouse Hanford Company's designation as a co-operator  
36 but is rather based on Westinghouse Hanford Company's contractual status  
37 (i.e., as a management and operations contractor) for the U.S. Department of  
38 Energy.  
39

40 The 2727-S Nonradioactive Dangerous Waste Storage Facility Closure Plan  
41 (Revision 3) consists of 8 chapters and 9 appendices.

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ACRONYMS AND ABBREVIATIONS

1		
2		
3		
4	ALARA	as low as reasonably achievable
5		
6	CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1989</i>
7		
8	CFR	Code of Federal Regulations
9		
10	DOE	U.S. Department of Energy
11	DOE-RL	U.S. Department of Energy-Richland Operations Office
12	DOS	disc operating system
13	DOT	U.S. Department of Transportation
14		
15	Ecology	Washington State Department of Ecology
16	EII	environmental investigation instructions
17	EPA	U.S. Environmental Protection Agency
18		
19	ft	foot
20		
21	gal	gallon
22		
23	HEIS	Hanford Environmental Information System
24		
25	in.	inch
26		
27	mi	mile
28	mi <sup>2</sup>	square mile
29	mL	milliliter
30	MS	matrix spiked samples
31	MSD	matrix spiked duplicate samples
32		
33	NRDWS	Nonradioactive Dangerous Waste Storage
34		
35	OSM	Office of Sample Management
36		
37	PCB	polychlorinated biphenyl
38		
39	QA	quality assurance
40	QAPI	quality assurance program index
41	QAPP	quality assurance project plan
42	QC	quality control
43	QI	quality instructions
44	QR	quality requirements
45		
46	RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
47		
48	TSD	treatment, storage, and/or disposal (facility)
49		
50	VOA	volatile organic analysis
51		
52		

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ACRONYMS AND ABBREVIATIONS (Cont)

1		
2		
3		
4	WAC	Washington Administrative Code
5	Westinghouse	Westinghouse Hanford Company
6	Hanford	
7		
8	XRF	X-ray fluorescence

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2727-S NONRADIOACTIVE DANGEROUS WASTE  
STORAGE FACILITY CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities for final closure of the 2727-S Nonradioactive Dangerous Waste Storage (NRDWS) Facility\* at the Hanford Site. The 2727-S NRDWS Facility provided container storage for nonradioactive dangerous and extremely hazardous wastes generated in the research and development laboratories, process operations, and maintenance and transportation functions throughout the Hanford Site. Storage operations began at the 2727-S NRDWS Facility March 14, 1983, and continued until December 30, 1986, when the last shipment of materials from the facility took place. These storage operations have been moved to the new 616 NRDWS Facility, which is an interim status unit located between the 200 East and 200 West Areas of the Hanford Site. The 2727-S NRDWS Facility is owned and operated by the U.S. Department of Energy-Richland Operations Office (DOE-RL). Previously, Rockwell Hanford Operations managed the facility on behalf of the DOE-RL until July 1, 1987, when Rockwell's responsibilities, which included closure of the 2727-S NRDWS Facility, were transferred to Westinghouse Hanford Company (Westinghouse Hanford).

For the convenience of the reviewer, a copy of the March 1987 Dangerous Waste Compliance Checklist/Questionnaire (Chapter 173-303 WAC), Part 6: Closure, is included as Appendix A to this closure plan.

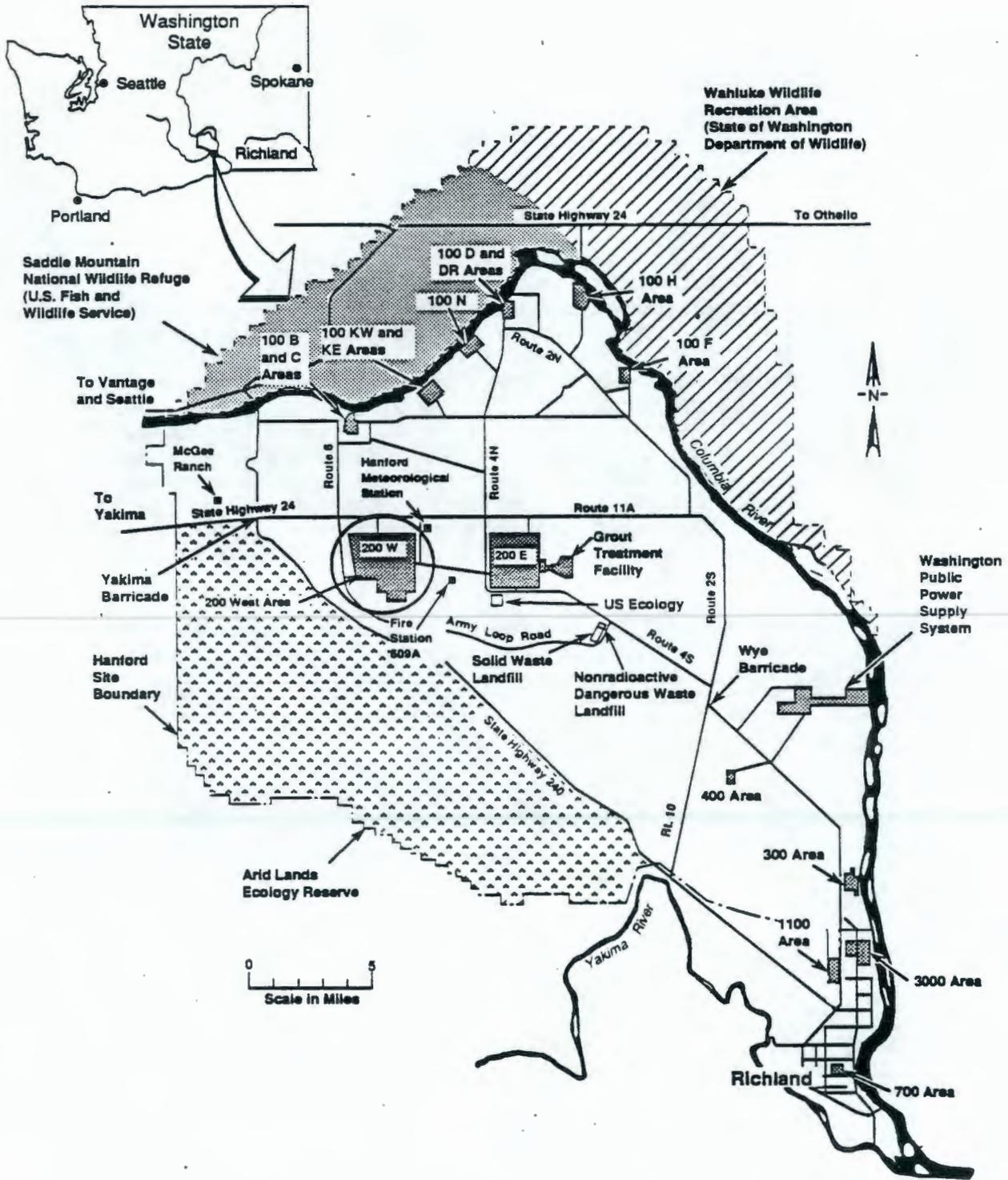
1.1 LOCATIONAL INFORMATION

The Hanford Site is a 560-mi<sup>2</sup> tract of semiarid land (Figure 1). The Hanford Site is located northwest of the city of Richland, Washington, in the Columbia River basin, which is the nearest population center. The center of Richland lies approximately 3 mi from the southernmost portion of the Hanford Site boundary.

In early 1943, the United States Army Corps of Engineers selected the Hanford Site as the location for reactor, chemical separation, and related facilities to produce and purify plutonium for national security and defense activities. Eight graphite-moderated reactors using Columbia River water for once-through cooling and a new type of dual-purpose reactor (N-Reactor) using a recirculating water coolant and producing both plutonium and steam for

---

\*Facility. For purposes of the *Resource Conservation and Recovery Act of 1976*, the Hanford Site is considered to be a single facility consisting of a number of waste management units. The term 'facility' also is commonly used in building nomenclature throughout the Hanford Site (e.g., 2727-S Nonradioactive Dangerous Waste Storage Facility).



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Figure 1. Regional Map.

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1 electricity were eventually built along the Columbia River. The graphite-  
2 moderated reactors were operated from 1944 to 1971; the N Reactor began  
3 operation in 1963 and a decision was made to place the N Reactor in cold  
4 standby status in February 1988.

5  
6 Activities are centralized in numerically designated areas on the  
7 Hanford Site. The reactor facilities are located along the Columbia River in  
8 the 100 Areas. The reactor fuel processing and waste management facilities  
9 are located in the 200 Areas, which are situated on a plateau about 7 mi from  
10 the river.

11  
12 The 300 Area, located adjacent to Richland, contains the reactor fuel  
13 manufacturing facilities and the research and development laboratories. The  
14 400 Area, 5 mi northwest of the 300 Area, contains the Fast Flux Test Facility  
15 used in the testing of liquid metal reactor systems. The 600 Area covers all  
16 locations not specifically given an area designation. Adjacent to north  
17 Richland, the 1100 Area contains units associated with administration,  
18 maintenance, transportation, and materials procurement and distribution. The  
19 3000 Area, between the 1100 Area and 300 Areas, contains engineering and  
20 administrative offices. Administrative buildings also are located in the  
21 700 Area, which is in downtown Richland.

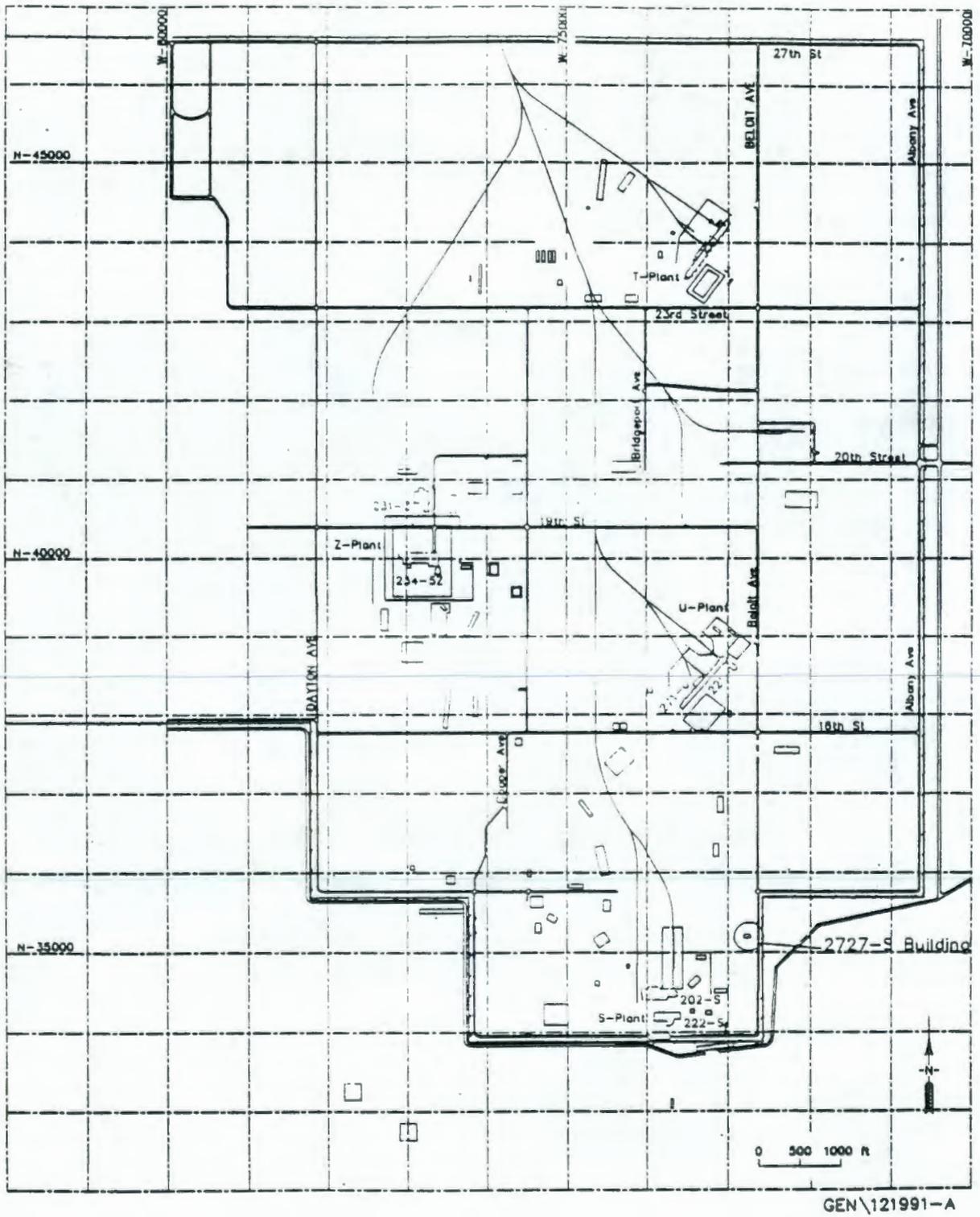
22  
23 The 2727-S NRDWS Facility is located in the southeast portion of the  
24 200 West Area (Figure 2). The 2727-S NRDWS Facility is located near an  
25 asphalt roadway (Beloit Avenue) within the 200 West Controlled-Access Area  
26 (Figure 3). This roadway receives work traffic.

## 27 28 29 1.2 SECURITY

30  
31 Because of the continuing 200 Area activities and the presence of several  
32 radioactive facilities, an effective site security program is maintained in  
33 the 200 Areas. Although originally intended for protection of government  
34 property, classified information, and special nuclear material, the security  
35 program also meets the requirements outlined in the Washington State  
36 Department of Ecology (Ecology) Washington Administrative Code  
37 (WAC) 173-303-310 (Ecology 1991a) for hazardous wastes. The onsite security  
38 systems prevent unknowing entry and minimize the possibility for unauthorized  
39 entry of persons, livestock, or wildlife into the 2727-S NRDWS Facility.

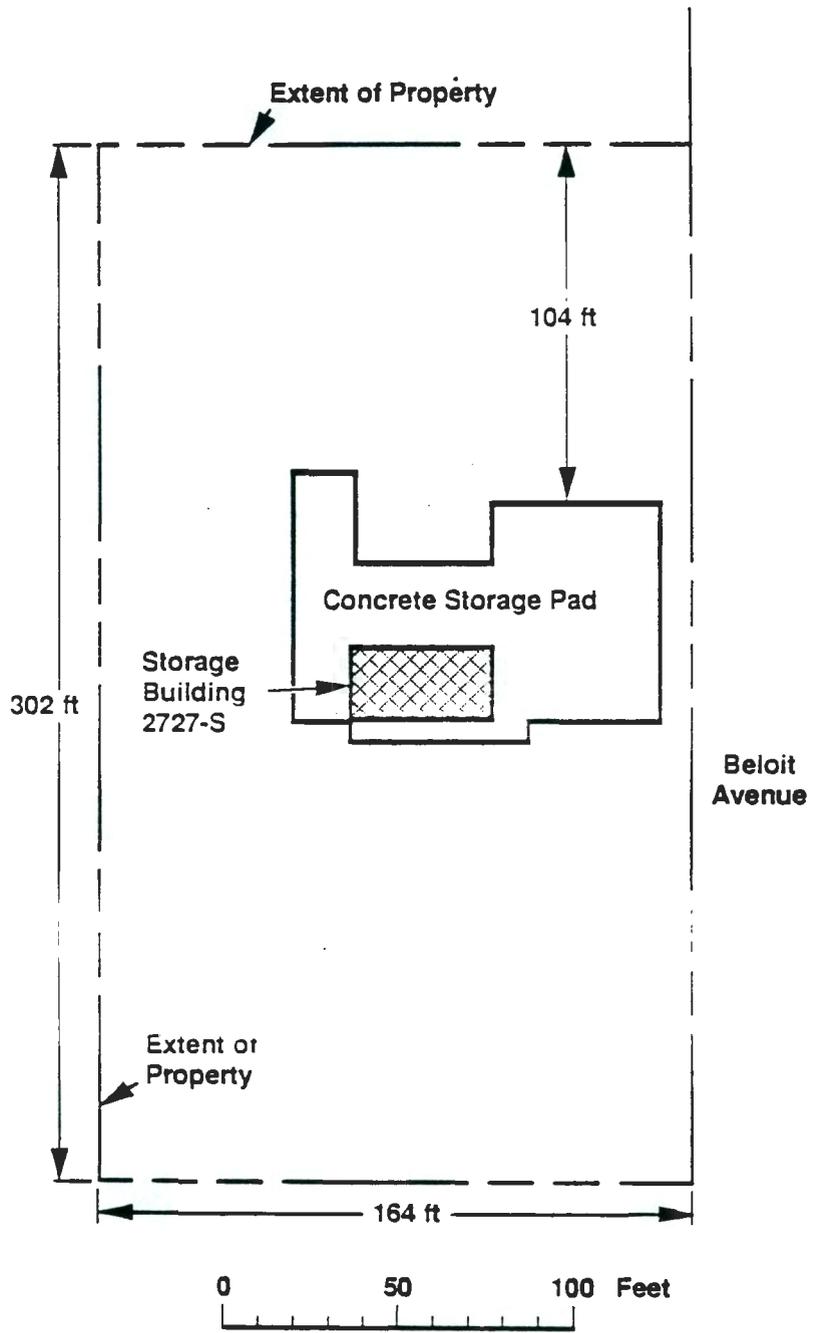
40  
41 Unauthorized or unintended entry to the facility is prevented by 24-hour  
42 surveillance systems in the form of manned barricades at the entries to  
43 controlled-access areas and fences, gates, locks, and warning signs. The Wye  
44 and Yakima Barricades (Figure 4) control access to the 200 West Area.  
45 Two barricades at the 200 West Area control direct access to the 2727-S NRDWS  
46 Facility. Only personnel who have been granted a security clearance from the  
47 DOE (or uncleared employees/visitors escorted by cleared personnel) are  
48 permitted to enter Hanford Site controlled-access areas. Hanford Patrol  
49 provides surveillance patrols of the controlled areas. In addition, access to  
50 the 2727-S Building is controlled by lock and key.

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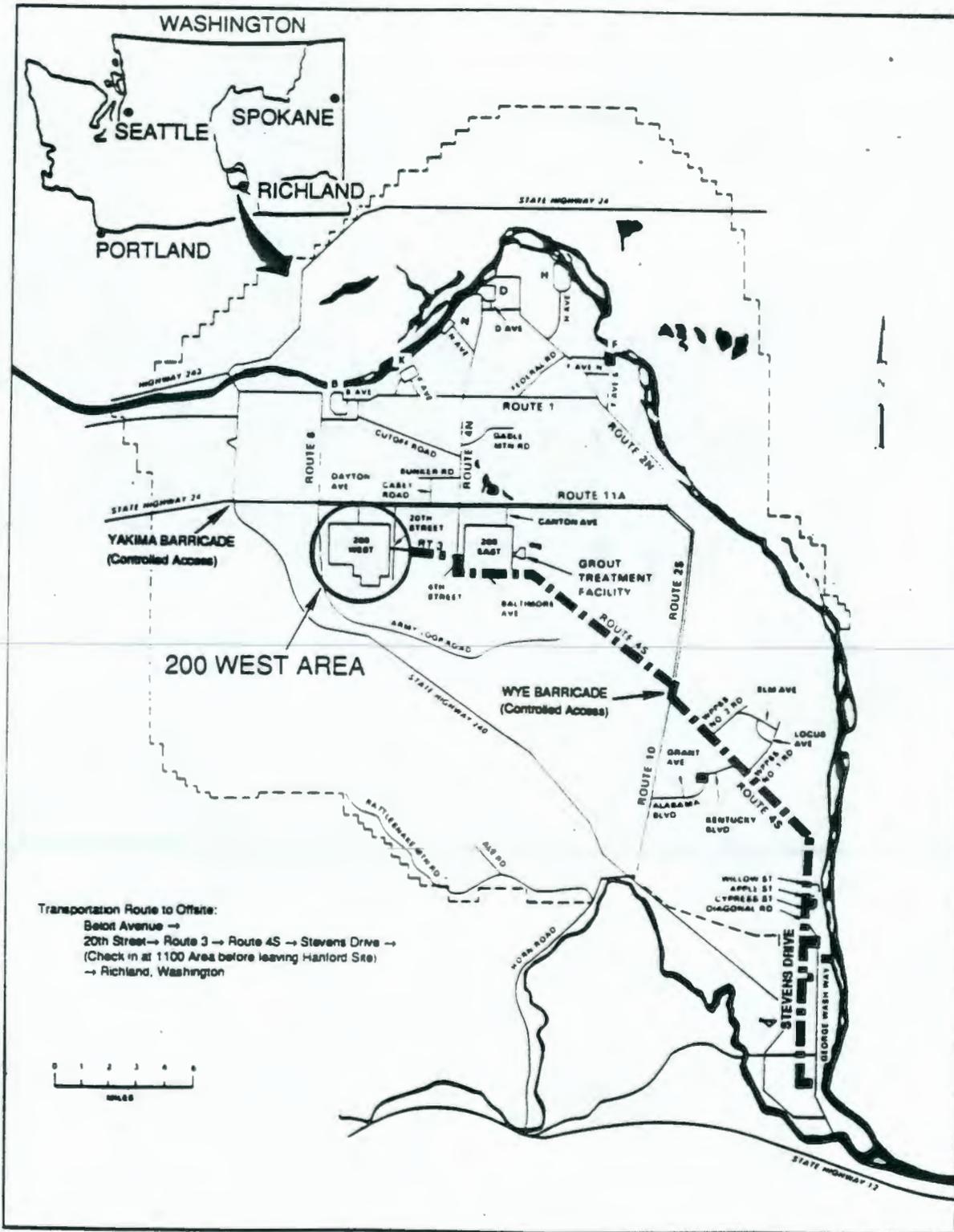
Figure 2. Vicinity Map 200 West Area.



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Figure 3. Site Plan 2727-S NRDWS Facility.



Transportation Route to Offsite:  
 Belmont Avenue →  
 20th Street → Route 3 → Route 4S → Stevens Drive →  
 (Check in at 1100 Area before leaving Hanford Site)  
 → Richland, Washington



1 Figure 4. Waste Transportation Route to Hanford Site Boundary.

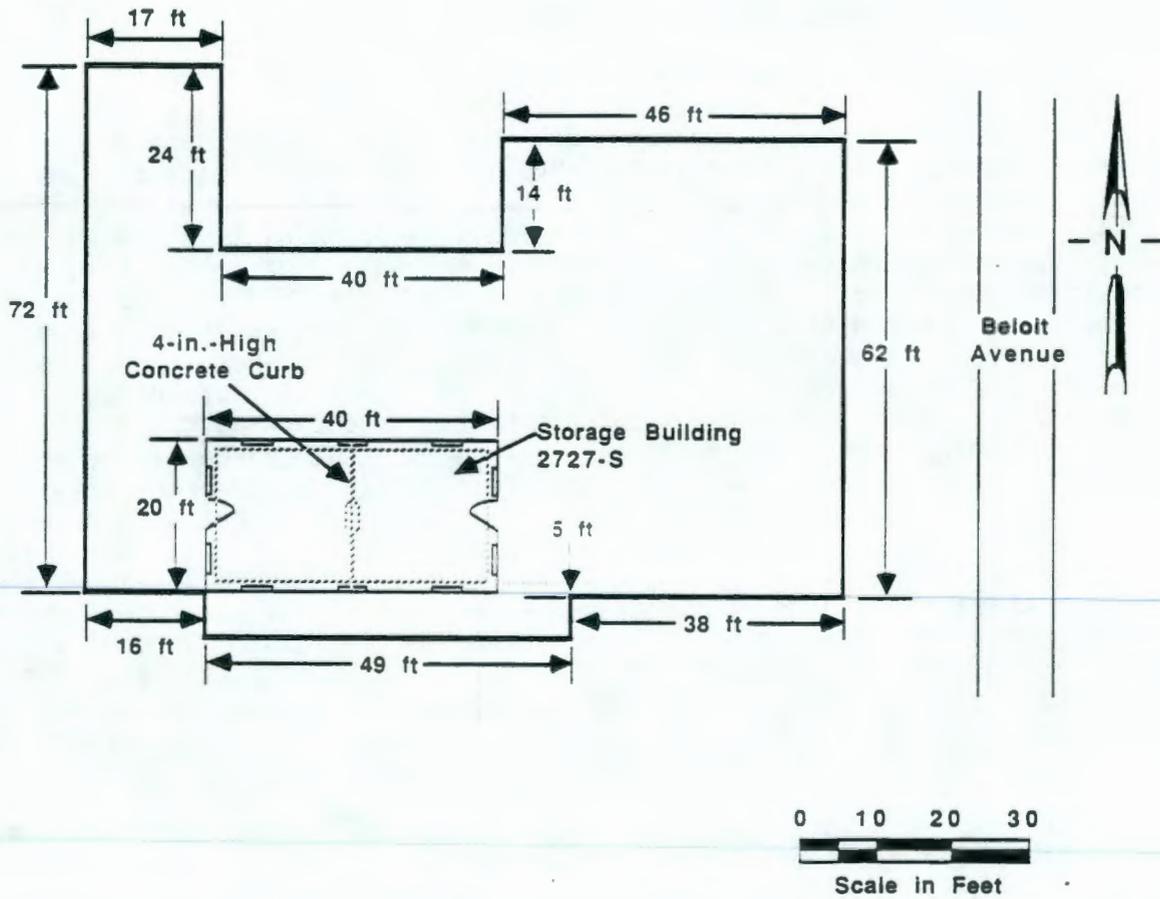
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1 Site personnel receive training on Hanford Site security regulations in  
2 the form of required security education and on-the-job training. Procedures  
3 for ensuring personnel compliance with security requirements, providing  
4 security education, and training personnel are developed and maintained on the  
5 Hanford Site. Performance of periodic security compliance audits and  
6 inspections ensures that these procedures are followed.

### 9 1.3 FACILITY DESCRIPTION AND OPERATIONS

11 Nonradioactive dangerous wastes received at the 2727-S NRDWS Facility  
12 were stored in a covered metal building (2727-S Building) set around (not  
13 atop) two main curbed bays for segregating oxidizing wastes from corrosive,  
14 organic, ignitable, and other waste types. The building dimensions are 20 by  
15 40 ft. There is a door at each end of the building and windows on all four  
16 walls. The metal building is lined internally with insulation and wallboard.  
17 The wallboard covers only the upper half of the walls, while the insulation  
18 lines both upper and lower walls. The floors and curbs of the storage bays in  
19 the building are concrete. There are some hairline cracks in the floor. The  
20 floor of the building is part of a concrete pad that extends beyond the  
21 building in four directions. The perimeter of the pad is not curbed  
22 (Figure 5). Appendix B contains current photographs showing the concrete pad  
23 and the building, both internally and externally. The source of the puddled  
24 liquid in the photographs is rainwater. No design or engineering drawings are  
25 available to provide additional information on either the building or the  
26 concrete pad. Both the building and the pad have been used as chemical and  
27 construction storage sites for many years. The exact nature and amounts of  
28 previous chemicals stored at the 2727-S NRDWS Facility is not known. There  
29 are no operating records available from that time (1960's). In general, new  
30 product chemicals were stored in their original shipping containers before  
31 distribution around the site. No wastes were stored at the site before its  
32 use as the 2727-S NRDWS Facility. A waste inventory, listed in Appendix E,  
33 shows the variability of wastes that passed through the 2727-S NRDWS Facility.

35 Drums were stored on wooden pallets to elevate them off the floor and  
36 away from possible accumulated liquids. When wastes were encountered that  
37 were not compatible with either bay (as determined from the initial generator  
38 waste analysis) or when spatial constraints were exceeded, containers were  
39 isolated on wooden pallets outside the 2727-S Building on the concrete pad.  
40 On occasion, empty drums were placed directly on the pad. Wastes were  
41 segregated outside in a manner similar to that described previously. Drums  
42 were never stacked outside the 2727-S Building. Inside the building, small  
43 containers (e.g., 5-gal drums, crates, and boxes) of compatible materials were  
44 sometimes stacked two containers high. Both hand trucks and forklifts were  
45 used to manage the drums at the 2727-S NRDWS Facility. Only hand trucks were  
46 used for drum transfer inside the building.



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Figure 5. Concrete Pad and Building Plan.

1 The 2727-S NRDWS Facility was not designed to drain and remove liquids  
2 resulting from leaks, spills, or precipitation. Standard spill response  
3 procedures included identification of spilled waste, application of a  
4 compatible absorbent, and collection of the waste and absorbent for disposal  
5 in an overpack drum, in which the originally leaking drum had been placed.  
6

7 During a period of approximately 1 month, toward the end of the operating  
8 life of the 2727-S NRDWS Facility, more drums were stored at the facility than  
9 could be held within the 2727-S Building or on the concrete pad. Drums on  
10 pallets were placed directly on the ground immediately along the sides of the  
11 pad (except on the Beloit Avenue side) and empty, triple-rinsed drums were  
12 placed directly on the ground (not on pallets). This practice did not reflect  
13 normal operating procedures. Drums were shifted about daily, as they were  
14 being organized for loading and shipment from the 2727-S NRDWS Facility. The  
15 drums and surrounding areas were inspected twice a day during this month-long  
16 period for leaks and spills. No more than 160 drums were ever stored off the  
17 concrete pad. This number represents the maximum number of drums that might  
18 have been stored off the pad; no drum was stored off the pad for more than one  
19 week.  
20

21 Under normal operating conditions, the 2727-S NRDWS Facility was  
22 inspected once a week. Information noted on the inspection log included areas  
23 subject to spills, structures, container condition, and safety/emergency  
24 equipment. Inspection logs for this 2727-S NRDWS Facility (dated May 9, 1985  
25 through December 22, 1986) were reviewed. Those containing comments or  
26 notations regarding spills, leaks, and deteriorated drums are included in  
27 Appendix C.  
28

29 It is recognized that there are several factors associated with the  
30 design and operation of the 2727-S NRDWS Facility that may have resulted in  
31 contamination of the facility and surrounding soils. These factors include:  
32 storage of drums on the soil beyond the concrete pad (exceeding design  
33 capacity); lack of curbs around the perimeter of the concrete pad; and cracks,  
34 holes, and joints within the concrete pad outside the 2727-S Building.  
35 Identification of contamination caused by these factors is addressed in  
36 Chapter 4.0.  
37  
38

#### 39 1.4 WASTES STORED AT THE 2727-S NRDWS FACILITY 40

41 Wastes were normally received in U.S. Department of Transportation (DOT)  
42 specification 85-, 55-, 30-, and 5-gal drums and DOT specification fiberboard  
43 boxes, crates, and containers. No wastes were received at this 2727-S NRDWS  
44 Facility in bulk loads. Most of the nonradioactive dangerous wastes received  
45 at the 2727-S NRDWS Facility consisted of empty, extremely hazardous material  
46 drums, unused pure chemical products, and product mixtures in small laboratory  
47 quantities. The 2727-S NRDWS Facility received a variety of chemical waste in  
48 its 3 1/2 years of operation. The list includes, but is not limited to, heavy  
49 metal, corrosive, ignitable, chlorinated solvent, and reactive wastes.  
50 Appendix E provides an inventory of wastes stored at the 2727-S NRDWS  
51 Facility. Wastes were designated according to Ecology waste designation  
52 regulations WAC 173-303-070 (Ecology 1991b).

1 The 2727-S NRDWS Facility received regulated wastes from DOE-RL  
2 processing, testing, construction, and maintenance units. Individual Hanford  
3 Site management contractors contributed waste to this unit under the common  
4 DOE-RL identification number. Therefore, the 2727-S NRDWS Facility was, in  
5 actuality, receiving onsite (not offsite) generated wastes. Nonetheless,  
6 Hanford Site management contractors implemented control procedures similar to  
7 those required for offsite treatment, storage, and/or disposal (TSD)  
8 facilities to ensure that proper waste identification and Ecology designation  
9 were attained at the generating site.

10  
11 Depending on the waste designation, nonradioactive regulated wastes were  
12 either managed onsite or shipped offsite to an appropriate TSD facility.  
13 Offsite TSD facilities that received wastes from the 2727-S NRDWS Facility are  
14 listed in Table 1. The location of the offsite TSD facility and its  
15 permitting status also are given.

16  
17  
18 Table 1. Offsite Treatment, Storage, and/or Disposal  
19 Facilities Receiving 2727-S Wastes.

20	Facility	Location	Permitting status
21	Northwest EnviroService, Inc.	Seattle, Washington	Interim
22	Chem-Security Systems, Inc.	Arlington, Oregon	Final
23	Crosby & Overton, Inc.	Kent, Washington	Interim

24  
25  
26 The waste transportation route taken from the 2727-S NRDWS Facility to  
27 the Hanford Site boundary is shown on Figure 4. Road names are identified,  
28 and the location of the Wye Barricade, a controlled-access barricade, is  
29 shown.

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2.0 CLOSURE PERFORMANCE STANDARD

Closure of the 2727-S NRDWS Facility, as described in the following sections, is designed to accomplish the following, in accordance with WAC 173-303-610(6):

- Minimize the need for further maintenance
- Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, postclosure escape of dangerous waste, dangerous waste constituents, leachate, contaminated runoff, or dangerous waste decomposition products to the ground, surface water, groundwater, or the atmosphere
- Return the land to a condition that will support its intended subsequent use, given the nature of the previous regulated waste activity.

In general, these goals will be accomplished by removing, to background environmental levels, regulated wastes from the 2727-S NRDWS Facility and removing or decontaminating all equipment, bases, structures, liners, soils, or other materials containing or contaminated with dangerous wastes or waste residue from the facility. Postclosure monitoring will not be necessary for the 2727-S NRDWS Facility because no regulated wastes will remain after closure. After closure has been completed, the 2727-S NRDWS Facility will no longer be classified as a TSD unit.

Two copies of this closure plan serve as the official copies of the plan. The official copies will be located at the following office: U.S. Department of Energy Field Office, Richland, Federal Building, 825 Jadwin Avenue, P.O. Box 550, Richland, Washington, 99352. The DOE-RL office will be responsible for amending this plan, as deemed necessary. It will be kept at the DOE-RL office until closure is completed and certified.

Closure activities will be monitored by a registered professional engineer who will certify that, in his or her judgment, closure was accomplished in accordance with the specifications of the approved closure plan as described herein. The professional engineer's report will be submitted to the U.S. Environmental Protection Agency (EPA) and Ecology along with DOE-RL and Westinghouse Hanford certifications of closure. The report and certifications will be sent by registered mail.

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3.0 ESTIMATE OF MAXIMUM INVENTORY OF WASTE

The maximum estimated inventory of containerized waste ever stored at the 2727-S NRDWS Facility was 772 drums. The drums were stored both inside the building and outside on the concrete pad and soil. The drums also varied in sizes (not including over-packs) of 5, 30, and 55 gal. Some of the drums were empty, some contained lab-packs, some were partially full, and some were full. The maximum gallonage potentially ever stored at the 2727-S NRDWS Facility is 42,460 gal (assuming 772 full 55-gal drums).

The discrepancy between the maximum volume of waste presented in this plan and that submitted in the Part A permit application is because the design capacity of the 2727-S NRDWS Facility was exceeded. A copy of the Part A permit application is presented in Appendix D.

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4.0 CLOSURE ACTIVITIES

The 2727-S NRDWS Facility will not require partial closure before final closure of the entire facility. At present, the 2727-S NRDWS Facility is under interim status and is not operating. The waste inventory in Appendix E indicates that the 2727-S NRDWS Facility held both characteristic and listed waste. Characterization samples will be analyzed for the constituents listed in Appendix G. The standard of background environmental levels or levels based on the limits of quantitation have been chosen as the appropriate cleanup level. However, if background threshold values cannot be achieved, health-based standards, such as standards identified in *The Model Toxics Control Act Cleanup Regulation*, (WAC 173-340) (Ecology 1991b), may be used with prior approval from Ecology.

4.1 HOW THE 2727-S NRDWS FACILITY WILL BE CLOSED

The primary strategy for closure of the 2727-S NRDWS Facility is clean closure. The closure operations will consist of the following steps, as necessary.

1. Determine if chemical residues are present in the building materials, concrete pad, and underlying and surrounding soils (and at what levels) by employing judgmental sampling point selection techniques. The selection of individual sampling points was based on guidance from Ecology.
2. Demolish and remove the building, the interior concrete pad, the building support soils (top 6 in. of soil immediately underneath building), and the exterior concrete pad. The building, pad, and soil debris will be disposed of in an offsite *Resource Conservation and Recovery Act of 1976* (RCRA) permitted (or interim status) landfill.
3. Excavate and dispose of any soils that have chemical constituents present above background levels, in an offsite RCRA permitted, (or interim status) landfill.
4. Perform closure verification sampling on the remaining soil as described in the sampling plan.
5. Perform repeated excavation and closure verification sampling as described in the sampling plan.
6. Appropriately decontaminate any equipment used in performing closure activities, as needed.
7. Appropriately dispose of any sampling and decommissioning waste generated during closure activities.

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- 1 8. Restore the area after closure activities are complete.  
2  
3 9. Certify that closure activities were completed in accordance with  
4 the approved closure plan.  
5

6 The closure activities will be completed in accordance with this closure  
7 plan, after approval of this plan by Ecology and EPA. The closure activities  
8 to be conducted in accordance with the schedule contained in Chapter 7.0,  
9 Figure 10, are explained in the following sections.

10  
11  
12 **4.2 SAMPLING PLAN**  
13

14 There are three media that may require sampling at the 2727-S NRDWS  
15 Facility. These are: (1) the building, (2) the concrete pad; both interior  
16 and exterior, and (3) the soils beneath the concrete pad and the surrounding  
17 perimeter. The basis for determining the need and extent of sampling  
18 activities for each of these media is discussed in the following section.  
19

20 Ecology will be notified at least 7 days in advance of any sampling event  
21 taking place at the 2727-S NRDWS Facility. Copies of laboratory analysis  
22 results performed on verification samples will be provided to Ecology.  
23

24  
25 **4.2.1 2727-S Building Sampling**  
26

27 Historical data indicates a limited potential for chemical contamination  
28 of the structure. However, instead of expending funds to perform an extensive  
29 sampling activity, clean closure will be achieved through handling and  
30 disposing of the 2727-S NRDWS Facility as a dangerous waste. The DOE-RL and  
31 Westinghouse Hanford contend that through process knowledge and historical  
32 records the 2727-S NRDWS Facility has received little or no contamination.  
33 Any sampling of the 2727-S Building structure will be performed in compliance  
34 with the receiving offsite RCRA landfill's waste analysis plan. Copies of any  
35 sample analytical report(s) prepared by the receiving offsite RCRA landfill  
36 will be promptly transferred to Westinghouse Hanford. Any remaining sample  
37 information pertinent for record keeping purposes will be transmitted to  
38 Westinghouse Hanford from the receiving offsite RCRA landfill within an  
39 acceptable time frame.  
40

41  
42 **4.2.2 Concrete Sampling**  
43

44 **4.2.2.1 Interior Pad.** The interior pad consists of the concrete pad directly  
45 under the building and the section of concrete extending 2 ft outward from the  
46 2727-S Building perimeter. The interior pad will be disposed of in an offsite  
47 RCRA landfill.  
48

49 Historical data indicates a limited potential for chemical contamination  
50 of the interior concrete pad. However, instead of expending funds to perform  
51 an extensive sampling activity, clean closure will be achieved through  
52 handling and disposing of the 2727-S NRDWS Facility as a dangerous waste.

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1 The DOE-RL and Westinghouse Hanford contend that through process knowledge and  
2 historical records the 2727-S NRDWS Facility has received little or no  
3 contamination. Any sampling of the interior concrete pad will be performed in  
4 compliance with the receiving offsite RCRA landfill's waste analysis plan.  
5 Copies of any sample analytical report(s) prepared by the receiving offsite  
6 RCRA landfill will be promptly transferred to Westinghouse Hanford. Any  
7 sample information pertinent for recordkeeping purposes will be transmitted to  
8 Westinghouse Hanford from the receiving TSD facility within an acceptable time  
9 frame. Concrete coring will be performed on the interior concrete to obtain  
10 undisturbed soil samples (Section 4.2.3.1) underneath the pad. The coring  
11 procedure being used is documented in Appendix F.

12  
13 **4.2.2.2 Exterior Pad.** The exterior pad consists of all portions of the  
14 exterior concrete pad not previously addressed in the description of the  
15 interior concrete pad. Waste containers were stored outside the  
16 2727-S Building on the exterior pad when the building storage capacity was  
17 exceeded. The exterior pad will be disposed of in an offsite RCRA landfill.

18  
19 Historical data indicates a limited potential for chemical contamination  
20 of the exterior concrete pad. However, instead of expending funds to perform  
21 an extensive sampling activity, clean closure will be achieved through  
22 handling and disposing of the 2727-S NRDWS Facility as a dangerous waste. The  
23 DOE-RL and Westinghouse Hanford contend that through process knowledge and  
24 historical records the 2727-S NRDWS Facility has received little or no  
25 contamination. Any sampling of the exterior concrete pad will be performed in  
26 compliance with the receiving offsite RCRA landfill's waste analysis plan.  
27 Copies of any sample analytical report(s) prepared by the receiving offsite  
28 RCRA landfill will be promptly transferred to Westinghouse Hanford. Any  
29 sample information pertinent for recordkeeping purposes will be transmitted to  
30 Westinghouse Hanford from the receiving offsite RCRA landfill within an  
31 acceptable time frame. Concrete coring will be performed on the exterior  
32 concrete to obtain undisturbed soil samples (Section 4.2.3.2) underneath the  
33 pad. The coring procedure being used is documented in Appendix F.

34  
35  
36 **4.2.3 Soil Sampling**

37  
38 Soil sampling at the 2727-S NRDWS Facility will encompass the following  
39 specific areas.

- 40  
41 • The soils along the perimeter fence.  
42  
43 These samples will be used to establish local background levels for  
44 establishing site cleanup criteria.  
45  
46 • The soils beneath the building.  
47  
48 • The soils beneath the exterior concrete pad.  
49  
50 • The soils outside the concrete pad perimeter.

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1 require access to the soils through the concrete pad. Closure verification  
2 sampling will take place before any removal and disturbance of soils at the  
3 site.  
4

5 The 2727-S Building was constructed with the floor divided into two bays.  
6 It has been agreed that the soil beneath each bay will be sampled. The  
7 selection of sampling points has been made with input from Ecology and can be  
8 seen in Figure 6. The sample location in the west bay area is located at the  
9 junction of cracks in the floor. This is a likely pathway for any  
10 contamination to reach the support soils beneath the 2727-S Building. The  
11 sampling point in the east bay of the 2727-S NRDWS Facility is located on a  
12 stain in the northerly area of the concrete. This staining is attributed to  
13 this point being the lowest in the east bay; therefore, liquids on the floor  
14 may have collected at this point. The stain appears to be algae growth from  
15 rainwater periodically pooling in the area since the 2727-S Building use  
16 ceased.  
17

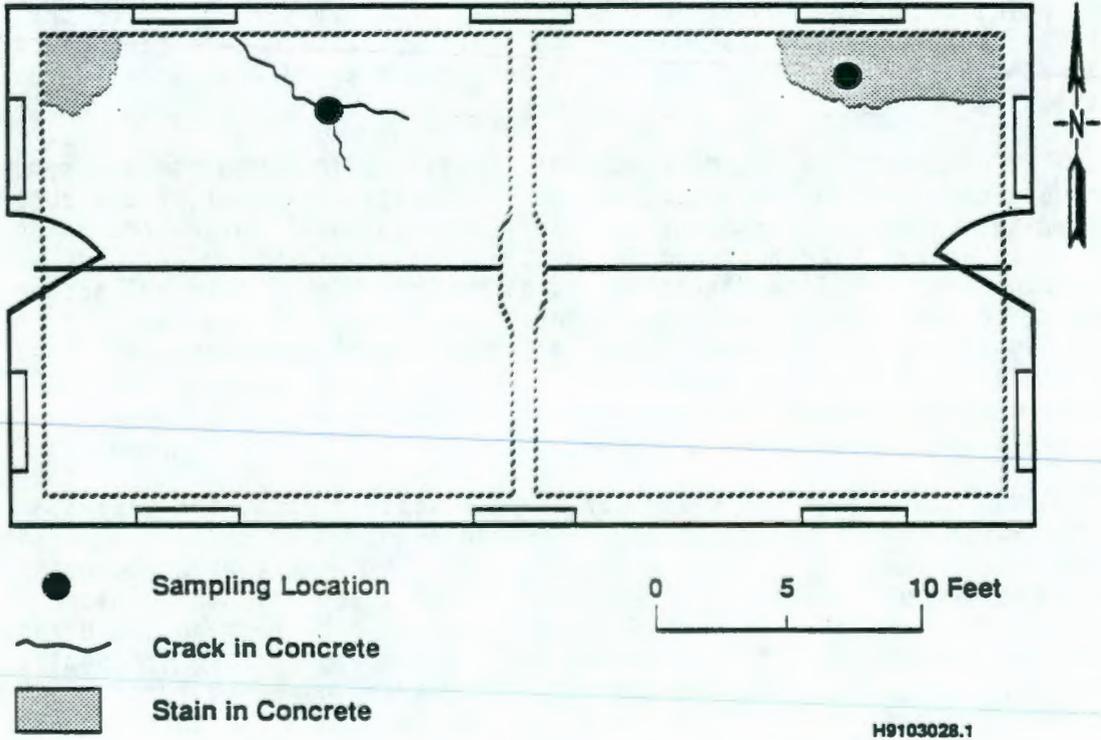
18 The procedure outlined in Appendix F will be followed for the removal of  
19 concrete cores to obtain access to the soil. After removal of the concrete  
20 cores, soil samples will be taken. Soil sampling will follow the guidelines  
21 set forth in EII 5.2 "Soil and Sediment Sampling" of WHC-CM-7-7, *Environmental*  
22 *Investigations and Site Characterization Manual*. The sample collection method  
23 used to collect samples will be either the use of a thin-walled ('Shelby')  
24 tube, a hand auger or scoop, spade, or shovel sampling technique. These  
25 methods are discussed in Appendices C and E, respectively, of WHC-CM-7-7. The  
26 specific method chosen to take samples will depend on field conditions at the  
27 time of sample collection.  
28

29 Given the extent and nature of storage activities at the 2727-S NRDWS  
30 Facility, it is unlikely that any soil with evidence of chemical constituents  
31 above background levels will be present. In the event that any constituents  
32 above background levels are determined to be present in these closure  
33 verification samples, the next 6 in. of soil would be removed and disposed of  
34 in an offsite RCRA landfill. If any soil is removed because of chemical  
35 contamination (other than the topmost 6-in. layer scheduled for removal with  
36 the interior pad), a buffer zone will be implemented. The buffer zone will  
37 consist of removing the adjoining soil to a circular distance of 5 ft and a  
38 depth of 4 in. past the last known point or area of soil contamination. If  
39 evidence of chemical constituents is present, closure verification sampling  
40 will be performed by taking 4 samples located in a 5 ft radius around the  
41 remediated area (including the buffer zone), and one sample located in the  
42 center of the same area.  
43

44 **4.2.3.2 Soils Beneath Exterior Pad.** The soils beneath the exterior pad at  
45 the 2727-S NRDWS Facility will be sampled in the same manner as the soils  
46 beneath the building pad. The difference is in the depths from which soil  
47 will be sampled. Samples beneath the exterior pad will be taken from a depth  
48 of 0-6 in., and from 18-24 in. These soil samples will be used as closure  
49 verification samples for that particular section of the concrete pad.  
50 However, unlike the soil removal action under the interior concrete pad, the

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Figure 6. Soil Sampling Locations Within Building.

1 topmost 6 in. of soil under the exterior pad will not be removed unless  
2 evidence of chemical contamination is present. The selection of sampling  
3 points has been made with input from Ecology and can be seen in Figure 7.  
4

5 The procedures outlined in Appendix F will be followed for the removal of  
6 concrete cores to obtain access to the soil. After removal of the concrete  
7 cores, soil samples will be taken. Soil sampling will follow the guidelines  
8 set forth in EII 5.2 "Soil and Sediment Sampling" of WHC-CM-7-7, *Environmental*  
9 *Investigations and Site Characterization Manual*. The sample collection method  
10 used to collect samples will be either a thin-walled ('Shelby') tube, a hand  
11 auger or scoop, spade, or shovel sampling technique. These methods are  
12 discussed in Appendices C and E, respectively, of WHC-CM-7-7. The specific  
13 method chosen to take samples will depend on field conditions at the time of  
14 sample collection.  
15

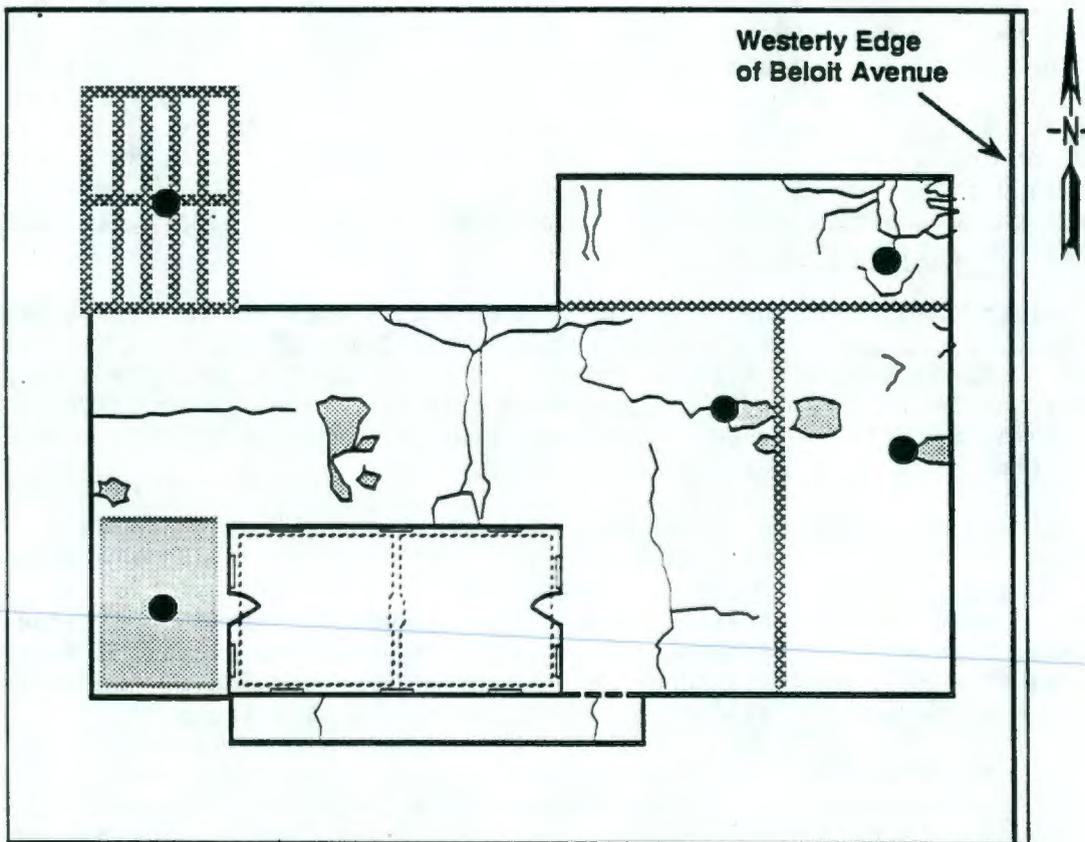
16 Given the extent and nature of storage activities at the 2727-S NRDWS  
17 Facility, it is unlikely that any soil with evidence of chemical constituents  
18 above background levels will be present. If any constituents above background  
19 levels are determined to be present in the closure verification samples, the  
20 next 6 in. of soil would be removed and disposed of in an offsite RCRA  
21 landfill.  
22

23 If any soil is removed because of chemical contamination, a buffer zone  
24 will be implemented. The buffer zone will consist of removing the adjoining  
25 soil to a circular distance of 5 ft and a depth of 4 in. past the last known  
26 point or area of soil contamination. If evidence of chemical constituents is  
27 present, closure verification sampling will be performed by taking 4 samples  
28 located in a 5 ft radius around the remediated area (including the buffer  
29 zone), and one sample located in the center of the same area.  
30

31 4.2.3.3 Perimeter Soils. Soil surrounding the exterior pad will be sampled  
32 to verify that waste handling activities did not affect it. There will be  
33 four samples taken from the perimeter soils. The selection of sampling points  
34 has been made under the guidance of Ecology. Samples will be taken to a depth  
35 of 6 in.  
36

37 The soil sample location for each side of the pad is shown in Figure 8.  
38 Each sample location was selected based on the assumption that this would be  
39 the side most likely to encounter detectable levels of chemical constituents  
40 in the soil. The north and west sample locations are in surface depressions.  
41 The east sample location is at the area where the transport trucks entered and  
42 left the site. The south sample location is located approximately south of  
43 the 2727-S Building and west of the area of discolored soil. The area of  
44 discolored soil on the south side of the pad will be sampled, analyzed, and  
45 removed as a separate and distinct removal action. If analysis indicates a  
46 waste code comparable to the 2727-S NRDWS Facility, it may also be shipped to  
47 the offsite RCRA landfill. If found to be a dangerous waste, this area will  
48 be subject to the same soil removal criteria as the other portions of the  
49 2727-S NRDWS Facility. The only difference for this area is that once the  
50 contaminated soil is removed, only one verification sample, obtained from the  
51 center of the this area, is required.

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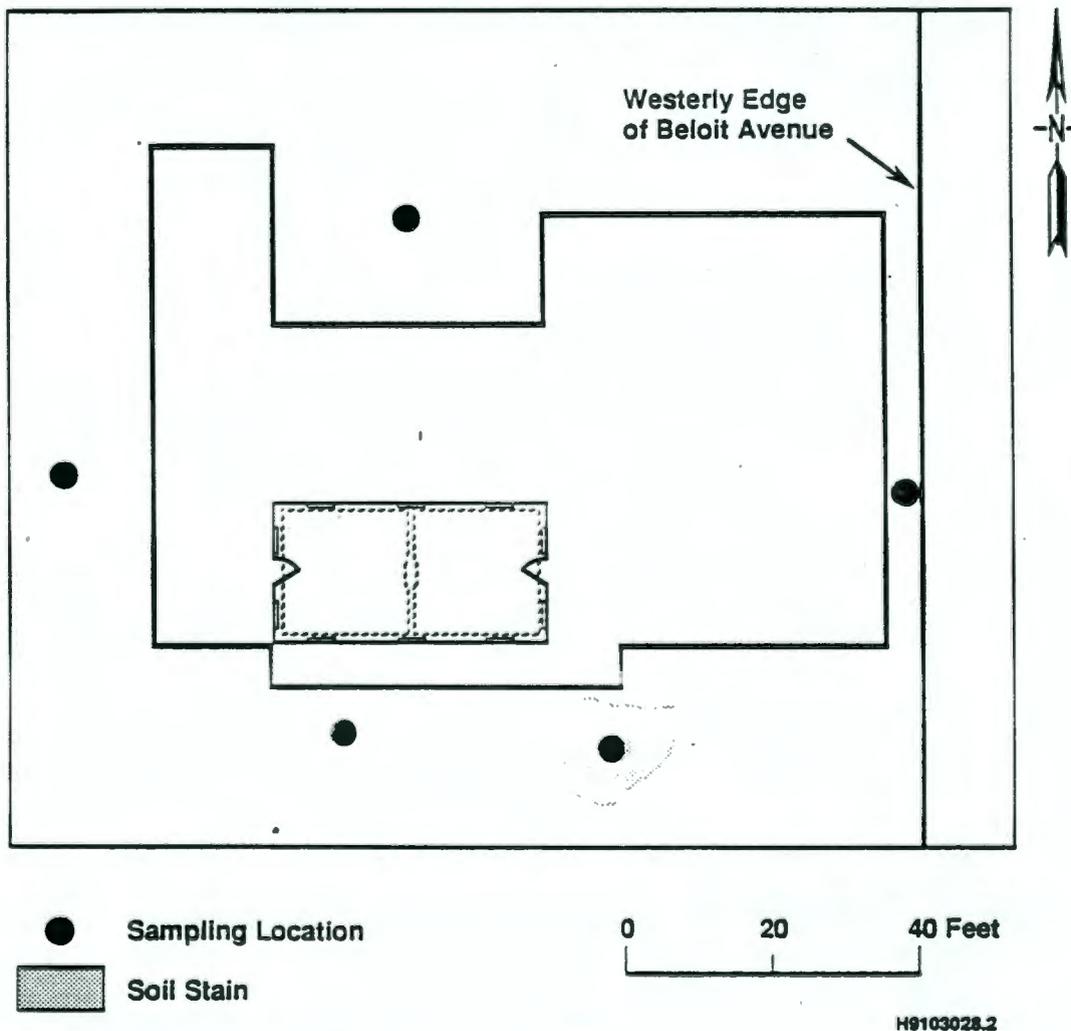
- Sampling Location
- ~ Crack in Concrete
- Stain or Dip in Concrete
- ▨ Seam (Expansion Joint)

0 30 Feet

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1 Figure 7. Soil Sampling Locations on Exterior Concrete Pad.



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Figure 8. Specific Perimeter Sampling Site Plan, Soil.

1 If any soil is removed because of chemical contamination in the remaining  
2 four perimeter locations, a buffer zone will be implemented. The buffer zone  
3 will consist of removing the adjoining soil to a circular distance of 5 ft and  
4 a depth of 4 in. past the last known point or area of soil contamination. If  
5 evidence of chemical constituents is present, closure verification sampling  
6 will be performed by taking 4 samples located in a 5 ft radius around the  
7 remediated area (including the buffer zone), and one sample located in the  
8 center of the same area.

9  
10 Soil sampling will follow the guidelines set forth in EII 5.2 "Soil and  
11 Sediment Sampling" of WHC-CM-7-7, *Environmental Investigations and Site*  
12 *Characterization Manual*. The sample collection method used to collect samples  
13 will be either the use of a thin-walled ('Shelby') tube, a hand auger or  
14 scoop, spade, or shovel sampling technique. These methods are discussed in  
15 Appendices C and E, respectively, of WHC-CM-7-7. The specific method chosen  
16 to take samples will depend on field conditions at the time of sample  
17 collection.

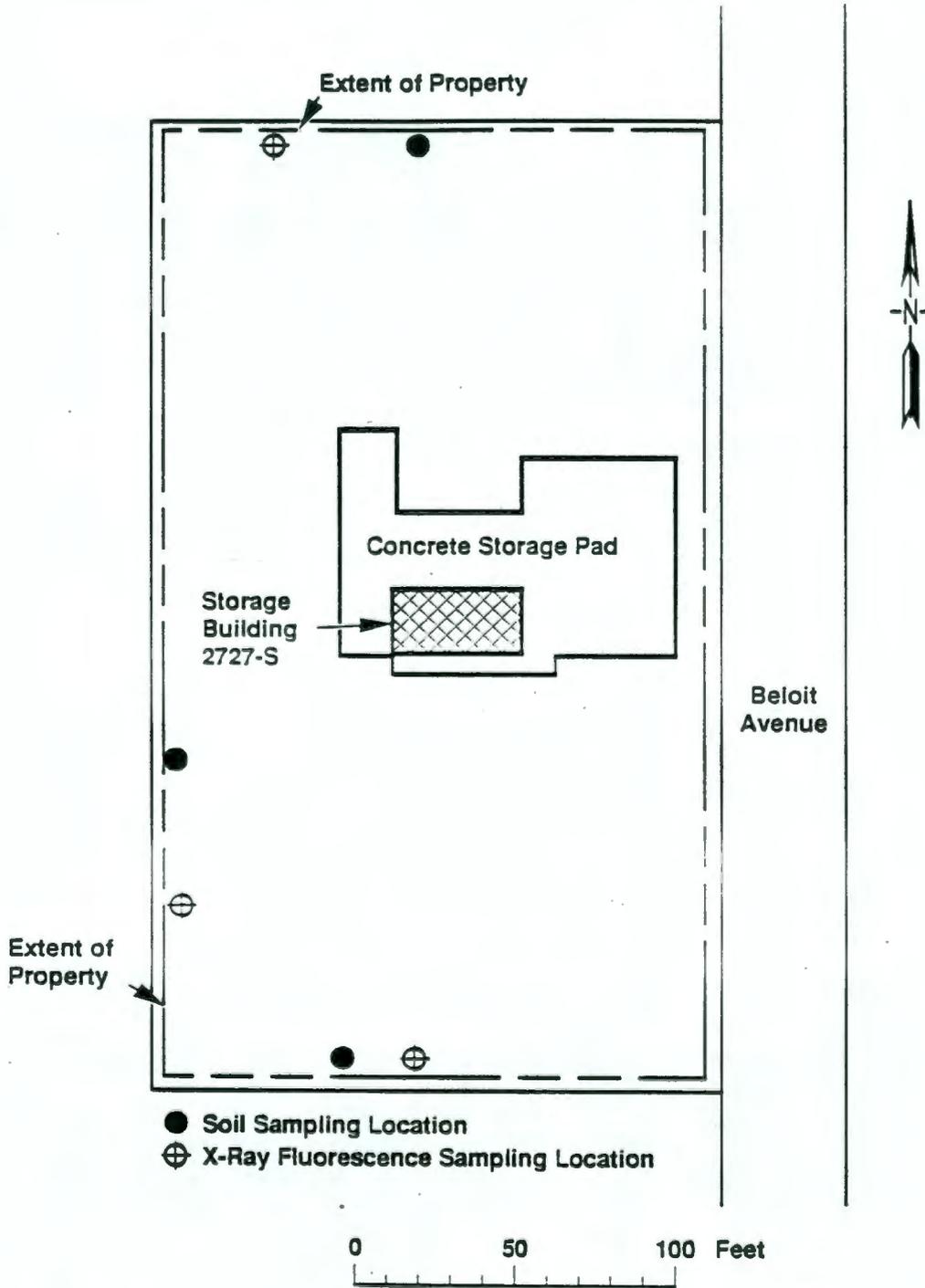
18  
19 Closure verification sampling will then be done at five locations. Four  
20 of the closure verification samples will be located within 5 ft of the  
21 perimeter of the remediated area: one each to the north, south, east, and  
22 west. The fifth closure verification sample will be located in the center of  
23 the remediated area. Any closure verification sample with chemical  
24 constituents present above background levels will have the soil removed and  
25 disposed of in the same manner discussed previously. This process would  
26 continue as necessary until verification of adequate soil removal is achieved.

27  
28 **4.2.3.4 Soil Background.** The soil located along the perimeter fence of the  
29 2727-S NRDWS Facility will be sampled to determine background level of  
30 chemical constituents. There will be three samples taken from within the  
31 perimeter fence. The amount and selection of sampling points has been made  
32 with input from Ecology and can be seen in Figure 9. One sample will be  
33 obtained from each portion of the fence not bordered by Beloit Avenue. Hence,  
34 the northern, western, and southern fence line will have one sampling location  
35 each. The exact location will be chosen by the responsible Westinghouse  
36 Hanford field sampling personnel.

37  
38 Soil sampling will follow the guidelines set forth in EII 5.2 "Soil and  
39 Sediment Sampling" of WHC-CM-7-7, *Environmental Investigations and Site*  
40 *Characterization Manual*. The sample collection method used to collect samples  
41 will be either a thin-walled ('Shelby') tube, a hand auger or scoop, spade, or  
42 shovel sampling technique. These methods are discussed in Appendices C and E,  
43 respectively, of WHC-CM-7-7. The specific method chosen to take samples will  
44 depend on field conditions at the time of sample collection.

45  
46 An X-ray fluorescence device will be used as a field screening technique  
47 onsite (Appendix F). To calibrate the X-ray fluorescence device for local  
48 background constituents, an additional three sampling locations along the  
49 perimeter fence is required. Exact locations will be chosen at the discretion  
50 of the personnel responsible for calibration of the device; however, they will  
51 be in the proximity of the three original perimeter fence sample locations.

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Figure 9. Background Soil Sampling Plan.

\*NOTE: All sampling locations are approximations.

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1 4.3 DISPOSAL REQUIREMENTS  
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3

4 4.3.1 The 2727-S Building Disposal  
5

6 The 2727-S Building is a 20 by 40 ft metal structure with interior  
7 wallboard, insulation, and electrical wiring.  
8

9 The 2727-S Building has a personnel door at each end and windows on all  
10 four walls. The structure is lined internally with insulation and wallboard.  
11 Trained personnel visually inspected the building and no evidence of asbestos  
12 was indicated. This conclusion was supported by process knowledge of the  
13 personnel responsible for building operations. The wallboard covers only the  
14 upper half of the walls, while the insulation lines both upper and lower  
15 walls. Because of the possible presence of polychlorinated biphenyls (PCBs),  
16 any fluorescent light ballasts present in the building will be removed before  
17 disposal of the building in an offsite RCRA landfill. Any fluorescent light  
18 ballasts from the 2727-S Building will be placed in an onsite PCB warehouse.  
19 Discarded fluorescent light tubes are considered a dangerous waste because of  
20 the presence of phosphorus. Discarded fluorescent light tubes from the  
21 2727-S Building will be removed and managed in accordance with Westinghouse  
22 Hanford onsite treatment procedures.  
23

24  
25 4.4 EQUIPMENT DECONTAMINATION  
26

27 Care will be taken in field sampling to ensure that there is no cross  
28 contamination of samples by sampling equipment. To prevent this source of  
29 contamination, freshly cleaned and decontaminated sampling tools will be used.  
30 When equipment must be reused in the field, it will be cleaned as thoroughly  
31 as practical. For this purpose, stringent laboratory cleaning procedures have  
32 been modified for field conditions as documented in WHC-CM-7-7, Environmental  
33 Investigation Instruction (EII) 5.5, "Decontamination of Equipment for  
34 RCRA/CERCLA Sampling."  
35

36  
37 4.5 RESTORATION  
38

39 Upon removal of waste residues and contaminated structures or soil,  
40 including waste generated during closure, the site may require some degree of  
41 reclamation. This may be justified to control dust, erosion, and surface  
42 water run-off and to promote postclosure usage. Site restoration will include  
43 backfilling disturbed soil areas with noncontaminated native soils,  
44 compaction, grading, and revegetation.  
45

46  
47 4.6 COST ESTIMATES  
48

49 It is DOE-RL's understanding that federal facilities are not required to  
50 comply with WAC 173-303-620 (1991a). However, projections of anticipated  
51 costs of closure will be provided annually during closure activities (starting  
52 October 1992).

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1 4.7 CERTIFICATION  
2

3 Within 60 days of completion of closure of the 2727-S NRDWS Facility,  
4 certifications will be submitted. Suggested certification statements are  
5 contained in Appendix I. The independent registered professional engineer who  
6 will be monitoring closure will visit the site at least at the commencement  
7 and end of each activity described in the closure plan (e.g., soil sampling,  
8 building removal, soil excavation, etc.). The professional engineer will  
9 review all records, notes, analyses, files, manifests, etc. relating to the  
10 closure activities. After the final professional engineer closure  
11 certification has been executed and the appropriate local zoning authority has  
12 received a copy of the survey plan indicating the location of the 2727-S NRDWS  
13 Facility, a responsible DOE official will certify that the facility has been  
14 closed in accordance with the closure plan. The responsible government  
15 official(s) is identified in Appendix I.

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5.0 CONTINGENCY PLAN

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A health and safety plan (HASP) is required for all hazardous waste sampling sites. This plan is intended to specify information pertinent to field assignments and to be a guide in unusual situations or emergencies. A site-specific version of the general RCRA/CERCLA investigation health and safety plan will be developed by Westinghouse Hanford to be used for RCRA sampling at the 2727-S NRDWS Facility. This plan will be developed and completed before initiation of RCRA sampling activities in accordance with EII 2.1, "Preparation of Health and Safety Plans."

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6.0 TRAINING REQUIREMENTS

6.1 PERSONNEL TRAINING

All personnel involved with the closure activities of the 2727-S NRDWS Facility will receive a minimum level of dangerous waste training.

- Managers and supervisors are responsible for supervising, coordinating, and directing the closure activities and personnel.
- Nuclear Process Operators and Decommissioning and Decontamination workers are responsible for sampling, packaging, and handling of dangerous waste, nonradioactive, and radioactive material.
- Health Physics Technicians are responsible for surveying for radiological and dangerous waste contamination.
- Crafts personnel are responsible for specialized work. The various crafts include carpenters, electricians, ironworkers/riggers, heavy equipment operators, crane operators, millwrights, pipefitters, and painters.

In addition to the personnel mentioned, any person entering a TSD unit during closure must have the 40 hours hazardous workers training.

Table 3 contains a matrix that relates job categories to the individual training course. Appendix H contains brief descriptions of the training courses, including descriptions of the target audience, instructional technique, evaluation method, length of course, and frequency of retraining.

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Table 3. Company-General Training Matrix.

Course title	Type	Target/Audience			
		MS	NPO	HPT	CR
Generator Hazards Safety Training	I	X	X	X	X
Hazardous Waste Worker Safety Training	I	X	X	X	X
Hazardous Waste Worker Safety Training, Refresher	C	X	X	X	X
Hazardous Materials/Waste Job Specific Training	I	X	X	X	X
Scott SKA-PAK <sup>®</sup> MSA PAPR	C	X	X	X	X
Self-Contained Breathing Apparatus (SCBA) Training (optional)	C	X	X	X	X
Radiation Safety Training	C	X	X	X	X
On-the-Job Training	C	X	X	X	X
Cardiopulmonary Resuscitation	C	X	X	X	X
Noise Control (optional)	C	X	X	X	X
Hazardous Waste Site Supervisor/Manager Safety Management Training	I	X			

- C = continuing course.
- CR = crafts.
- HPT = health physics technicians.
- I = introductory course.
- MS = manager and supervisors.
- NPO = nuclear process operators and decommissioning and decontamination workers.
- X = required course.

<sup>®</sup>SKA-PAK is a trademark of Figgie International, Incorporated.

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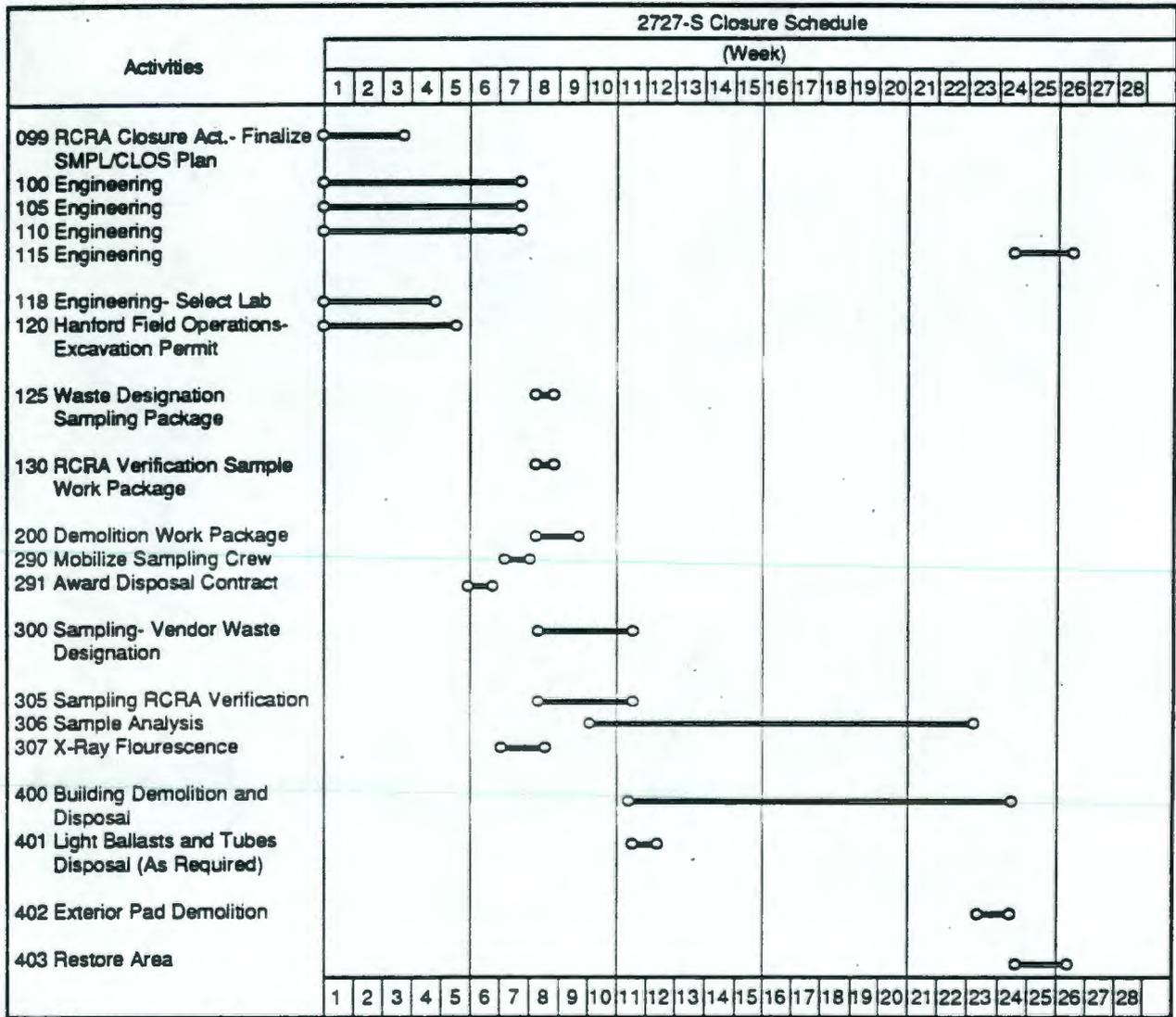
7.0 CLOSURE PLAN SCHEDULE

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Closure of the 2727-S NRDWS Facility will begin upon notification by Ecology of plan approval. Closure of the 2727-S NRDWS Facility will proceed according to the schedule presented in Figure 10.

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1 Figure 10. The 2727-S NRDWS Facility Closure Plan Schedule.

8.0 REFERENCES

1  
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3  
4 Ecology, 1991a, *Dangerous Waste Regulations*, Washington Administrative  
5 Code 173-303, Washington State Department of Ecology, Olympia,  
6 Washington.  
7  
8 Ecology, 1991b, *The Model Toxics Control Act Cleanup Regulation*, Washington  
9 Administrative Code 173-340, Washington State Department of Ecology,  
10 Olympia, Washington.  
11  
12 *Resource Conservation and Recovery Act of 1976*, as amended, Public Law 94-580,  
13 90 Stat. 2795, 42 USC 6901 et seq.  
14  
15 WHC, 1989a, *Environmental Investigations and Site Characterizations Manual*,  
16 WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington.  
17  
18 WHC, 1989b, *Nonradioactive Dangerous Waste Packaging and Disposal*  
19 *Requirements*, WHC-CM-5-16, Westinghouse Hanford Company, Richland,  
20 Washington.  
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APPENDIX A

DANGEROUS WASTE COMPLIANCE CHECKLIST/QUESTIONNAIRE  
CHAPTER 173-303 WAC

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DANGEROUS WASTE COMPLIANCE CHECKLIST/QUESTIONNAIRE CHAPTER 173-303 WAC  
March 1987

\*\*\*\*\*

Part 6: Closure

This part of the checklist/questionnaire is applicable to all dangerous waste management facilities operating under interim status. Dangerous waste facilities may include containers, tanks, surface impoundments, waste piles, thermal treatment, chemical, physical and biological treatment, land treatment, incinerators, and landfills.

The abbreviation "O/O" is used frequently throughout this checklist/questionnaire and stands for the words "owner and/or operator."

The questions in the checklist have been written in a manner such that they can be answered either "Yes" or "No." However, the answers to some questions may require additional explanation. The space provided for comments at the end of each section may be used for explanations. If a question does not apply to a particular facility, simply write "NA" (not applicable) next to the question.

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CLOSURE PLAN CHECKLIST

6.1. GENERAL FACILITY INFORMATION

Facility Name: 2727-S NRDWS EPA/State I.D.: # WA7890008967

Inspectors Name: \_\_\_\_\_ Date: \_\_\_\_\_

Check the type(s) of unit operations that the O/O manages at his facility (refer to 6.3 for Unit Specific Requirements):

	<u>Page No.</u>
• Containers . . . . .	13
• Tanks . . . . .	14
• Surface Impoundments . . . . .	15
• Piles . . . . .	16
• Land Treatment . . . . .	17
• Landfills . . . . .	18
• Incinerators . . . . .	19
• Thermal Treatment . . . . .	20
• Chemical, physical and biological treatment . . . . .	21

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2. MAXIMUM EXTENT OF OPERATION (40 CFR 265.112(a)(1)) Yes No
- A. Does the plan identify the MAXIMUM EXTENT OF OPERATION which will be unclosed during the life of the facility? N/A
- B. Is the MAXIMUM EXTENT OF OPERATION estimate exceeded by current operations? N/A
- C. Does the MAXIMUM EXTENT OF OPERATION estimate include:
- a. the maximum area of landfill or land treatment ever containing wastes? N/A
  - b. inactive areas open because of operating problems or contingencies? N/A
  - c. maximum area of land ever used for land spreading? N/A
  - d. the most extensive treatment required for land spreading? N/A
  - e. the maximum area used for storage? X

Explain each "NO" answer.

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

3. MAXIMUM INVENTORY (40 CFR 265.112(b)(3))
- A. Is there an estimate of the MAXIMUM INVENTORY of wastes in storage or treatment at any time during the life of the facility? (Note: write NA for those cases where there is no storage or treatment prior to disposal.) X
- B. Does the MAXIMUM INVENTORY estimate include the maximum amount of on-site wastes?
- a. requiring pre-treatment? N/A
  - b. requiring treatment? N/A
  - c. requiring disposal? N/A
- C. Does the MAXIMUM INVENTORY estimate include the maximum amount of on-site:
- a. wastes in surface impoundments? N/A

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- |  | <u>Yes</u>               | <u>No</u>   |
|--|--------------------------|-------------|
| b. wastes in partially-closed non-disposal surface impoundments?   | <u>N/A</u>               | <u>    </u> |
| c. wastes in tanks?  | <u>N/A</u>               | <u>    </u> |
| d. wastes in piles?  | <u>N/A</u>               | <u>    </u> |
| e. wastes in drainage pits?  | <u>N/A</u>               | <u>    </u> |
| f. wastes in containers?   | <u>X</u>                 | <u>    </u> |
| g. standing liquids?   | <u>N/A</u>               | <u>    </u> |
| <br>   |                          |             |
| C. Does the MAXIMUM INVENTORY estimate include the maximum amount of on-site: (continued)  | <u>Yes</u>               | <u>No</u>   |
| h. sludge?   | <u>N/A</u>               | <u>    </u> |
| i. contaminated soil from land treatment fields?   | <u>N/A</u>               | <u>    </u> |
| j. contaminated soil from around tanks, containers, piles?   | <u>X</u>                 | <u>    </u> |
| k. contaminated soil from around tanks, containers, piles?   | <u>N/A</u>               | <u>    </u> |
| l. process residues?   | <u>N/A</u>               | <u>    </u> |
| m. decontamination residues?   | <u>X</u>                 | <u>    </u> |
| <br>   |                          |             |
| D. Does the plan discuss the type(s) of TESTING AND CRITERIA to be used to determine: Note: the regulations do not require closure plans to include information on waste testing and criteria. Write "NA" for situations where soil contamination, decontamination residues, or process residues are not relevant. |                          |             |
| a. whether soil is contaminated?   | <u>X</u>                 | <u>    </u> |
| b. whether decontamination residues are hazardous?   | <u>X</u>                 | <u>    </u> |
| c. whether process residues are hazardous?   | <u>N/A</u>               | <u>    </u> |
| <br>   |                          |             |
| E. Are INCOMPATIBLE WASTES identified and provisions described for keeping them separate during closure (Note: write "NA" only if there are no incompatible wastes being managed at the facility.)   | <u>See comment below</u> |             |

Comments: No wastes are on site. Closure will consist of sampling and decontamination of the walls of the building, the concrete pad and the surrounding soil as well as disposal of all closure activity wastes.

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4. <u>CLOSURE STEPS</u>	<u>Yes</u>	<u>No</u>
A. Does the plan clearly identify the STEPS TO CLOSE		
a. at any point during the intended operating life? (40 CFR 265.112(b))	<u>N/A</u>	<u>    </u>
b. at the end of the intended operating life? (40 CFR 265.112(b))	<u>X</u>	<u>    </u>
B. Do the STEPS TO CLOSE in the plan include:		
a. removal of wastes? (40 CFR 265.112(b))	<u>N/A</u>	<u>    </u>
b. treatment of wastes? (40 CFR 265.112(b))	<u>N/A</u>	<u>    </u>
c. transportation of all wastes? (40 CFR 265.112(b))	<u>N/A</u>	<u>    </u>
d. waste disposal? (40 CFR 265.112(b))	<u>N/A</u>	<u>    </u>
e. identification of and the type of off-site dangerous waste management unit to be used? (40 CFR 265.112(b))	<u>N/A</u>	<u>    </u>
f. waste containment?	<u>N/A</u>	<u>    </u>
g. cover? (40 CFR 265.310(a))	<u>N/A</u>	<u>    </u>
h. removal or decontamination of contaminated containment system components, equipment, structures, and soil? (40 CFR 265.112(b)(4))	<u>X</u>	<u>    </u>
i. groundwater monitoring?	<u>N/A</u>	<u>    </u>
j. closure certification? (40 CFR 265.115)	<u>X</u>	<u>    </u>
k. maintenance of leachate program?	<u>N/A</u>	<u>    </u>
l. maintenance of gas collection program?	<u>N/A</u>	<u>    </u>
m. security requirements?	<u>X</u>	<u>    </u>
C. With respect to the REMOVAL, TREATMENT, OR DISPOSAL of waste, does the plan identify:		
a. the source and type of materials and equipment needed?	<u>N/A</u>	<u>    </u>
b. the amount of labor required?	<u>N/A</u>	<u>    </u>
c. the capacity, number, and location of trenches or cells needed?	<u>N/A</u>	<u>    </u>
d. the area required for landspreading?	<u>N/A</u>	<u>    </u>
D. Does the plan describe the DECONTAMINATION (40 CFR 265.112(b)(4); 265.114) of facility equipment and structures, including:		
a. a list of equipment, containers, containment systems, and structures requiring disposal or decontamination?	<u>X</u>	<u>    </u>
b. decontamination procedures?	<u>X</u>	<u>    </u>
c. method of treatment or disposal of residues?	<u>X</u>	<u>    </u>

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- |   | <u>Yes</u>        | <u>No</u>        |
|---|-------------------|------------------|
| d. sampling and testing program?  | <u>X</u>          | ___              |
| e. criteria to be used for determining the extent of decontamination necessary to satisfy the closure performance standards?                      | <u>X</u>          | ___              |
| <b>E. With respect to MONITORING, does the closure plan describe:</b>   | <b><u>Yes</u></b> | <b><u>No</u></b> |
| a. details of the groundwater monitoring program during closure?  | ___               | <u>N/A</u> ___   |
| b. soil testing and monitoring?   | <u>X</u>          | ___              |
| c. maintenance of monitoring equipment during closure?  | ___               | <u>N/A</u> ___   |
| d. other (specify: _____)   | ___               | <u>N/A</u> ___   |
| <b>F. With respect to CERTIFICATION of closure (40 CFR 265.115), does the closure plan describe scheduled or estimated number of inspections?</b> | <u>X</u>          | ___              |
| <b>G. If a system for COLLECTING LEACHATE is present, does the closure plan:</b>  | ___               | <u>N/A</u>       |
| a. describe leachate removal, treatment, and disposal during closure?   | ___               | ___              |
| b. identify the approximate volume of leachate collected?   | ___               | ___              |
| c. provide for maintenance of the leachate collection system during closure?  | ___               | ___              |
| <b>H. If a GAS COLLECTION SYSTEM is required during operation, does the closure plan?</b>   | ___               | <u>N/A</u>       |
| a. describe procedures for collecting gas during closure?   | ___               | ___              |
| b. describe monitoring samples and analysis during closure?   | ___               | ___              |
| c. describe maintenance of gas collection system during closure?  | ___               | ___              |
| <b>I. If SECURITY (ex: fencing) is required, does the closure plan:</b>   | ___               | <u>N/A</u>       |
| a. describe the maintenance of security equipment during the closure period?  | ___               | ___              |
| b. describe the installation of appropriate equipment at closure?   | ___               | ___              |
| c. state the dimensions of the fence and the area to be enclosed?   | ___               | ___              |

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Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. FINAL CLOSURE: SCHEDULE Yes No

A. For O/O of facilities without approved closure plans, or who use a trust fund to demonstrate financial assurance, does the plan identify the YEAR when final closure is expected to occur? (40 CFR 265.112(b)(7)) X     

• What is the expected year of closure? N/A

B. Is there a SCHEDULE for closure activities for each management unit? (40 CFR 265.112(b)(6)) X     

IF "NO" SKIP TO COMMENTS SECTION.

C. Does the SCHEDULE for closure of each management unit include:

a. total time required to close? X     

b. the time for intervening closure activities? (40 CFR 265.112(b)(6)) X     

c. time required for key steps:

i. waste inventory treatment? N/A  
(40 CFR 265.112(b)(6))

ii. waste inventory disposal? N/A  
(40 CFR 265.112(b)(6))

iii. removal of waste inventory and residues? N/A

iv. decontamination of facility equipment and structures? X     

v. installation of containment and diversion structures? N/A

vi. placement of final cover? N/A  
(40 CFR 265.112(b)(6))

vii. planting vegetation? N/A

viii. closure certification? X     

ix. other (specify: \_\_\_\_\_) N/A

D. Does the SCHEDULE for closure of each management unit:

a. encompass more than 90 days for treatment, removal, or disposal of wastes after receipt of final volume of dangerous wastes or after approval of the closure plan? (40 CFR 265.113(a)) N/A

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Yes No  
\_\_\_ X

b. encompass more than 180 days for completion of closure plan activities after receipt of final volume of dangerous wastes or after approval of the closure plan? (40 CFR 265.113(b))

E. Does the schedule identify any management units to be closed before final closure (e.g., partial closure)? \_\_\_ X

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. GENERAL CLOSURE COST ESTIMATE

Yes No

A. Is there a written closure cost estimate? \_\_\_ N/A

B. What is the amount of the closure cost estimate? \$ N/A

C. Is there documentation supporting the cost estimate? \_\_\_ N/A

- a. work-ups? \_\_\_ N/A
- b. contractor bids? \_\_\_ N/A
- c. operating history? \_\_\_ N/A
- d. other \_\_\_\_\_ \_\_\_ N/A

Note: The closure cost estimate cannot incorporate any salvage value that may be realized by the sale of dangerous waste, facility structures or equipment, land, or any other facility assets. (40 CFR 265.142(a)(3))

D. Has the cost estimate been adjusted by the 9% inflation factor or by recalculating the cost estimate in current dollars:

1. within 30 days after the end of the latest fiscal year for O/O using financial tests? \_\_\_ N/A

11. or within 60 days prior to the anniversary date of establishment of all other financial instruments? \_\_\_ N/A  
(40 CFR 265.142(b))

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E. Does the cost estimate cover all the activities in the closure plan including costs of labor? N/A

F. Does the closure cost estimate cover all required closure activities? (40 CFR 265.142(a)) N/A

G. Are the costs based on hiring a third party to close the facility? N/A

If "NO" specify in comments below:

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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6.3 UNIT SPECIFIC REQUIREMENTS

This section addresses requirements which are specific to individual TSD units. In an effort to simplify the checklist, the requirements in this section have been organized into unit specific modules. This enables the inspector to select only those requirements which are specific to the particular facility under investigation.

Please note that with respect to surface impoundments, waste piles and land treatment units, if if O/O either cannot or elects not to remove all waste residues, contaminated soils, structures, and equipment, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills.

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1. CONTAINERS

Yes No

- A. Does the closure plan describe the following:
  - a. the procedure for removing dangerous waste containers from the facility; N/A
  - b. inspection of waste containers for leaks; N/A
  - c. the procedure for transferring dangerous wastes from leaking containers to non-leaking containers; N/A
- B. Have provisions been made for the decontamination of equipment and structures? X
- C. Does the plan describe the testing program needed to judge the success of the decontamination efforts? X
- D. Does the testing program include:
  - a. sampling methods X
  - b. testing parameters X
  - c. analytical procedures X

Comments: \_\_\_\_\_  
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2. TANKS (40 CFR 265.197)

Yes No

A. Does the closure plan describe procedures for removing dangerous wastes from the tank, discharge control equipment and discharge containment structures?

N/A

B. Does the plan describe procedures for decontaminating the tank, associated piping, discharge control equipment, and discharge confinement structures (including underlying containment systems)?

N/A

C. Have criteria been established to determine the effectiveness of the decontamination process?

N/A

D. Have test procedures been included to determine the effectiveness of the decontamination procedures?

N/A

E. Does the testing procedure include:

- a. sampling methods
- b. testing parameters
- c. analytical procedures

N/A

N/A

N/A

Comments: \_\_\_\_\_

\_\_\_\_\_

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3. SURFACE IMPOUNDMENTS (40 CFR 195.223) Yes No
- A. Upon closure, does the O/O plan to remove from the impoundment:
- a. standing liquids        N/A
  - b. waste and waste residue        N/A
  - c. underlying and surrounding contaminated soil        N/A
  - d. the liner (if any)        N/A
- B. Does the closure plan provide a detailed plan for the removal of:
- a. all hazardous wastes        N/A
  - b. the containment system (if applicable)        N/A
  - c. contaminated soil        N/A
- C. Does the closure plan describe a testing program to determine if the site is clean?        N/A
- D. Does the closure plan provide an estimate of each quantity of material to be removed from the site?        N/A

Comments: \_\_\_\_\_  
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4. WASTE PILES (40 CFR 265.258(a))

Yes No

A. Does the closure plan provide a detailed plan for the removal of:

a. all dangerous wastes and residues

N/A

b. the contaminated containment system (if applicable)

N/A

c. contaminated soil

N/A

d. structures and equipment with waste and leachate

N/A

B. Does the closure plan describe the procedures to be used to decontaminate equipment and structures?

N/A

C. Have criteria been established to judge the effectiveness of the decontamination procedures?

N/A

D. Does the closure plan describe a testing program to determine if the site is clean?

N/A

Comments: \_\_\_\_\_

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5. LAND TREATMENT (40 CFR 265.230) Yes No
- A. Does the closure plan address the following objectives and explain how they will be achieved?
- a. control of migration of hazardous wastes and constituents into groundwater. N/A
  - b. control of the release of contaminated run-off into surface water. N/A
  - c. control of the release of airborne particulate contaminants caused by wind erosion. N/A
  - d. protection of food chain crops. N/A
- B. Does the closure plan include at least a narrative statement indicating that the following factors were considered in addressing the closure objectives?
- a. type and amount of waste. N/A
  - b. mobility and rate of migration N/A
  - c. site location, topography, and surrounding land use. N/A
  - d. climate, including precipitation. N/A
  - e. characteristics of the cover, including material, final surface contour, thickness, porosity, permeability, slope, vegetation. N/A
  - f. geological and soil profiles and surface and subsurface hydrology. N/A
  - g. unsaturated zone monitoring. N/A
  - h. type, concentration, and depth of hazardous constituent migration as compared to background concentrations. N/A

Comments: \_\_\_\_\_  
\_\_\_\_\_  
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6. LAND DISPOSAL (40 CFR 265.310) Yes No
- A. Does the closure plan address the following objectives and explain how they will be achieved with respect to cover design and construction?
- a. provide long-term minimization of migration of liquids through the closed landfill; N/A
  - b. function with minimum maintenance; N/A
  - c. promote drainage and minimize erosion or abrasion of the cover; N/A
  - d. accommodate settling and subsidence so that the cover's integrity is maintained; and N/A
  - e. have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present. N/A
- B. Does the closure plan include at least a narrative statement indicating that the following factors were considered in addressing the closure objectives?
- a. type and amount of waste N/A
  - b. mobility and rate of migration N/A
  - c. site location, topography, and surrounding land N/A
  - d. climate, including amount, frequency and pH of precipitation N/A
  - e. characteristics of the cover, including material type, final surface contour, thickness, porosity, permeability, slope, and type of vegetation N/A
  - f. geologic characteristics, soil profiles, and surface and sub-surface hydrology N/A
  - g. unsaturated zone monitoring N/A
  - h. type, concentration, and depth of hazardous constituent migration as compared to background concentrations N/A

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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7. INCINERATORS (40 CFR 265.351)

Yes No

A. Does the closure plan address the removal of:

- a. all wastes
- b. ash
- c. scrubber waters
- d. scrubber sludges

N/A  
N/A  
N/A  
N/A

B. Are procedures for decontaminating the incinerator, ash collection equipment, and emission control equipment, described or referenced in the closure plan?

N/A

C. Does the closure plan address the disposal of all contaminated equipment, residues, solvents, and contaminated cleaning agents?

N/A

D. Has the plan included criteria to be used to judge the success of the decontamination efforts?

N/A

E. Does the closure plan describe a testing program to determine if the standards of decontamination has been met?

N/A

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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8. THERMAL TREATMENT (40 CFR 265.381)
- |  | <u>Yes</u> | <u>No</u>  |
|--|------------|------------|
| A. Does the closure plan address the disposal of all wastes and residues?  |            | <u>N/A</u> |
| B. Does the closure plan describe the procedure for decontamination of the thermal treatment equipment and surrounding structures? |            | <u>N/A</u> |
| C. Does the closure plan describe a testing program to determine if the standard of decontamination has been met?                  |            | <u>N/A</u> |

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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APPENDIX B

PHOTOGRAPHS

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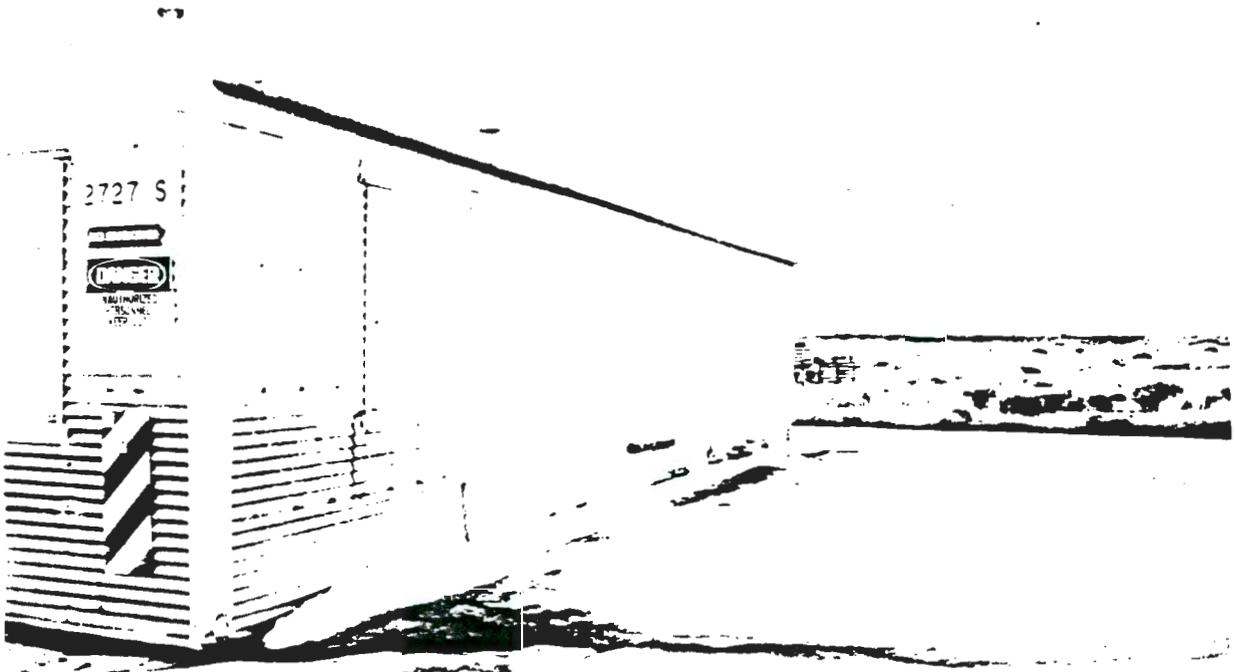
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1 Nonradioactive Dangerous waste Storage Facility 2727-S/200 West Area

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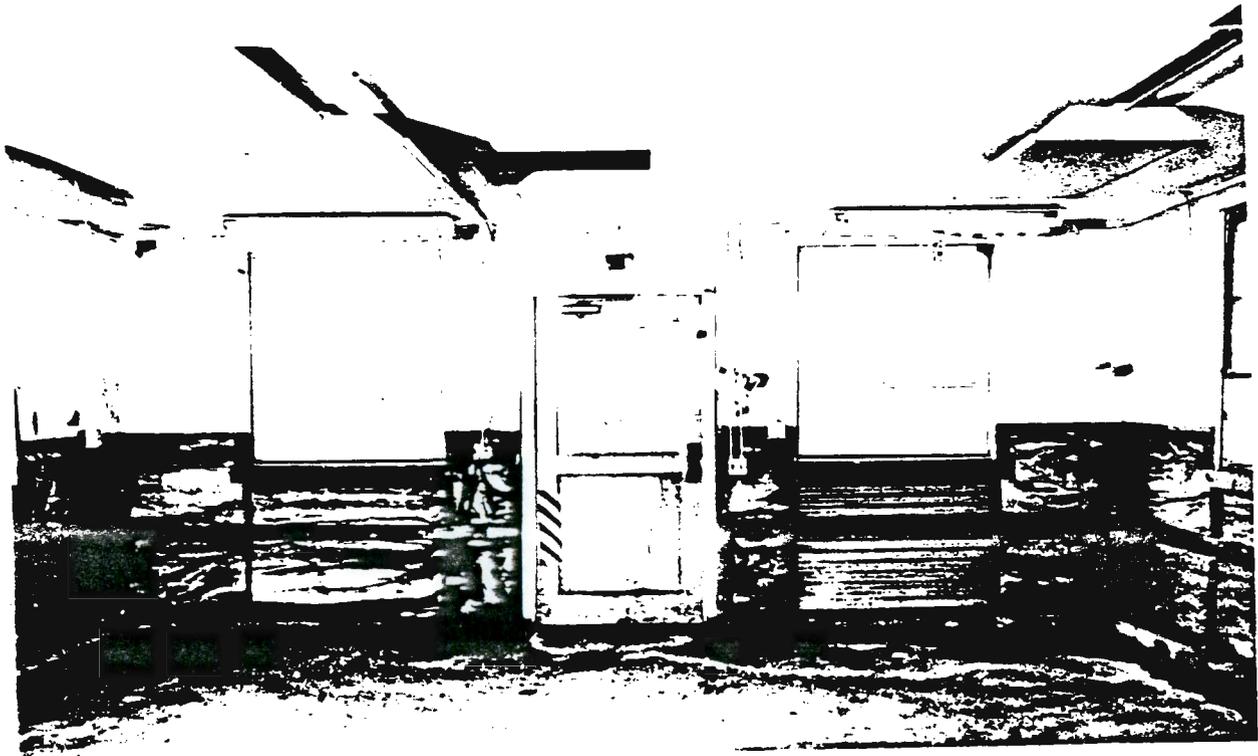


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North Side of the 2727-S Building Looking West



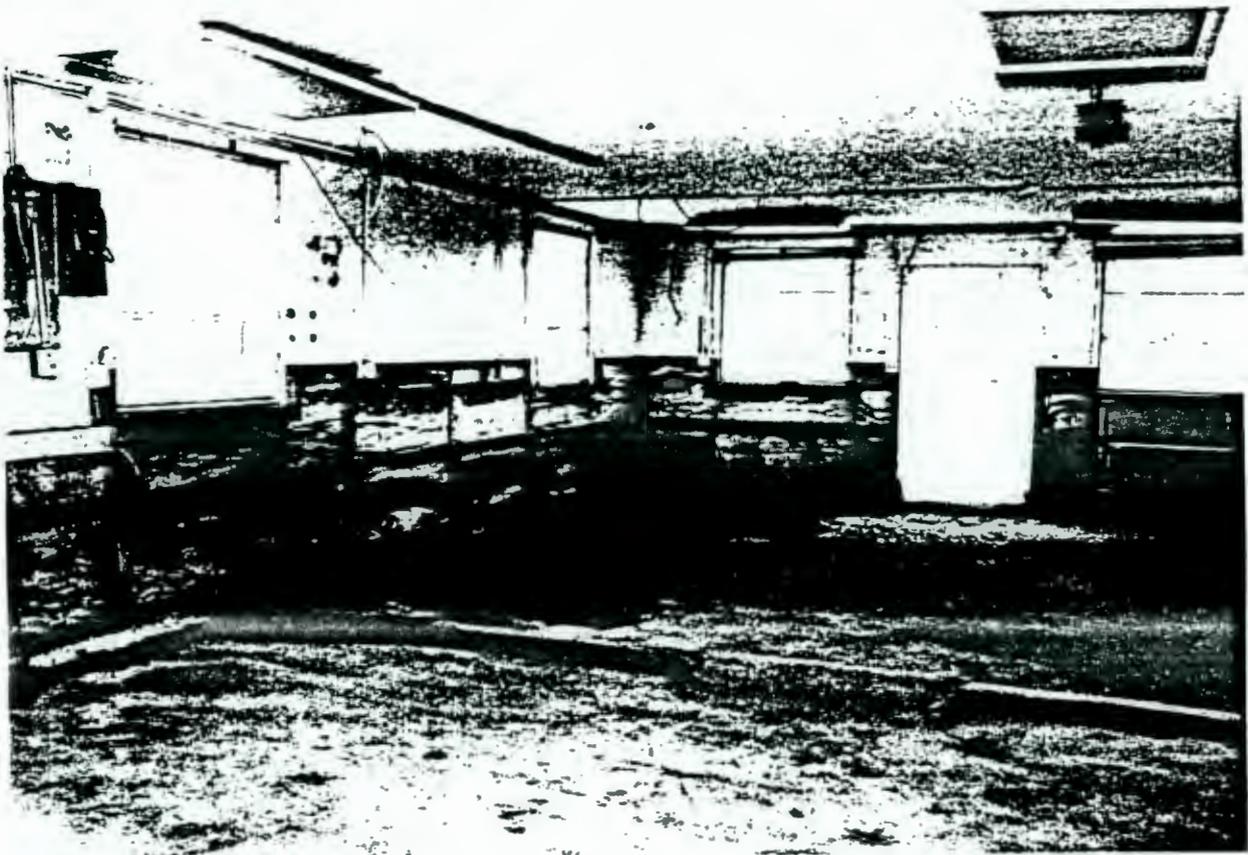
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The Rear of the 2727-S Building From the Inside

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1 Inside the 2727-S Building Showing the Insulation and Wallboard  
2 Lining the Metal Building. The concrete pad is curbed to  
3 isolate incompatible wastes.

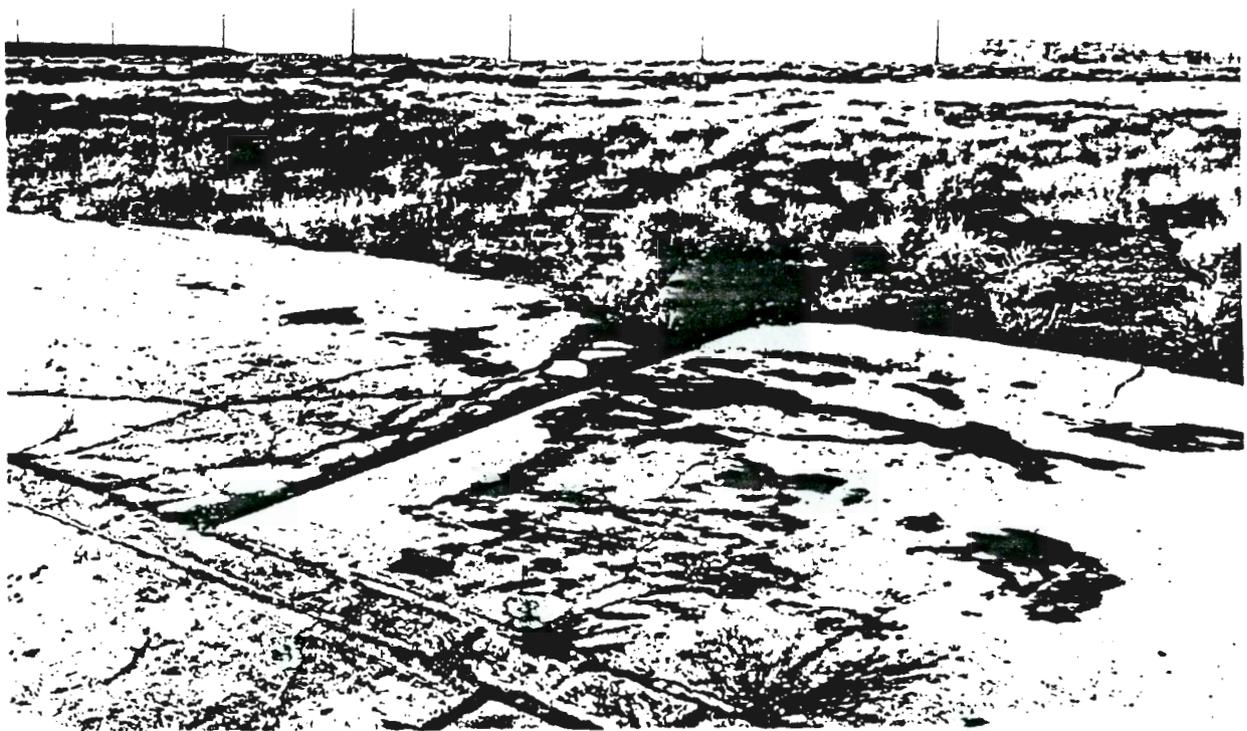
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A Photograph of the Ceiling of the 2727-S Building Showing  
that the Insulation Extends Through the Upper Portion  
of the Wall Into the Ceiling

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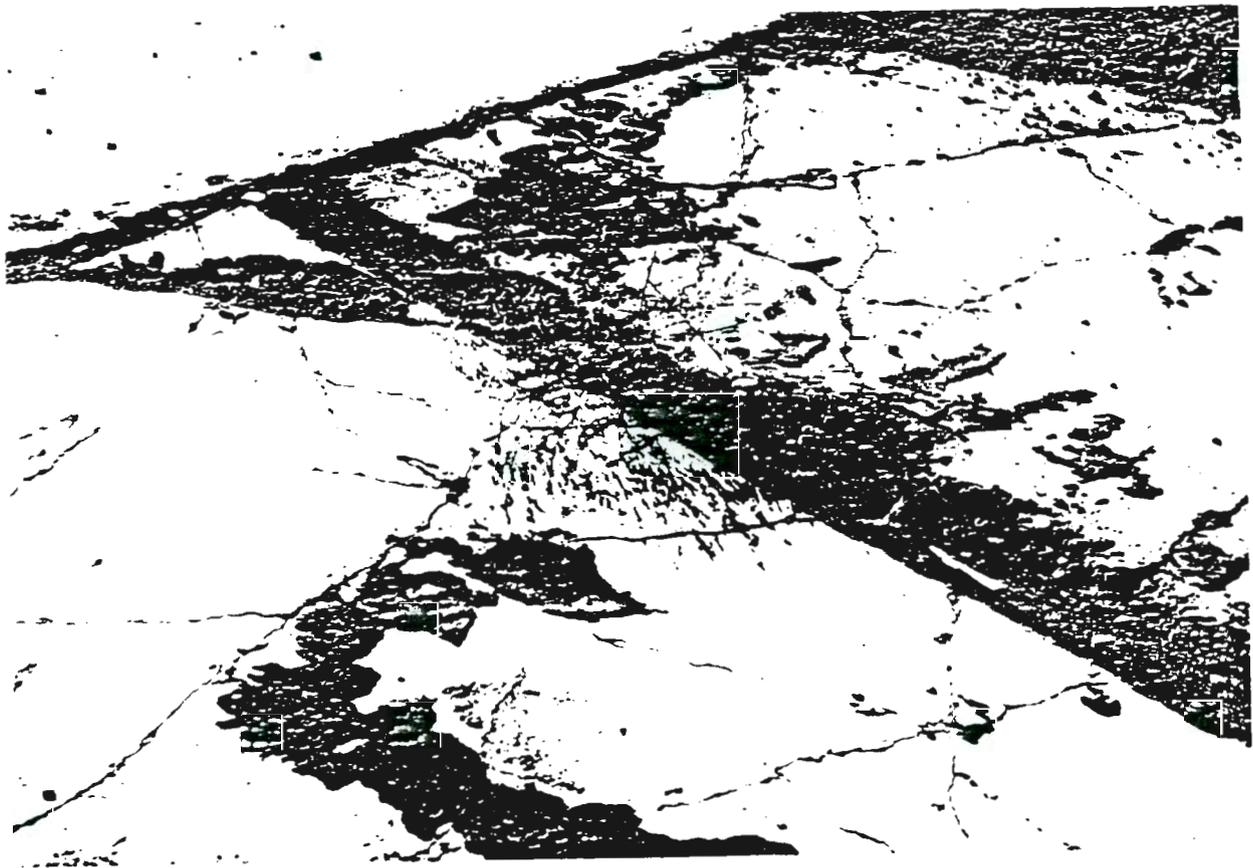


1 North Edge of 2727-S Exterior Concrete Pad Showing Deterioration

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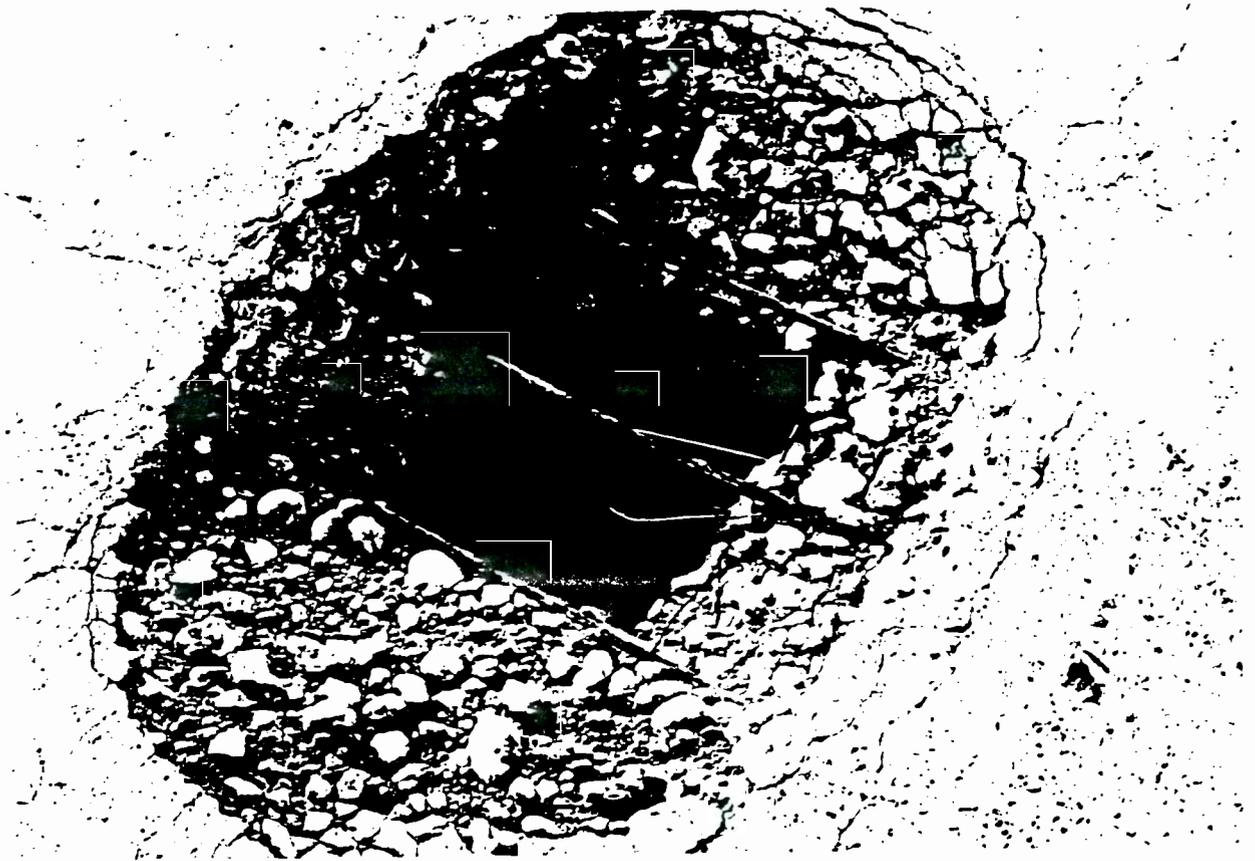
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Concrete has Deteriorated on Seams of the 2727-S Exterior Pad  
and a Few Stains are Visible



1 An Offshoot of the 2727-S Exterior Concrete Pad on the  
2 North Side. Seams in the pad have deteriorated.

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1 A Dip in the 2727-S Exterior Concrete Pad Outside Near Beloit Avenue



6022-4626118  
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Back (West) Side of the 2727-S Building

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APPENDIX C

SPILL REPORTS

0122-4628116

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WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: 7-2-86  
TIME: 2:20

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS			
6. INSPECTOR SIGNATURE			
		<u>MB WALMSLEY</u>	
		PRINT NAME	
		<u>MB Walmsley</u>	
		SIGN NAME	
		<u>SWP + DCU</u>	

91224623161 7 1943294, 2213



WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: 7-17-86

TIME: 2<sup>30</sup> pm

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS			
6. INSPECTOR SIGNATURE			
		<u>M. B. WALMSLEY</u>	
		<u>[Signature]</u>	<u>SWP/DU</u>

5122-1623116  
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WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

1

DATE: 11-25-85

TIME: 11:20 AM

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input type="checkbox"/>	<input type="checkbox"/> _____	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

5. COMMENTS  
*Inside of 2727-S building has been cleaned out completely since June 1985.*

6. INSPECTOR SIGNATURE  
 \_\_\_\_\_  
PRINT NAME  
 \_\_\_\_\_  
SIGN NAME

9122-1629M6

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WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

1

DATE: July 29, 1980  
TIME: 2:00 pm

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
<b>1. AREAS SUBJECT TO SPILLS</b> A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2. STRUCTURES</b> A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>3. CONTAINER CONDITION</b> A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>4. SAFETY/EMERGENCY EQUIPMENT</b> A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>5. COMMENTS</b> <p style="text-align: center;"><i>Building will be completely empty soon.</i></p>			
<b>6. INSPECTOR SIGNATURE</b> <p style="text-align: center;"><u>DL Lund</u>  <small>PRINT NAME</small></p> <p style="text-align: center;"><u>DL Lund</u>  <small>SIGN NAME</small></p>			

921 : : 7 1943294-2217

WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: August 4, 1986  
TIME: 3:00 pm

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> 8-4-86 → <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS A inspected drum of corrosives had corrosion on the bottom of <sup>the</sup> drum. We believe (Mr. R. Rowan) that one bottle of acid is broken and the drum will be opened and the contents dealt with accordingly.			
6. INSPECTOR SIGNATURE <u>D L Lund</u> PRINT NAME <u>D L Lund</u> SIGN NAME			

8122-4626V16  
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WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: August 20, 86

TIME: 1:35 pm

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS <ul style="list-style-type: none"> <li>Under supervision of Industrial, Hygiene + Safety personnel, the building is being readied for closure. Drums were being shipped offsite today, and overpacks were used to handle non-specification waste items.</li> </ul>			
6. INSPECTOR SIGNATURE <p style="text-align: center;"><u>MB WALMSLEY</u> PRINT NAME</p> <p style="text-align: center;"><u>MB Walmsley</u> 8-20-86 SIGN NAME <u>SWP/DOU</u></p>			

0222-4628146  
9413294-2220  
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WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: Sept. 5, 1986

TIME: 11:00 AM

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input type="checkbox"/> NA	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS <i>Everything was in order, building is being emptied with the opening of 616-S.</i>			
6. INSPECTOR SIGNATURE  <u>D. L. Lund</u> <small>PRINT NAME</small> <u>D. L. Lund</u> <small>SIGN NAME</small>			

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WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: 10-22-86

TIME: 1:00

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS  (2st) Comment from 10-17-86: on damaged, outside areas; there are only one area on cement pad which is open (see sketch), which continues to be stored inside / outside 2727-S  10-22-86 11:56 others checked no repairs made.			
6. INSPECTOR SIGNATURE  M.B. Walsley PRINT NAME  M.B. Walsley, 10-22-86 SIGN NAME HAZ. Waste Unit  Waste Mgt. Dept. Eng. Group.			

9413294.2224  
4277-1623116  
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WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: November 15, 86  
TIME: 9<sup>00</sup> am

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS • #2(A) OUTSIDE CEMENT PAD STILL DAMAGED (AS NOTED IN 10/30 and 10/22). • GENERAL : OFFSITE SHIPMENT PLANNED FOR 11/7/86, FOR DRUMS <sup>INSIDE</sup> OUTSIDE FACILITY. (SEVERAL ITEMS INSIDE FACILITY MAY ALSO BE SHIPPED IF SPACE ALLOWS ON <sup>OFFSITE SHIPMENT</sup> TRUCK).			
6. INSPECTOR SIGNATURE <div style="text-align: right;"> <u>M.B. WALMSLEY</u>  <small>PRINT NAME</small>  <u>M.B. Walmsley</u> - Hazardous Waste Unit 4-10-86  <small>SIGN NAME</small> </div>			

9222-462E116

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WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

1

DATE: Sept. 24, 1996

TIME: 2:00 p.m.

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS <i>No leakage - building is being emptied of waste.</i>			
6. INSPECTOR SIGNATURE <u>D. L. Lund</u> PRINT NAME <u>D. L. Lund</u> SIGN NAME			

8227-4625-116

WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: Dec 7 1995  
TIME: 7:00 am

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS <i>(No) remarks; Reimage needed main entrance facility (near front door) some leakage from cold weather</i>			
6. INSPECTOR SIGNATURE		<u>MB Williams</u> PRINT NAME <u>MB Williams</u> SIGN NAME	

6222 762E 716 7 1 2 6

6222 762E 716 7 1 2 6

WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: 12-12-36  
TIME: 1:30 pm

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS			
6. INSPECTOR SIGNATURE			
	<u>Paul Siebendor</u> <small>PRINT NAME</small> <u>Paul Siebendor</u> <small>SIGN NAME</small>		

9113294-2230

WEEKLY INSPECTION LOG  
NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY  
2727-S BUILDING/200 WEST AREA

DATE: 12-22-86

TIME: 10<sup>am</sup>

	STATUS		
	NO PROBLEMS NOTED	REQUIRED REMEDIAL ACTIONS/DATE	SEE COMMENTS
1. AREAS SUBJECT TO SPILLS A. LOADING/UNLOADING AREAS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. STRUCTURES A. CEMENT PAD B. CURBING C. ROOF/WALLS D. SIGNS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. CONTAINER CONDITION A. CLOSED B. STRUCTURAL DEFECTS C. CORROSION D. LABELS REQUIRED E. EVIDENCE OF LEAKAGE	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. SAFETY/EMERGENCY EQUIPMENT A. ABSORBENTS B. OVERPACK DRUMS C. EYEWASH D. FIRE EXTINGUISHER E. TWO-WAY RADIOS F. PROTECTIVE CLOTHING G. GLOVES H. RESPIRATORS/CARTRIDGES I. ESCAPE PACK	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. COMMENTS	<p>2727-S building contents (drums, boxes, cans, etc) are being readied for off-site shipment. Some progress is being made to prepare building for closure.</p>		
6. INSPECTOR SIGNATURE	<p><u>M B WILMSLEY</u> PRINT NAME</p> <p><u>M B Wilmsley</u> 12-22-86 SIGN NAME</p>		

921171943294-2231

APPENDIX D

PART A PERMIT APPLICATION

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3  
4

9113294 2232  
1626116

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3

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3  
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5

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9113294 2233

7

9 2 1

9113294 2233

Use metric type of unit measurements in SI units  
 All units are based on metric type, i.e., 12 characters/1000L

FORM 3 DANGEROUS WASTE PERMIT APPLICATION

1. EPA/STATE I.D. NUMBER  
 WA7890008967

OFFICIAL USE ONLY

LOCATION PROVIDED DATE RECEIVED (mo., day, & yr.) COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

A. FIRST APPLICATION (place an "X" below and provide the appropriate data)

1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete next boxes.)

2. NEW FACILITY (Complete next boxes.)

FOR EXISTING FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the date to the left)

FOR NEW FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION (place an "X" below and complete Section I above)

1. FACILITY HAS AN INTERIM STATUS PERMIT

2. FACILITY HAS A FINAL PERMIT

III. PROCESSES — CODES AND DESIGN CAPACITIES

A. PROCESS CODE — Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the (Section III-C).

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

1. AMOUNT — Enter the amount.

2. UNIT OF MEASURE — For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PRO- CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PRO- CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage			Treatment		
CONTAINER (barrel, drum, etc.)	301	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
OR STEPPLE	302	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
	303	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
SURFACE IMPOUNDMENT	304	GALLONS OR LITERS			
Disposal			OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or inciner- ators. Describe the processes in the space provided; Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY
INJECTION WELL	080	GALLONS OR LITERS			
LANDFILL	081	ACRE-FEET (do volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	082	ACRES OR HECTARES			
OCEAN DISPOSAL	083	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	084	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	T	HECTARE-METER	H
CUBIC YARDS	Y	GALLONS PER HOUR	W	ACRES	S
CUBIC METERS	C	LITERS PER HOUR	H	HECTARES	Q
GALLONS PER DAY	D				

EXAMPLE FOR COMPLETING SECTION III (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PRO- CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY	LINE NUMBER	A. PRO- CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY
		1. AMOUNT (capacity)	2. UNIT OF MEAS- URE (enter code)				1. AMOUNT (capacity)	2. UNIT OF MEAS- URE (enter code)	
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
	S 0 1	27,000	G		7				
2					8				
3					9				
4					10				

4522-4625/16

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

S01

The 2727-S NRDWS is located in the southeast portion of the 200 West Area and provides container storage for nonradioactive dangerous wastes generated in the research and development laboratories, process operations, and maintenance and transportation function throughout the Hanford Site.

IV. DESCRIPTION OF DANGEROUS WASTES

A. DANGEROUS WASTE NUMBER — Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS .....	P	KILOGRAMS .....	K
TONS .....	T	METRIC TONS .....	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed dangerous wastes: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous wastes: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER — Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

- Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
- Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 800 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. DANGEROUS 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))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2			T 0 3 D 8 0	included with above

9143294 2235

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 10 wastes to list.

I.D. NUMBER (enter from page 1)

WA 7 8 9 0 0 0 8 9 6 7

V. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS 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	15,000	K	S 0 1	Storage
2	D 0 0 2	18,000			
3	D 0 0 4	100			
4	D 0 0 5	15,000			
5	D 0 0 6	500			
6	D 0 0 7	5,000			
7	D 0 0 8	100			
8	D 0 0 9	1,500			
9	D 0 1 0	500			
10	D 0 1 1	100			
11	W T 0 1	12,000			
12	W T 0 2	35,000			
13	W T 0 2	22,000			
14	W P 0 1	10,000			
15	W P 0 2	3,000			
16	W C 0 1	8,000			
17	W C 0 2	3,000			
18	F 0 0 1	500			
19	F 0 0 2	500			
20	F 0 0 3	500			
21	F 0 0 4	50			
22	F 0 0 5	500			
23	D 0 0 3	200			
24	W P 0 3	3,000			
25	F 0 2 7	50			
26					

9413294-2236  
 9 2 1 2 5



Continued from page 2.  
 NOTE: Photocopy this page before completing if you have more than 28 wastes to list.

I. D. NUMBER (enter from page 1)		IV. DESCRIPTION OF DANGEROUS WASTES (continued)		D. PROCESSES		
WA: 7   8   9   0   0   0   8   9   6   7		A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in (1))
1	U 0 3 6	50		K	S 0 1	Storage
2	U 0 3 7					
3	U 0 3 8					
4	U 0 3 9					
5	U 0 4 1					
6	U 0 4 2					
7	U 0 4 3					
8	U 0 4 4					
9	U 0 4 5					
10	U 0 4 6					
11	U 0 4 7					
12	U 0 4 8					
13	U 0 4 9					
14	U 0 5 0					
15	U 0 5 1					
16	U 0 5 2					
17	U 0 5 3					
18	U 0 5 5					
19	U 0 5 6					
20	U 0 5 7					
21	U 0 5 8					
22	U 0 6 0					
23	U 0 6 1					
24	U 0 6 2					
25	U 0 6 3					
26	U 0 6 4					

9443294-2238

7  
2  
1  
2  
0

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 20 wastes to list.

I.D. NUMBER (enter from page 1)

WA 7 8 9 0 0 0 8 9 6 7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS 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 0 6 6	50	K	S 0 1	Storage
2	U 0 6 7				
3	U 0 6 8				
4	U 0 7 0				
5	U 0 7 1				
6	U 0 7 2				
7	U 0 7 3				
8	U 0 7 4				
9	U 0 7 5				
10	U 0 7 6				
11	U 0 7 7				
12	U 0 7 8				
13	U 0 7 9				
14	U 0 8 0				
15	U 0 8 1				
16	U 0 8 2				
17	U 0 8 3				
18	U 0 8 4				
19	U 0 8 5				
20	U 0 8 7				
21	U 0 9 2				
22	U 0 9 3				
23	U 0 9 4				
24	U 0 9 5				
25	U 0 9 6				
26	U 0 9 7				

6522-4623-116  
9443294-2239

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 25 wastes to list.

ID. NUMBER (enter from page 1)  
 A 7 8 9 0 0 0 8 9 6 7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. (owner code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (owner code)	D. PROCESSES	
				1. PROCESS CODES (owner)	2. PROCESS DESCRIPTION (if a waste is not entered in D(1))
1	U 0 9 9	50	K	S 0 1	Storage
2	U 1 0 3				
3	U 1 0 5				
4	U 1 0 6				
5	U 1 0 9				
6	U 1 1 0				
7	U 1 1 1				
8	U 1 1 4				
9	U 1 1 5				
10	U 1 2 1				
11	U 1 2 2				
12	U 1 2 5				
13	U 1 2 6				
14	U 1 2 7				
15	U 1 2 8				
16	U 1 2 9				
17	U 1 3 0				
18	U 1 3 1				
19	U 1 3 2				
20	U 1 3 3				
21	U 1 3 5				
22	U 1 3 8				
23	U 1 4 2				
24	U 1 4 3				
25	U 1 4 4				
26	U 1 4 7				

0422-4628146  
 9 2 1 2 6

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 20 wastes to list

I.D. NUMBER (enter from page 1)					
WA 7 8 9 0 0 0 8 9 6 7					
IV. DESCRIPTION OF DANGEROUS WASTES (continued)					
LINE NO.	A. DANGEROUS 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 C11)
1	U 1 9 0	50	K	S 0 1	Storage
2	U 1 9 1				
3	U 1 9 4				
4	U 1 9 6				
5	U 1 9 7				
6	U 2 0 1				
7	U 2 0 7				
8	U 2 0 8				
9	U 2 0 9				
10	U 2 1 0				
11	U 2 1 1				
12	U 2 1 2				
13	U 2 1 9				
14	U 2 2 0				
15	U 2 2 3				
16	U 2 2 5				
17	U 2 2 6				
18	U 2 2 7				
19	U 2 2 8				
20	U 2 3 0				
21	U 2 3 1				
22	U 2 3 2				
23	U 2 3 3				
24	U 2 3 5				
25	U 2 3 6				
26	U 2 3 7				

14221622 P16 ( 7 9 2 1 2 6

Continued from page 2.  
 NOTE: Photocopy this page before completing if you have more than 28 wastes (0-11)

ID. NUMBER (enter from page 1)  
 WA 7 8 9 0 0 0 8 9 6 7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS 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 1 4 9	50	K	S 0 1	Storage
2	U 1 5 1				
3	U 1 5 2				
4	U 1 5 3				
5	U 1 5 6				
6	U 1 5 7				
7	U 1 5 8				
8	U 1 6 0				
9	U 1 6 3				
10	U 1 6 5				
11	U 1 6 6				
12	U 1 6 7				
13	U 1 6 8				
14	U 1 6 9				
15	U 1 7 0				
16	U 1 7 1				
17	U 1 7 4				
18	U 1 7 6				
19	U 1 7 7				
20	U 1 7 8				
21	U 1 7 9				
22	U 1 8 3				
23	U 1 8 4				
24	U 1 8 5				
25	U 1 8 8				
26	U 1 8 9				

2727-S Storage Facility  
 1 2 1 2 9



Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 25 wastes to list.

ID. NUMBER (enter from page 1)		IV. DESCRIPTION OF DANGEROUS WASTES (continued)		D. PROCESSES		
WA 71890008967		A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in C-1)
1	P 0 0 1	50.	K	S 0 1	Storage	
2	P 0 0 2					
3	P 0 0 3					
4	P 0 0 4					
5	P 0 0 5					
6	P 0 0 7					
7	P 0 0 8					
8	P 0 0 9					
9	P 0 1 0					
10	P 0 1 1					
11	P 0 1 2					
12	P 0 1 3					
13	P 0 1 4					
14	P 0 1 5					
15	P 0 1 6					
16	P 0 1 7					
17	P 0 1 8					
18	P 0 2 0					
19	P 0 2 1					
20	P 0 2 2					
21	P 0 2 3					
22	P 0 2 4					
23	P 0 2 5					
24	P 0 2 6					
25	P 0 2 7					
26	P 0 2 8					

4427-4628116  
 7  
 9 2 1 2 5

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

ID. NUMBER (enter from page 1)									
WIA7890008967									

IV. DESCRIPTION OF DANGEROUS WASTES (continued)									
LINE NO.	A. DANGEROUS 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 Col 1)		
1	P 0 2 9	50	K	S	0	1			Storage
2	P 0 3 0								
3	P 0 3 1								
4	P 0 3 3								
5	P 0 3 4								
6	P 0 3 5								
7	P 0 3 6								
8	P 0 3 7								
9	P 0 3 8								
10	P 0 3 9								
11	P 0 4 0								
12	P 0 4 1								
13	P 0 4 2								
14	P 0 4 3								
15	P 0 4 4								
16	P 0 4 5								
17	P 0 4 6								
18	P 0 4 7								
19	P 0 4 8								
20	P 0 4 9								
21	P 0 5 0								
22	P 0 5 1								
23	P 0 5 4								
24	P 0 5 6								
25	P 0 5 7								
26	P 0 5 8								

2727-S Storage Facility  
 9413294 2245  
 7  
 1  
 2  
 9



Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 20 wastes to list.

I.D. NUMBER (enter from page 1)									
WA7890008967									
IV. DESCRIPTION OF DANGEROUS WASTES (continued)									
LINE NO.	A. DANGEROUS 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 0 8 9	50	K	S	0	1			Storage
2	P 0 9 2								
3	P 0 9 3								
4	P 0 9 4								
5	P 0 9 5								
6	P 0 9 6								
7	P 0 9 7								
8	P 0 9 8								
9	P 0 9 9								
10	P 1 0 1								
11	P 1 0 2								
12	P 1 0 3								
13	P 1 0 4								
14	P 1 0 5								
15	P 1 0 6								
16	P 1 0 7								
17	P 1 0 8								
18	P 1 0 9								
19	P 1 1 0								
20	P 1 1 1								
21	P 1 1 2								
22	P 1 1 3								
23	P 1 1 4								
24	P 1 1 5								
25	P 1 1 6								
26	P 1 1 8								

2727-S Storage Facility

Continued from page 2.  
 NOTE: Photocopy this page before completing if you have more than 28 wastes to list

ID. NUMBER (enter from page 1)  
 WA 7 8 9 0 0 0 8 9 6 7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

L I N E N O. E.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEAS- URE (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	50	K	S 0 1	Storage
2	P 1 2 0				
3	P 1 2 1				
4	P 1 2 2				
5	P 1 2 3				
6					
7					
8					
9					
10					
11					
12					
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BH22 H629116

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

LD. NUMBER (enter from page 1)  
 WA 7 8 9 0 0 0 8 9 6 7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

L I N E	A. DANGEROUS WASTE NO. <small>(enter code)</small>	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEAS- URE <small>(enter code)</small>	D. PROCESSES	
				1. PROCESS CODES <small>(enter)</small>	2. PROCESS DESCRIPTION <small>(if a code is not entered - Q111)</small>
1	U 0 0 2	50	K	S 0 1	Storage
2	U 0 0 4				
3	U 0 0 5				
4	U 0 1 1				
5	U 0 1 4				
6	U 0 1 6				
7	U 0 2 8				
8	U 0 3 1				
9	U 0 5 9				
10	U 0 6 9				
11	U 0 8 6				
12	U 0 8 7				
13	U 0 8 8				
14	U 0 8 9				
15	U 0 9 0				
16	U 0 9 1				
17	U 0 9 8				
18	U 1 0 1				
19	U 1 0 2				
20	U 1 0 7				
21	U 1 0 8				
22	U 1 1 2				
23	U 1 1 3				
24	U 1 1 6				
25	U 1 1 7				
26	U 1 1 8				

64275 4528 FIG 1 7 9 2 1 2 6

Continued from page 2.  
 NOTE: Photocopy this page before completing if you have more than 28 wastes to list.

IV. DESCRIPTION OF DANGEROUS WASTES (continued)									
LINE NO.	A. DANGEROUS 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 1 1 9	50	K	S	0	1			Storage
2	U 1 2 0								
3	U 1 2 3								
4	U 1 2 4								
5	U 1 3 4								
6	U 1 3 6								
7	U 1 3 7								
8	U 1 3 9								
9	U 1 4 0								
10	U 1 4 1								
11	U 1 4 5								
12	U 1 4 6								
13	U 1 4 8								
14	U 1 5 0								
15	U 1 5 4								
16	U 1 5 5								
17	U 1 5 9								
18	U 1 6 1								
19	U 1 6 2								
20	U 1 6 4								
21	U 1 7 2								
22	U 1 7 3								
23	U 1 8 0								
24	U 1 8 1								
25	U 1 8 2								
26	U 1 8 6								

0522-4623116

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Continued from the front

**IV. DESCRIPTION OF DANGEROUS WASTES (continued)**

USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION 0(1) ON PAGE 3.

S01

The 2727-S Storage Facility was used for the storage of dangerous wastes generated on the Hanford Site. These wastes consisted of listed wastes, wastes from non-specific sources, characteristic wastes, and state-only wastes.

**V. FACILITY DRAWING**

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

**VI. PHOTOGRAPHS**

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures, existing storage, treatment, and disposal areas, and sites of future storage, treatment or disposal areas (see instructions for more detail).

**II. FACILITY GEOGRAPHIC LOCATION** \*This information appears on the attached drawing and photog

LATITUDE (degrees, minutes, & seconds)

LONGITUDE (degrees, minutes, & seconds)

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**VIII. FACILITY OWNER**

- A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.
- B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER				2. PHONE NO. (area code & no.)			
3. STREET OR P.O. BOX				4. CITY OR TOWN		5. ST.	6. ZIP CODE

**IX. OWNER CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

NAME (print or type) Michael J. Lawrence Manager, Richland Operations United States Department of Energy	SIGNATURE <i>Michael J. Lawrence</i>	DATE SIGNED November 16, 1987
---	---	----------------------------------

**X. OPERATOR CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

NAME (print or type) SEE ATTACHMENT	SIGNATURE	DATE SIGNED
--	-----------	-------------

1527-4629716 7 9 2 6

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents; and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

*Michael J. Lawrence*

Michael J. Lawrence  
Manager, Richland Operations  
United States Department of Energy

11-16-87  
Date

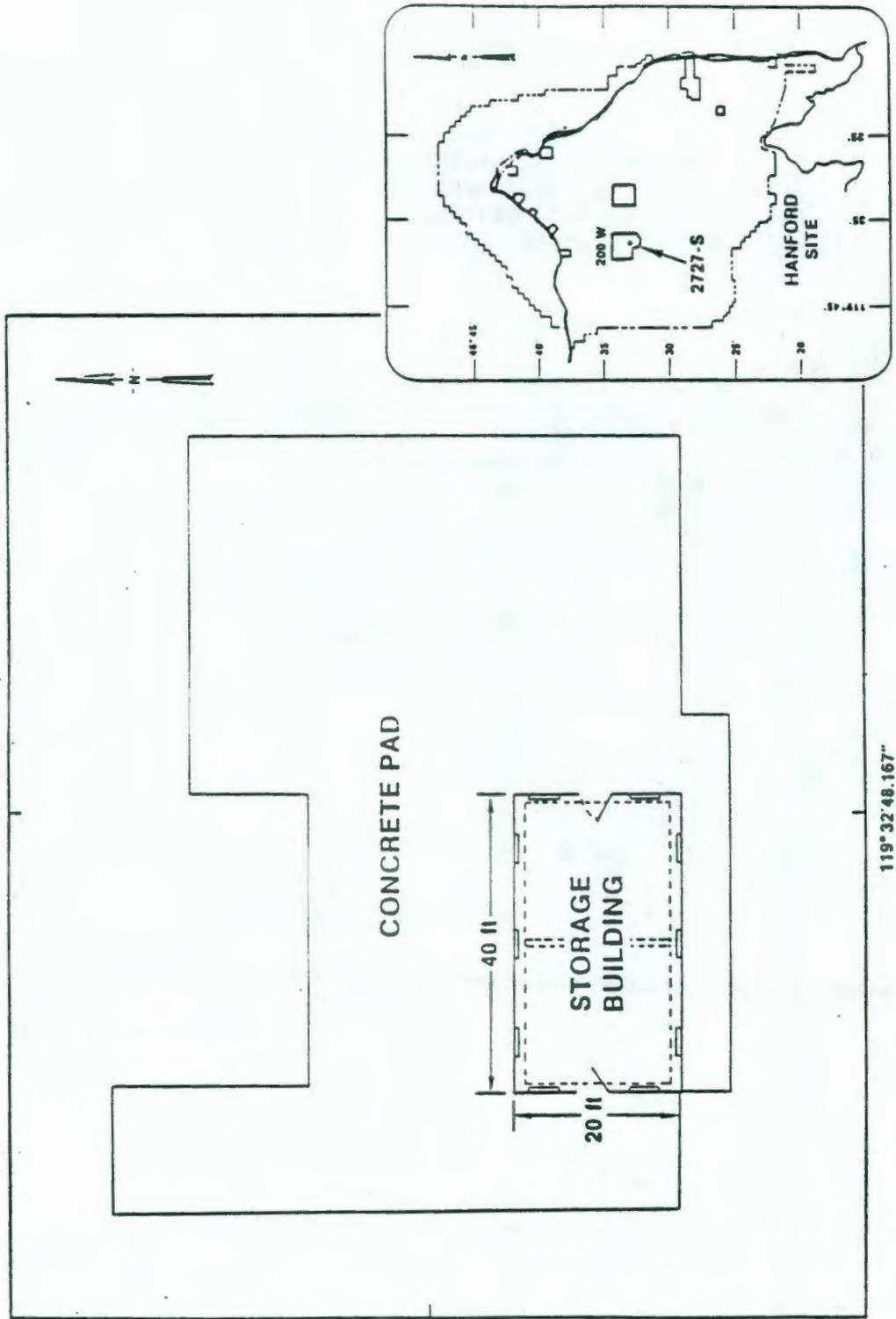
*W. M. Jacobi*

William M. Jacobi  
President  
Westinghouse Hanford Company

11-16-87  
Date

2527-16291K  
9413294-2252  
9 2 1 2

2727-S NONRADIOACTIVE DANGEROUS  
WASTE STORAGE FACILITY  
SITE PLAN



46°33'14.601"

200707-13.77

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APPENDIX E

2727-S NRDWS FACILITY WASTE INVENTORY

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9413294-2255

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APPENDIX E

2727-S NRDWS FACILITY WASTE INVENTORY

1  
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8 Offsite Shipping Manifest for 1986. (This is the only time  
9 period during which these manifests are available.) . . . . . APP E-1  
10  
11 Additional Waste Information for Materials Transported  
12 to an Approved Hanford Site Treatment, Storage,  
13 and Disposal Facility . . . . . APP E-54

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9413294 2257

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1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986

13. YUMI EPA/STATE ID NUMBER: WA 19 00 00 967  
 14. RECEIVING FACILITY (ISO): WA 05 83 67 152  
 15. TRANSPORTER EPA/STATE ID NUMBER: WA 05 83 67 152  
 NAME: Northwest EnviroService, Inc.  
 ADDRESS: 1500 Airport Way South  
 Seattle, Washington WA 98134

16. WASTE IDENTIFICATION	17. Manifest Document Number	18. Manifest Shipment Date (MM DD YY)	19. Physical State	20. Chemical Name	21. Hazardous Waste Code	22. Waste Description (see instructions)	23. Dangerous Waste Number (see instructions and WAC 173.303)	24. Waste Database Line No. or BHW	25. L. Amount of Waste	26. K. For ISO Facility (Use only)
1	16198	07-21-86	1	0	0	Toxic, carcinogenic, persistent solution of methylene chloride, trichloroethylene and acetyl methacrylate from plant operations	F001 WP01	EMW	19	
2	16198	07-21-86	5	1	1	Toxic potassium fluoride from laboratory	W102	DM	0	
3	16198	07-21-86	1	1	1	Toxic acetic acid from broken thermometers in laboratory	U151 W101	EMW	0.5	
4	16198	07-21-86	1	0	0	Trichloroethylene empty drums	U228 WP01	EMW	0	
5	16198	07-21-86	1	0	0	Persistent oil solution with 0.10% trichloroethane from automotive operation	F002	DM	45	
6	16198	07-21-86	1	0	0	Carcinogenic solution of mixed organics from plant operations	WC02	DU	220	
7	16198	07-21-86	1	0	0	Toxic ethylene glycol solutions from automotive operation	W102	DM	880	
8	16198	07-21-86	1	0	0	Spent toxic, persistent carbon tetrachloride solution from plant operations	WP01 F001	EMW	736	
9	16198	07-21-86	1	0	0	Toxic ethylene glycol solutions from automotive operation	W102	DM	1,200	
10	16198	07-21-86	1	0	0	Tetrachloroethylene from plant operations	U210 WC01	EMW	756	
11	16198	07-21-86	1	01	01	Toxic triphenyl phosphite ester from plant operations	W102	DU	238	
12	16198	07-21-86	1	1	1	Toxic solution of photographic waste with silver from photographic laboratory	D011	DU	213	
13	16198	07-21-86	5	1	1	Toxic absorbed metallic mercury from spill clean-up in laboratory	W101	EMW	7	
14	16198	07-21-86	5	0	0	Carcinogenic, solidified polyvinyl alcohol from laboratory	WC01	EMW	20	
15	16198	07-21-86	5	1	1	EP toxic, dried paint residue with lead and chromium from paint operation	D007	EMW	16	

17. COMMENTS (Enter information by section and/or line number—see instructions).



9413294-2259

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YOUR STATE ID NUMBER WA 9 0 0 0 9 6 7 1		14. RECEIVING FACILITY (FSD) SP/STATE ID NUMBER WA 0 0 5 8 3 6 7 1 5 2		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134					
15. WASTE CHARACTERIZATION A - Manifest Document Number B - Waste ID Number C - Date D - Physical State E - Chemical Nature F - Hazardous Properties G - Quantity H - Date of Receipt I - Date of Disposal J - Date of Treatment K - Date of Storage L - Date of Release M - Date of Remediation N - Date of Investigation O - Date of Assessment P - Date of Approval Q - Date of Completion R - Date of Review S - Date of Audit T - Date of Inspection U - Date of Sampling V - Date of Analysis W - Date of Reporting X - Date of Archiving Y - Date of Accession Z - Date of Inventory		16. TRANSPORTER SP/STATE ID NUMBER WA 0 0 5 8 3 6 7 1 5 2		WASTE DESCRIPTION (see instructions) F.		DANGEROUS WASTE NUMBER (see instructions and WAC 173.303)		AMOUNT OF WASTE		WASTE CODE (see instructions)	
1		1		Flammable, toxic, persistent, carcinogenic oil mixture with isopropanol, acetone, toluene, dichlorodifluoromethane, and aliphatic hydrocarbons from automotive operation		F001 F003 W01		379		EMU	
2		1		Toxic, persistent, flammable solution of acetone, methanol, toluene, methylene chloride and methyl ethyl ketone from laboratory		F001 F005 W01		29		EMU	
3		1		Toxic, carcinogenic, corrosive, igniting agent solution of 50% chromic acid and 50% sulfuric acid from laboratory		W01 W07 D001		8		EMU	
4		1		Toxic, flammable, persistent, carcinogenic solutions of mixed organics (labeled organics include methanol, acetone, methylene chloride, toluene, butanol, chloroethane and crude oil from laboratory)		D001 F002 W01		50		EMU	
5		1		Toxic, polycyclic, aromatic hydrocarbon, halogenated hydrocarbon, carcinogenic, flammable organic solution of acetone, methylene chloride, and coal tar from laboratory		D001 F001 W01 W03		7.6		EMU	
6		1		Toxic, persistent, carcinogenic, flammable solution of mixed organics including methanol, acetone, acetonitrile, methylene chloride, methyl isobutyl ketone, chloroform, 1,1,1-trichloroethane, carbon tetrachloride, and 1,1,2-trichlorotrifluoroethane from laboratory		F002 F005 W01 W02 W03		21		EMU	
7		1		Toxic, persistent, carcinogenic, flammable solution of isooctane, acetonitrile, gasoline, and 1,1,1-trichlorotrifluoroethane from laboratory		D001 W02 W01		16		EMU	
8		1		Toxic, persistent, flammable solution of 50% hexane, and 50% methylene chloride from laboratory		W01 D001		28		EMU	
9		1		Toxic, flammable solution of xylene, 2-ethoxyethanol, and surfactants from laboratory.		D001 F003		4		EMU	

17. COMMENTS (Enter information by section and/or line number - see instructions).

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1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986

13 WASTE MANAGEMENT NUMBER: 04/1/1008967  
 14 RECEIVING FACILITY (FSD) EVALUATE TO NUMBER: WA0058367192  
 15 TRANSPORTER EVALUATE TO NUMBER: WA0058367152  
 NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134  
 NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
WASTE MANAGEMENT NUMBER	MANIFESTED DATE (MM DD YY)	PHYSICAL STATE	CHEMICAL NATURE	WASTE DESCRIPTION (see instructions)	DANGEROUS WASTE NUMBER (see instructions and WAC 173-303)	WASTE QUANTITY (kg or lbs)	WASTE TYPE	AMOUNT OF WASTE	IC FSD FACILITY					
16206	07-25-86	1	0	Toxic, persistent, flammable organic solutions, labpacked components include acetone, methanol, pyridine, dichloromethane, and trichloroethene from laboratory	F003 W001 F005	7.6	EHU							
16206	07-25-86	1	0	Toxic, carcinogenic, flammable liquid of xylene, and mixed organic solutions with the components hexane, heptane, butanol, methyl t-butyl ether, benzene, acetone, and cyclohexane from laboratory	U239 D001 W001	19.7	EHU							
16206	07-25-86	1	0	Toxic, carcinogenic solution of 90% ethylene glycol with methanol, and rhodamine-B from laboratory	F003 W002	40.5	EHU							
16206	07-25-86	1	0	Cyclohexanone from laboratory	U057 W001	30	EHU							
16206	07-25-86	6	01	Toxic, flammable solution of methyl ethyl ketone, vinyl resin and red dye from laboratory	W002 F005	7.6	DU							
16206	07-25-86	1	0	Xylene from laboratory	U239 F003 D001	11	EHU							
16206	07-25-86	1	0	Toxic, persistent, carcinogenic flammable liquid of mixed organic solutions including acetone, nitrobenzene, acetone, chloroform, toluene, methanol, methyl isobutyl ketone, and trichloroethylfluoroethane from laboratory	W001 W001 F002 F005	13.2	EHU							
16206	07-25-86	1	01	Toxic, carcinogenic, flammable, corrosive solution of phosphoric acid and isopropyl alcohol from laboratory	D001 W002	8	DU							
16206	07-25-86	1	0	Toxic, persistent, carcinogenic, flammable solution of mixed organics and solids including acetone, isooctane, methanol, toluene, acetone, nitrobenzene, trichloroethylfluoroethane, methyl isobutyl ketone with endrin, lindane, methoxychlor, toxaphene, and 2,4,5-TP all from laboratory	F002 W001 W001 D013 D015 D017 W001	17	EHU							

17. COMMENTS (Enter information by section and/or line number—see instructions).

APP E-14

DOE/RL 88-37 Revision 3



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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YOUR EPA/STATE ID NUMBER WA 714 4114947	14 RECEIVING FACILITY (USD) EPA/STATE ID NUMBER WA 0058367152	NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134	NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134	15 TRANSPORTER EPA/STATE ID NUMBER WA 0058367152					
16 WASTE NUMBER	A Manifest Document Number	B Manifest Shipment Date (MM DD YY)	C Physical State S-Solid L-Liquid G-Sludge M-Compressed Gas	D Chemical Nature O-Organic I-Inorganic	E F Waste Description (see instructions)	G Dangerous Waste Number (see instructions and WAC 173.203)	H Waste Designation (see instructions)	I L Amount of Waste	J K LC For ISD Facility ID Use Only
1	16204	07-25-86	L S	0	toxic, carcinogenic, persistent mixture of brominated polyester resin and styrene from construction operation	U01 VC01	ENV	276	K
2	16204	07-25-86	L L	0	Flammable hexane from laboratory	0001	DW	30	K
3	16204	07-25-86	L L	0	Flammable naphtha from construction operation	0001	DW	1,137	K
4	16204	07-25-86	L L	0	Flammable paint thinner (mineral spirits) from paint operation	0001	DW	40	K
5	16204	07-25-86	L G	01	Flammable, toxic, persistent, carcinogenic mixture of latex and enamel paints, epoxy resin, and adhesives which includes mixed organics, chromium and lead pigments from paint operation	F03 F05 U01 VC01 D008	ENV	114	K
6	16204	07-25-86	L L G	01	Flammable, toxic, persistent, carcinogenic mixture of latex and enamel paints, epoxy resin, and adhesives which includes mixed organics, chromium and lead pigments from paint operation	F02 F05 U01 VC01 D008	ENV	1,037	K
7	16204	07-25-86	L G	01	Flammable, toxic, persistent, carcinogenic mixture of latex and enamel paints, epoxy resin, and adhesives which includes mixed organics, chromium and lead pigments from paint operation	F03 F05 U01 VC01 D008	ENV	1,360	K
8	16204	07-25-86	L G	01	toxic, carcinogenic, persistent, flammable labpack of enamel latex paints, adhesives, and thinners which includes mixed organics, chlorinated resins, and lead from paint operation	F03 U01 VC01 D008	ENV	198	K
9	16204	07-25-86	L L	0	Toluene from laboratory	U20 U01	ENV	91	K
10	16304	07-25-86	L L	0	Toluene from laboratory	U20 U01	ENV	13	K

17. COMMENTS (Enter information by section and/or line number—see instructions).

9413294-2263

**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YINYLPA/STATE ID NUMBER WA/08/0000967	14 RECEIVING FACILITY (RSD) WA005836714	NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZP 98134	NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZP 98134	16 TRANSPORTER EPA/STATE ID NUMBER WA0058367152	
---	--	--	--	---	--

L I M E	A Material Document Number	N Material Shipment Date	C Physical State	D Chemical Nature	E Hazardous Material Code	F Waste Description (see instructions)	G Waste Code (see instructions and WAC 173.303)	H Waste Quantity (see instructions and WAC 173.303)	I Waste Type (see instructions and WAC 173.303)	J Waste Type (see instructions and WAC 173.303)
1	16204	07-25-86	L	0	0	Toluene from laboratory	U220 U101	ENW		141
2	16204	07-25-86	L	0	0	Toxic, flammable labpack with acetone and toluene from laboratory	U101 U220	ENW		46
3	16204	07-25-86	L	0	0	Trichloroethylene from laboratory	U228 U101	ENW		239
3	16204	07-25-86	L	0	0	Butyl alcohol from laboratory	U031	DW		14
4	16204	07-25-86	L	0	0	Flammable, carcinogenic solution of oil and surfactants from automotive operation	U001	ENW		100
5	16204	07-25-86	L	0	0	Flammable, toxic solution of toluene, methyle ethyl ketone, and butanol from paint operation	F003 D001	ENW		33
6	16210	08-01-86	L	0	0	Toxic, persistent, combustible bromobenzene from laboratory	U101 D001	ENW		27
7	16210	08-01-86	L	0	0	Toxic, polycyclic aromatic hydrocarbon, carcinogenic solution of solvent refined coal and surfactants from laboratory	U101 U103	ENW		60
8	16210	08-01-86	L	0	0	Toxic, polycyclic aromatic hydrocarbon, carcinogenic, persistent, solvent refined coal from laboratory	U101 U103	ENW		107
9	16210	08-01-86	L	0	0	Toxic, polycyclic aromatic hydrocarbon, carcinogenic solvent refined coal from laboratory	U101 U103	ENW		214
10	16210	08-01-86	L	0	0	Toxic, flammable solution of mixed organics, including toluene from construction operation	U102 D001	DW		45
11	16210	08-01-86	L	0	0	Combustible, toxic solution of nonane and trimethyl benzene from paint operation	U102	DW		198
12	16210	08-01-86	L	0	0	Toxic, persistent solution of biomass oils, methylene chloride, methylene hydroxide and water from laboratory	F002 U101	ENW		211

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YEAR EPA/STATE ID NUMBER WA 14 0 0 0 8 9 6 7	14 RECEIVING FACILITY (TSDF) EPA/STATE ID NUMBER WA 0 5 8 3 6 7 1 5 2	NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington, zr 98134	NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington, zr 98134
--	--	---	---

LINE	WASTE NUMBER	A Manifest Document Number	B Manifest Date (MM DD YY)	C Physical State	D Chemical Nature	E F. Waste Description (see instructions)	G Dangerous Waste Number (see instructions and WAC 173-303)	H Waste Designation Under EPA EHW	I L Amount of Waste	J K IC For YSD Facility ID Use Only
1	16210		08-01-86	L	0	Combustible labpack of 1-hexanol and 2-ethoxy ethanol from laboratory	0001	DV	13	
2	16210		08-01-86	L	0	Toxic, carcinogenic, flammable labpack with containers of pyridine, 4-methyl-2-pentanone, pyrrolidine, propanol, xylene, and a solution of methanol and benzene from laboratory	UC01 0001 U239 U101	ENV	338.6	
3	16210		08-01-86	L	10	Toxic solution of sodium/potassium sulfite, hydroquinone, potassium hydroxide, sodium carbonate, potassium bromide, ethylenediamine, and methylamine sulfate from photographic laboratory	U102	DV	160	
4	16210		08-01-86	L	0	Toxic, persistent solution of poly(dimethylamino)-ethylene and (dimethylamino) ethylene dichloride from plant operations	U102	ENV	209	
5	16210		08-01-86	L	10	Corrosive solution of potassium hydroxide, organophosphates, and sodium polymethacrylates from plant operations	0002	DV	627	
6	16210		08-01-86	L	0	Toxic, persistent empty drum that previously contained poly(dimethylamino) ethylene and (dimethylamino)-ethylene dichloride from plant operations	U102	ENV	0	
7	16210		08-01-86	L	0	Toxic propylene glycol from automotive operation	U102	DV	106	
8	16210		08-01-86	L	0	Toxic aryl phosphate ester from plant operations	U101	ENV	53	
9	16210		08-01-86	L	1	Toxic tributyl phosphate solution from plant operations	U102	DV	53	
10	16210		08-01-86	L	0	Toxic ethylene glycol solution from automotive operation	U102	DV	832	
11	16210		08-01-86	L	01	Toxic, persistent solution of water with 10% mixed organics, including 1,1,1-trichloroethane and acetone from plant operations	F002 U101	ENV	220	
12	16210		08-01-86	L	10	Toxic aqueous solution of potassium hydroxide, ethylenediaminetetraacetic acid, and organophosphates from plant operations	U102	DV	53	
13	16210		08-01-86	L	01	Carcinogenic, persistent, polycyclic aromatic hydrocarbon - asphalt, water surfactants, and hydrochloric acid solution from laboratory	U103	ENV	218	

17. COMMENTS (Enter information by section and/or line number—see instructions).



9413294-2266

**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YOUR EPA/STATE ID NUMBER: **WA 0058367192** NAME: **Northwest EnviroService, Inc.** ADDRESS: **1500 Airport Way South Seattle, Washington ZIP 98134**

14 RECEIVING FACILITY (EED) EPA/STATE ID NUMBER: **WA 0058367192** NAME: **Northwest EnviroService, Inc.** ADDRESS: **1500 Airport Way South Seattle, Washington ZIP 98134**

15 TRANSPORTER EPA/STATE ID NUMBER: **WA 0058367152** NAME: **Northwest EnviroService, Inc.** ADDRESS: **1500 Airport Way South Seattle, Washington ZIP 98134**

16 WASTE IDENTIFICATION NUMBER	A Manifest Document Number	B Manifest Shipment Date (MM DD YY)	C				E Chemical Nature (S-Solid, L-Liquid, G-Sludge, M-Compressed Gas)	F Waste Description (see Instructions)	G Dangerous Waste Number (see Instructions and WAC 173-303)	H Waste Designation (see Instructions)	L Amount of Waste	K For Facility Use Only
			D Physical State (S-Solid, L-Liquid, G-Sludge, M-Compressed Gas)	17	18	19						
1	16210	08-01-86	L	L	0	Phenol from laboratory	U101	ENU	2.4			
2	16210	08-01-86	L	L	0	Toxic, reactive acetone cyanohydrin from laboratory	D003	ENU	3.5			
3	16210	08-01-86	L	L	0	Toxic, persistent, carcinogenic solution of phenol, chloroform, and ethidium bromide from laboratory	U101 UC01	ENU	4			
4	16210	08-01-86	L	L	01	Toxic, persistent solution of beta-vinyl dichloro amine, sodium chloride, fluoride, and sulfate compounds from basin clean-up operation	U101 UC01	ENU	36			
5	16210	08-01-86	L	L	0	Polycyclic aromatic hydrocarbon oil solution from automotive operation	U101 UC01	ENU	900			
6	16210	08-01-86	L	S	01	Toxic, carcinogenic mixture of tin and thiourea from laboratory	U101 UC01	ENU	11			
7	16210	08-01-86	L	S	0	Thiourea from laboratory	U101 UC01	ENU	45			
8	16210	08-01-86	S	S	0	Toxic, carcinogenic, adsorbed tetrachloroethylene solution from plant operation	U210 UC01	ENU	227			
9	16210	08-01-86	L	L	0	Trichloroethylene from plant operations	U210 UC01	ENU	75			
10	16210	08-01-86	L	L	0	1,1,1-trichloroethane - empty drum	U226 U101	ENU	0			
11	16210	08-01-86	L	L	1	Toxic, persistent empty drum which previously contained a solution of sodium pentachlorophenate and potassium hydroxide from plant operations	U101 UC01	ENU	0			
12	16210	08-01-86	L	L	1	Toxic, persistent empty drum which previously contained a solution of sodium pentachlorophenate and potassium hydroxide from plant operations	U101 UC01	ENU	0			
13	16210	08-01-86	L	L	0	1,1,1-trichloroethane - empty drum	U226 U101	ENU	0			
14	16210	08-01-86	L	L	1	Metallic mercury from laboratory	D009 U151	ENU	2.3			

17. COMMENTS (Enter information by section and/or line number—see Instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 FORM EPA/STATE ID NUMBER		14 RECEIVING FACILITY (FSD)		NAME ADDRESS		15 TRANSPORTER		NAME ADDRESS	
WA 7 0 0 0 0 0 0 0 6 7		WA 1 0 0 5 0 3 6 7 1 5 2		Northwest EnviroService, Inc. 1500 Airport Way South Seattle, Washington 98134		Northwest EnviroService, Inc. 1500 Airport Way South Seattle, Washington 98134		Northwest EnviroService, Inc. 1500 Airport Way South Seattle, Washington 98134	
16 WASTE IDENTIFICATION		17 COMMENTS (Enter information by section and/or line number—see instructions).		18 WASTE DESCRIPTION		19 DANGEROUS WASTE NUMBER		20 WASTE AMOUNT	
Line	Manifest Document Number	Manifest Shipment Date (MM-DD-YY)	Physical State (S-Solid, L-Liquid, G-Gas, M-Miscellaneous)	Chemical Nature (O-Organic, I-Inorganic, A-Acid, B-Basic, N-Nitrogen, P-Phosphorus, S-Sulfur, H-Halogen, M-Metal, O-Oxidizing, R-Reducing, C-Corrosive, T-Toxic, F-Flammable, C-Carcinogenic, P-Poisonous, E-Explosive, O-Others)	Section	Section	Section	Section	Section
1	16210	08-01-86	L	1	Toxic butane carbamate solution from laboratory	D005	DU	26.6	
2	16210	08-01-86	L	0	Toxic, persistent, carcinogenic liquid containing carbon tetrachloride and 1,1,1 trichloroethane	U211 W01 U226	ENU	6.2	
3	16210	08-01-86	L	0	Toxic solution of oil with mixed organics which include methyl ethyl ketone, acetone, and toluene from automotive operation	W101 F003	ENU	17	
4	16325	11-24-86	L	01	Toxic, carcinogenic, flammable solution of methyl ethyl ketone, hydrocarbon, methanol paraffin, potassium silicate, potassium phosphate, ammonium hydroxide, isopropanol, and sodium chromate from paint operation	F003 F005 W101 D001	ENU	145	
5	16325	11-24-86	L	01	Toxic, persistent, flammable mixture of solvents including xylene, methyl ethyl ketone, mineral spirits, chloroacetone, and 3-bromoheptane with lead and chromium in resin sludge from paint operation	F005 D001 D008 F003	ENU	525	
6	16325	11-24-86	L	0	Toxic, flammable methyl ethyl ketone (25X) aqueous solution from paint operation	F005 D001	DU	198.2	
7	16325	11-24-86	L	0	Toxic ethylene glycol (50X) aqueous solution from automotive operation	W102	DU	800	
8	16310	11-07-86	L	01	Toxic, carcinogenic, flammable paint mixture of epoxy resin, methyl isobutyl ketone, xylene, and lead chromate from paint operation	W101 D001 D008 F003	ENU	68	
9	16310	11-07-86	G	0	Toxic, carcinogenic, combustible solution of asbestos, xylene, and toluene from construction operation	W102 W01 F005	ENU	68	
10	16310	11-07-86	L	0	Toxic, carcinogenic, flammable solution of methyl isobutyl ketone, naphtha, xylene, toluene, isopropanol, ethylene glycol monoethyl ether, and diethylene triamine from construction operation	W102 W01 F005	DU	710	
11	16310	11-07-86	L	1	Toxic solution of manganese hydroxide and ammonium chloride from laboratory	W102	DU	32	

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YWMI EPA/STATE ID NUMBER WA 19 00 00 09 67		14 RECEIVING FACILITY (RFD) EPA/STATE ID NUMBER WA 05 83 67 15 2		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP: 98134		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP: 98134											
16 WASTE SHIPPER/GENERATOR A Manifest Document Number 16310		B Manifest Shipment Date (MM DD YY) 11-07-86		C Physical State 1 L		D Hazardous Waste Code 1 1		E Waste Description (see instructions) Carcinogenic solution of ammonium chloride and ferric oxide from laboratory		F Dangerous Waste Number (see instructions and WAC 173.303) UC01		G Waste Designation (see instructions) ENU		H Amount of Waste 21		I Facility ID (see instructions) K	
17 COMMENTS (Enter information by section and/or line number—see instructions).																	

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YINH EPA/STATE ID NUMBER WA 0000967	14 RECEIVING FACILITY (RSD) EPA/STATE ID NUMBER WA 0058367152	NAME ADDRESS Northwest EnviroService, Inc. 1500 Airport Way South Seattle, Washington ZIP 98134	NAME ADDRESS Northwest EnviroService, Inc. 1500 Airport Way South Seattle, Washington ZIP 98134	15 TRANSPORTER EPA/STATE ID NUMBER WA 0058367152	16 RECEIVING FACILITY (RSD) EPA/STATE ID NUMBER WA 0058367152
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18. WASTE IDENTIFIERS	A. Manifest Document Number	B. Manifest Document Date (MM-DD-YY)	C. Physical State	D. Chemical Nature	E. Waste Description (see instructions)	F. Hazardous Waste Identification Code (HWIC)	G. Quantity (kg or lb)	H. Amount of Waste	I. Facility ID
1	16216	08-08-86	L	01	Toxic, flammable, corrosive solution of butanol and aqueous perchloric acid from laboratory	U102	4	4	A
2	16216	08-08-86	L	0	Cyclohexane from laboratory	U056 U101	1.2	1.2	A
3	16216	08-08-86	L	0	Propargyl alcohol from laboratory	U101 P102	6	6	A
4	16216	08-08-86	L	0	Corrosive 2-methoxyethylamine from laboratory	D002	7.6	7.6	A
5	16216	08-08-86	L	0	Toluene from laboratory	U220 U101	1	1	A
6	16216	08-08-86	L	01	Flammable, toxic solution of ethanol and aqueous picric acid from laboratory	U102	2.2	2.2	A
7	16216	08-08-86	L	0	Toxic, flammable liquid of xylene and methanol from laboratory	U154 U101	0.86	0.86	A
8	16216	08-08-86	L	0	Acetone from laboratory	U002 U102	0.76	0.76	A
9	16216	08-08-86	L	0	Flammable butyl acetate from photographic laboratory	D001	3.8	3.8	A
10	16216	08-08-86	L	0	Flammable hexane from laboratory	D001	0.08	0.08	A
11	16216	08-08-86	M	0	Persistent gas mixture of trichloromonofluoromethane and dichlorodifluoromethane from plant operations	U101	2.2	2.2	A
12	16216	08-08-86	L	0	Toxic, flammable solution of oil and xylene from laboratory	U102 D001	3.2	3.2	A
13	16216	08-08-86	L	0	Toxic, flammable, corrosive liquid of isomylalcohol, butanol, and morpholine from laboratory	U102 D001	3.02	3.02	A
14	16216	08-08-86	L	1	Toxic magnesium chloride from laboratory	U102	7	7	A

**17. COMMENTS (Enter information by section and/or line number—see instructions).**

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1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986									
13 YOUR EPA/STATE ID NUMBER WA 7 8 9 0 0 0 8 9 6 7 WASTE IDENTIFICATION A Manifest Document Number B Manifest Shipment Date (MM DD YY) 08-08-86	14 RECEIVING FACILITY (TSD) EPA/STATE ID NUMBER WA D 0 5 B 3 6 7 1 5 2 NAME Northwest Enviroservice, Inc. ADDRESS 1500 Airport Way South Seattle, Washington ZIP 98134	15 TRANSMITTER EPA STATE ID NUMBER WA D 0 5 B 3 6 7 1 5 2 NAME Northwest Enviroservice, Inc. ADDRESS 1500 Airport Way South Seattle, Washington ZIP 98134	16 WASTE IDENTIFICATION A Manifest Document Number B Manifest Shipment Date (MM DD YY) C Physical State S-Solid L-Liquid G-Sludge M-Compressed Gas D. Chemical Nature 0-Dry 1-Liquid 2-Gaseous 3-Other E. Amount of Waste F. Waste Description (see instructions) G. Dangerous Waste Number (see instructions and WAC 173-303) H. Waste Designation I. Amount of Waste J. Facility Use Only K.						
16216	08-08-86	L	0	Nylene from laboratory	U239 V101	ENV	0.9		
16216	08-08-86	L	0	Toxic, flammable solution of methanol, methyl isobutyl ketone, and isocycane from laboratory	W102 D001	DW	1.3		
16216	08-08-86	L	0	Toxic, persistent, carcinogenic labpack containing methylene chloride and chloroform from laboratory	W101 U001 U044	ENV	5.8		
16216	08-08-86	L	0	Methanol from laboratory	U154 D001	DW	2.7		
16216	08-08-86	L	1	Metallic mercury from laboratory	U151 D009	ENV	10		
16216	08-08-86	L	1	Flammable, reactive ammonium sulfide aqueous solution from laboratory	D001	DW	3		
16216	08-08-86	L	0	Corrosive crotonaldehyde from laboratory	W101 D001	ENV	4		
16216	08-08-86	L	0	Toxic, flammable labpack containing octanol and ethyl acetate from laboratory	D001 U112	DW	1.71		
16216	08-08-86	L	0	Methyl alcohol from laboratory	U154 W102	DW	0.9		
16216	08-08-86	S	1	Toxic sodium fluoride from laboratory	W102	DW	10		
16216	08-08-86	L	0	Toxic, flammable methanol solution (50% aqueous) from laboratory	F003 D001	DW	4		
16216	08-08-86	L	0	Toxic, carcinogenic, flammable solution of benzene, pyridine, ethyl ether, and petroleum ether from laboratory	D001 F003 U001	ENV	3.8		
16216	08-08-86	S	1	Corrosive sodium aluminate from laboratory	D002	DW	6.8		

17. COMMENTS (Enter information by section and/or line number—see instructions)

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1986		Form 4		GENERATOR ANNUAL DANGEROUS WASTE REPORT		Form 4		1986	
13. YURRI EPA/STATE ID NUMBER		14. RECEIVING FACILITY (FSD)		NAME		15. TRANSPORTER		NAME	
WA 0058367152		WA 0058367152		Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134		Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134		EPA/STATE ID NUMBER	
14. WASTE RECEIVING FACILITY		15. TRANSPORTER		16. RECEIVING FACILITY (FSD)		NAME		ADDRESS	
A - Manifest Document Number		B - Physical State		C - Material Shipment Date		D - Chemical Nature		E - Waste Description (see instructions)	
1		L		08-08-86		L 1 01		Toxic, corrosive, flammable, carcinogenic solution of potassium hydroxide, pyridine, toluene, pentane, benzene, petroleum ether, and diethyl ether from laboratory	
2		L		08-08-86		L 0		Tetrachloroethylene from laboratory	
3		L		08-08-86		L 0		1,1,1-trichloroethane from laboratory	
4		S		08-08-86		S 1		Ignitable labpack containing cesium nitrate, sodium nitrate, potassium chlorate, and potassium permanganate from laboratory	
5		S		08-08-86		S 1		Ignitable gedolinum nitrate from laboratory	
6		L		08-08-86		L 0		Combustible butyl glycidyl ether solution from laboratory	
7		L		08-08-86		L 0		Combustible, toxic labpack containing cumene and ethylaniline from laboratory	
8		L		08-08-86		L 0		Flammable, toxic organic solution of pyridine, methylene chloride, acetone, toluene and hexane from laboratory	
9		S		08-08-86		S 1		Toxic, carcinogenic potassium dichromate from laboratory	
10		L		08-08-86		L 0		Combustible labpack of 2-methoxyethyl acetate and tributylamine from laboratory	
11		L		08-08-86		L 0		Combustible dimethyl formamide from laboratory	
12		S		08-08-86		S 1		Ignitable potassium nitrate from laboratory	
13		S		08-08-86		S 1		Toxic, carcinogenic labpack containing sodium dichromate and potassium dichromate from laboratory	
14		S		08-08-86		S 1		Toxic, corrosive sodium hydroxide from laboratory	

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YINRI EPA/STATE ID NUMBER WA 10101967		14 RECEIVING FACILITY (TSDF) EPA/STATE ID NUMBER WA 10058367152		NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington, ZIP 98134		NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington, ZIP 98134				
16 TRANSPORTER EPA/STATE ID NUMBER WA 10058367152		17 DANGEROUS WASTE (TSDF) EPA/STATE ID NUMBER WA 10058367152		18 RECEIVING FACILITY (TSDF) EPA/STATE ID NUMBER WA 10058367152		19 WASTE CHARACTERISTICS EPA/STATE ID NUMBER WA 10058367152				
A	B	C	D	E	F	G	H	I	J	K
Manifest Document Number	Manifest Shipment Date (MM DD YY)	Physical State S-Solid L-Liquid G-Sludge M-Compressed Gas	Chemical Nature O-Organic I-Inorganic	Waste Description (see instructions)	Dangerous Waste Number (see instructions and WAC 173-303)	Waste Designation (see instructions)	Amount of Waste	TSDF Facility Use Only		
16216	08-08-86	S	0	Corrosive sulfamic acid from laboratory	D002	DU	0.002			
16216	08-08-86	S	1	Corrosive potassium pyrosulfate from laboratory	D002	DU	2			
16216	08-08-86	SL	1	Toxic, ignitable labpack containing hydrogen peroxide solution, sodium nitrite, aluminum nitrate, sodium nitrate, magnesium perchlorate, potassium nitrate, silver nitrate, lanthanum nitrate, and sodium nitrate solution from laboratory	U101 D001	ENU	5.45			
16216	08-08-86	L	01	Combustible solution of tributyl phosphate and kerosene from laboratory	D001	DU	0.6			
16216	08-08-86	L	1	Ignitable, carcinogenic solution of hydrogen peroxide from laboratory	D001	DU	1.59			
16216	08-08-86	L	1	Ignitable, toxic ferric nitrate from laboratory	U101	ENU	1.58			
16216	08-08-86	S	1	Ignitable ammonium nitrate from laboratory	D001	DU	2.25			
16216	08-08-86	S	1	Toxic nickel chloride from laboratory	U102	DU	4			
16216	08-08-86	L	1	Toxic, corrosive, reactive sodium sulfide solution from laboratory	D002 D003	DU	3			
16216	08-08-86	L	1	Corrosive, spent sulfuric acid solution from laboratory	D002	DU	1.3			
16216	08-08-86	S	1	Corrosive lithium hydroxide from laboratory	D002	DU	2.3			
16216	08-08-86	S	1	Toxic, corrosive barium hydroxide from laboratory	U101 D002	ENU	2.3			
16216	08-08-86	L	1	Toxic, corrosive, carcinogenic solution of sulfuric acid, nitric acid, and sodium bichromate from laboratory	D002 D007	ENU	0.5			
16216	08-08-86	S	0	Corrosive citric acid from laboratory	D002	DU	2.25			
16216	08-08-86	L	0	Combustible labpack containing decahydroanthracene and ethylene glycol monomethyl ether from laboratory	D001	DU	0.35			

17. COMMENTS (Enter information by section and/or line number—see instructions).



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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YUNH EPA/STATE ID NUMBER WA 10 00 09 67	14 RECEIVING FACILITY (FSD) EPA/STATE ID NUMBER WA 05 03 67 152	NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134	NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134	15 TRANSPORTER EPA/STATE ID NUMBER WA 05 03 67 152	
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LINE NUMBER	A Manifest Document Number	B Manifest Shipment Date (MM DD YY)	C Physical State 1-Solid 2-Liquid 3-Hazardous 4-Compressed Gas	D Chemical Name 1-1-1 2-2-2 3-3-3 4-4-4	E Waste Description (see instructions)	F Dangerous Waste Number (see instructions and WAC 173-303)	G Waste Designation (see instructions)	H Amount of Waste	I Waste Code (see instructions)	J K For ISD Facility (Use only)
1	16216	08-08-86	1	1	Reactive potassium ferrocyanide solution from laboratory	D003	DU	0.9	K	
2	16216	08-08-86	1	1	Corrosive surfuryl chloride aqueous solution from laboratory	D002	DU	2	K	
3	16216	08-08-86	1	0	Toxic, corrosive acetic anhydride from laboratory	U101	ERU	1	K	
4	16216	08-08-86	1	1	Toxic, corrosive potassium hydroxide aqueous solution from laboratory	U101	ERU	2.5	K	
5	16216	08-08-86	1	1	Toxic, corrosive zinc chloride aqueous solution from laboratory	U101	ERU	1	K	
6	16216	08-08-86	1	1	Toxic, corrosive sulfuric acid aqueous solution from laboratory	U102	DU	3	K	
7	16216	08-08-86	1	0	Toxic, persistent, corrosive trichloroacetic acid solution from laboratory	D002 U101	ERU	0.1	K	
8	16216	08-08-86	1	0	Benzene from laboratory	U101 U101	ERU	3.5	K	
9	16216	08-08-86	1	1	Toxic, corrosive, carcinogenic solution of sulfuric acid, nitric acid and sodium bichromate from laboratory	D002 U101	ERU	0.5	K	
10	16216	08-08-86	1	1	Toxic, carcinogenic, corrosive solution of aqueous sulfuric acid and potassium dichromate from laboratory	U102 U101	ERU	5	K	
11	16216	08-08-86	1	1	Toxic, corrosive aqueous sodium hydroxide solution from laboratory	U102	DU	3	K	
12	16216	08-08-86	1	1	Toxic, corrosive phosphorous trichloride solution from laboratory	D002	ERU	0.9	K	
13	16216	08-08-86	5	1	Corrosive, reactive phosphorous pentoxide from laboratory	D002	DU	1.59	K	
14	16216	08-08-86	1	01	Toxic, ignitable, corrosive solution of xylene and di-2-ethyl-hexyl phosphoric acid from laboratory	F003 U101	ERU	0.05	K	
15	16216	08-08-86	5	1	Toxic, corrosive sodium metasilicate from laboratory	U102	DU	3	K	
16	16216	08-08-86	1	5	Corrosive, reactive phosphorous pentoxide from laboratory	D002	DU	7.2	K	
17	16216	08-08-86	1	1	Toxic, corrosive sodium metasilicate pentahydrate from laboratory	U102	DU	11.3	K	

17. COMMENTS (Enter information by section and/or line number—see instructions).



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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 FIRM/STATE ID NUMBER: WA 1010167152  
 14 RECEIVING FACILITY (FSD) EPA/STATE ID NUMBER: WA 1010167152  
 NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington, ZIP: 98134  
 NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington, ZIP: 98134  
 15 TRANSPORTER EPA/STATE ID NUMBER: WA 1010167152

16 WASTE IDENTIFICATION	17 A Manifest Number	17 B Manifest Shipment Date (MM/DD/YY)	17 C Physical State	17 D Chemical Nature	17 E Hazardous	17 F Waste Description (see instructions)	17 G Dangerous Waste Code (see instructions and WAC 173-303)	17 H Waste Designation (see instructions)	17 I Amount of Waste	17 J For TSD Facility (see instructions)
1	16216	08-08-86	L S	0	0	Corrosive absorbed citric acid solution from laboratory	D002	DU	2.25	K
2	16216	08-08-86	L	0	0	Corrosive phosphoric acid bis-(2-ethylhexyl ester) from laboratory	D002	DU	0.45	K
3	16216	08-08-86	L S	1	1	Toxic, ignitable ferric nitrate from laboratory	D001	U101	1.5	K
4	16216	08-08-86	S	1	1	Corrosive lithium hydroxide from laboratory	D002	DU	1	K
5	16216	08-08-86	L	0	0	Labpack of n-(aminothioxomethyl)-acetamide and hexachlorocyclohexene from laboratory	P002 U101 U129	U101 U101	3.75	K
6	16216	08-08-86	L	1	1	Toxic graphite and water solution with trace of ammonia from laboratory	U102	DU	0.9	K
7	16216	08-08-86	L	1	1	Toxic, reactive, aqueous solution of silicates, metal chlorides, mercury, arsenic, and mercuric thiocyanate from photographic laboratory	U101 D009	U101	4.4	K
8	16216	08-08-86	L	1	1	Carcinogenic aqueous solution with traces of sodium thiosulfate, potassium chloride, hydrochloric acid, beryllium sulfate, and thorium nitrate from laboratory	U102	DU	5.4	K
9	16216	08-08-86	L	1	1	Carcinogenic aqueous solution with traces of sodium thiosulfate, potassium chloride, hydrochloric acid, beryllium sulfate, and thorium nitrate from laboratory	U102	DU	8	K
10	16216	08-08-86	L	0	0	Toxic, carcinogenic, polycyclic aromatic hydrocarbon solution of coal tar distillates from laboratory	U101 U102	U101	9	K
11	16216	08-08-86	L	0	0	Persistent solution of poly(dimethylamino)-ethylene and (dimethylamino)-ethylene dichloride from plant operations	U101	U101	1	K
12	16216	08-08-86	L	1	1	Toxic, corrosive sodium silicate solution from laboratory	U102	DU	0.4	K
13	16216	08-08-86	L S	1	1	Toxic, carcinogenic labpack containing beryllium sulfate and cupric sulfate from laboratory	U101	U101	3.5	K
14	16216	08-08-86	L	1	1	Reactive, EP toxic lead sulfide aqueous solution from laboratory	D008	U101	10	K

17. COMMENTS (Enter information by section and/or line number—see instructions).

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1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986

13 YEAR EPA/STATE ID NUMBER: WA 10101967  
 14 RECEIVING FACILITY (RSD) EPA/STATE ID NUMBER: WA D058367152  
 15 TRANSPORTER EPA/STATE ID NUMBER: HAD058367152  
 NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134  
 NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP 98134

18. WASTE IDENTIFICATION	A Manifest Document Number	B Manifest Shipment Date (MM/DD/YY)	C Physical State S-Solid L-Liquid D-Sludge or Slurry M-Compressed Gas	E Chemical HOURS (0-10)	F. Waste Description (see instructions)	G. Dangerous Waste Number (see instructions and WAC 173-303)	H. Waste Designation (see instructions)	I. Amount of Waste	K For 150 Facility (see instructions)
1	16216	08-08-86	L	01	Toxic, persistent labpack containing a solution of carbon tetrachloride and dibutyl phosphinate, and a solution of tetrachloroethylene and tributyl phosphate from laboratory	F002	EMW	0.135	
2	16216	08-08-86	LS	10	Toxic, carcinogenic, labpack of trisodium phosphate and diethoxybenzidine from laboratory	U021	EMW	1.85	
3	16216	08-08-86	L	10	Toxic labpack containing persistent, carcinogenic solution of tributyl phosphate and carbon tetrachloride and a container of dinitrophenol from laboratory	U011	EMW	0.85	
4	16216	08-08-86	S	1	Toxic copper sulfate from laboratory	U011	EMW	5	
5	16216	08-08-86	L	1	Toxic, carcinogenic solution of aqueous potassium dichromate and trace sulfuric acid from laboratory	U007	EMW	2	
6	16216	08-08-86	L	1	Reactive potassium ferricyanide from laboratory	0003	OU	1	
7	16216	08-08-86	L	0	Toxic, persistent solution of 1,1,1-trichloroethane and inert resin from laboratory	U011	EMW	0.5	
8	16216	08-08-86	L	10	Labpack containing toxic tributyl phosphate solution and containing persistent methylene iodide from laboratory	U021	EMW	1.75	
9	16216	08-08-86	L	0	Toxic, persistent methene sulfenyl chloride from laboratory	U011	EMW	1	
10	16216	08-08-86	L	0	Aniline from laboratory	U012	EMW	2.5	
11	16216	08-08-86	L	1	Toxic, reactive solution of aqueous silicates, metal chlorides and mercuric thiocyanate from photographic laboratory	U003	EMW	2.2	
12	16216	08-08-86	S	1	Toxic silver chloride from laboratory	0011	EMW	0.2	
13	16216	08-08-86	L	1	Toxic labpack containing magnesium chloride, silver citrate, chromium chloride, barium sulfate, and a carcinogenic alloy of bismuth, cadmium, tin, and lead from laboratory	U011	EMW	1.95	

17. COMMENTS (Enter information by section and/or line number—see instructions).



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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

12. YEAR/STATE ID NUMBER WA 9100B967		14. RECEIVING FACILITY (RFD) EPA/STATE ID NUMBER WA 058367154		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134	
13. WASTE CHARACTERIZATION A - Manifest Document Number B - Manifest Shipment Date (MM/DD/YY) C - Physical State 1 - Solid 2 - Liquid 3 - Sludge 4 - Gas 5 - Compressed Gas D - Chemical Nature 1 - Organic 2 - Inorganic 3 - Mixed 4 - Other		15. TRANSPORTER EPA/STATE ID NUMBER WA 058367152		16. DANGEROUS WASTE NUMBER (see instructions and WAC 173-303) G. Waste Description (see instructions) F. Waste Description (see instructions)		17. COMMENTS (Enter information by section and/or line number—see instructions)	

Line	Manifest Document Number	Manifest Shipment Date (MM/DD/YY)	Physical State	Chemical Nature	Waste Description (see instructions)	Dangerous Waste Number (see instructions and WAC 173-303)	Waste Designation (see instructions and WAC 173-303)	Amount of Waste	Vehicle ID Facility (if different)
1	16216	08-08-86	S	1	Toxic mixture of copper, zinc, and aluminum from laboratory	W101	EMW	0.5	
2	16216	08-08-86	S	1	Vanadium pentoxide from laboratory	P120	EMW	0.5	
3	16216	08-08-86	L	0	Nitrobenzene from laboratory	U169 D001	EMW	3	
4	16216	08-08-86	S	1	Arsenic acid from laboratory	P010 D004	EMW	0.01	
5	16216	08-08-86	S	1	Arsenic trioxide from laboratory	P012 D004	EMW	0.05	
6	16216	08-08-86	S	1	Toxic, carcinogenic sodium chloride from laboratory	W101 W001	EMW	2.1	
7	16216	08-08-86	L	1	Toxic aqueous solution of 1% mercury and trace amounts of sulfuric, nitric, hydrochloric, and phosphoric acid from laboratory	D009	EMW	2	
8	16216	08-08-86	S	0	Benzopyrene from laboratory	U022 W003	EMW	0.003	
9	16216	08-08-86	S	1	Toxic reagent used to absorb 1% of a solution of ammonium thiosulfate, sodium acetate, trace silver oxide and sulfuric acid from photographic laboratory	W102	DW	7.5	
10	16216	08-08-86	L	01	Toxic, reactive aqueous solution of silver, cyanide, and ethylenediamine from laboratory	D003 W101	EMW	1	
11	16216	08-08-86	L	1	Reactive potassium ferrocyanide from laboratory	D003	DW	1.5	
12	16216	08-08-86	L	1	Toxic aqueous solution with 80 ppm selenium from laboratory	W102	DW	2	
13	16216	08-08-86	S	1	Toxic labpack containing sodium phosphate, dibasic and sodium phosphate, tribasic from laboratory	W102	DW	0.5	
14	16216	08-08-86	S	1	EP toxic sodium arsenate from laboratory	D004	EMW	4	

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1986		Form 4		GENERATOR ANNUAL DANGEROUS WASTE REPORT		Form 4		1980					
13 YHRH EPA/STATE ID NUMBER		14 RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER		15 TRANSPORTER EPA/STATE ID NUMBER		NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134							
14 YHRH EPA/STATE ID NUMBER		14 RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER		15 TRANSPORTER EPA/STATE ID NUMBER		NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134							
16 WASTE CHARACTERIZATION		17 COMMENTS (Enter information by section and/or line number—see instructions)		18 WASTE DESCRIPTION (see instructions)		19 DANGEROUS WASTE NUMBER (see instructions and WAC 173.303)		20 WASTE DESIGNATION (see EHW)		21 AMOUNT OF WASTE		22 WAC FOR ISD FACILITY USE ONLY	
A	B	C	D	E	F	G	H	I	J	K	L	M	
Manifest Document Number	Manifest Date (MM/YY)	Physical State 1-Solid 2-Liquid 3-Sludge 4-Compressed Gas	Chemical Nature 0-Organic 1-Inorganic	Waste Description (see instructions)	Dangerous Waste Number (see instructions and WAC 173.303)	Waste Designation (see EHW)	Amount of Waste	WAC For ISD Facility Use Only					
16216	08-08-86	1	1	Hydrastine, 34-60% aqueous solution, from laboratory	U133 D002 UC01	EMW	6						
16216	08-08-86	3	1	Toxic absorbed aqueous solution of sodium acetate and ammonium thiosulfate from photographic laboratory	U102	DW	2.7						
16216	08-08-86	1	1	Toxic, ignitable, corrosive solution of nitric acid, hydrochloric acid, and hydrofluoric acid with sodium nitrate, sodium sulfate, ferric nitrate, and aluminum nitrate precipitate from laboratory	U101 D001	EMW	1.13						
16216	08-08-86	1	1	Metallic mercury from laboratory	U101 D009	EMW	1						
16216	08-08-86	1	10	Toxic, carcinogenic, corrosive solution of chromous chloride, zinc chloride and hydrochloric acid with trace of octanol from laboratory	U101 D002	EMW	1						
16216	08-08-86	1	1	Metallic mercury from laboratory	U1512 D009	EMW	1.8						
16353	12-23-86	1	0	Toxic, persistent, flammable mixed organics including methyl ethyl ketone, 1,1-trichloroethane, and mineral spirits from paint operation	U101 UP02 F001	EMW	200						
16353	12-23-86	1	01	Toxic, persistent, carcinogenic aqueous solution of methylene chloride, cresylic acid, and sodium bichromate from automotive operation	F001 F004 UC01	EMW	112						
16353	12-23-86	1	1	Toxic, persistent, corrosive aqueous solution of chlorinated hydrocarbons, and cresylic acid from automotive operation	D002 F004	EMW	446						
16353	12-23-86	1	0	Methyl alcohol from automotive operation	U154 D001	DW	74						

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1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986

13 YURRI EPA/STATE ID NUMBER: WA 10101967  
 14 RECEIVING FACILITY (1500) EPA/STATE ID NUMBER: WA 058367152  
 NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134  
 NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134

L I N E	A Manifest Number	M Manifest Date (MM/DD/YY)	C Physical State a-Solid l-Liquid g-Sludge M-Compressed Gas	D Hazardous Material ID Number (1-4 digit)	E Physical Chemical Nature (1-3 digit)	F Waste Description (see instructions)	G Dangerous Waste Number (see instructions and WAC 173-203)	H Waste Designation (see EPA HW EHW)	I L Amount of Waste	J K For 155 Facility ID Use Only
1	16353	12-23-86	1G	01	01	Toxic, carcinogenic flammable aqueous solution of methyl ethyl ketone, methanol, aliphatics hydrocarbons, isopropyl alcohol, sodium chromate, ammonium hydroxide paraffin wax and potassium silicate and phosphate from paint operation.	F005 M001 D007	ENW	165	
2	16353	12-23-86	1	01	01	Toxic, persistent flammable aqueous solution of methyl ethyl ketone, mineral spirits oil, chloroform, and 3 bromoheptane with 19.5 ppm chromium and 5 ppm lead from paint operation	F005 D001 D008	ENW	175	
3	16353	12-23-86	1	01	01	Toxic, flammable aqueous solution of mineral spirits, methyl ethyl ketone and chromum from paint operation	F005 D001	ENW	175	
4	16353	12-23-86	1	01	01	Toxic, flammable aqueous solution of mineral spirits, methyl ethyl ketone, styrene, chromium and lead from paint operation	F003 F005 D007	ENW	175	
5	16353	12-23-86	1	0	0	Toxic, flammable aqueous methyl ethyl ketone (25%) solution from paint operation	W102 D001	DU	199	
6	16353	12-23-86	1	0	0	1,1,1-trichloroethane from plant operations	U226 W101	ENW	70	
7	16353	12-23-86	1	01	01	Toxic, carcinogenic aqueous solution of biphenyl a-glycinal ether, aromatic amine, and glass fiber from construction operation	U001	ENW	69	
8	16353	12-23-86	1	0	0	Toxic, ignitable aqueous solution of biphenyl a-glycinal ether, phenol and aromatic hydrocarbons from construction operation	D001	DU	51	
9	16353	12-23-86	1	10	10	Toxic, corrosive aqueous solution of alkali metasilicates and carbonates, sodium hydroxide, ethylene diamine tetracetic acid, and surfactants from plant operations	D002	DU	195	
10	16353	12-23-86	1	0	0	Toxic, persistent, flammable solution of wood tar, styrene, acetone, and methylene chloride from laboratory	F002 F003 W101	ENW	7.6	

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 TONN EPA/STATE ID NUMBER WA 01003967		14 RECEIVING FACILITY (TSD) EPA/STATE ID NUMBER WA 0058367152		15 TRANSPORTER EPA/STATE ID NUMBER WA 0058367152		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington, WA 98134		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington, WA 98134	
16 WASTE CHARACTERIZATION		17 DANGEROUS WASTE NUMBER (see instructions and WAC 173-303)		18 WASTE DESIGNATION (see instructions)		19 AMOUNT OF WASTE		20 TONN FOR TSD FACILITY (see instructions)	
A Manifest Document Number	B Manifest Shipment Date (MM DD YY)	C Physical State 1-Solid 2-Liquid 3-Sludge 4-Compressed Gas	D Chemical Nature 0-None 1-Organic 2-Inorganic	E Waste Description (see instructions)	F Waste Designation (see instructions)	G Amount of Waste	H TSD Facility ID Number	I TSD Facility Name	J TSD Facility Address
1 16353	12-23-86	L	0	Toxic, persistent, carcinogenic, flammable solution of methylene chloride, acetone, benzene and hexane from laboratory	EU01	7.6	K		
2 16353	12-23-86	L	0	Toxic, carcinogenic flammable solution of benzene and hexane from laboratory	EU01	3.8	K		
3 16353	12-23-86	L	0	Toxic, carcinogenic, persistent, flammable solution of methylene chloride, acetonitrile, acetone, hexane, chloroform, ethanol, and benzene from laboratory	EU01	3.8	K		
4 16353	12-23-86	L	0	Toxic, persistent, carcinogenic, flammable solution of methylene chloride, benzene and hexane from laboratory	EU01	3.8	K		
5 16353	12-23-86	L	0	Toxic, carcinogenic, persistent, flammable solution of methylene chloride, hexane, acetone, chloroform, and pentane from laboratory	EU01	3.8	K		
6 16353	12-23-86	L	0	Toxic, persistent, carcinogenic, flammable solution of hexane, methyl t-butyl ether and chloroform from laboratory	EU01	3.8	K		
7 16353	12-23-86	L	0	Toxic, persistent, carcinogenic, corrosive, flammable solution of acetic acid, acetone, acetonitrile, chloroform, hexane, benzene and methylene chloride from laboratory	EU01	8	K		
8 16353	12-23-86	L	0	1,1,1-trichloroethane from laboratory	EU01	10	K		
9 16353	12-23-86	L	0	Toxic solution of water, methanol, and formaldehyde from laboratory	EU01	15	K		
10 16353	12-23-86	L	0	Toxic, flammable solution of toluene from laboratory	EU01	4.5	K		

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YENI EPA/STATE ID NUMBER		14 RECEIVING FACILITY (RSD)		15 TRANSPORTER		NAME		ADDRESS		ZP	
WA 910018967		WA 058367192		HA 058367152		Northwest Enviroserve, Inc.		1500 Airport Way South		Seattle, Washington	
13 YENI EPA/STATE ID NUMBER		14 RECEIVING FACILITY (RSD)		15 TRANSPORTER		NAME		ADDRESS		ZP	
WA 910018967		WA 058367192		HA 058367152		Northwest Enviroserve, Inc.		1500 Airport Way South		Seattle, Washington	
16 WASTE IDENTIFICATION	A Manifest Document Number	B Manifest Shipment Date (MM/DD/YY)	C Physical State	D State Status	E Chemical Name	F Waste Description (see instructions)	G Dangerous Waste Number (see instructions and WAC 173.302)	H Waste Designation (see OWM ENW)	I Amount of Waste	J K For USD to Facility at the City	
1	16353	12-23-86	1	0	Toxic, flammable, carcinogenic, persistent solution of mixed organics which includes methanol, tetrahydrofuran, diethyl ether, carbon tetrachloride, dioxane, acetone, chloroform, pyridine borane, isooctane, benzene, methyl t-butyl ether, toluene, benzene, ethanol, butanol, and methylene chloride from laboratory	F002 F005 W01 D001	F003 W01	9.9	K		
2	16353	12-23-86	1	0	Toxic, carcinogenic, ignitable aqueous solution of isopropanol, methanol and phenol from laboratory	F003 W01	W01	5	K		
3	16353	12-23-86	1	0	Toxic solution of dihydroxy acetone, benzyl alcohol, methanol and isooctane from laboratory	F003	W02	0.9	K		
4	16353	12-23-86	1	0	Toxic, persistent, carcinogenic, reactive, flammable solution of isooctane, boron trifluoride, methanol, hexane dithiocyanate, chloroform, methylene chloride, benzene, acetone, carbon disulfide, trichloroethylene, fluorosulfone and acetonitrile from laboratory	F002 F003 W01 D001	F005 W01 D001 D003	13	K		
5	16353	12-23-86	5	1	Toxic, solution of sulfuric and nitric acids, neutralized and absorbed with lead, mercury, silver, arsenic and cadmium from laboratory	D008 D004 D011	D009 D006 W02	20	K		
6	16353	12-23-86	1	0	Cyclohexanone from laboratory	W057 D001	W01	36	K		
7	16353	12-23-86	G	01	Toxic, ignitable mixture of naphtha and silicone from construction operation	W01	D001	40	K		
8	16353	12-23-86	1	0	Ignitable, toxic, carcinogenic solution of xylene, benzene, naphthalene and mixed aliphatic hydrocarbons from laboratory	F003 D001	W01 M01	250	K		
9	16353	12-23-86	1	0	Ignitable, toxic, persistent solution of trichloromethylfluoromethane, cresols, and mixed aliphatic hydrocarbons from laboratory	D001 F004 W01	F002 W01	250	K		
10	16353	12-23-86	S	1	Toxic sodium tetraborate from laboratory	W02	D01	48.8	K		

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13. YOUR EPA/STATE ID NUMBER: **WA 00000967** 14. RECEIVING FACILITY (ISO) EPA/STATE ID NUMBER: **WA 0058367152**

NAME: **Northwest EnviroService, Inc.** ADDRESS: **1500 Airport Way South Seattle, Washington ZIP 98134**

NAME: **Northwest EnviroService, Inc.** ADDRESS: **1500 Airport Way South Seattle, Washington ZIP 98134**

A Manifest Treatment Number	B Manifest Shipment Date (mm, dd, yy)	C Physical State 1-Solid 2-Liquid 3-Sludge 4-Hazardous 5-Compressed Gas	D Chemical Nature 0-Organic 1-Inorganic	E Waste Description (see instructions)	F Waste Description (see instructions)	G Waste Designation (see instructions and WAC 173-303)	H Waste Designation (see instructions and WAC 173-303)	I Amount of Waste	J Waste For ISD Facility Use only
1	12-23-86	5	1	Toxic, carcinogenic, reactive labpack containing cadmium, cadmium cyanide, cadmium oxide and zinc chloride from laboratory	Toxic, carcinogenic, reactive labpack containing cadmium, cadmium cyanide, cadmium oxide and zinc chloride from laboratory	D006 UC01	ENV	23.1	
2	12-23-86	1S	10	Toxic labpack containing barium chloride and a carcinogenic formaldehyde solution from laboratory	Toxic labpack containing barium chloride and a carcinogenic formaldehyde solution from laboratory	F003 VT01	ENV	3.74	
3	12-23-86	1	1	Toxic aqueous sodium sulfite (95%) solution from laboratory	Toxic aqueous sodium sulfite (95%) solution from laboratory	D002 UC01	DU	8	
4	12-23-86	1	1	Toxic, corrosive, carcinogenic solution of aqueous sulfuric and chromic acids from laboratory	Toxic, corrosive, carcinogenic solution of aqueous sulfuric and chromic acids from laboratory	D007 VT01	ENV	33	
5	12-23-86	1	1	Toxic, corrosive, aqueous hydrochloric acid (0.36%) solution from laboratory	Toxic, corrosive, aqueous hydrochloric acid (0.36%) solution from laboratory	D002 UC01	DU	1.8	
6	12-23-86	1	1	Toxic, corrosive, aqueous phosphoric acid (80%) solution from laboratory	Toxic, corrosive, aqueous phosphoric acid (80%) solution from laboratory	D002 UC01	DU	3.8	
7	12-23-86	1	0	1,1,1-trichloroethane from plant operations	1,1,1-trichloroethane from plant operations	U226 VT01	ENV	38	
8	12-23-86	5	1	Toxic, carcinogenic sodium chromate from laboratory	Toxic, carcinogenic sodium chromate from laboratory	D007 UC01	ENV	26	
9	12-23-86	5	1	Toxic, reactive mixture of aluminum oxide, calcium chloride, sulfur, and calcium sulfate from laboratory	Toxic, reactive mixture of aluminum oxide, calcium chloride, sulfur, and calcium sulfate from laboratory	D003	DU	7.93	
10	12-23-86	5	0	Corrosive, toxic acetic anhydride from laboratory	Corrosive, toxic acetic anhydride from laboratory	D002 UC01	ENV	0.94	
11	12-23-86	1	0	Toxic aqueous ethylene glycol (50%) solution from automotive operation	Toxic aqueous ethylene glycol (50%) solution from automotive operation	D002 VT02	DU	800	
12	12-23-86	1	1	Toxic, corrosive aqueous solution with trace amounts of potassium iodide, mercuric iodide and sodium hydroxide from plant operation	Toxic, corrosive aqueous solution with trace amounts of potassium iodide, mercuric iodide and sodium hydroxide from plant operation	D009 VT02	ENV	250	
13	12-23-86	1	1	Reactive toxic, corrosive aqueous solution with trace amounts of mercuric sulfur cyanide, ferrous nitrate, and nitric acid from plant operations	Reactive toxic, corrosive aqueous solution with trace amounts of mercuric sulfur cyanide, ferrous nitrate, and nitric acid from plant operations	D009 D003	DU	250	
14	12-23-86	1	10	Corrosive aqueous solution with trace amounts of methanol, hydrochloric acid, and p-dimethylamino benaldehyde from plant operations	Corrosive aqueous solution with trace amounts of methanol, hydrochloric acid, and p-dimethylamino benaldehyde from plant operations	D002 F003	DU	250	

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YEAR/STATE ID NUMBER WA 900010167	14 RECEIVING FACILITY (EEO) EPA/STATE ID NUMBER WA 050367143	NAME Northwest EnviroService, Inc. ADDRESS 1500 Airport Way South Seattle, Washington ZIP 98134	15 TRANSPORTER EPA/STATE ID NUMBER WA 058367152	NAME Northwest EnviroService, Inc. ADDRESS 1500 Airport Way South Seattle, Washington ZIP 98134
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A Manifest Document Number	B Manifest Shipment Date (mm dd yy)	C Physical State S-Solid L-Liquid M-Sludge U-Compressed Gas	D Chemical Nature 0-Organic 1-Inorganic	F Waste Description (see instructions)	G Dangerous Waste Identification (see instructions and WAC 173-303)	H Waste Package (see instructions)	I Amount of Waste	K FCL for 15D Facility (see instructions)
1 16351	12-23-86	1	1	Toxic, corrosive aqueous solution with trace amounts of barium chloride and sodium hydroxide from laboratory	D002 U102	DW	114	K
2 16351	12-23-86	1	10	Corrosive aqueous solution with trace amounts of sulfuric acid, potassium dichromate, acetone, and diphenyl carbazide from laboratory	D002	DW	15	K
3 16351	12-23-86	1	10	Toxic, corrosive aqueous solution of potassium hydroxide and surfactants from plant operation	U101	ENW	400	K
4 16351	12-23-86	1	10	Corrosive aqueous solution of ethylenediaminetetraacetic acid and sodium polymethacrylate from plant operations	D002	DW	200	K
5 16351	12-23-86	1	1	Hydratine aqueous (10X) solution from plant operations	U133 UC01	ENW	100	K
6 16351	12-23-86	1	10	Toxic, carcinogenic, corrosive aqueous solution sodium hydroxide, sulfuric acid, hydrochloric acid, nitric acid, formaldehyde, selenium, mercury and beryllium from laboratory	U101 D002 D010 D009	ENW	4	K
7 16351	12-23-86	1	1	Toxic, corrosive sulfuric acid solution from automotive operation	U102	DW	15	K
8 16351	12-23-86	1	1	Toxic sodium hypochlorite (5X) aqueous solution from laboratory	U101	ENW	2	K
9 16351	12-23-86	1	0	Toxic, corrosive, persistent solution of chloroform and phenol from laboratory	U101 UP01	ENW	20	K
10 16351	12-23-86	1	1	Sodium azide from laboratory	P105 D003	ENW	0.1	K
11 16351	12-23-86	1	1	Toxic aqueous solution with aryl polyhydric alcohol and p-tertiaryoctylphenoxy polyethyl alcohol from photochemical laboratory	U102	DW	0.23	K
12 16351	12-23-86	5	1	Toxic ammonium chloride from laboratory	U102	DW	0.45	K
13 16351	12-23-86	1	0	Toxic, persistent, flammable solution of stoddard solvent, methyl benzene, propane, butane, methylene chloride, toluene and hydrocarbon solvent from paint operation	U101 UP01	ENW	20	K

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YRHSI EPA/STATE ID NUMBER WA 900009167		14 RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER WA 058367194		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 99134		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134	
15 WASTE RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER WA 058367194		16 TRANSPORTER EPA/STATE ID NUMBER WA 058367152		17 DANGEROUS WASTE NUMBER (see instructions and WAC 173-303) U102		18 AMOUNT OF WASTE 127	
19 WASTE RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER WA 058367194		20 RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER WA 058367194		21 WASTE DESCRIPTION (see instructions) F. Waste Description (see instructions) Toxic aqueous solution of potassium hydroxide, hydroquinone, sodium/potassium carbonate, sodium/potassium sulfite and ethylenediamine from photographic laboratory Toxic, carcinogenic crushed fluorescent cadmium and mercury light bulbs from maintenance operation Toxic, ignitable aqueous slurry of metal nitrates including lead nitrate, chromium nitrate and barium nitrate from laboratory Toxic, ignitable aqueous slurry of metal nitrates including barium nitrate, cadmium nitrate, chromium nitrate, selenium nitrate, and silver nitrate from laboratory Toxic, ignitable aluminum nitrate from laboratory Toxic, ignitable silver nitrate from laboratory Toxic, ignitable slurry of metal nitrates including barium nitrate, chromium nitrate and lead nitrate from laboratory Toxic, corrosive glacial hydrochloric acid from laboratory Toxic, corrosive aqueous solution of hydrofluoric and nitric acids from laboratory Toxic aqueous solution with alkyl hydroxylamine and hydroquinone from plant operations Toxic, corrosive labpack containing glacial acetic acid and glacial hydrochloric acid from laboratory Ignitable potassium nitrate from laboratory		22 WASTE DESCRIPTION (see instructions) Toxic aqueous solution of potassium hydroxide, hydroquinone, sodium/potassium carbonate, sodium/potassium sulfite and ethylenediamine from photographic laboratory Toxic, carcinogenic crushed fluorescent cadmium and mercury light bulbs from maintenance operation Toxic, ignitable aqueous slurry of metal nitrates including lead nitrate, chromium nitrate and barium nitrate from laboratory Toxic, ignitable aqueous slurry of metal nitrates including barium nitrate, cadmium nitrate, chromium nitrate, selenium nitrate, and silver nitrate from laboratory Toxic, ignitable aluminum nitrate from laboratory Toxic, ignitable silver nitrate from laboratory Toxic, ignitable slurry of metal nitrates including barium nitrate, chromium nitrate and lead nitrate from laboratory Toxic, corrosive glacial hydrochloric acid from laboratory Toxic, corrosive aqueous solution of hydrofluoric and nitric acids from laboratory Toxic aqueous solution with alkyl hydroxylamine and hydroquinone from plant operations Toxic, corrosive labpack containing glacial acetic acid and glacial hydrochloric acid from laboratory Ignitable potassium nitrate from laboratory	
23 WASTE RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER WA 058367194		24 RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER WA 058367194		25 WASTE DESCRIPTION (see instructions) Toxic aqueous solution of potassium hydroxide, hydroquinone, sodium/potassium carbonate, sodium/potassium sulfite and ethylenediamine from photographic laboratory Toxic, carcinogenic crushed fluorescent cadmium and mercury light bulbs from maintenance operation Toxic, ignitable aqueous slurry of metal nitrates including lead nitrate, chromium nitrate and barium nitrate from laboratory Toxic, ignitable aqueous slurry of metal nitrates including barium nitrate, cadmium nitrate, chromium nitrate, selenium nitrate, and silver nitrate from laboratory Toxic, ignitable aluminum nitrate from laboratory Toxic, ignitable silver nitrate from laboratory Toxic, ignitable slurry of metal nitrates including barium nitrate, chromium nitrate and lead nitrate from laboratory Toxic, corrosive glacial hydrochloric acid from laboratory Toxic, corrosive aqueous solution of hydrofluoric and nitric acids from laboratory Toxic aqueous solution with alkyl hydroxylamine and hydroquinone from plant operations Toxic, corrosive labpack containing glacial acetic acid and glacial hydrochloric acid from laboratory Ignitable potassium nitrate from laboratory		26 WASTE DESCRIPTION (see instructions) Toxic aqueous solution of potassium hydroxide, hydroquinone, sodium/potassium carbonate, sodium/potassium sulfite and ethylenediamine from photographic laboratory Toxic, carcinogenic crushed fluorescent cadmium and mercury light bulbs from maintenance operation Toxic, ignitable aqueous slurry of metal nitrates including lead nitrate, chromium nitrate and barium nitrate from laboratory Toxic, ignitable aqueous slurry of metal nitrates including barium nitrate, cadmium nitrate, chromium nitrate, selenium nitrate, and silver nitrate from laboratory Toxic, ignitable aluminum nitrate from laboratory Toxic, ignitable silver nitrate from laboratory Toxic, ignitable slurry of metal nitrates including barium nitrate, chromium nitrate and lead nitrate from laboratory Toxic, corrosive glacial hydrochloric acid from laboratory Toxic, corrosive aqueous solution of hydrofluoric and nitric acids from laboratory Toxic aqueous solution with alkyl hydroxylamine and hydroquinone from plant operations Toxic, corrosive labpack containing glacial acetic acid and glacial hydrochloric acid from laboratory Ignitable potassium nitrate from laboratory	

17. COMMENTS (Enter information by section and/or line number—see instructions).

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1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986

13 YURNI EPA/STATE ID NUMBER WA 19 00 0 H 9 6 7  
 14 RECEIVING FACILITY (TES) EPA/STATE ID NUMBER H A 0 5 8 3 6 7 1 5 2  
 NAME ADDRESS NORTHWEST EnviroService, Inc. 1500 Airport Way South Seattle, Washington 98134  
 NAME ADDRESS NORTHWEST EnviroService, Inc. 1500 Airport Way South Seattle, Washington 98134

15 WASTE IDENTIFICATION	16 Manifest Shipment Date (MM/DD/YY)	17 Physical State 1-Solid 2-Liquid 3-Sludge 4-Compressed Gas	18 Chemical Nature 1-Organic 2-Inorganic 3-Metallic 4-Other	19 Waste Description (see instructions)	20 Dangerous Waste Number (see instructions and WAC 173.203)	21 Waste Designation (see instructions)	22 Amount of Waste	23 RC Facility ID Number (see instructions)
1	08-08-86	1	1	Hydrazine 30 3% aqueous empty drums	U133 0002	EWU	0	K
2	08-08-86	1	1	Hydrazine 30 3% aqueous empty drums	U133 0002	EWU	0	K
3	08-08-86	1	1	Hydrazine 30 3% aqueous empty drums	U133 0002	EWU	0	K
4	08-08-86	1	10	Toxic, carcinogenic solution of automotive oil and hydrazine from plant operations	U101	EWU	110	K
5	08-08-86	1	1	Toxic, ignitable cadmium nitrate (982) aqueous solution from plant operations	0001 0006	EWU	0	K
6	08-08-86	1	1	Toxic, ignitable cadmium nitrate (983) aqueous solution from plant operations	0001 0006	EWU	0	K
7	08-08-86	1	0	Toxic, flammable, organic solution of methyl ethyl ketone, acetone, toluene, xylene and mineral spirits from paint operations	F003 F005	EWU	230	K
8	08-08-86	1	01	Toxic, persistent organic solution of halogenated hydrocarbons and lead from paint operations	W02 0008	EWU	150	K
9	08-08-86	1	10	Toxic, flammable solution of methyl ethyl ketone with lead and chromium pigments from paint operation	0001 0007 F005	EWU	827	K
10	08-01-86	1	1	Corrosive, EP toxic aqueous nitric acid (23) solution with selenium from laboratory	0002 W102	DW	20	K
11	08-01-86	1	1	Corrosive, EP toxic aqueous nitric acid (23) solution with arsenic from laboratory	0002 W102	DW	20	K
12	08-01-86	1	1	Toxic, corrosive aqueous nitric acid (23) solution with arsenic, lead, and selenium from laboratory	0008 0004 W101	EWU	20	K

17. COMMENTS (Enter information by section and/or line number—see instructions).



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NAME: Northwest EnviroService, Inc.  
ADDRESS: 1500 Airport Way South  
Seattle, Washington, 98134

15 TRANSPORTER  
EPA STATE ID NUMBER  
WA 005B367152

NAME: Northwest EnviroService, Inc.  
ADDRESS: 1500 Airport Way South  
Seattle, Washington, 98134

16 RECEIVING FACILITY (FSD)  
EPA STATE ID NUMBER  
WA 005B367152

18 WASTE ID NUMBER	A Manifest Document Number	B Manifest Shipment Date (MM/YY)	C Physical State 1-Solid 2-Liquid 3-Sludge 4-Composite 5-Gas	D Chemical Nature 1-Hazardous 2-Non-Hazardous 3-Other	E Waste Description (see instructions)	F Waste Management Number (see instructions and WAC 172.303)	G Waste Designation (see instructions)	H Amount of Waste	I Facility Use Code
1	16215	08-01-86	1	1	Toxic aqueous solution of n-alkyl dimethyl benzyl ammonium chloride, and bis(tert-butyl) oxide from plant operations	W102	DW	206	K
2	16215	08-01-86	1	0	Toxic polyethyleneimine from laboratory	W102	DW	238	K
3	16215	08-01-86	1	01	Toxic, persistent aqueous solution of potassium hydroxide and sodium pentachlorophenate from plant operations	W101	ENU	0	K
4	16215	08-01-86	1	10	Toxic aqueous solution of acetic acid, oxalic acid, sodium chloride, and sodium sulfate from laboratory	W102	DW	227	K
5	16215	08-01-86	5	0	Toxic, carcinogenic, persistent mixture of brominated polyester resin and styrene from construction operation	W101	ENU	205	K
6	16215	08-01-86	1	1	Hydrazine 30-35% aqueous empty drums	W101	ENU	0	K
7	16215	08-01-86	1	1	Hydrazine 30-34% aqueous solution from plant operations	W101	ENU	270	K
8	16215	08-01-86	1	1	Toxic, corrosive aqueous sulfuric acid solution from laboratory	W102	DW	33.3	K
9	16215	08-01-86	1	1	Toxic, corrosive sodium hydroxide (50%) aqueous solution from plant operations	W102	DW	159	K
10	16215	08-01-86	3	1	Toxic, corrosive, carcinogenic mixture of sodium hydroxide in hydrating drum from plant operations	W101	ENU	110	K
11	16215	08-01-86	1	0	Toxic, in solution of methyl ethyl ketone from laboratory	W102	DW	948	K
12	16215	08-01-86	1	0	Ignitable, toxic, in solution of methyl ethyl ketone from laboratory	W102	DW	149.7	K
13	16215	08-01-86	1	1	Ignitable, corrosive, in solution of nitric acid from laboratory	W101	ENU	16.0	K
14	16215	08-01-86	5	1	Toxic, lead oxide, chromium nitrate from laboratory	W101	ENU	10.5	K

17. COMMENTS (Enter information by section and/or line number—see instructions).

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1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986

13 YOUR EPA/STATE ID NUMBER: WA 190009167  
 14 RECEIVING FACILITY (FSD) ID NUMBER: WA 058367192  
 NAME: Northwest Enviroservice, Inc.  
 ADDRESS: 1500 Airport Way South  
 Seattle, Washington ZIP: 98134  
 NAME: Northwest Enviroservice, Inc.  
 ADDRESS: 1500 Airport Way South  
 Seattle, Washington ZIP: 98134  
 IS TRANSPORTER ID NUMBER: WA 058367152

A Manifest Document Number	B Manifest Shipment Date (MM/DD/YY)	C Physical State 1-Solid 2-Liquid 3-Sludge 4-Other 5-Compressed Gas	D Chemical Nature 1-Organic 2-Inorganic 3-Flammable 4-Non-flammable 5-Corrosive 6-Toxic 7-Irritant 8-Other	E Waste Description (see instructions)	F Waste Description (see instructions)	G Dangerous Waste Number (see instructions and WAC 173.203)	H Waste Designation DW or EHW	I Amount of Waste	J K IC For ISD ID Facility ID Use Only
1 16215	08-01-86	1	1	Ignitable toxic, solution of aluminum nitrate from laboratory		D001	EWU	1,136	
2 16215	08-01-86	1	0	Toxic, ignitable, organic solution of acetone, toluene, methyl ethyl ketone and mineral spirits from paint operations		F003 F005	EWU	400	
3 16215	08-01-86	1	0	Ignitable, solution of naphtha from construction operations		D001	DW	250	
4 26355	12-23-86	5	1	Toxic, antimony trioxide from laboratory		U102	DW	4.5	
5 26355	12-23-86	1	10	Persistent, ignitable, reactive, ethyl chloride from laboratory		U101 D003	EWU	0.1	
6 26355	12-23-86	1	0	Benzene from laboratory		U019 U101	EWU	0.22	
7 26355	12-23-86	1	0	Dioxane from laboratory		U108 D001	DW	0.35	
8 26355	12-23-86	1	0	formaldehyde from laboratory		U101 U101	EWU	0.9	
9 26355	12-23-86	1	0	formaldehyde from laboratory		U122 U101	EWU	30	
10 26355	12-23-86	1	0	Ignitable, hexane solution from laboratory		D001	DW	0.3	
11 26355	12-23-86	1	0	Ignitable, kerosene from laboratory		D001	DW	3.6	
12 26355	12-23-86	1	0	Methyl alcohol from laboratory		U154 D001	DW	0.18	
13 26355	12-23-86	1	0	Ignitable, aluminum metallic powder from laboratory		D001	DW	0.05	
14 26355	12-23-86	1	1	Ignitable, magnesium perchlorate from laboratory		D001	DW	0.45	
15 26355	12-23-86	1	1	Toxic, ignitable, mercuric nitrate from laboratory		U101 D001	EWU	1.01	

17. COMMENTS (Enter information by section and/or line number—see instructions).

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1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986

13 WASTE ID NUMBER: WA7490009671  
 14 RECEIVING FACILITY (RSD) ID NUMBER: WA0058367152  
 15 TRANSPORTER ID NUMBER: HA0058367152  
 NAME: Northwest EnviroService, Inc.  
 ADDRESS: 1500 Airport Way South, Seattle, Washington, ZIP: 98134  
 NAME: Northwest EnviroService, Inc.  
 ADDRESS: 1500 Airport Way South, Seattle, Washington, ZIP: 98134

L S M E	A Manifest Document Number	B Manifest Date (MM, DD, YY)	C				F. Waste Description (see instructions)	G. Dangerous Waste Number (see instructions and WAC 173-303)	H. Waste Designation (see EW or EHW)	I. Amount of Waste	J K For 1SD Facility Use Only
			D Physical State	E Chemical Nature	F Hazardous Category	G Quantity					
1	26353	12-23-86	L	S	1	Toxic, ignitable, chromium, cobalt, ceric ammonium nitrates from laboratory	D001	ENU	0.67		
2	26353	12-23-86	S	1	1	Ignitable, sodium nitrate, cerium nitrate from laboratory	D001	DU	0.55		
3	26353	12-23-86	S	1	1	Ignitable, potassium nitrate from laboratory	D001	DU	1.1		
4	26353	12-23-86	L	S	1	Toxic, ignitable potassium nitrite from plant operations	U102	DU	18		
5	26353	12-23-86	L	S	1	Ignitable, potassium permanganate from laboratory	D001	DU	0.1		
6	26353	12-23-86	S	1	1	Ignitable, reactive sodium perchlorate from laboratory	D001	DU	0.45		
7	26353	12-23-86	L	0	0	Methylene chloride from laboratory	U101 U080	ENU	0.5		
8	26353	12-23-86	L	0	0	Methylene chloride from plant operations	U080 U101	ENU	0.2		
9	26353	12-23-86	L	0	0	Toxic, persistent, carcinogenic, methylene chloride in solution from plant operations	U101 U101	ENU	0.9		
10	26353	12-23-86	L	S	1	Lead acetate from plant operations	U144	ENU	4.5		
11	26353	12-23-86	L	L	0	Phenol from laboratory	U188	ENU	0.5		
12	26353	12-23-86		S	1	Potassium cyanide from laboratory	P098 U101	ENU	0.2		
13	26353	12-23-86	L	L	01	Corrosive, toxic, carcinogenic, formaldehyde, heavy metals, hydrochloric acid, nitric acid, sulfuric acid from plant operations	D002 D006 D010 U101	ENU	2.2		
14	26353	12-23-86	L	L	01	Corrosive, toxic, carcinogenic, beryllium, mercury, formaldehyde, hydrochloric acid from plant operations	D002 D009	ENU	2.2		

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 WASH STATE ID NUMBER WA 11111111		14 RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER WA 058367152		15 TRANSPORTER EPA/STATE ID NUMBER WA 058367152		NAME Northwest EnviroService, Inc. ADDRESS 1500 Airport Way South Seattle, Washington, WA 98134														
16 WASH STATE ID NUMBER WA 11111111		17 RECEIVING FACILITY (ISD) EPA/STATE ID NUMBER WA 058367152		NAME Northwest EnviroService, Inc. ADDRESS 1500 Airport Way South Seattle, Washington, WA 98134		FORM 4 1986														
A Manifest Document Number	B Manifest Shipment Date (MM, DD, YY)	C Physical State 1-Solid 2-Liquid 3-Sludge 4-Gas	D Chemical Material 0-Organic 1-Inorganic	E Waste Description (see instructions)	F Waste Description (see instructions)	G Waste Description (see instructions)	H Waste Description (see instructions)	I Waste Description (see instructions)	J Waste Description (see instructions)	K Waste Description (see instructions)	L Amount of Waste	M Waste Description (see instructions)	N Waste Description (see instructions)	O Waste Description (see instructions)	P Waste Description (see instructions)	Q Waste Description (see instructions)	R Waste Description (see instructions)	S Waste Description (see instructions)	T Waste Description (see instructions)	
1	12-23-86	1	1	Corrosive, carcinogenic, potassium hydroxide, hydrazine sulfate from laboratory	Corrosive, carcinogenic, potassium hydroxide, hydrazine sulfate from laboratory	UCB1	0002	0.55	ERU	0.55										
2	12-23-86	1	1	Corrosive, toxic, barium hydroxide from laboratory	Corrosive, toxic, barium hydroxide from laboratory	UT01	0002 0005	0.5	ERU	0.5										
3	12-23-86	1	0	Corrosive, 4-hydroxyresorcinol from laboratory	Corrosive, 4-hydroxyresorcinol from laboratory	DU	0002	0.01	DU	0.01										
4	12-23-86	1	0	Corrosive, toxic, o-cresol, oxalic acid from laboratory	Corrosive, toxic, o-cresol, oxalic acid from laboratory	UT01	U052 0002	0.3	ERU	0.3										
5	12-23-86	1	1	Corrosive, lithium hydroxide, in solution from laboratory	Corrosive, lithium hydroxide, in solution from laboratory	DU	0002	0.45	DU	0.45										
6	12-23-86	1	1	Corrosive, toxic, sodium hydroxide from laboratory	Corrosive, toxic, sodium hydroxide from laboratory	DU	U102	0.01	DU	0.01										
7	12-23-86	1	0	Corrosive, carcinogenic, polystyrene polymer divinyl benzene sulfonic acid/water from laboratory	Corrosive, carcinogenic, polystyrene polymer divinyl benzene sulfonic acid/water from laboratory	UC02	UC02	0.8	DU	0.8										
8	12-23-86	1	1	Corrosive, reactive, toxic, lithium hydroxide, thiocyanic acid, boron phosphate from laboratory	Corrosive, reactive, toxic, lithium hydroxide, thiocyanic acid, boron phosphate from laboratory	ERU	0002 0003	5.4	ERU	5.4										
9	12-23-86	1	1	Corrosive, sodium calcium hydrate from laboratory	Corrosive, sodium calcium hydrate from laboratory	DU	0002	1.0	DU	1.0										
10	12-23-86	1	1	Corrosive, sodium hydroxide from laboratory	Corrosive, sodium hydroxide from laboratory	DU	0002	0.45	DU	0.45										
11	12-23-86	1	01	Corrosive, toxic, ammonium oxalate, oxalic acid, sodium dodecyl benzene sulfonate from plant operations	Corrosive, toxic, ammonium oxalate, oxalic acid, sodium dodecyl benzene sulfonate from plant operations	DU	0002	3	DU	3										
12	12-23-86	1	1	Corrosive, toxic, carcinogenic, potassium hydroxide, potassium permanganate, potassium chromate from plant operations	Corrosive, toxic, carcinogenic, potassium hydroxide, potassium permanganate, potassium chromate from plant operations	ERU	0002 0007	3	ERU	3										
13	12-23-86	1	0	Ignitable, corrosive, 1,6-hexanediamine, ethylenediamine, in solution from laboratory	Ignitable, corrosive, 1,6-hexanediamine, ethylenediamine, in solution from laboratory	DU	0001	0.52	DU	0.52										
14	12-23-86	1	10	Corrosive, methylene chloride, formic acid, acrylic acid in solution from laboratory	Corrosive, methylene chloride, formic acid, acrylic acid in solution from laboratory	ERU	F002	0.5	ERU	0.5										

17. COMMENTS (Enter information by section and/or line number—see instructions).





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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 WASTE RECEIVING FACILITY (RSD) NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134		14 TRANSPORTER NAME: Northwest EnviroService, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134							
15 RECEIVING FACILITY (RSD) EPA/STATE ID NUMBER: WA 005 B 3 6 7 1 5 2		16 TRANSPORTER EPA/STATE ID NUMBER: WA 005 B 3 6 7 1 5 2							
LINE NUMBER	A Manifest Document Number	B Manifest Shipment Date (mm/dd/yy)	C Physical State 1-Solid 2-Liquid 3-Sludge 4-Compressed Gas	D Chemical Hazardous 1-Explosive 2-Flammable 3-Corrosive 4-Toxic 5-Other	E Waste Description (see instructions)	F Dangerous Waste Number (see instructions and WAC 173-303)	G Waste Management Method (see instructions)	H Amount of Waste	I For ISO Facility Use Only
1	26353	12-23-86	5	1	Toxic, reactive, sodium cyanide, potassium cyanide, mercuric chloride from laboratory	P016 P098 U101	ENU	0.8	
2	26353	12-23-86	5	1	Toxic, carcinogenic, potassium cyanide, mercuric oxide, arsenic pentoxide from laboratory	U101 P011 UC01	ENU	1	
3	26353	12-23-86	1	01	Ignitable, Corrosive solution of acetaldehyde, nitric acid from laboratory	D001	DU	0.5	
4	26353	12-23-86	5	1	Ignitable, ammonium persulfate from laboratory	D001	DU	0.45	
5	26353	12-23-86	1	0	Corrosive, solution of phosphoric acid, bis(2-ethyl hexyl ester) from laboratory	D002	DU	0.45	
6	26353	12-23-86	1	0	Formaldehyde from laboratory	UC01 D001	ENU	0.2	
7	26353	12-23-86	1	5	Toxic, ignitable, barium nitrate from laboratory	D005 D001	ENU	3	
8	26353	12-23-86	5	1	Ignitable, corrosive, chromic acid from laboratory	D001 D002	DU	0.45	
9	26353	12-23-86	1	1	Ignitable, toxic, corrosive, carcinogenic, solution of chromic acid from laboratory	D001 D002 UC01	ENU	14.1	
10	26353	12-23-86	5	0	Toxic, paraformaldehyde from laboratory	U102	DU	1	
11	26353	12-23-86	1	1	Corrosive, cupric sulfate, sodium/potassium tartrate, sodium hydroxide from laboratory	D002	DU	0.58	
12	26353	12-23-86	1	1	Corrosive, cupric sulfate, sodium/potassium tartrate, sodium hydroxide from laboratory	D002	DU	0.58	

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YEAR/STATE ID NUMBER WA/090000967		14 RECEIVING FACILITY (FSD) EPA/STATE ID NUMBER WA0058367152		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP: 98134		NAME: Northwest Enviroservice, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington ZIP: 98134				
LINE	WASTE IDENTIFICATION	A Manifest Identification Number	B Manifest Shipment Date (MM-DD-YY)	C Physical State S-Solid L-Liquid G-Sludge M-Compressed Gas	D Chemical Nature 0-Organic 1-Inorganic	F Waste Description (see instructions)	G Dangerous Waste Number (see instructions and WAC 173 303)	H Waste Designation (see instructions and WAC 173 303)	I Amount of Waste	J ICFSD Facility Use Only
1	26353		12-23-86	L	1	Toxic, reactive, corrosive, solution of potassium ferricyanide, potassium hydroxide from plant operations	U102 D002	DU	1	
2	26353		12-23-86	L	1	Toxic, corrosive, solution of silver, lead, cadmium, selenium, arsenic, chromium, cobalt, vanadium, beryllium, and acids from laboratory	D004 D006 U101	ENU	9.7	
3	26353		12-23-86	L	1	Corrosive, toxic, solution of mercury, sulfuric acid from laboratory	D002 D009	ENU	16	
4	26353		12-23-86	L	1	Corrosive, toxic, carcinogenic, solution of sodium dichromate, sulfuric acid from laboratory	D002 D007	ENU	0.7	
5	26353		12-23-86	L	0	Corrosive, solution of n-vinyl-2-pyrrolidone/maleic acid copolymer from laboratory	D002	DU	0.8	
6	26353		12-23-86	S	1	Reactive, ferric chloride from laboratory	D003	DU	0.45	
7	26353		12-23-86	L	1	Corrosive, toxic, solution of lead, selenium from plant operations	D002 D008	DU	20	
8	26353		12-23-86	L	1	Corrosive, toxic, solution of lead, chromium, cadmium, selenium from plant operations	D006 D007 D010	ENU	20	
9	26353		12-23-86	L	1	Corrosive, toxic, solution of nitric acid, selenium, from plant operations	D002 D010	DU	20	
10	26353		12-23-86	L	01	Corrosive, solution of sulfuric acid, ferric chloride, para-amino diethyl aniline from plant operations	D002	DU	7	
11	26353		12-23-86	L	1	Corrosive, toxic, solution of nitric acid, heavy metals from plant operations	D002	DU	20	
12	26353		12-23-86	L	1	Corrosive, toxic, solution of lithium borate, nitric acid, clay components from plant operations	D002	DU	17	

17. COMMENTS (Enter information by section and/or line number—see instructions).

9413294-2297

**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

12. YR/ST: EPA/STATE ID NUMBER: WA 910018967		13. RECEIVING FACILITY (EEO): NAME: Northwest EnviroSERVICE, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134		14. TRANSPORTER: EPA/STATE ID NUMBER: WA 0058367152		NAME: Northwest EnviroSERVICE, Inc. ADDRESS: 1500 Airport Way South Seattle, Washington 98134		
15. WASTE IDENTIFICATION		16. RECEIVING FACILITY (EEO)		17. COMMENTS (Enter information by section and/or line number—see instructions).				
A Manifest Document Number	B Manifest Shipment Date (mm dd yy)	C Physical State 6-Solid 7-Liquid 8-Sludge 9-Other	D EPA/STATE ID NUMBER	E Physical Chemical Name 6-Solid 7-Liquid 8-Sludge 9-Other	F Waste Description (see instructions)	G DANGEROUS WASTE IDENTIFICATION CODE (see instructions and WAC 173.203)	H Waste Quantity (in LBS or GAL)	I K For USD DO Facility Use Only
1 26353	12-23-86	1	01	01	Corrosive, carcinogenic, toxic, solution of hydrochloric acid, formaldehyde, acetone from plant operations	0002 UC02	DU	4.1
2 26355	12-23-86	1	10	10	Corrosive, toxic, solution of oxalic acid from plant operations	0002	EW	2
3 26355	12-23-86	1	1	1	Corrosive, solution of hydrochloric, picric acids from plant operations	0002	DU	1
4 26355	12-23-86	1	1	1	Corrosive, toxic, solution of hydrofluoric acid from plant operations	U131 0002	DU	6
5 26355	12-23-86	1	1	1	Toxic, solution of sodium hypochlorite from laboratory	U102	DU	0.01
6 26355	12-23-86	1	0	0	Ignitable, solution of decaline from laboratory	0001	DU	0.02
7 26355	12-23-86	1	01	01	Toxic, ignitable, carcinogenic, solution of methylene chloride, formic, cresylic acids from laboratory	F002 0001	DU	0.5
8 26355	12-23-86	1	1	1	Ignitable, solution of gendolinium from laboratory	0001	DU	0.08
9 26355	12-23-86	1	01	01	Ignitable, solution of mineral oil, stearic acid, cetyl alcohol from laboratory	0001	DU	0.23
10 26353	12-23-86	1	0	0	Toxic, carcinogenic, persistent, solution of perchloroethylene, petroleum distillates, methylene chloride from laboratory	F001 F002 U101	EW	31.1
11 26353	12-23-86	1	0	0	Toxic, carcinogenic, ignitable, solution of asbestos, xylene, toluene from plant operations	F003 0001	EW	33.75
12 26353	12-23-86	1	0	0	Toxic, carcinogenic, ignitable, solution of asbestos, xylene, toluene from plant operations	F003 0001	EW	101.26
13 26353	12-23-86	5	0	0	Toxic, maleic acid from laboratory	U102	DU	0.6
14 26353	12-23-86	1	1	1	Corrosive, toxic, solution of ammonium hydroxide from plant operations	0002	EW	20.46
15 26353	12-23-86	5	1	1	Corrosive, metabisulfite from laboratory	0002	DU	0.35

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13. TUNR EPA/STATE ID NUMBER WA 0191010967		14. RECEIVING FACILITY (TSO) EPA/STATE ID NUMBER WA 0158367192		15. TRANSPORTER EPA/STATE ID NUMBER WA 0158367152		NAME Northwest Enviroservice, Inc. ADDRESS 1500 Airport Way South Seattle, Washington WA 98134		NAME Northwest Enviroservice, Inc. ADDRESS 1500 Airport Way South Seattle, Washington WA 98134		
16. WASTE IDENTIFICATION	A Manifest Document Number	B Manifest Shipment Date (MM DD YY)	C Physical State 1-Solid 2-Liquid 3-Sludge 4-Compressed Gas	D Chemical Status 1-Organic 2-Inorganic	E Waste Description (see instructions)	F Waste Description (see instructions)	G Dangerous Waste Number (see instructions and WAC 172-303)	H Waste Disposal Code (see instructions)	I Amount of Waste	J K For 1SD Facility Use Only
1	26353	12-23-86	1	1	Toxic, mercury from laboratory	Toxic, mercury from laboratory	U101	ENW	12.9	
2	26353	12-23-86	1	1	Toxic, selenium oxide from laboratory	Toxic, selenium oxide from laboratory	U101	ENW	0.02	
3	26353	12-23-86	1	1	Toxic, sodium phosphate, tribasic from laboratory	Toxic, sodium phosphate, tribasic from laboratory	U102	DU	0.45	
4	26353	12-23-86	1	1	Toxic, carcinogenic, solution of mercury, nickel, chromium, arsenic, cadmium, lead, hydrochloric acid from laboratory	Toxic, carcinogenic, solution of mercury, nickel, chromium, arsenic, cadmium, lead, hydrochloric acid from laboratory	U004 U006 U009 U101	ENW	3.6	
5	26353	12-23-86	1	10	Toxic, solution of lead, acetic acid, from laboratory	Toxic, solution of lead, acetic acid, from laboratory	U101	ENW	7.25	
6	26353	12-23-86	1	01	Persistent, toxic, carcinogenic, chloroform, methyl isobutyl ketone, methylene chloride, isooctane, benzene, acetone, trichlorotrifluoroethane, methanol, gasoline, light hydrocarbons, hexane, carbon disulfide from laboratory	Persistent, toxic, carcinogenic, chloroform, methyl isobutyl ketone, methylene chloride, isooctane, benzene, acetone, trichlorotrifluoroethane, methanol, gasoline, light hydrocarbons, hexane, carbon disulfide from laboratory	U101	ENW	22	
7	26353	12-23-86	1	0	Persistent, l-cysteine hydrochloride hydrate from laboratory	Persistent, l-cysteine hydrochloride hydrate from laboratory	U101	ENW	0.1	
8	26353	12-23-86	1	10	Toxic, carcinogenic, solution of chromium, nickel, vanadium, tin, zinc, beryllium, antimony, formaldehyde, acetic acid, cadmium, lead from laboratory	Toxic, carcinogenic, solution of chromium, nickel, vanadium, tin, zinc, beryllium, antimony, formaldehyde, acetic acid, cadmium, lead from laboratory	U006 U007 U102	ENW	12	
9	26353	12-23-86	1	0	Toxic, p-nitrophenol from laboratory	Toxic, p-nitrophenol from laboratory	U101	ENW	0.1	
10	26353	12-23-86	1	0	Persistent, chloramine T from laboratory	Persistent, chloramine T from laboratory	U101	ENW	0.25	
11	26353	12-23-86	1	1	Reactive, sodium nitroferrocyanide from laboratory	Reactive, sodium nitroferrocyanide from laboratory	U003	DU	0.1	
12	26353	12-23-86	1	10	Toxic, carcinogenic, solution of mercuric chloride, acetic acid, potassium dichromate, sodium sulfite from laboratory	Toxic, carcinogenic, solution of mercuric chloride, acetic acid, potassium dichromate, sodium sulfite from laboratory	U007 U009	ENW	0.25	
13	26353	12-23-86	1	01	Toxic, carcinogenic, sodium cacodylate, sodium dimethyl arsenate from laboratory	Toxic, carcinogenic, sodium cacodylate, sodium dimethyl arsenate from laboratory	U004 U101	ENW	0.26	
14	26353	12-23-86	1	1	Carcinogenic, nickel oxide from laboratory	Carcinogenic, nickel oxide from laboratory	U101	ENW	0.2	

17. COMMENTS (Enter information by section and/or line number—see instructions).



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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

**13** YCMI EPA STATE ID NUMBER: WA 10 03 19 67  
**14** RECEIVING FACILITY (FSD) SP/STATE ID NUMBER: WA 10 58 36 71 52  
**15** TRANSPORTER SP/STATE ID NUMBER: WA 10 58 36 71 52

NAME ADDRESS: Northwest Enviroservice, Inc. 1500 Airport Way South Seattle, Washington 98134  
 NAME ADDRESS: Northwest Enviroservice, Inc. 1500 Airport Way South Seattle, Washington 98134

**16** WASTE RECEIPT NUMBER: 26353  
**17** COMMENTS (Enter information by section and/or line number—see instructions).

A Manifest Document Number	B Manifest Shipment Date (MM DD YY)	C Physical State 1-Solid 2-Liquid 3-Sludge 4-Compressed Gas	D Chemical Nature 0-Organic 1-Inorganic	E Waste Description (see instructions)	F Waste Description (see instructions)	G Dangerous Waste Number (see instructions and WAC 173-303)	H Waste Designation DM or EMW	I Amount of Waste	J W.C. For TSD Facility ID No. (see instructions)
26353	12-23-86	1	1	Toxic, barium chloride/cadmium oxide/chromium acetate/cupric sulfate solution from laboratory	Toxic, barium chloride/cadmium oxide/chromium acetate/cupric sulfate solution from laboratory	0007	EMW	1.35	
26353	12-23-86	5	10	Toxic, phenyl mercuric acetate from laboratory	Toxic, phenyl mercuric acetate from laboratory	0009	EMW	0.05	
26353	12-23-86	5	10	Toxic, phenyl mercuric chloride from laboratory	Toxic, phenyl mercuric chloride from laboratory	0009	EMW	0.05	
26353	12-23-86	1	0	Carcinogenic, toxic, solution of benzaldehyde, formaldehyde from plant operations	Carcinogenic, toxic, solution of benzaldehyde, formaldehyde from plant operations	UC01	EMW	5	
26353	12-23-86	1	0	Toxic, solution of biphenyl, epichlorohydrin from plant operations	Toxic, solution of biphenyl, epichlorohydrin from plant operations	UT02	DW	0.5	
26353	12-23-86	5	1	Toxic, zinc chloride, tin chloride, tin fluoride from plant operations	Toxic, zinc chloride, tin chloride, tin fluoride from plant operations	UT02	DW	0.5	
26353	12-23-86	5	0	Toxic, ethylene glycol from plant operations	Toxic, ethylene glycol from plant operations	UT02	DW	20	
26353	12-23-86	1	1	Carcinogenic, solution of sodium thioarsite, potassium chloride, hydrochloric acid, beryllium sulfate, thorium nitrate from laboratory	Carcinogenic, solution of sodium thioarsite, potassium chloride, hydrochloric acid, beryllium sulfate, thorium nitrate from laboratory	UC02	DW	4	

9413294-2301

**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

NAME: Crosby & Overton, Inc.  
ADDRESS: 20245 76th Avenue  
South Kent, Washington 98032

13. VENDOR EPA/STATE ID NUMBER: WA 0901018967  
14. RECEIVING FACILITY (RSD) EPA/STATE ID NUMBER: WA 099124144

15. TRANSPORTER EPA/STATE ID NUMBER: WA 0991241767

NAME: Crosby & Overton, Inc.  
ADDRESS: 20245 76th Avenue  
South Kent, Washington 98032

16. WASTE IDENTIFICATION	17. COMMENTS (Enter information by section and/or line number—see instructions)	A. Manifest Document Number	B. Manifest Shipments Date (MM/YY)	C. Physical State	D. Chemical Nature	E. Waste Description (see instructions)	F. Hazardous Waste Number (see instructions and WAC 173-303)	G. Waste Designation (see instructions)	H. Amount of Waste	I. Facility ID (see instructions)
1 16065			03-06-86	1	0	Persistent poly isophtylene/dimethyleneethylene-(diethylimino) ethylene dichloride mixture from operations	U001	HW	5	1
2 16065			03-06-86	1	0	Persistent 1,1,2 trichloro, 1,2,2-trifluoroethane-empty drum from operations	U001	HW	0	1
3 16065			03-06-86	1	10	Empty drums were persistent, toxic, flammable solution of ethyl-chloroform, organometallic copper, and hydrocarbon solvent from plant operations	U001 U102	EW	0	1
4 16065			03-06-86	1	0	Empty drum persistent solution of hydrocarbon solvent and trichloro-ethylene from plant operations	U001	EW	0	1
5 16065			03-06-86	6	1	Toxic, EP toxic, ignitable mixture of 98% aqueous cadmium nitrate from plant operations	U001 U006	EW	42	1
6 16065			03-06-86	1	6	Toxic, EP toxic, ignitable mixture of 98% aqueous cadmium nitrate from plant operations	U001	EW	18	1
7 16065			03-06-86	1	1	Empty 34-60% aqueous hydrazine drums from operations	U133 U002	EW	0	1
8 16065			03-06-86	1	1	Empty 34-60% aqueous hydrazine drums	U133 U002	EW	2	1
9 16065			03-06-86	1	1	Toxic inorganic liquid from operations	U102	DW	4,764	1
10 16067			03-28-86	1	1	Empty 34-60% aqueous hydrazine drums	U133 U002	EW	0	1
11 16136			05-16-86	1	0	Toxic, reactive, carcinogenic polyurethane of diisocyanates from construction	U001 U003	EW	143	1
12 16136			05-16-86	1	0	Toxic, reactive, carcinogenic polyurethane of diisocyanates from construction - empty drums	U001 U003	EW	0	1
13 16136			05-16-86	1	0	Spent toxic, persistent polyurethane of mixed chlorinated organics from construction operation	U001 U101	EW	540	1

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 VHM/ EPA/STATE ID NUMBER: **WA 0991281767** NAME: **Crosby & Overton, Inc.** ADDRESS: **20245 76th Avenue South Kent, Washington 98032**  
 16 TRANSPORTER EPA/STATE ID NUMBER: **WA 0991281767** NAME: **Crosby & Overton, Inc.** ADDRESS: **20245 76th Avenue South Kent, Washington 98032**

14 WASTE BEHELD	15 A Manifest Document Number	15 B Manifest Date (MM-DD-YY)	15 C Manifest Date (YY)	16 C Physical State S-Solid L-Liquid G-Sludge M-Compressed Gas	16 D Chemical Nature 0-Organic 1-Inorganic	16 E Waste Description (see instructions)	16 F Hazardous Waste Number (see instructions and WAC 173-303)	16 G Waste Designation (see instructions)	16 H Amount of Waste	16 I Facility Use (see instructions)
1	16136	05-16-86	86	L	0	Spent toxic, persistent polyurethane of mixed chlorinated organics from construction operation - empty drums	U001 V101	F002	0	K
2	16140	05-20-86	86	L	0	Toxic, reactive, carcinogenic polyurethane of diisocyanates from construction operation	U001 D003	V101	118	K
3	16140	05-20-86	86	L	0	Toxic, reactive, carcinogenic polyurethane of diisocyanates from construction operation - empty drums	U001 D003	V101	0	K
4	16140	05-20-86	86	L	0	Spent toxic, persistent polyurethane of mixed chlorinated organics from construction operation	U001 V101	F002	109	K
5	16140	05-20-86	86	L	0	Spent toxic, persistent polyurethane of mixed chlorinated organics from construction operation - empty drums	U001 V101	F002	0	K
6	16150	05-30-86	86	L	0	Carbon tetrachloride - empty drums	U211 U001	U001	0	K
7	16150	05-30-86	86	L	1	34-40% aqueous hydrazine - empty drums	U133 D002	U001	0	K
8	16150	05-30-86	86	L	1	Toxic, EP toxic mercury and copper tubing (2.33 mg) from operations	D009 V101	U001	10	K
9	16150	05-30-86	86	L	1	Toxic, EP toxic mixture of glass, metal, and mercury (376 ppm) from fluorescent bulbs from maintenance operation	U151 D009	V101	1,436	K
10	16150	05-30-86	86	L	1	Toxic, EP toxic mercury switches with 0.1% mercury from maintenance operation	U151 D009	V101	1,621	K
11	16150	05-30-86	86	L	1	Mercury from laboratory	U151 D009	V101	4.1	K
12	16150	05-30-86	86	L	1	EP toxic, toxic mercury (5%) in solid waste from operations	D009 V101	U001	57	K

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

12 YOUR EPA/STATE ID NUMBER: WA 71010467  
 13 RECEIVING FACILITY (TSO) NAME: Crosby & Overton, Inc.  
 ADDRESS: 20245 76th Avenue South Kent, Washington 98032  
 14 TRANSPORTER EPA/STATE ID NUMBER: WA 0991281767  
 NAME: Crosby & Overton, Inc.  
 ADDRESS: 20245 76th Avenue South Kent, Washington 98032

16 WASTE IDENTIFICATION	17 A Manifest Document Number	17 B Manifest Shipment Date (MM/DD/YY)	17 C Physical State S-Solid L-Liquid G-Sludge M-Compressed Gas	17 D Chemical Nature 0-None 1-Organic 2-Inorganic	17 E Waste Description (see instructions)	17 F Dangerous Waste Number (see instructions and WAC 173-202)	17 G Waste Designation (see instructions)	17 H Amount of Waste	17 I EPA Facility ID	17 J
1	16150	05-30-86	L	5	EP toxic, toxic mercury contaminated rags, piping (0.1 wt% mercury) from operations	U101 0009	EMW	82		
2	16150	05-30-86	L	SL	Toxic mercury and mercury spill clean-up contaminated waste (0.1 wt% mercury) from operations	U151 0009	EMW	23		
3	16157	06-06-86	L	0	Persistent (halogenated hydrocarbon) organic solution from operations	MP02	DW	227		
4	16157	06-06-86	L	0	Flammable organic solution from operations	PO01	DW	159		
5	16157	06-06-86	L	0	Flammable fuel oil from automotive maintenance	PO01	DW	159		
6	16157	06-06-86	L	1	Toxic inorganic solution from operations	VI02	DW	5,685		
7	16157	06-06-86	L	0	Ignitable organic solution from operations	PO01	DW	550		
8	16157	06-06-86	L	1	Carcinogenic inorganic solution from operations	UC02	DW	341		
9	16123	06-12-86	L	1	Empty 31-60% aqueous hydrazine drums	U133 0002	EMW	0		
10	26176	06-25-86	L	1	Corrosive aqueous ammonium hydroxide from blueprint machine	VI01 0002	EMW	209		
11	26176	06-25-86	L	1	Corrosive aqueous ammonium hydroxide from blueprint machine	VI01 0002	EMW	55		
12	26176	06-25-86	L	1	Corrosive aqueous ammonium hydroxide from blueprint machine	VI01 0002	EMW	27		
13	26176	06-25-86	L	1	Corrosive aqueous ammonium hydroxide from blueprint machine	VI01 0002	EMW	41		
14	26176	06-25-86	L	0	Persistent (halogenated hydrocarbon) organic solution from operations	UP02	DW	1,228		
15	26176	06-25-86	L	0	Flammable organic solution from operations	PO01	DW	173		

17. COMMENTS (Enter information by section and/or line number—see instructions).



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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YEAR EPA/STATE ID NUMBER: WA 78 9 0 0 0 8 9 6 7  
 14 RECEIVING FACILITY (HSO) EPA/STATE ID NUMBER: WA 0 9 1 2 8 1 7 6 7  
 NAME: Crosby & Overton, Inc. ADDRESS: 20245 76th Avenue South Kent, Washington 98032  
 NAME: Crosby & Overton, Inc. ADDRESS: 20245 76th Avenue South Kent, Washington 98032

L	M	E	A	B	C	D	E	F	G	H	I	J	K
1	2	3	4	5	6	7	8	9	10	11	12	13	14
WASTE IDENTIFICATION NUMBER	WASTE IDENTIFICATION NUMBER	WASTE IDENTIFICATION NUMBER	WASTE IDENTIFICATION NUMBER	WASTE IDENTIFICATION NUMBER	WASTE IDENTIFICATION NUMBER	WASTE IDENTIFICATION NUMBER							
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	26181	06-30-86	0	0	0	0	0	Spent, flammable, toxic, carcinogenic solution of methyl ethyl ketone, solvent, and thinner from paint operation	001 F005	U102 UC01	ENV	175	
2	26181	06-30-86	1	0	0	0	Spent, flammable, toxic mixed organics from paint operation	U101 F003	F005 D001	ENV	76		
3	26181	06-30-86	1	0	0	0	Flammable mixed organic solution from operations	D001		DU	182		
4	26181	06-30-86	1	0	0	0	Flammable mixed organic solution from operations	D001		DU	1,500		
5	26181	06-30-86	1	0	0	0	Flammable toxic mixture of oil, trimethylbenzenes and tetramethylbenzenes from operations	001 U102		DU	200		
6	26181	06-30-86	1	0	0	0	Spent, flammable, toxic methyl ethyl ketone solution from paint operation	001 F005	U102	DU	650		
7	26181	06-30-86	1	0	0	0	Persistent dichlorodifluoromethane from operations	U075 W01		ENV	220		
8	26181	06-30-86	1	01	0	0	Spent flammable, toxic, corrosive, EP toxic, solution of solvents, enamel paint, acids and heavy metals from paint operation	F003 001 U101 D008	F005 D002 D007	ENV	113		
9	26181	06-30-86	1	01	0	0	Spent flammable, toxic, EP toxic solution of solvents, enamel paint, and heavy metals from paint operation	F003 001 D007	F005 U101	ENV	791		
10	26181	06-30-86	1	0	0	0	Flammable, carcinogenic isopropanol from construction operations	001 UC02		DU	918		
11	26181	06-30-86	1	0	0	0	Ignitable, toxic mixture of nonane, trimethylbenzene and water from construction	U102 D001		DU	190		
12	26181	06-30-86	1	0	0	0	Ignitable, toxic adhesive mixture of toluene, oil, and resins from construction operation	U102 D001		DU	691		

17. COMMENTS (Enter information by section and/or line number—see instructions).

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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

NAME: Crosby & Overton, Inc. ADDRESS: 20245 76th Avenue South Kent, Washington 98032

NAME: Crosby & Overton, Inc. ADDRESS: 20245 76th Avenue South Kent, Washington 98032

13 WASTE SHIPMENT RECORDING

L M E	A Manifest Document Number	B Manifest Shipment Date (MM DD YY)	C. RECEIVING FACILITY (FBO)				F. Waste Description (see instructions)	G. Dangerous Waste Number (see instructions and WAC 173-303)	H. Waste Designa- tion or HW	L Amount of Waste	K Facility Use Only
			14. EPA/STATE ID NUMBER	15. TRANSPORTER EPA/STATE ID NUMBER	16. RECEIVING FACILITY (FBO) EPA/STATE ID NUMBER	17. WASTE SHIPMENT RECORDING EPA/STATE ID NUMBER					
1	26181	06-30-86	L	0	0	Spent, toxic solution of non-PCB oil and mixed organics from automotive operation	F003 W002	DV	209	K	
2	26181	06-30-86	L	0	0	Toxic, persistent methylenechloride from automotive operation	U000 W001	ENV	0	K	
3	26181	06-30-86	L	0	0	Flammable organic solution from operations	D001	DV	234	K	
4	26181	06-30-86	L	0	0	Flammable organic solution from operations	D001	DV	227	K	
5	26181	06-30-86	L	10	10	Spent flammable, toxic mixed organics with thinners and zinc from paint operations	D001 F005	ENV	479	K	
6	26181	06-30-86	L	01	01	Spent toxic, persistent, flammable solution of methyl ethyl ketone, thinners, and epoxy resins from paint operation	F003 F005 W001	ENV	478	K	
7	26181	06-30-86	L	0	0	Spent flammable, toxic solution of methyl ethyl ketone and paint thinner from paint operation	F003 F005	ENV	205	K	
8	26181	06-30-86	L	01	01	Spent flammable, toxic, persistent, carcinogenic, EP toxic solution of organic solvents, paint resins, and chromium from paint operation	F003 F005 W001 W002	ENV	99	K	
9	26181	06-30-86	L	01	01	Spent flammable, toxic, carcinogenic, EP toxic solution of organic solvents, paint resins, and chromium from paint operation	F003 W002 W001	ENV	178	K	
10	26181	06-30-86	L	01	01	Spent flammable, toxic, carcinogenic, persistent, EP toxic solution of organic solvents, paint resins, and chromium from paint operation	F003 W001 W002 W007	ENV	128	K	
11	26181	06-30-86	L	0	0	Spent flammable, toxic, carcinogenic solution of mixed organics from paint operation	W002 W001	ENV	209	K	

17. COMMENTS (Enter information by section and/or line number—see instructions)

1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986

NAME: Crosby & Overton, Inc.  
ADDRESS: 20245 76th Avenue  
South Kent, Washington 98032

IS TRANSPORTER  
EPA STATE ID NUMBER: WA 0991281767

NAME: Crosby & Overton, Inc.  
ADDRESS: 20245 76th Avenue  
South Kent, Washington 98032

RECEIVING FACILITY (RSD)  
EPA STATE ID NUMBER: WA 0991281767

NAME: Crosby & Overton, Inc.  
ADDRESS: 20245 76th Avenue  
South Kent, Washington 98032

13. UNIT/STATE ID NUMBER	14. RECEIVING FACILITY (RSD)	15. WASTE IDENTIFICATION	16. RECEIVING FACILITY (RSD)		17. COMMENTS (Enter information by section and/or line number—see instructions).				
			EPA STATE ID NUMBER	WASTE DESCRIPTION (see instructions)	AMOUNT OF WASTE	WASTE DESCRIPTION (see instructions)			
WA 0991281767	WA 0991281767	1 26101 A Methyl Ethyl Ketone 06-30-86	L	0	Flammable toxic mixture of oil, trimethylbenzenes and tetramethylbenzenes from operations	200	DW		
		2 26101 A Methyl Ethyl Ketone 06-30-86	L	0	Spent flammable, toxic solution of methyl ethyl ketone and paint thinners from paint operations	220	DW		
		3 26101 A Methyl Ethyl Ketone 06-30-86	L	0	Flammable, persistent solution of oil and mixed organics from automotive operation	337	EW		
		4 26101 A Methyl Ethyl Ketone 06-30-86	L	0	Flammable polycyclic aromatic hydrocarbon solution of kerosene, distillates, and fluoranthene from operations	380	EW		
		5 26101 A Methyl Ethyl Ketone 06-30-86	L	01	Spent persistent flammable, corrosive, toxic, LP toxic solution of methylene chloride hydroxide, and chromate from paint operations	0	EW		
		6 26101 A Methyl Ethyl Ketone 06-30-86	L	0	Flammable paint thinner from paint operation	325	DW		
		7 26101 A Methyl Ethyl Ketone 06-30-86	L	0	Flammable organic mixture from operations	223	DW		
		8 16104 A Methyl Ethyl Ketone 07-03-86	S	0	Toxic, carcinogenic, persistent mixture of brominated polyester resin and styrene from construction operation	1,459	EW		
		9 16104 A Methyl Ethyl Ketone 07-03-86	L	0	Toxic ethylene glycol (aqueous) solution from automotive operation	625	DW		
		10 16104 A Methyl Ethyl Ketone 07-03-86	L	0	Toxic, persistent ethylene glycol solution from automotive operation	208	EW		
		11 16104 A Methyl Ethyl Ketone 07-03-86	L	0	Spent ignitable, toxic, persistent, carcinogenic oil solution with mixed organics from automotive operation	689	EW		
		12 16104 A Methyl Ethyl Ketone 07-03-86	L	0	Combustible, toxic stoddard solvent solution from paint operation	474	DW		
		13 16104 A Methyl Ethyl Ketone 07-03-86	L	0	Combustible aqueous fuel oil from maintenance operation	456	DW		



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**1986 Form 4 GENERATOR ANNUAL DANGEROUS WASTE REPORT Form 4 1986**

13 YOUR EPA/STATE ID NUMBER WA 09 9 1 2 8 1 7 6 7		14 RECEIVING FACILITY (FSD) EPA/STATE ID NUMBER WA 09 9 1 2 8 1 7 6 7		NAME: Crosby & Overton, Inc. ADDRESS: 20245 76th Avenue South Kent, Washington 98032		NAME: Crosby & Overton, Inc. ADDRESS: 20245 76th Avenue South Kent, Washington 98032					
15 WASTE NUMBER 1 16262		16 TRANSPORTER EPA/STATE ID NUMBER WA 09 9 1 2 8 1 7 6 7		G. Hazardous Waste Number (see Instructions and WAC 173 303) UT01 0002		H. Waste Designation (see Instructions and WAC 173 303) ERU		I. Amount of Waste 291		J. Facility Use Only 1	
17. COMMENTS (Enter information by section and/or line number—see instructions). 1 16262 2 16262		C. Manifest Date (MM/DD/YY) 09/30/86		D. Physical State 1 - Solid 2 - Liquid 3 - Sludge 4 - Compressed Gas		E. Chemical Nature 1 - Inorganic 2 - Organic 3 - Both 4 - Unknown		F. Waste Description (see Instructions) Tonic, corrosive 10% aqueous sodium hydroxide solution from operations Corrosive, EP toxic solution with 0.4X barium chloride and 0.2X sodium hydroxide from laboratory		K. Facility Use Only 1	

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CONTAINER QTY	TYPE	HM	DOT PROPER SHIPPING NAME	HAZARD CLASS	HAZ. MAT ID. NO.	WASTE DESCRIPTION	PHYSICAL STATE	EPA HAZ. WASTE NO.	GAL./LB.	FT3
13	55 GAL DRUM	X	WASTE AMMONIUM HYDROXIDE	CORROSIVE MATERIAL	NA2672	CORROSIVE LIQUID	LIQUID	D-022	495 GAL	68
7	55 GAL DRUM	X	WASTE SODIUM HYDROXIDE DRY SOLID	CORROSIVE MATERIAL	UN1823	CORROSIVE SOLID	SOLID	D-002	385	52.5
9	FIBER-BOARD DRUM	X	WASTE MAGNESIUM NITRATE	OXIDIZER	UN1474	OXIDIZER	SOLID	D-001	2700 LB	22.5
1	FIBER-BOARD DRUM	X	WASTE NICKEL NITRATE	OXIDIZER	UN2725	OXIDIZER	SOLID	D-001	300 LB	2.5
26	55 GAL DRUM		WASTE INHIBITED ETHYLENE GLYCOL	ORM-E	NA9189	ORM-E	LIQUID	WT02	11,480 LB	200
26	55 GAL DRUM	X	WASTE SODIUM ALUMINATE SOLUTION	CORROSIVE MATERIAL	UN1819	CORROSIVE LIQUID	LIQUID	D-002	1430 GAL	195
1	55 GAL DRUM	X	WASTE FLAMMABLE LIQUID N.O.S.	FLAMMABLE LIQUID	UN1993	LABPACK FLAMMABLE LIQUID DRUM 84-3	LIQUID	D-005	55 GAL	7.5
1	55 GAL DRUM	X	HAZARDOUS WASTE LIQUID N.O.S.	ORM-E	NA9189	LABPACK DRUM 85-4	LIQUID	D-005	55 GAL	7.5
1	55 GAL DRUM	X	WASTE FLAMMABLE LIQUID, POISONOUS N.O.S.	FLAMMABLE LIQUID	UN1992	LABPACK #86-5 FLAMMABLE LIQUID AND POISON	LIQUID	D-005	55 GAL	7.5
1	55 GAL DRUM	X	WASTE FLAMMABLE LIQUID N.O.S.	FLAMMABLE LIQUID	UN1993	LABPACK DRUM #87-1 FLAMMABLE LIQUID	LIQUID	D-005	55 GAL	7.5
1	55 GAL DRUM	X	WASTE FLAMMABLE LIQUID N.O.S.	FLAMMABLE LIQUID	UN1993	LABPACK #88-2 FLAMMABLE	LIQUID	D-005	55 GAL	7.5
1	55 GAL DRUM	X	WASTE POISON B. LIQUID N.O.S.	POISON B	UN2810	POISON LIQUID	LIQUID	D-001	55 GAL	7.5
1	55 GAL DRUM	X	WASTE TETRAHYDROFURAN	FLAMMABLE LIQUID	UN2056	FLAMMABLE LIQUID	LIQUID	D-005	55 GAL	7.5
1	55 GAL DRUM	X	WASTE FLAMMABLE LIQUID N.O.S.	FLAMMABLE LIQUID	UN1993	FLAMMABLE LIQUID LABPACK 7	LIQUID	D-005	55 GAL	7.5

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CONTAINER QTY	TYPE	HM	DOT PROPER SHIPPING NAME	HAZARD CLASS	HAZ. MAT ID. NO.	WASTE DESCRIPTION	PHYSICAL STATE	EPA HAZ. WASTE NO.	GAL./LB.	FT <sup>3</sup>
1	55 GAL DRUM	X	WASTE FLAMMABLE LIQUID N.O.S.	FLAMMABLE LIQUID	UN1993	LABPACK 92-8 FLAMMABLE	LIQUID	D-005	55 GAL	7.5
1	55 GAL DRUM	X	WASTE FLAMMABLE LIQUID N.O.S.	FLAMMABLE LIQUID	UN1993	LABPACK 93-9 FLAMMABLE	LIQUID	D-005	55 GAL	7.5
1	55 GAL DRUM	X	WASTE FLAMMABLE LIQUID N.O.S.	FLAMMABLE LIQUID	UN1993	LABPACK 94-10 FLAMMABLE	LIQUID	D-005	55 GAL	7.5
1	30 GAL DRUM	X	WASTE FLAMMABLE LIQUID N.O.S.	FLAMMABLE LIQUID	UN1993	LABPACK 95-11 FLAMMABLE	LIQUID	D-005	30 GAL	4.0

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APPENDIX F

SAMPLING AND HANDLING PROCEDURES

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Table F-1. Investigative Procedures for 2727-S Nonradioactive  
Dangerous Waste Site Facility Sampling.

Procedure	Title <sup>a</sup>
EII 1.1	Hazardous Waste Site Entry Requirements
EII 1.2	Preparation and Revision of Environmental Investigation Instructions
EII 1.4	Deviation from Environmental Investigation Instructions
EII 1.5	Field Logbook
EII 1.6	Records Management
EII 1.7	Indoctrination, Training and Qualification
EII 2.1	Preparation of Hazardous Waste Operations Permits
EII 2.2	Occupational Health Monitoring
EII 3.2	Health and Safety Monitoring Instruments
EII 4.2	Interim Control of Unknown, Suspected Hazardous and Mixed Waste
EII 5.1	Chain of Custody
EII 5.2	Soil and Sediment Sampling
EII 5.4	Field Decontamination of Drilling, Well Development and Sampling Equipment
EII 5.5	1706-KE Laboratory Decontamination of RCRA/CERCLA Sampling Equipment
EII 5.11	Sample Packaging and Shipping

<sup>a</sup>Procedures are EII's selected from the latest approved version of WHC-CM-7-7 (WHC 1989).

RCRA = Resource Conservation and Recovery Act of 1976  
 CERCLA = Comprehensive Environmental Response, Compensation and Liability Act of 1980.

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1 collected with clean, stainless-steel sampling tools, and transferred to a  
2 clean, stainless-steel mixing bowl. When a sufficient amount of sample has  
3 been obtained for all of the required analyses, enough sample to be used for  
4 volatile organic analysis (VOA) will be collected and placed in the  
5 appropriate container. The sample will be thoroughly mixed, placed in  
6 appropriate sample containers along with any required sample preservatives,  
7 and stored appropriately until sent to the analyzing laboratory under  
8 chain-of-custody procedures. Sampling equipment will be decontaminated  
9 between samples and after sample collection. All sampling activities will be  
10 performed in accordance with Westinghouse Hanford Company (Westinghouse  
11 Hanford) environmental procedures.  
12  
13

## 14 2.2 SPECIAL EQUIPMENT

15  
16 The following list is not meant to be all inclusive, but to indicate some  
17 of the special equipment not normally associated with soil sampling activities  
18 that may be necessary to perform the work.  
19

- 20 • Electric generator set
- 21
- 22 • Core drill equipment
- 23
- 24 • Drill mounting bracket
- 25
- 26 • HILTI concrete bolting equipment (or equivalent)
- 27
- 28 • Compressed breathing air
- 29
- 30 • Coarse sand, silicon carbide, or garnet
- 31
- 32 • Hoses
- 33
- 34 • ASTM TYPE IV reagent grade water
- 35
- 36 • Approved grout material; Master Flow 928 Grout
- 37
- 38 • Steam cleaning equipment.
- 39

## 40 41 2.3 PREPARATORY WORK

42  
43 Before core drilling, preparatory tasks will be performed. This includes  
44 equipment assembly, functional check out, and wrapping of the drill rig to  
45 facilitate decontaminating to provide access to area to be sampled.  
46  
47  
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1 2.4 CORE SAMPLING (Pre-Drilling)  
2

- 3 (1) The use of water will be minimized in all cutting operations. Any  
4 liquid (water and concrete cuttings) slurry will be allowed to  
5 accumulate on the floor low points. The slurry will then be  
6 absorbed and packaged in appropriate containers. Due to the  
7 presence of this liquid slurry, the containers shall not be included  
8 in the facility shipment to the offsite RCRA permitted landfill, but  
9 instead be handled as a suspected hazardous waste separate from the  
10 2727-S removal activity. This liquid slurry will be absorbed,  
11 packaged, and managed in accordance with EII 4.2 (WHC 1991).  
12  
13 (2) Predrilling holes should proceed until the boring is to a depth  
14 assessed at no more than 80 percent of estimated depth as provided  
15 by Decommissioning Engineering. The core boring should not  
16 penetrate through the concrete slab unless the sampling team is  
17 immediately available to collect samples, in keeping with  
18 Section 2.5. Otherwise, the location should be temporarily  
19 abandoned by removing the drill rig, blowing out the annulus space  
20 with air, and covering the bore hole with plastic sheeting or a  
21 wooden covering.  
22

23  
24 2.5 CORE SAMPLING (Breakthrough and Sample Collection)  
25

26 Use a decontaminated core drill bit for each location.  
27

- 28 (1) Reinstall drill rig and restart drilling EXCEPT THAT THE ONLY  
29 COOLING WATER TO BE USED SHALL CONSIST OF FILLING THE ANNULAR SPACE  
30 WITH ASTM TYPE IV REAGENT GRADE WATER.  
31  
32 (2) Remove the concrete core and drill rig from sample location to  
33 provide access to the soil immediately below the basin floor.  
34  
35 (3) Following the sample collection (refer to Chapter 4.0), the core  
36 hole will be plugged with concrete, bentonite/soil slurry, or other  
37 approved substances, as necessary.  
38

39  
40 2.6 SHARPENING CORE DRILL BITS  
41

42 Bits can be sharpened by drilling into concrete block using water (water  
43 will be ASTM Type IV reagent grade water). The bit shall be decontaminated  
44 before use for breakthrough.

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3.0 X-RAY FLUORESCENCE SAMPLING

3.1 INTRODUCTION

Field screening for heavy metals using a portable XRF analyzer provides a means to determine levels of contamination by heavy metals in the field. This document reports in draft form the technical basis and site-specific procedures to be used in field screening of soil samples from the 2727-S NRDWS Facility for detection of elemental contaminants, which may be present. This plan will discuss generalized site- and task-specific requirements and procedures for sample collection, data handling, and data evaluation. When a final version of specific procedures is completed, it will be incorporated into the 2727-S NRDWS Facility closure plan at the appropriate interval.

3.2 BACKGROUND INFORMATION

Although process knowledge indicates a limited potential for chemical contamination in the 2727-S Facility, soils beneath the concrete pad are to be sampled before demolition to verify that no contamination exists below the planned depth of disposal. After demolition, if further remediation is necessary due to the presence of metals, XRF will be used as a field screening technique. This will assist in determining the extent of contamination.

3.3 ANALYTICAL REQUIREMENTS

The X-Met-880 is to be used to detect the presence of inorganic contaminants in soil and concrete. Qualitative or semiquantitative data is to be provided on a quick turnaround basis, subject to confirmation by validated laboratory tests. The basic goal of field screening is to quickly identify elevated levels of elemental contaminants in soils.

Most elements are present in soils at some concentration. Table F-2 indicates typical ranges of concentration for various elements amenable to analysis by XRF. Because most elements of interest are likely to be present as part of the natural background, the basic function of XRF analysis is to identify situations when a particular element is present in concentrations significantly above typical background levels. However, this must be based on background levels specific to the soil under analysis.

Factors that affect the ability of a field-portable XRF unit to detect and quantify a specific element include matrix scattering and absorption, secondary excitation, and peak overlaps. Also, because the X-Met uses isotopic sources with fixed energy levels to irradiate the sample, the relative efficiency by which a given element can be excited will depend on the relationship between the absorption edge and the source energy lines.

The X-Met determines elemental concentrations by means of "models" in which measurements of total count rates are made in a maximum of ten "windows" associated with specific elements. Peak overlap effects are accounted for by

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Table F-2. Typical Concentration of Various Elements in Soils.

Element	Common range for soils (ppm) <sup>1</sup>
Arsenic	1 - 50
Barium	100 - 3,000
Bromine	1 - 10
Cadmium	0.01 - 0.70
Cesium	0.3 - 25
Chromium	1 - 1,000
Cobalt	1 - 40
Copper	2 - 100
Gallium	5 - 70
Germanium	1 - 50
Iodine	0.1 - 40
Iron	7,000 - 550,000
Lanthanum	1 - 5,000
Lead	2 - 200
Mercury	0.01 - 0.3
Manganese	20 - 3,000
Molybdenum	0.2 - 5
Nickel	5 - 500
Rubidium	50 - 500
Selenium	0.1 - 2
Silver	0.01 - 5
Strontium	50 - 1,000
Tin	2 - 200
Titanium	1,000 - 10,000
Vanadium	20 - 500
Yttrium	25 - 250
Zinc	10 - 300
Zirconium	60 - 2,000

<sup>1</sup>Source: Lindsay, W. (1979) Chemical Equilibrium in Soils; John Wiley & Sons, New York, 1979.

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1 means of mathematical deconvolution based on comparison of pure element  
2 spectra for the elements of interest. Least-squares regression techniques are  
3 used to account for interelement effects by determining the best fit between  
4 measured values and known assay values for a suite of calibration standards.  
5 A maximum of six assay values may be computed and displayed in a model. The  
6 X-Met can maintain up to 32 models in memory, and recalculations can be made  
7 with different models, provided each model is based on the same source.

8  
9 If a model is to provide accurate quantitative analysis, it should be  
10 based on material that is representative of material likely to be encountered  
11 in the samples to be analyzed. Development of a calibrated assay model  
12 requires 20 to 30 samples of similar matrix material containing known levels  
13 of the contaminants of interest. Presently, no such suite of samples is  
14 available for Hanford soils, and calibration of the models to be used in field  
15 screening is based on a hazardous waste calibration suite of twenty soil  
16 samples provided by Outokumpu. These samples have been oven dried and sieved  
17 to minus 200 mesh; hence, they are considerably finer and drier than typical  
18 Hanford Site soils. Assay values are provided for chromium, copper, zinc,  
19 arsenic, cadmium, and lead. Concentration values for the calibration samples  
20 are shown in Table F-3.

21  
22 When calibration samples are not available, it is still possible to  
23 develop a semiquantitative estimate, based on the corrected X-ray intensity in  
24 the window of interest. An index model does not attempt to correct for  
25 interelement effects other than peak overlap. The number reported is an index  
26 value: it does not indicate the absolute amount of the element present, but  
27 rather the relative amount. Therefore, index values significantly above  
28 background levels would be an indication that the element may be present in  
29 concentrations greater than those observed in the background, but it does not  
30 necessarily mean that allowable contaminant levels have been exceeded.

31  
32 A third approach to detection of elemental contaminants is the "scan"  
33 model concept. In this approach, the usable energy range is divided into six  
34 contiguous windows. For each window, the gross count rate is reported as an  
35 assay value. Comparison of assay values with background levels is used to  
36 identify samples that may contain anomalous concentrations of heavy metals.  
37 The contaminants are identified by spectral evaluation. As with the index  
38 model, it is impossible to determine concentration levels, and anomalous  
39 concentrations do not necessarily mean that allowable contaminant levels have  
40 been exceeded.

41  
42 Table F-4 provides a summary of available models for evaluation of  
43 samples from the 2727-S NRDWSF. Additional models may be developed as  
44 appropriate.

45  
46 For each model, the X-Met reports assay (or index) values for each of the  
47 six dependents. The instrument also reports the standard deviation for each  
48 assay value, as well as net (deconvoluted) and gross count rates for each  
49 channel.

Table F-3. Hazardous Waste Calibration Samples.

Sample number	Amount of element added (mg/Kg)					
	Cr	Cu	Zn	As	Cd	Pb
201	0	0	0	0	0	4,960
202	0	0	0	0	3,235	0
203	0	0	0	4,957	0	0
204	0	0	4,611	0	0	0
205	0	4,907	0	0	0	0
206	3,304	0	0	0	0	0
207	6,251	6,091	3,517	2,811	1,221	937
208	322	241	998	9,656	4,402	3,862
209	1,965	1,964	922	491	160	122
210	81	488	458	977	6,360	2,929
211	2,423	9,080	8,520	6,356	2,366	1,816
212	1,265	949	6,230	3,794	1,853	6,640
213	4,530	3,881	228	243	316	485
214	161	2,898	1,813	120	78	9,660
215	656	122	2,767	1,966	320	246
216	0	0	0	0	0	0
217	0	2,916	4,560	0	0	0
218	0	4,857	2,734	0	0	0
219	0	0	0	4,934	0	2,960
220	0	0	0	2,961	0	4,935

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Table F-4. X-Met Models for Analysis of 2727-S NRDWS Facility Samples.

Model No.	1	2	3	5	9	10	
Source	<sup>241</sup> Am	<sup>244</sup> Cm	<sup>244</sup> Cm	<sup>244</sup> Cm	<sup>241</sup> Am	<sup>244</sup> Cm	
Type	Index	Index	Assay	Assay	"Scan"	"Scan"	
Elements	Rb	Cr <sup>1,2</sup>	Ti	Cr <sup>1</sup>	Fe <sup>1,3</sup>	Ti <sup>1,2</sup>	
	Sr <sup>1,2</sup>	Fe <sup>1,2</sup>	Cr <sup>1</sup>	Fe <sup>1,2</sup>	Cu <sup>1,2</sup>	Fe <sup>1,2</sup>	
	Zr <sup>1,2</sup>	Ni <sup>1,2</sup>	Fe <sup>1,2</sup>	Cu <sup>1</sup>	Rb <sup>1,2</sup>	Cu <sup>1,2</sup>	
	Mo <sup>1,2</sup>	Cu <sup>1,2</sup>	Ni	Zn <sup>1</sup>	Mo <sup>1,2</sup>	As <sup>1,2</sup>	
	Ag <sup>1,2</sup>	Zn <sup>1,2</sup>	Cu <sup>1</sup>	As <sup>1</sup>	Ag <sup>1,2</sup>	Pb <sup>1,2</sup>	
	Cd <sup>1,2</sup>	As <sup>1,2</sup>	Zn <sup>1</sup>	Pb <sup>1</sup>	Sn <sup>1,2</sup>	Pu <sup>1,2,4</sup>	
	Sn <sup>1,2</sup>	Hg	As <sup>1</sup>	Si <sup>4</sup>	BS	BS	
	Sb	Pb	Pb <sup>1</sup>	BS			
	BS	BS	Si <sup>4</sup>				
			BS				
Calibrated to:	N/A	N/A	HW samples	HW samples	HW samples	Local back-ground	Local back-ground
Standard MST/STA	None	None	S#216	S#216	S#216	None	None

<sup>1</sup>Indicates assay (dependent) output.  
<sup>2</sup>Indicates assay output is an index value.  
<sup>3</sup>Secondary peak from <sup>240</sup>Pu daughters in <sup>244</sup>Cm source.  
<sup>4</sup>Compton scattering of source radiation in a silica matrix.

BS = backscatter  
 HW = hazardous waste  
 MST = initial measurement of standard sample  
 N/A = not applicable  
 STA = standard corection measurement

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1 In addition to model output, the X-Met also records the X-ray spectra as  
2 a function of pulse count versus energy level (channel number) in a  
3 256-channel analyzer. This spectra can be downloaded to a computer or data  
4 logger for later analysis. Presently, experience with the X-Met suggests that  
5 visual examination of the spectra is a useful means to identify elements  
6 present in the sample. Therefore, spectra will be collected from both sources  
7 for each sample.

### 10 3.4 ANALYTICAL PROCEDURES

11 Analytical procedures for the X-Met are currently being developed and are  
12 not available at this time. When a final version of analytical procedures is  
13 completed, it will be incorporated into the 2727-S NRDWS Facility closure plan  
14 at the appropriate interval. These procedures may be modified as appropriate  
15 to improve the quality or reliability of the field screening data. Any  
16 modifications will be documented in the field logbook.

### 20 3.5 CONTACT MEASUREMENTS

21 Contact measurements will be made on soil as required. To make a contact  
22 measurement, the operator will hold the X-Met probe against the surface to be  
23 measured and pull the trigger for the specified measurement time. Results may  
24 be recorded in a portable data logger. The X-Met electronics package will be  
25 mounted on a pack frame to facilitate operator mobility.

### 29 3.6 SAMPLE MEASUREMENTS

30 Sample measurements will be made on aliquots of soil samples obtained for  
31 laboratory analysis and as directed by the field team leader.

32 Each sample will be identified by it's six-character Hanford  
33 Environmental Information System (HEIS) code. The samples will be measured  
34 with a least one model on each source, and spectra will be collected for each  
35 source. Each spectrum will be stored in an individual disc operating system  
36 (DOS) text file.

### 41 3.7 DATA EVALUATION

42 Because no site-specific or matrix-specific calibration samples are  
43 available for all elements of interest, evaluation of XRF data from the soil  
44 samples and contact measurements will be done in a qualitative or  
45 semiquantitative sense. Detection of contaminants will be based on both model  
46 output and examination of spectra. In general, elements will be reported as  
47 "possibly present in concentrations exceeding background levels."  
48

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1 3.8 MODEL DEVELOPMENT AND INTERPRETATION OF NUMERICAL OUTPUT  
2

3 Models will be used to provide numeric output for each element of  
4 interest. Examination of spectra for various sands from Hanford and elsewhere  
5 suggests that iron content may be variable. Hence, iron (Fe) will generally  
6 be reported as an index value in each model. To facilitate comparison, the  
7 net count rate will be reported: no attempt will be made to "zero" the Fe  
8 output in background soils.  
9

10 In addition to the elements of interest, other elements may be included  
11 in models as necessary to account for possible interelement effects and/or  
12 variations in natural element content. For example, titanium (Ti), zinc (Zn)  
13 and rubidium (Rb) may be present in measurable amounts as naturally occurring  
14 in the soil. Hence, they may be included as independents in a model. Also,  
15 additional windows may be included as necessary to measure specific energy  
16 lines or to improve deconvolution.  
17

18 For each measurement, the assay values, standard deviations ("STD"  
19 command), net count rate ("INT" command) and gross count rate ("PUL" command)  
20 will be recorded. These commands have been assigned to function keys on the  
21 instrument panel. As a general rule, an element will be reported to be  
22 present if the difference between index value and background is greater than 3  
23 times the standard deviation. This may be subject to modification, based on  
24 the results of other models and examination of the raw spectra.  
25

26  
27 3.9 SPECTRAL COMPARISON  
28

29 Direct comparison of spectra can provide some indication of the elements  
30 present in a sample. Because each element fluoresces at a characteristic  
31 energy level, the presence of a peak at the corresponding channel is an  
32 indication that the element of interest may be present. However, overlapping  
33 peaks or small peaks in the vicinity of larger ones may not be immediately  
34 noticeable. Spectra are output from the X-Met in a line printer histogram  
35 format. This can be loaded into a spreadsheet such as Lotus 1-2-3 for  
36 plotting and analysis. One analytical approach, which appears to show some  
37 promise, is to multiply the background spectra by a factor based on the ratio  
38 of the Fe or back-scatter peaks and subtracting it from the unknown spectra.  
39 If no other heavy elements other than iron are present, the resulting residual  
40 should be close to zero over all channels. Any additional counts may be an  
41 indication of the presence of an element associated with that energy level.  
42

43 Spectral evaluation will be accomplished using Lotus 1-2-3. Spectra are  
44 downloaded from the X-Met and imported into Lotus, where total counts can be  
45 plotted as a function of channel number (energy level). The worksheet also  
46 can be used to manipulate spectra as necessary. For example, a representative  
47 background can be subtracted from a sample spectra to look for channels in  
48 which significant residual energy is present. The effects of iron content can  
49 be compensated for by scaling the pure element spectra for iron to obtain zero

50 \*Lotus is a trademark of Lotus Development Corporation.

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1 counts in the peak channel for iron and subtracting the scaled spectra from  
2 the sample spectra. A similar approach can be used to compensate for other  
3 elements which may be present in significant concentrations.  
4

5 Spectra can also be viewed using the "SPECVIEW" enhancement to PROCOMM  
6 communications software provided by Outokumpu. In SPECVIEW, a cursor can be  
7 calibrated to provide an indication of energy level at each channel. From  
8 this, elements can be identified by their characteristic energy levels.  
9

10  
11  
12 **4.0 REFERENCES**  
13

14  
15 *Comprehensive Environmental Response, Compensation and Liability Act of 1980,*  
16 *as amended, Public Law 96-510, 42 USC 9601 et seq.*  
17

18 Lindsay, W., (1979), *Chemical Equilibrium in Soils*; John Wiley & Sons,  
19 New York, 1979.  
20

21 *Resource Conservation and Recovery Act of 1976, as amended, Public Law 94-580,*  
22 *42 USC 6901 et seq.*  
23

24 WHC, 1988, *Radiation Protection Manual*, WHC-CM-4-10, Westinghouse Hanford  
25 Company, Richland, Washington.  
26

27 WHC, 1989, *Environmental Investigations and Site Characterizations Manual,*  
28 *WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington.*

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APPENDIX G

QUALITY ASSURANCE PROJECT PLAN

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GLOSSARY

DEFINITIONS OF TERMS

Accuracy. For the purposes of sampling activities, accuracy may be interpreted as the measure of the bias in a system. Sampling accuracy normally is assessed through the evaluation of trip and equipment blanks while analytical method accuracy and specific sample matrix effects are assessed through the analysis of control standards and spiked samples.

Audit. For the purposes of sampling activities, audits are considered to be systematic checks to verify the quality of operation of one or more elements of the total measurement system. In this sense, audits may be of two types: (1) performance audits, in which quantitative data are independently obtained for comparison with data routinely obtained in a measurement system or (2) system audits, involving a qualitative onsite evaluation of laboratories or other organizational elements of the measurement system for compliance with established quality assurance program and procedure requirements. For environmental investigations at the Hanford Site, performance audit requirements are fulfilled by periodic submittal of blind samples to the primary laboratory or the analysis of split samples by an independent laboratory. System audit requirements are implemented through the use of standard surveillance procedures.

Comparability. For the purposes of sampling activities, comparability is an expression of the relative confidence with which one data set may be compared with another.

Completeness. For the purposes of sampling activities, completeness may be interpreted as a qualitative parameter expressing the percentage of measurements judged to be valid.

Deviation. For the purpose of sampling activities, deviation refers to a planned departure from established criteria that may be required as a result of unforeseen field situations or that may be required to correct ambiguities in procedures that may arise in practical applications.

Field/Equipment Blanks. A blank that consists of pure deionized, distilled water or pure, clean silica sand, drawn through decontaminated sampling equipment and taken as a sample. Blanks are used to verify the adequacy of sampling equipment decontamination procedures and are used to check for possible contamination originating with the sampling environment.

Trip Blanks. A blank of purified water (prepared as for field blanks) that is placed in the sample bottle in an uncontaminated area before going in the field. Trip blanks are subjected to the same handling as other samples and serve to identify contamination from sample containers or transportation and storage procedures. One trip blank each day will be collected for methods that analyze for the presence of volatile organic compounds.

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1        Duplicate Sample. Field duplicate samples are samples retrieved from the  
2 same sampling location using the same equipment and sampling technique and  
3 analyzed independently. Laboratory duplicate samples are samples taken  
4 successively from the same sample bulb. Duplicate samples generally are used  
5 to verify the repeatability or reproduceability of analytical data and  
6 normally are analyzed with each analytical batch or every 20 samples,  
7 whichever is greater.

8  
9        Matrix Spiked Samples. Matrix spiked samples are a type of laboratory  
10 quality control sample; the samples are prepared by splitting a sample  
11 received from the field into two homogeneous aliquots (i.e., replicate  
12 samples), and adding a known quantity of a representative analyte of interest  
13 to one aliquot in order to calculate percentage of recovery.

14  
15        Nonconformance. A nonconformance is a deficiency in characteristic,  
16 documentation, or procedure that renders the quality of material, equipment,  
17 services, or activities unacceptable or indeterminate. When the deficiency is  
18 of a minor nature; does not effect a permanent or significant change in  
19 quality if it is not corrected; can be brought into conformance with immediate  
20 corrective action; it shall not be categorized as a nonconformance. However,  
21 if the nature of the condition is such that it cannot be immediately and  
22 satisfactorily corrected, it shall be documented in compliance with approved  
23 procedures and brought to the attention of management for disposition and  
24 appropriate corrective action.

25  
26        Precision. Precision is a measure of the repeatability or  
27 reproduceability of specific measurements under a given set of conditions.  
28 Specifically, it is a quantitative measure of the variability of a group of  
29 measurements compared to their average value. Precision normally is expressed  
30 in terms of standard deviation, but also may be expressed as the coefficient  
31 of variation (i.e., relative standard deviation) and range (i.e., maximum  
32 value minus minimum value). Precision is assessed by means of  
33 duplicate/replicate sample analysis.

34  
35        Quality Assurance (QA). For the purposes of sampling activities, QA  
36 refers to the total integrated quality planning, quality control, quality  
37 assessment, and corrective action activities that collectively ensure that the  
38 data from monitoring and analysis meets all end user requirements and/or the  
39 intended end use of the data.

40  
41        Quality Assurance Project Plan (QAPP). The QAPP is an orderly assembly  
42 of management policies, project objectives, methods, and procedures that  
43 defines how data of known quality will be produced for a particular project or  
44 investigation.

45  
46        Quality Control (QC). For the purposes of sampling activities, QC refers  
47 to the routine application of procedures and defined methods to the  
48 performance of sampling, measurement, and analytical processes.

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1        Reference Samples. Reference samples are a type of laboratory quality  
2 control sample prepared from an independent, traceable standard at a  
3 concentration other than that used for analytical equipment calibration, but  
4 within the calibration range. Such reference samples are required for every  
5 analytical batch or every 20 samples, whichever is greater.

6  
7        Replicate Sample. Replicate samples are two aliquots removed from the  
8 same sample container in the laboratory and analyzed independently.

9  
10       Representativeness. For the purposes of sampling activities,  
11 representativeness may be interpreted as the degree to which data accurately  
12 and precisely represent a characteristic of a population parameter, variations  
13 at a sampling point, or an environmental condition. Representativeness is a  
14 qualitative parameter which is most concerned with the proper design of a  
15 sampling program.

16  
17       Split Sample. A split sample is produced through homogenizing a field  
18 sample and separating the sample material into two equal aliquots. Field  
19 split samples usually are routed to separate laboratories for independent  
20 analysis, generally for the purposes of auditing the performance of the  
21 primary laboratory relative to a particular sample matrix and analytical  
22 method (see the glossary entry for audit). In the laboratory, samples  
23 generally are split to create matrix spiked samples (see the glossary entry  
24 matrix spiked samples).

25  
26       Validation. For the purposes of sampling activities, validation refers  
27 to a systematic process of reviewing a body of data against a set of criteria  
28 to provide assurance that the data are acceptable for their intended use.

29  
30       Verification. For the purposes of sampling activities, verification  
31 refers to the process of determining whether procedures, processes, data, or  
32 documentation conform to specified requirements. Verification activities may  
33 include inspections, audits, surveillances, or technical review.

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4 **1.0 PROJECT DESCRIPTION**

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14 **1.1 PROJECT OBJECTIVE**

The objective of the 2727-S Nonradioactive Dangerous Waste Storage (NRDWS) facility sampling and analysis activities are to determine those portions of the facility that will require removal and disposal at a permitted, or interim status, treatment, storage, and disposal (TSD) facility. Those portions that do not require disposal will be left in place for remaining closure activities.

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24 **1.2 BACKGROUND INFORMATION**

The background information for the 2727-S NRDWS Facility is contained in Chapter 1.0 of this closure plan.

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44 **1.3 QUALITY ASSURANCE PROJECT PLAN APPLICABILITY AND RELATIONSHIP TO THE WESTINGHOUSE HANFORD COMPANY QUALITY ASSURANCE PROGRAM**

This quality assurance project plan (QAPP) applies specifically to the field activities and laboratory analyses performed as part of sampling and testing investigations supporting the sampling at the 2727-S NRDWS Facility. The QAPP is prepared in compliance with the *Environmental Engineering, Technology and Permitting Function Quality Assurance Program Plan* (WHC 1990). This plan describes the means selected to implement the overall QA program requirements defined by the *Quality Assurance Manual* (WHC 1989b), as applicable to environmental investigations, while accommodating the specific requirements for project plan format and content agreed upon in the *Hanford Federal Facility Agreement and Consent Order* (Ecology et al. 1989). The program plan contains a matrix of procedural resources [from WHC-CM-4-2 and from the *Westinghouse Hanford Environmental Investigations and Site Characterization Manual* (WHC 1989a)] that have been drawn upon to support this QAPP. This QAPP is subject to mandatory review and revision before use on subsequent phases of the investigation. Distribution and revision control of this plan will be in compliance with procedures QR 6.0, "Document Control," and QI 6.1, "Quality Assurance Document Control," all from WHC-CM-4-2 (WHC 1989b). All plans and procedures referenced in the QAPP are available for regulatory review.

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49 **1.4 SAMPLING AND TESTING ACTIVITIES**

Sampling activities will include concrete sampling and sampling of soils. A complete description of all activities is provided in the sampling and analysis plan for the facility.

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2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

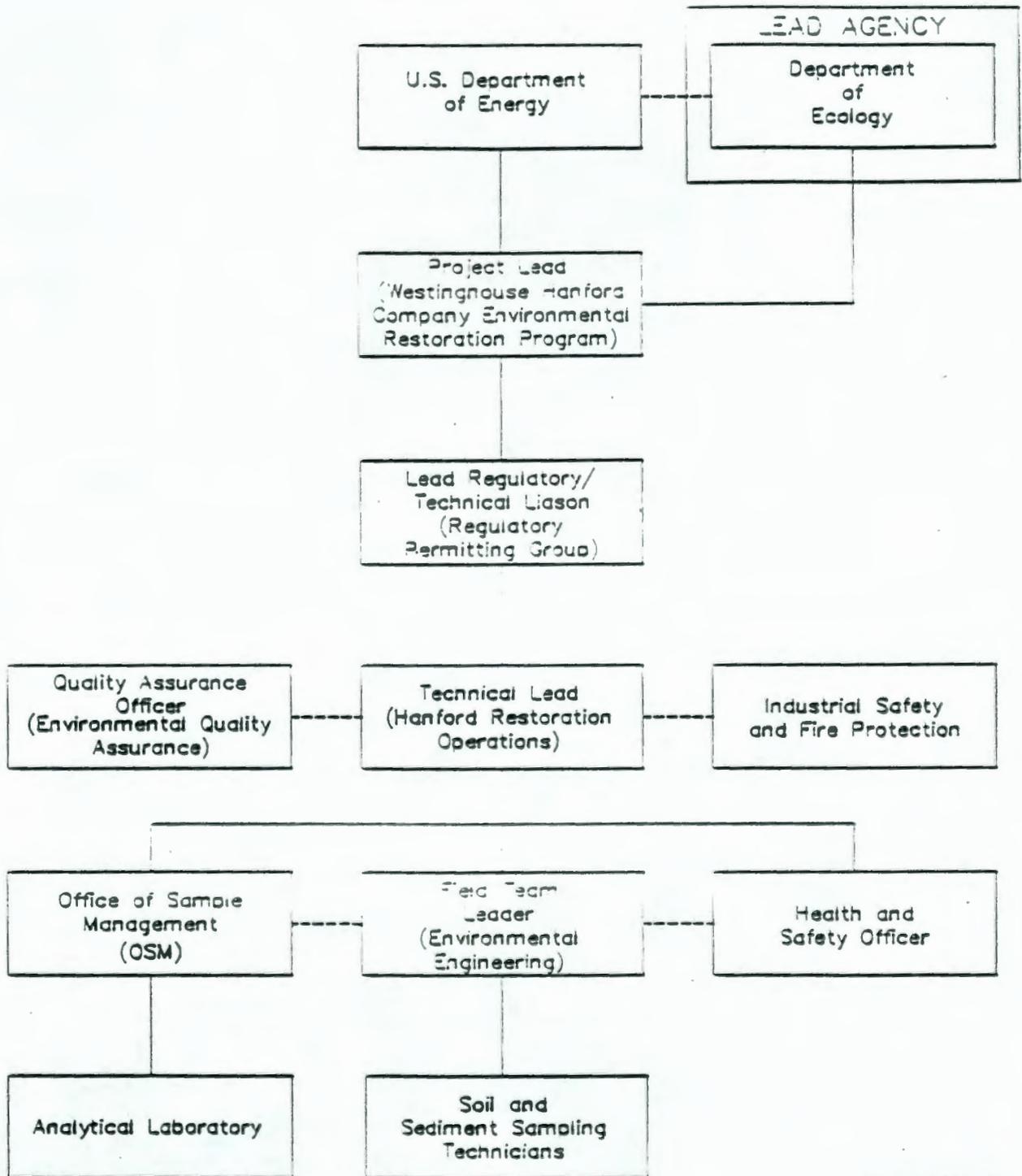
The following sections describe the organizations and their responsibilities in conducting investigations at the 2727-S NRDWS Facility.

2.1 PROJECT MANAGEMENT RESPONSIBILITIES

The Environmental Engineering, Geotechnology, and Permitting Function of the Westinghouse Hanford Company (Westinghouse Hanford) has primary responsibilities for conducting the sampling and analysis for the 2727-S NRDWS Facility closure activities. An organizational chart is included as Figure G-1. The following describe responsibilities of key test personnel and organizations:

- **Closure Plan Lead and Lead Regulatory/Technical Liaison (Regulatory Permitting Group)**--The Closure Plan Lead is responsible for overall project organization and interface with the regulatory agencies and the U.S. Department of Energy (DOE).
- **Technical Lead**--The Technical Lead will be responsible for overall direction of sampling and testing activities; responsibilities include the planning and authorization of all work and management of any subcontracted activities, as well as overall technical schedule and budgetary performance.
- **Quality Assurance Officer**--The Environmental Quality Assurance Officer is responsible for coordination and/or oversight of performance to the QAPP requirements by means of internal auditing and surveillance techniques. The Environmental Quality Assurance Officer retains the necessary organizational independence and authority to identify conditions adverse to quality and to inform the Closure Plan Lead and Technical Lead of needed corrective action.
- **Health and Safety Officer (Environmental Division/Environmental Field Services)**--The Health and Safety Officer is responsible for determining potential health and safety hazards from volatile, and/or toxic compounds during sample handling and sampling decontamination activities and has the responsibility and authority to halt field activities due to unacceptable health and safety concerns.
- **Field Team Leader**--The field team leader is responsible for onsite direction of sampling technicians in compliance with the requirements of the sampling plan, this QAPP, and implementing all environmental investigations instructions (EIIs).

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1 Figure G-1. Project Organization, Sampling at the 2727-S Nonradioactive  
2 Dangerous Waste Storage Facility.

- Office of Sample Management (OSM)--The Office of Sample Management is responsible for the procurement and coordination of analytical support services, sample tracking through the laboratories, and receipt and validation of analytical data as discussed in Section 8.0.

## 2.2 ANALYTICAL LABORATORIES

Samples shall be routed to an approved Westinghouse Hanford, participant contractor, or subcontractor laboratory, who shall be responsible for performing the analyses identified in this plan in compliance with work orders or contractual requirements and Westinghouse Hanford-approved procedures (Section 4.1.2). At the direction of the Technical Lead, services of alternate qualified laboratories may be procured through the OSM for the performance of split sample analyses for performance audit purposes. If such an option is selected, the QA plan and applicable analytical procedures from the alternate laboratory also shall be approved by Westinghouse Hanford before their use in compliance with Section 4.1.2 requirements. All analytical laboratory work shall be subject to the surveillance controls invoked by QI 7.3, "Source Surveillance and Inspection" (WHC 1989b).

## 2.3 OTHER SUPPORT CONTRACTORS

Procurement of other support contractors may be assigned project responsibilities at the direction of the Technical Lead. Such services shall be in compliance with standard Westinghouse Hanford procurement procedure requirements as discussed in Section 4.1.2. All work shall be performed in compliance with Westinghouse Hanford approved QA plans and/or procedures, subject to controls of QI 7.3, "Source Surveillance and Inspection" (WHC 1989b).

## 3.0 OBJECTIVES FOR MEASUREMENTS

The purpose of this investigation is to determine which portions of the 2727-S NRDWS Facility will require dismantling, transportation to, and disposal in a permitted TSD Facility for final disposition. As noted in Section 4.6 of *Data Quality Objectives for Remedial Response Activities: Volume I, Development Process* (EPA 1987), universal goals for precision, accuracy, representativeness, completeness, and comparability cannot be practically established at the outset of an investigation. However, data are available from previously negotiated analytical contracts for Hanford Site investigations, the data quality objectives guidance document cited previously (EPA 1987), and from typical capabilities currently expected for laboratories involved in environmental analyses that may be used as minimum guidelines for the selection of analytical methods appropriate for this investigation. Table G-1 provides preliminary target values for detection limits, precision, and accuracy that are intended for use in initial procurement negotiations

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1 with the analytical laboratory. After individual laboratory statements of  
2 work are negotiated, and procedures are developed and approved as noted in  
3 Section 4.1 and Table G-1, this section will be revised to reference approved  
4 detection limit, precision, and accuracy criteria as project requirements.  
5

6 Goals for data representativeness are addressed qualitatively by the  
7 specification of sampling locations and intervals within the sampling and  
8 analysis plan. Objectives for completeness for this investigation shall  
9 require that contractually or procedurally established requirements for  
10 precision and accuracy be met for at least 90 percent of the total number of  
11 requested determinations. Failure to meet this criterion shall be documented  
12 in data summary reports, as described in Section 8.1, and shall be considered  
13 in the validation process discussed in Section 8.2. As appropriate,  
14 corrective action measures shall be initiated by the Technical Lead, as noted  
15 in Section 13.0. Approved analytical procedures shall require the use of the  
16 reporting techniques and units consistent with the Environmental Protection  
17 Agency (EPA) reference methods listed in Table G-1 to facilitate the  
18 comparability of data sets in terms of precision and accuracy.  
19

#### 20 21 22 4.0 SAMPLING PROCEDURES 23

24  
25 The following sections provide information on procedure approvals and  
26 controls, investigative procedures, and additions and changes to procedures.  
27

#### 28 29 4.1 PROCEDURE APPROVALS AND CONTROL 30

31 Procedure approvals and controls are discussed in the following sections.  
32  
33

#### 34 4.1.1 Westinghouse Hanford Procedures 35

36 The Westinghouse Hanford procedures that will be used to support the  
37 sampling plan have been selected from the quality assurance program index  
38 (QAPI) included in the *Westinghouse Hanford, Environmental Engineering,  
39 Technology and Permitting Function Quality Assurance Program Plan* (WHC 1990).  
40 Selected procedures include EIIs from the *Environmental Investigations and  
41 Site Characterization Manual* (WHC 1989a), and quality requirements (QRs) and  
42 quality instructions (QIs) from the *Westinghouse Hanford Quality Assurance  
43 Manual* (WHC 1989b). Procedure approval, revision, and distribution control  
44 requirements applicable to EIIs are addressed in EII 1.2, "Preparation and  
45 Revision of Environmental Investigation Instructions" (WHC 1989a);  
46 requirements applicable to QIs and QRs are addressed in QR 5.0, "Instructions,  
47 Procedures, and Drawings"; QI 5.1, "Preparation of Quality Assurance  
48 Documents"; QR 6.0, "Document Control"; and QI 6.1, "Quality Assurance  
49 Document Control" (WHC 1989b). Other procedures applicable to the  
50 preparation, review, and revision of OSM and other Hanford Site analytical  
51 laboratory procedures shall be defined in the various procedures and manuals

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1 identified in the *Environmental Engineering, Technology and Permitting*  
2 *Function Quality Assurance Program Plan* under criteria 5.00 and 6.00. All  
3 procedures are available for regulatory review on request at the direction of  
4 the Technical Lead.  
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#### 7 **4.1.2 Participant Contractor/Subcontractor Procedures**

8  
9 As noted in Section 2.1, participant contractor and/or subcontractor  
10 services may be procured at the direction of the Technical Lead. All such  
11 procurements shall be subject to the applicable requirements of QR 4.0,  
12 "Procurement Document Control"; QI 4.1, "Procurement Document Control";  
13 QI 4.2, "External Services Control"; QR 7.0, "Control of Purchased Items and  
14 Services"; QI 7.1, "Procurement Planning and Control"; and/or QI 7.2,  
15 "Supplier Evaluation" (WHC 1989b). Whenever such services require procedural  
16 controls, requirements for use of Westinghouse Hanford procedures or for  
17 submittal of contractor procedures for Westinghouse Hanford review and  
18 approval before use, shall be included in the procurement document or work  
19 order, as applicable. In addition to the submittal of analytical procedures,  
20 analytical laboratories shall be required to submit the current version of  
21 their internal QA program plans. Before use, all analytical laboratory plans  
22 and procedures shall be reviewed and approved by qualified personnel from  
23 Westinghouse Hanford QA, OSM, Westinghouse Hanford analytical laboratories  
24 organizations, or other qualified personnel, as directed by the Technical  
25 Lead. All participant contractor or subcontractor procedures, plans, and/or  
26 manuals shall be retained as project quality records in compliance with  
27 EII 1.6, "Records Management" (WHC 1989a); QR 17.0, "Quality Assurance  
28 Records"; and QI 17.1, "Quality Assurance Records Control" (WHC 1989b). All  
29 such documents shall be available for regulatory review on request, at the  
30 direction of the Technical Lead.  
31  
32

#### 33 **4.2 SAMPLING AND INVESTIGATIVE PROCEDURES**

34  
35 All soil sampling activities shall be performed in compliance with  
36 EII 5.2, "Soil and Sediment Sampling" (WHC 1989a). Additional EIIs that are  
37 required to support this activity are identified in Table 2 of Chapter 4.0.  
38 Sample identification requirements and container type, preparation, and  
39 preservation requirements shall be as specified in EII 5.11. Procedures to  
40 support data interpretation shall be developed as modifications to EII 1.2, as  
41 contractor procedures, or may be incorporated as addenda to this QAPP as  
42 necessary to support the detailed requirements of the 2727-S NRDWS Facility  
43 sampling plan.  
44  
45

#### 46 **4.3 PROCEDURE ADDITIONS AND CHANGES**

47  
48 Additional EIIs or EII updates that may be required as a consequence of  
49 sampling plan requirements shall be developed in compliance with EII 1.2,  
50 "Preparation and Revision of Environmental Investigations Instructions"  
51 (WHC 1989a). Should deviations from established EIIs be required to  
52 accommodate unforeseen field situations, the field team leader can authorize

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1 any such deviation in accordance with the requirements of EII 1.4, "Deviation  
2 from Environmental Investigations Instructions" (WHC 1989a). Documentation,  
3 review, and disposition of instruction change authorization forms are defined  
4 within EII 1.4. Other types of document change requests shall be completed as  
5 required by the Westinghouse Hanford procedures governing their preparation  
6 and revision.

## 5.0 SAMPLE CUSTODY

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13 All samples obtained during the course of this investigation shall be  
14 controlled as required by EII 5.1, "Chain of Custody" (WHC 1989) from the  
15 point of origin to the analytical laboratory. Laboratory chain-of-custody  
16 procedures shall be reviewed and approved as required by Westinghouse Hanford  
17 procurement control procedures as noted in Section 4.1, and shall ensure the  
18 maintenance of sample integrity and identification throughout the analytical  
19 process. At the direction of the Technical Lead, requirements for return of  
20 residual sample materials after completion of analysis shall be defined in  
21 accordance with those procedures defined in the procurement documentation to  
22 subcontractor or participant contractor laboratories. Chain-of-custody forms  
23 shall be initiated for returned residual samples as required by the approved  
24 procedures applicable within the participating laboratory. Results of  
25 analyses shall be traceable to original samples through the unique code or  
26 identifier specified in Section 4.0. All results of analyses shall be  
27 controlled as permanent project quality records as required by QR 17.0,  
28 "Quality Assurance Records" (WHC 1989b) and EII 1.6, "Records Management"  
29 (WHC 1989a).

## 6.0 CALIBRATION PROCEDURES

30  
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35  
36 Calibration of all Westinghouse Hanford measuring and test equipment,  
37 whether in existing inventory or purchased for this investigation, shall be  
38 controlled as required by QR 12.0, "Control of Measuring and Test Equipment";  
39 QI 12.1, "Acquisition and Calibration of Portable Measuring and Test  
40 Equipment"; QI 12.2, "Measuring and Test Equipment Calibration by User"  
41 (WHC 1989b); and/or EII 3.1, "User Calibration of Health and Safety Measuring  
42 and Test Equipment" (WHC 1989a). Routine operational checks for Westinghouse  
43 Hanford field equipment shall be as defined within applicable EIIs or  
44 procedures; similar information shall be provided in Westinghouse  
45 Hanford-approved participant contractor or subcontractor procedures.

46  
47 Calibration of Westinghouse Hanford, participant contractor, or  
48 subcontractor laboratory analytical equipment shall be as defined by  
49 applicable standard analytical methods, subject to Westinghouse Hanford review  
50 and approval.

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7.0 ANALYTICAL PROCEDURES

Analytical methods or procedures based on the reference methods identified in Table 1 and Section 3.0 shall be selected or developed and approved before use in compliance with appropriate Westinghouse Hanford procedure and/or procurement control requirements as noted in Section 4.1.

8.0 DATA REDUCTION, VALIDATION, AND REPORTING

The following sections contain information concerning data reporting, data validation, and data review and management.

8.1 DATA REDUCTION AND DATA PACKAGE PREPARATION

All analytical laboratories shall be responsible for preparing a report summarizing the results of analysis and for preparing a detailed data package that includes all information necessary to perform data validation to the extent indicated by the minimum requirements of Section 8.2. Data summary report format and data package content shall be defined in procurement documentation subject to Westinghouse Hanford review and approval as noted in Section 4.1. At a minimum, laboratory data packages shall include the following:

- Sample receipt and tracking documentation (including identification of the organization and individuals performing the analysis, the names and signatures of the responsible analysts, sample holding time requirements, references to applicable chain-of-custody procedures, and the dates of sample receipt, extraction, and analysis)
- Instrument calibration documentation, including equipment type and model, with continuing calibration data for the time period in which the analysis was performed
- Quality control data, as appropriate for the methods used, including matrix spike/matrix spike duplicate data, recovery percentages, precision data, laboratory blank data, and identification of any nonconformances that may have affected the laboratory's measurement system during the time period in which the analysis was performed
- The analytical results or data deliverables, including reduced data, reduction formulas or algorithms, and identification of data outliers or deficiencies.

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1 Other supporting information, such as initial calibration data,  
2 reconstructed ion chromatographs, spectrograms, traffic reports, and raw data,  
3 need not be included in the submittal of individual data packages unless  
4 specifically requested by the Technical Lead or the OSM. However, all sample  
5 data shall be retained by the analytical laboratory and made available for  
6 systems or program audit purposes upon request by Westinghouse Hanford,  
7 U.S. Department of Energy-Richland Operations Office (DOE-RL), or regulatory  
8 agency representatives (Section 10.0). Such data shall be retained by the  
9 analytical laboratory through the duration of contractual statement of work,  
10 at which point the data shall be turned over to Westinghouse Hanford for  
11 archiving.

12  
13 The completed data package shall be reviewed and approved by the  
14 analytical laboratory's QA Manager before submittal to the OSM for validation  
15 as discussed in Section 8.2. The requirements of this section shall be  
16 included in procurement documentation or work orders, as appropriate, in  
17 compliance with the standard Westinghouse Hanford procurement control  
18 procedures referenced in Section 4.1.

19  
20  
21 **8.2 VALIDATION**

22  
23 Validation of the completed data package shall be performed by  
24 Westinghouse Hanford OSM personnel. The following validation requirements  
25 shall be defined within approved OSM data validation procedures at a minimum  
26 of Level C as outlined in Westinghouse Hanford's *Sample Management and*  
27 *Administration WHC-CM-5-3*, (WHC 1990b).

- 28  
29  
30 • Sample holding times  
31  
32 • Initial and continuing calibration requirements  
33  
34 • Accuracy (i.e., spikes, control standards, etc.)  
35  
36 • Precision (i.e, duplicates, splits, etc.)  
37  
38 • Blanks.

39  
40  
41 **8.3 FINAL REVIEW AND RECORDS MANAGEMENT CONSIDERATIONS**

42  
43 All validation reports and supporting analytical data packages shall be  
44 subjected to a final technical review by a qualified reviewer at the direction  
45 of the Technical Lead before submittal to regulatory agencies or inclusion in  
46 reports or technical memoranda. All validation reports, data packages, and  
47 review comments shall be retained as permanent project quality records in  
48 compliance with EII 1.6, "Records Management" (WHC 1989a) and QA 17.0,  
49 "Quality Assurance Records" (WHC 1989b).

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9.0 INTERNAL QUALITY CONTROL

All analytical samples shall be subject to in-process quality control measures in both the field and laboratory. Unless superseded by specific directions provided in the sampling plan, the following minimum field quality control requirements apply. The following requirements are adapted from *Test Methods for Evaluating Solid Waste (SW-846)* (EPA 1986), as modified by the proposed rule changes included in the *Federal Register*, Volume 54, No. 13 (EPA 1989).

- Duplicate samples--For each shift of sampling activity under an individual sampling subtask, a minimum of 5 percent of the total collected samples shall be duplicated. Field duplicate samples are samples retrieved from the same sampling location using the same equipment and sampling technique, but analyzed independently. Laboratory duplicate samples are samples taken successively from the same bulb. Duplicate samples are generally used to verify the repeatability or reproducibility of the analytical data.
- Split samples--At the Technical Lead's direction, field or field duplicate samples may be split in the field and sent to an alternative laboratory as a performance audit of the primary laboratory. Frequency shall meet the minimum requirements identified in the bullets below.
- Field/Equipment Blanks--A water blank consists of pure deionized, distilled water whose chemical composition is known, drawn through decontaminated sampling equipment and taken as a sample. Blanks are used to verify the adequacy of sampling equipment decontamination procedures and are used to check for possible contamination originating with the sampling environment. Blanks will be run before the initiation of sampling each day or if blank contamination is suspected or detected.

The internal quality control checks performed by analytical laboratories' laboratory analyses shall meet the following minimum requirements:

- Matrix spiked (MS) and matrix spiked duplicate (MSD) samples--Matrix spiked and matrix spiked duplicate samples require the addition of a known quantity of a representative analyte of interest to the sample as a measure of recovery percentage. The spike shall be made in a replicate of a field sample. Spike compound selection, quantities, and concentrations shall be described in the laboratories analytical procedures. Minimum QC requirements should be an analysis of either a (1) MS/MSD analysis, of (2) matrix spike and duplicate sample analysis at a frequency of once/batch or once every 20 samples, whichever is greater, and at least once for each sample matrix analyzed.

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- 1 • Quality control reference samples--A quality control reference  
2 sample shall be prepared from an independent standard at a  
3 concentration other than that used for calibration, but within the  
4 calibration range, as required by method specific QC. Reference  
5 samples are required as an independent check on analytical technique  
6 and methodology, and shall be run with every analytical batch, or  
7 every 20 samples, whichever is greater.  
8
- 9 • Method blank--A method blank shall be run at a frequency of  
10 once/batch or once/20 samples and once for each sample matrix as a  
11 measure of any laboratory contamination.

12  
13 Other instrument or method specific quality control and calibration  
14 requirements shall be as defined by the applicable standard analytical  
15 methods. The minimum requirements of this section shall be invoked in  
16 procurement documents or work orders in compliance with standard Westinghouse  
17 Hanford procedures as noted in Section 4.1.  
18  
19  
20

## 21 10.0 PERFORMANCE AND SYSTEM AUDITS

22  
23

24 Performance, system, and program audits are scheduled to begin early in  
25 the execution of this sampling plan and to continue through to completion.  
26 Collectively, the audits address quality affecting activities that include,  
27 but are not limited to measurement accuracy, intramural and extramural  
28 analytical laboratory services, field activities, and data collection,  
29 processing, validation, and management.  
30

31 Performance audits of the accuracy of laboratory analyses are implemented  
32 in accordance with Standard Operating Procedure EII 1.12 "Laboratory Analysis  
33 Performance Audits." System audit requirements are implemented in accordance  
34 with Standard Operating Procedure QI 10.4, "Surveillance" (WHC 1989b).  
35 Surveillances will be performed regularly throughout the course of the  
36 sampling plan activities. Additional performance and system surveillances may  
37 be scheduled as a result of corrective action requirements, or may be  
38 performed upon request. All quality affecting activities are subject to  
39 surveillance.  
40

41 All aspects of sampling plan activities will also be evaluated as part of  
42 environmental restoration program wide QA audits under the procedural  
43 requirements of WHC-CM-4-2 (WHC 1989b). Program audits shall be conducted in  
44 accordance with QR 18.0, "Audits"; QI 18.1, "Audit Programming and  
45 Scheduling"; and QI 18.2, "Planning, Performing, Reporting, and Follow-up of  
46 Quality Audits" by auditors qualified in compliance with QI 2.5,  
47 "Qualification of Quality Assurance Program Audit Personnel" (WHC 1989b).

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4 **11.0 PREVENTIVE MAINTENANCE**

5 All measurement and testing equipment used in the field and laboratory  
6 that directly affects the quality of the analytical data shall be subject to  
7 preventive maintenance measures that ensure minimization of measurement system  
8 downtime. Field equipment maintenance instructions shall be as defined by the  
9 approved procedures governing their use. Laboratories shall be responsible  
10 for performing or managing the maintenance of their analytical equipment;  
11 maintenance requirements, spare parts lists, and instructions shall be  
12 included in individual methods or in laboratory QA plans, subject to  
13 Westinghouse Hanford review and approval. When samples are analyzed using  
14 EPA reference methods, the requirements for preventive maintenance of  
15 laboratory analytical equipment as defined by the reference method shall  
16 apply.  
17  
18

19 **12.0 DATA ASSESSMENT PROCEDURES**

20  
21  
22 Analytical data shall first be compiled and summarized by the laboratory  
23 and validated in compliance with approved OSM procedures meeting all minimum  
24 requirements of Section 8.0.  
25  
26

27  
28 **13.0 CORRECTIVE ACTION**

29  
30  
31 Corrective action requests required as a result of surveillance reports,  
32 nonconformance reports, or audit activity shall be documented and  
33 dispositioned as required by QR 16.0, "Corrective Action"; QI 16.1,  
34 "Trending/Trend Analysis"; and QI 16.2, "Corrective Action Reporting,"  
35 (WHC 1989b). Primary responsibilities for corrective action resolution are  
36 assigned to the Technical Lead and the QA Coordinator. Other measurement  
37 systems, procedures, or plan corrections that may be required as a result of  
38 routine review processes shall be resolved as required by governing procedures  
39 or shall be referred to the Technical Lead for resolution. Copies of all  
40 surveillance, nonconformance, audit, and corrective action documentation shall  
41 be routed to the project QA records upon completion.  
42  
43

44  
45 **14.0 QUALITY ASSURANCE REPORTS**

46  
47  
48 As previously stated in Sections 10.0 and 13.0, project activities shall  
49 be assessed regularly by auditing and surveillance processes. At the  
50 conclusion of the sampling program all field and laboratory data, raw data,

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1 reports, surveillance reports, non-conformance reports, audit reports and  
2 corrective action documentation will be transferred to Westinghouse Hanford  
3 for archival, if not already transmitted.  
4  
5  
6

## 7 15.0 REFERENCES

- 8  
9  
10 Ecology, et al., 1989, *Hanford Federal Facility Agreement and Consent Order*,  
11 Washington State Department of Ecology, U.S. Environmental Protection  
12 Agency, and U.S. Department of Energy, Richland, Washington.  
13  
14 EPA, 1983, *Interim Guidelines and Specifications for Preparation of Quality*  
15 *Assurance Project Plans*, QAMS-005/80, U.S. Environmental Protection  
16 Agency/Office of Exploratory Research, Washington, D.C.  
17  
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Table G-1. Analytical Levels, Methods and Detection Limits for Sample Analysis. (sheet 1 of 7)

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Category of Analysis	Analyte of Interest	Analytical Level <sup>(1)</sup>	EPA Standard Method <sup>(2)</sup>	MDC <sup>(3)</sup>
Organic vapor screening	Volatile/semivolatile organics	I	N/A	N/A
X-ray fluorescence	Metals (Al-U)	I	N/A	N/A
Ion analysis	Bromide	III	300.0 <sup>(5)</sup>	1 µg/g
	Chloride	III	300.0 <sup>(5)</sup>	1 µg/g
	Fluoride	III	300.0 <sup>(5)</sup>	1 µg/g
	Nitrate	III	300.0 <sup>(5)</sup>	1 µg/g
	Nitrite	III	300.0 <sup>(5)</sup>	1 µg/g
	Phosphate	III	300.0 <sup>(5)</sup>	2 µg/g
	Sulfate	III	300.0 <sup>(5)</sup>	1 µg/g
	Sulfide	III	9031	10 µg/g
	Cyanide	III	9010	0.5 µg/g
	Ammonium	III	ASTM-D-1426 C/D <sup>(4)</sup>	0.5 µg/g
Metals analysis	Aluminum	III	6010	15 µg/g
	Antimony	III	6010	10 µg/g
	Barium	III	6010	0.6 µg/g
	Beryllium	III	6010	0.3 µg/g
	Boron	III	6010	1 µg/g
	Cadmium	III	6010	0.2 µg/g
	Calcium	III	6010	5 µg/g
	Chromium	III	6010	1 µg/g
	Cobalt	III	6010	2 µg/g
	Copper	III	6010	1 µg/g
	Iron	III	6010	5 µg/g
	Lithium	III	6010	10 µg/g
	Magnesium	III	6010	5 µg/g
	Manganese	III	6010	0.5 µg/g
	Molybdenum	III	6010	4 µg/g
	Nickel	III	6010	1 µg/g
	Potassium	III	6010	10 µg/g
Silicon	III	6010	5 µg/g	
Silver	III	6010	1 µg/g	
Titanium	III	6010	6 µg/g	
Sodium	III	6010	10 µg/g	
Strontium	III	6010	1 µg/g	

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Table G-1. Analytical Levels, Methods and Detection Limits  
for Sample Analysis. (sheet 2 of 7)

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Category of Analysis	Analyte of Interest	Analytical Level <sup>(1)</sup>	EPA Standard Method <sup>(2)</sup>	MDC <sup>(3)</sup>	
Metals analysis (cont.)	Tin	III	6010	3 µg/g	
	Vanadium	III	6010	0.5 µg/g	
	Zinc	III	6010	0.5 µg/g	
	Zirconium	III	6010	5 µg/g	
	Arsenic	III	7060	0.5 µg/g	
	Lead	III	7421	0.5 µg/g	
	Mercury	III	7471	0.2 µg/g	
	Selenium	III	7740	0.5 µg/g	
	Thallium	III	7841	1.0 µg/g	
	Volatile organics analysis	Acetone	III	8240	TBD
		Acetonitrile	III	8240	0.01 µg/g
Acrolein		III	8240	0.01 µg/g	
Acrylonitrile		III	8240	0.01 µg/g	
Allyl chloride		III	8240	0.1 µg/g	
Benzene		III	8240	0.005 µg/g	
Bromodichloromethane		III	8240	0.005 µg/g	
Bromoform		III	8240	0.005 µg/g	
Carbon disulfide		III	8240	0.01 µg/g	
Carbon tetrachloride		III	8240	0.01 µg/g	
Chlorobenzene		III	8240	0.005 µg/g	
Chloroethane		III	8240	0.005 µg/g	
Chloroform		III	8240	0.01 µg/g	
Dibromochloromethane		III	8240	0.005 µg/g	
1,2-Dibromo-3-chloropropane		III	8240	0.005 µg/g	
1,2-Dibromoethane		III	8240	0.01 µg/g	
p-Dichlorobenzene		III	8240	0.01 µg/g	
trans-1,4-Dichloro-2-butene		III	8240	0.005 µg/g	
Dichlorodifluoromethane		III	8240	TBD	
1,1-Dichloroethane		III	8240	0.01 µg/g	
1,2-Dichloroethane		III	8240	0.005 µg/g	
1,1-Dichloroethylene		III	8240	0.5 µg/g	
trans-1,2-Dichloroethylene		III	8240	0.01 µg/g	
1,2-Dichloropropane	III	8240	0.005 µg/g		
1,3-Dichloropropene	III	8240	0.005 µg/g		
1,4-Dioxane	III	8240	0.005 µg/g		
Ethyl benzene	III	8240	0.5 µg/g		
Ethyl methacrylate	III	8240	0.005 µg/g		
2-hexanone	III	8240	0.05 µg/g		

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Table G-1. Analytical Levels, Methods and Detection Limits  
for Sample Analysis. (sheet 3 of 7)

Category of Analysis	Analyte of Interest	Analytical Level <sup>(1)</sup>	EPA Standard Method <sup>(2)</sup>	MDC <sup>(3)</sup>
Volatile organics analysis (cont.)	Methacrylonitrile	III	8240	0.01 µg/g
	Methyl bromide	III	8240	0.01 µg/g
	Methyl chloride	III	8240	0.01 µg/g
	Methyl ethyl ketone	III	8240	0.01 µg/g
	Methyl iodide	III	8240	TBD
	Methyl isobutyl ketone	III	8240	0.01 µg/g
	Methyl bromide	III	8240	0.01 µg/g
	Methylene chloride	III	8240	0.01 µg/g
	Pentachloroethane	III	8240	0.01 µg/g
	Propionitrile	III	8240	0.005 µg/g
	Pyridine	III	8240	0.5 µg/g
	Styrene	III	8240	0.005 µg/g
	1,1,1,2-Tetrachloroethane	III	8240	0.01 µg/g
	1,1,2,2-Tetrachloroethane	III	8240	0.005 µg/g
	Tetrachloroethylene	III	8240	0.005 µg/g
	Toluene	III	8240	0.005 µg/g
	1,1,1-Trichloroethane	III	8240	0.005 µg/g
	1,1,2-Trichloroethane	III	8240	0.005 µg/g
	Trichloroethylene	III	8240	0.005 µg/g
	Trichlorofluoromethane	III	8240	TBD
	1,2,3-Trichloropropane	III	8240	0.01 µg/g
Vinyl acetate	III	8240	0.005 µg/g	
Vinyl chloride	III	8240	0.01 µg/g	
Xylene (total)	III	8240	0.005 µg/g	
Semi-volatile organics analysis	Acenaphthene	III	8270	1 µg/g
	Acenaphthylene	III	8270	1 µg/g
	Acetone	III	8270	1 µg/g
	Acetophenone	III	8270	1 µg/g
	2-Acetylaminofluorene	III	8270	1 µg/g
	4-Aminobiphenyl	III	8270	1 µg/g
	Aniline	III	8270	1 µg/g
	Anthracene	III	8270	1 µg/g
	Aramite	III	8270	1 µg/g
	Benzo[a]anthracene	III	8270	1 µg/g
Benzo[b]fluoranthene	III	8270	1 µg/g	
Benzo[k]fluoranthene	III	8270	1 µg/g	
Benzo[ghi]perylene	III	8270	1 µg/g	
Benzo[a]pyrene	III	8270	1 µg/g	

Table G-1. Analytical Levels, Methods and Detection Limits  
for Sample Analysis. (sheet 4 of 7)

Category of Analysis	Analyte of Interest	Analytical Level <sup>(1)</sup>	EPA Standard Method <sup>(2)</sup>	MDC <sup>(3)</sup>
Semi-volatile organics analysis (cont.)	Benzyl alcohol	III	8270	1 µg/g
	Bis(2-chloroethoxy)methane	III	8270	1 µg/g
	Bis(2-chloroethyl)ether	III	8270	1 µg/g
	Bis(2-chloro-1-methylethyl) ether	III	8270	1 µg/g
	Bis(2-ethylhexyl)phthalate	III	8270	1 µg/g
	4-Bromophenyl phenyl ether	III	8270	1 µg/g
	Butyl benzyl phthalate	III	8270	1 µg/g
	p-Chloro-m-cresol	III	8270	1 µg/g
	2-Chloronaphthalene	III	8270	1 µg/g
	2-Chlorophenol	III	8270	1 µg/g
	Chrysene	III	8270	1 µg/g
	Cresol	III	8270	1 µg/g
	Diallate	III	8270	1 µg/g
	Dibenz[ah]anthracene	III	8270	1 µg/g
	Dibenzofuran	III	8270	1 µg/g
	Di-n-butyl phthalate	III	8270	1 µg/g
	1,2-Dichlorobenzene	III	8270	1 µg/g
	1,3-Dichlorobenzene	III	8270	1 µg/g
	1,4-Dichlorobenzene	III	8270	1 µg/g
	3,3-Dichlorobenzidine	III	8270	1 µg/g
	2,4-Dichlorophenol	III	8270	1 µg/g
	2,6-Dichlorophenol	III	8270	1 µg/g
	Diethyl phthalate	III	8270	1 µg/g
	0,0-diethyl 0-2-pyrazinyl phosphorothionate	III	8270	1 µg/g
	dihydrosafrole	III	8270	1 µg/g
	p-(Dimethylamino) azobenzene	III	8270	1 µg/g
	7,12-Dimethylbenz[a]-anthracene	III	8270	1 µg/g
	3,3'-Dimethylbenzidine	III	8270	1 µg/g
	alpha, alpha-Dimethylphenethylamine	III	8270	1 µg/g
	Dimethyl phthalate	III	8270	1 µg/g
	m-Dinitrobenzene	III	8270	1 µg/g
	4,6-Dinitro-o-cresol	III	8270	1 µg/g
	2,4-Dinitrophenol	III	8270	1 µg/g
2,4-Dinitrotoluene	III	8270	1 µg/g	
2,6-Dinitrotoluene	III	8270	1 µg/g	
Dinoseb	III	8270	1 µg/g	

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Table G-1. Analytical Levels, Methods and Detection Limits  
for Sample Analysis. (sheet 5 of 7)

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Category of Analysis	Analyte of Interest	Analytical Level <sup>(1)</sup>	EPA Standard Method <sup>(2)</sup>	MDC <sup>(3)</sup>
Semi-volatile organics analysis (cont.)	Di-n-octyl phthalate	III	8270	1 µg/g
	Diphenylamine	III	8270	1 µg/g
	Ethyl methanesulfonate	III	8270	1 µg/g
	Fluoranthene	III	8270	1 µg/g
	Fluorene	III	8270	1 µg/g
	Hexachlorobenzene	III	8270	1 µg/g
	Hexachlorobutadiene	III	8270	1 µg/g
	Hexachlorocyclopentadiene	III	8270	1 µg/g
	Hexachloroethane	III	8270	1 µg/g
	Hexachlorophene	III	8270	1 µg/g
	Hexachloropropene	III	8270	1 µg/g
	Indeno(1,2,3-cd)pyrene	III	8270	1 µg/g
	Isodrin	III	8270	1 µg/g
	Isophorone	III	8270	1 µg/g
	Isosafrole	III	8270	1 µg/g
	Methapyrilene	III	8270	1 µg/g
	3-Methylcholanthrene	III	8270	1 µg/g
	Methyl methacrylate	III	8270	1 µg/g
	Methyl methanesulfonate	III	8270	1 µg/g
	2-methylnaphthalene	III	8270	1 µg/g
	Napthalene	III	8270	1 µg/g
	1,4-Naphthoquinone	III	8270	1 µg/g
	1-Naphthylamine	III	8270	1 µg/g
	2-Naphthylamine	III	8270	1 µg/g
	m-nitroaniline	III	8270	1 µg/g
	o-nitroaniline	III	8270	1 µg/g
	p-nitroaniline	III	8270	1 µg/g
	4-nitroquinoline 1-oxide	III	8270	1 µg/g
	N-nitrosodi-n-butylamine	III	8270	1 µg/g
	N-nitrosodiethylamine	III	8270	1 µg/g
	N-nitrosodiphenylamine	III	8270	1 µg/g
	N-nitrosomethylethylamine	III	8270	1 µg/g
	N-nitrosomorpholine	III	8270	1 µg/g
	N-nitrosopiperidine	III	8270	1 µg/g
	N-nitrosopyrrolidine	III	8270	1 µg/g
	5-Nitro-o-toluidine	III	8270	1 µg/g
	Pentachlorobenzene	III	8270	1 µg/g
	Pentachloronitrobenzene	III	8270	1 µg/g
	Pentachlorophenol	III	8270	1 µg/g

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Table G-1. Analytical Levels, Methods and Detection Limits  
for Sample Analysis. (sheet 6 of 7)

Category of Analysis	Analyte of Interest	Analytical Level <sup>(1)</sup>	EPA Standard Method <sup>(2)</sup>	MDC <sup>(3)</sup>
Semi-volatile organics analysis (cont.)	Phenacetin	III	8270	1 µg/g
	Phenanthrene	III	8270	1 µg/g
	Phenol	III	8270	1 µg/g
	p-Phenylenediamine	III	8270	1 µg/g
	2-Picoline	III	8270	1 µg/g
	Pronamide	III	8270	1 µg/g
	Pyrene	III	8270	1 µg/g
	Safrole	III	8270	1 µg/g
	1,2,4,5-Tetrachlorobenzene	III	8270	1 µg/g
	2,3,4,6-Tetrachlorophenol	III	8270	1 µg/g
	o-toluidine	III	8270	1 µg/g
	1,2,4-Trichlorobenzene	III	8270	1 µg/g
	2,4,6-Trichlorophenol	III	8270	1 µg/g
	2,4,5-Trichlorophenol	III	8270	1 µg/g
	0,0,0-Triethyl phosphorothioate	III	8270	1 µg/g
	sym-Trinitrobenzene	III	8270	1 µg/g
Pesticide and PCB analysis	Endrin	III	8080	0.01 µg/g
	Lindane (and isomers)	III	8080	0.01 µg/g
	Methoxychlor	III	8080	1 µg/g
	Toxaphene	III	8080	1 µg/g
	Aldrin	III	8080	0.01 µg/g
	Chlordane	III	8080	1 µg/g
	4,4'-DDD	III	8080	0.01 µg/g
	4,4'-DDE	III	8080	0.01 µg/g
	4,4'-DDT	III	8080	0.01 µg/g
	Endosulfan I	III	8080	0.01 µg/g
	Endosulfan II	III	8080	0.01 µg/g
	Endosulfan sulfate	III	8080	0.05 µg/g
	Heptachlor	III	8080	0.01 µg/g
	Heptachlor epoxide	III	8080	0.01 µg/g
	Kepone	III	8080	1 µg/g
	Dieldrin	III	8080	0.01 µg/g
Chlorobenzilate	III	8080	0.3 µg/g	
Polychlorinated biphenyls	III	8080	1 µg/g	
Chlorinated herbicide analysis	2,4-D	III	8150	1 µg/g
	2,4,5-TP silvex	III	8150	1 µg/g
	2,4,5-T	III	8150	1 µg/g

Table G-1. Analytical Levels, Methods and Detection Limits  
for Sample Analysis. (sheet 7 of 7)

Category of Analysis	Analyte of Interest	Analytical Level <sup>(1)</sup>	EPA Standard Method <sup>(2)</sup>	MDC <sup>(3)</sup>
Phosphorous pesticide analysis	Dimethoate	III	8140	0.2 µg/g
	Disulfoton	III	8140	1 µg/g
	Methyl parathion	III	8140	1 µg/g
	Phorate	III	8140	1 µg/g
	Tetraethylpyrophosphate	III	8140	1 µg/g

Notes:

- (1) Analytical levels are as defined in Section 4.3.1 of *Data Quality Objectives for Remedial Response Activities: Volume 1, Development Process* (EPA, 1987a).
- (2) EPA standard methods are from *Test Methods for Evaluating Solid Wastes (SW-846)*, Third Edition (EPA, 1986).
- (3) MDC refers to contractually defined minimum detectable concentration in soil. Certain MDC values are labeled TBD (to be determined) and will be provided in a revision to this table after Westinghouse Hanford review and approval of revisions to the statement of work.
- (4) Standard ASTM methods are from *1990 Annual Book of ASTM Standards, Volume 4.08: Soil and Rock; Building Stones; Geotextiles* (ASTM, 1987).
- (5) From *Methods for Chemical Analysis of Water and Wastes* (EPA 1983).

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APPENDIX H

PERSONNEL TRAINING

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1 Title: Generator Hazards Safety Training  
2 Description: Provides the dangerous material/waste worker with  
the fundamentals for safe use and disposal of  
dangerous materials.  
3 Target Audience: Dangerous material and waste workers  
4 Technique: Classroom  
5 Evaluation: Written test  
6 Length: 4 hours  
7 Frequency: 24 months.

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10 Title: Hazardous Waste Worker Safety Training  
11 Description: Provides the dangerous waste worker with the  
fundamentals of safety when working with dangerous  
waste.  
12 Note: This course fulfills training requirements  
of 29 CFR 1910.120 requiring dangerous waste  
training of workers at all treatment, storage,  
and/or disposal facilities regulated under RCRA.  
13 Target Audience: Dangerous material and waste workers  
14 Technique: Classroom and on-the-job training  
15 Evaluation: Written test  
16 Length: 24 hours  
17 Frequency: Not applicable.

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1 Title: Hazardous Waste Worker Safety Training Refresher

2 Description: Provides the dangerous waste worker with a  
refresher in the fundamentals of safety when  
working with dangerous waste.

3 Note: This course fulfills training requirements  
of 29 CFR 1910.120 requiring dangerous waste  
training of workers at all treatment, storage,  
and/or disposal facilities regulated under RCRA.

4 Target Audience: Dangerous material and waste workers

5 Technique: Classroom

6 Evaluation: Written test

7 Length: 8 hours

8 Frequency: 12 months.

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11 Title: Hazardous Material/Waste job-Specific Training

12 Description: Provides job-specific dangerous material/waste  
information. Two checklists may be obtained from  
safety training to help the supervisor/manager  
through this session with each employee.

13 Note: Not a classroom presentation--supervisor  
conducts this exercise with each employee using the  
checklists.

14 Target Audience: Employees who complete generator hazards safety  
training

15 Technique: On-the-job training

16 Evaluation: On-the-job training checklist

17 Length: Average - 2 hours

18 Frequency: 12 months.

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1 Title: Scott SKA-PAK MSA PAPP  
2 Description: This class is designed to instruct employees in the proper use of the Scott "SKAPAK" for entry, exit, or work in conditions immediately dangerous to life and health, and to instruct employees to recognize and handle emergencies. This class also includes instructions in the use of MSA PAPP.  
3 Target Audience: General, Safety, QA, OPS/OPRS, Management, Maintenance Engineering  
4 Technique: Classroom  
5 Evaluation: Practical exam  
6 Length: Approximately 2 hours  
7 Frequency: 12 months.

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10 Title: Self-Contained Breathing Apparatus (SCBA) Annual Qualification  
11 Description: Provides instructions in the proper use of a pressure-demand respirator in which breathing air is supplied from a cylinder carried on the user's back. The SCBA are typically used for emergency response situations in an atmosphere that is immediately dangerous to life or health.  
12 Target Audience: General, Safety, OPS/OPRS, Maintenance  
13 Technique: Taught in a classroom using a slide projector and overhead projector  
14 Evaluation: Written and practical test  
15 Length: Approximately 4 hours  
16 Frequency: 12 months.

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- 1 Title: Radiation Safety Training
- 2 Description: A practical dress/undress demonstration is also required. Instructs radiation workers in the fundamentals of radiation protection and the proper procedures for monitoring exposures (ALARA). Training includes knowledge of the acute and chronic effects of exposure to radiation risks associated with occupational radiation exposure, mode of exposure, protective measures, instrumentation, monitoring programs, contamination control, personnel decontamination, warning signs and alarms, and responsibilities of employees and managers.
- 3 Target Audience: Radiation workers as defined in WHC-CM-4-10
- 4 Technique: Taught in a classroom using a white board, and appropriate audio/visual equipment
- 5 Evaluation: Written exam and practical dress/undress
- 6 Length: Approximately 7 hours
- 7 Frequency: 24 months (retraining under Course Number 020003).
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- 10 Title: On-The-Job Training
- 11 Description: On-the-job training under the supervision of an experienced person before full responsibilities may be assumed. In addition, all personnel on the hazardous waste site are required to have reviewed this Waste Sampling and Analysis Plan.
- 12 Target Audience: Nuclear Operators and Operations Management
- 13 Technique: Classroom and on-the-job training
- 14 Evaluation: Practical exercise and on-the-job training checklist
- 15 Length: 40 hours
- 16 Frequency: 12 months.
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1 Title: Cardiopulmonary Resuscitation (CPR)  
2 Description: Provide cardiopulmonary Resuscitation training to  
American Heart Association standards.  
3 Target Audience: Hazardous Waste Worker  
4 Technique: Classroom and active participation  
5 Length: 4 hours  
6 Frequency: 24 months (recertification)  
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9 Title: Noise Control (Noise-Hearing Conservation)  
10 Description: Provide employees with information conducive to  
hearing conservation. Supervisors and employees  
responsibility, exposure limits, hearing  
conservation requirements, protection devices,  
diagnosis of noise, induced hearing loss  
11 Target audience: All employees exposed to an 8 hour time weighted  
average sound level of 85 dBA or greater  
12 Technique: Classroom  
13 Evaluation: None  
14 Length: Approximately 1 hour  
15 Frequency: 12 months.  
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- 1 Title: Hazardous Waste Site Supervisor/Manager Safety Management Training
- 2 Description: This program provides an additional eight hours of training for supervisors and managers covering hazardous waste programs.
- 3 Target Audience: Personnel who manage or have safety overview responsibilities of dangerous material and waste operations.
- 4 Technique: Classroom
- 5 Evaluation: None
- 6 Length: 8 hours
- 7 Frequency: Not applicable
- 
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APPENDIX I

CERTIFICATION STATEMENTS

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APPENDIX I

CERTIFICATION STATEMENTS

CERTIFICATION OF CLOSURE FOR THE 2727-S NONRADIOACTIVE  
DANGEROUS WASTE STORAGE FACILITY

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10 Within 60 days of final closure, the DOE-RL will submit to Ecology a  
11 certification of closure. This certification will be signed by both the  
12 DOE-RL and an independent professional engineer registered in the State of  
13 Washington, stating that the 2727-S Facility has been closed in accordance  
14 with the approved closure plan. The certification will be submitted by  
15 registered mail. Documentation supporting the independent professional  
16 engineer's certification will be retained and furnished to Ecology upon  
17 request.

18  
19 The DOE-RL and the independent professional engineer registered in the  
20 State of Washington will certify with the document similar to Figure I-1.  
21 Figure I-1 is attached for your consideration.

CLOSURE CERTIFICATION  
FOR

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Hanford Site Facility  
Department of Energy-Richland Operations

We, the undersigned, hereby certify that all \_\_\_\_\_  
closure activities were performed in  
accordance with the specifications in the approved closure plan.

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Owner/Operator Signature DOE-RL Representative Date  
(Typed Name)

P.E.#  
Signature Independent Registered Professional Engineer Date  
(Typed Name and Washington State Professional Engineer license number)

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# CONTINUATION NOTICE

RECORD NO: 0034019 17/18

This record has been filmed in two parts.  
To view the beginning portion of this  
record, see the microfilm reel and frame  
number listed below.

CONTINUED FROM:

REEL NO: 94-13294 PART I

FRAME NO: 2110