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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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Seattle, Washington 98101

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Reply To
Attn Of: HW-106

June 14, 1993

James M. Bauer, Program-Manager
Office of Environmental Assurance
Permits and Policy
Department of Energy
Richland Field Office
P.O. Box 550 (A5-19)
Richland, Washington 99352



Re: Review of 616 and 305-B Facilities Waste Analysis Plans
Environmental Protection Agency ID. NO. WA7 89000 8967

Dear Mr. Bauer:

The United States Environmental Protection Agency (EPA), Region 10, and the Washington State Department of Ecology (Ecology) recently conducted a site visit on December 17-18, 1992, at the Hanford Federal Facility in Richland, Washington. The purpose of this visit was to gather information to ascertain whether the Waste Analysis Plans, submitted as part of the Part B Permit Applications for the Hanford Federal Facility for the 616 Non-Radioactive Dangerous Waste Storage Facility and the 305-B Radioactive Mixed Waste Storage Facility, are complete under 40 CFR §§ 270.10(c) and 270.14(b)(2)-(3), and comply with 40 CFR § 264.13. EPA has completed a review of the requested information as well as the Waste Analysis Plans contained in the Part B Applications submitted on June 26, 1990 and August 17, 1991, respectively.

The enclosed comments document that substantial portions of the information required in a Part B Permit Application for waste characterization and waste analysis plans were not provided, such as waste characterization, detailed chemical and physical analyses of representative samples of the wastes, the description of waste designation, and waste analysis verification as required under 40 CFR § 264.13. The permitting regulations under the Resource Conservation and Recovery Act, as amended (RCRA), require significantly more waste characterization, waste designation information, waste analysis verification information, and more information of the management of Toxicity Characteristic (TC) and Land Disposal Restricted (LDR) wastes than were presented in the applications. The waste analysis plans fail to

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demonstrate any systematic approach to waste analysis for either on-site or off-site facilities as required by 40 CFR § 264.13.

EPA and Ecology urge Energy to make the necessary investment in the preparation of a technically complete application for the 616 and 305-B Storage Facilities. We request that you submit revised Waste Analysis Plans for the 616 and 305-B Storage Facilities to include detailed waste characterization and supporting data within forty-five (45) days of receipt of this letter. Several guidance documents which will assist you are provided with this letter ("Waste Analysis Plans: A Guidance Manual", EPA/530-SW-84-012, USEPA, October 1984) and ("RCRA Permit Quality Protocol(Draft)", EPA/530-SW-90-050, USEPA, September 1988, Section C: Checklist for Waste Characteristics).

Please contact Daniel Duncan, Hanford Permit Coordinator at (206) 553-6693, or Megan Lerchen, 616 Unit Manager, at (206) 438-3089, and Scott McKinney, 305-B Unit Manager, at (206) 459-6725, if you have any questions regarding this matter.

Sincerely,



Carrie Sikorski, Chief
RCRA Permits Section
Environmental Protection
Agency



Dave Jansen, P.E., Section Manager
Nuclear and Mixed Waste Management
Program
Department of Ecology

Enclosures

cc: Toby Michelena, Ecology
Steve Wisness, DOE
Jack Boller, WOO

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616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE FACILITY
JUNE 1990

C-1. WASTE CHARACTERIZATION: SECTION 3.1: 40 CFR § 264.13.(b)(6)

a. Chemical and Physical Analyses: 40 CFR § 270.14(b)(2),
264.13(a), 268.7(a), 268.9

For each hazardous waste stored at the facility, describe the waste, the hazard characteristics, the basis for hazard designation, and provide a detailed chemical and physical analyses of representative samples which contains all the information which must be known to store, treat or dispose of the waste in accordance with 40 CFR Parts 264 and 268.

Deficiency:

Incomplete Chemical and Physical Analyses: Section 3.1 of the Part B Application, entitled "Chemical, Biological, and Physical Analyses" is incomplete. Although the 616 facility receives hazardous waste from some 150 "certified generators," Section 3.1 "Chemical, Biological, and Physical Analyses", of the waste analysis plan does not provide detailed characterization data of representative samples of the wastes which are stored at the facility. Section 3.1 must include detailed waste characterization data including chemical and physical analyses for known waste streams.

Incomplete Listing of Waste Codes: Table 3-2, of the Part B application, entitled "Waste Codes of Materials Stored at the 616 Storage Facility," provides only a general listing of wastes (e.g. "U", "P" and "F" numbers) received at the 616 Facility. Section 3.1 of the Part B Permit application must include a complete listing of all waste codes for wastes received at the 616 Storage Facility.

Inconsistent Waste Codes: The listing for WL01/WL02 does not appear on the Part A Permit Application and yet is listed in Table 3-2, "Waste Codes of Materials Stored at the 616 Storage Facility." The Table should reflect all the waste codes listed in the latest Part A Permit Application and identify which waste streams they are found in. Waste code discrepancies between the Part B and the Part A Permit Application dated June 21, 1990 must be corrected.

Incomplete Waste Stream Reports: Detailed laboratory reports for the waste stored in the 616 Storage Facility are completed, as a first time initial assessment, for approximately 75% of the waste streams according to information provided during the December 17, 1992 site visit by representatives of Solid Waste Engineering. All waste

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stream laboratory reports which are currently available should be included in the Part B application in accordance with 40 § CFR 264.13, for each waste stream that is stored at the 616 Storage Facility. These analyses must also be updated when there is reason to believe that the waste stream has changed. See Comment C-2.d

Insufficient Toxicity Characteristic (TC) Waste Inventory and Analyses: An inventory and analyses of the Toxicity Characteristic (TC) wastes (D004-D043) listed on the Part A Permit Application, which are stored at the 616 Storage Facility were not available during the site visit on December 17-18, 1992. The Toxicity Characteristic Waste inventory must be included in Section 3.1 of the waste analysis plan in accordance with 40 CFR § 270.14(b)(2). Copies of the TC waste analyses must be included in Section 3.2 of the waste analysis plan in accordance with 40 CFR § 270.14 (b)(2).

Insufficient Waste Stream Information: There is a limited description of the waste streams at the facility in Section 3.2 of the waste analysis plans. The description of waste streams in Section 3.2, "Waste Analysis Plan," is limited to (1) old pure chemical products, (2) spent dangerous waste, (3) product/mixtures from laboratories, and (4) empty Dangerous Waste drums (i.e., generic, not tied to any specific process). The description of each specific waste stream received at the 616 Storage Facility must be included in Section 3.2 of the waste analysis plan.

Insufficient Waste Process Information: There is insufficient information regarding each process to confirm that the wastes can be properly managed at the facility. The description of waste processes is limited to a listing in Appendix 3A and should be expanded to include the information contained in WHC-CM-5-16 entitled "Solid Waste Management" as well as a summary of Section 1.0, "Solid Waste Disposal System Overview." The facility's waste analyses records, or studies conducted on hazardous waste generated from similar processes to that which generated the waste to be managed at the facility, may be included in the data base required to comply with 40 CFR § 264.13(a)(1). This information is also required in the cases where process knowledge is utilized to characterize the waste. This data base must include a detailed description of all the waste streams which are stored in the 616 Storage Facility and provide criteria specific information on each waste stream. The Waste Analysis Plan must provide detailed criteria for each waste stream, as well as the parameters required to properly containerize and segregate the waste. The data base must clearly demonstrate how the analysis provides sufficient information on the waste's properties to comply

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with 40 CFR § 264.13(a). The waste analysis plan must include detailed waste characterization and detailed chemical and physical analyses of representative samples of the wastes in accordance with 40 CFR § 264.13(a).

C-2. WASTE ANALYSIS PLAN: SECTION 3.0: 40 CFR § 270.14(b)(3), 264.13(b) and (c)

Provide a copy of the waste analysis plan that describes the methodologies for conducting analyses required to properly store or dispose of hazardous wastes.

Deficiencies:

Limited Integrated Waste Analysis: The list of wastes or description of waste types to be permitted are not identified by specific processes that generate the wastes. The list of wastes is limited to the waste codes in Table 3-2 in the Part B Permit Application. This list of waste codes must be tied to specific processes. In addition, the properties of the wastes for each process must be provided. The information in the waste analysis plan is limited to that provided on the Waste Designation Worksheet as described in WHC-CM-5-16 entitled "Solid Waste Management." While the hazardous waste code and basis for RCRA waste hazard designation are provided on the designation worksheet, there is no rationale for linking the process to the waste analysis parameters required by 40 CFR § 264.13 (b)(1). See Comment C-1.a.

Incomplete Waste Storage Restrictions: There is limited information regarding waste storage restrictions in the 616 Storage Facility. This is limited to Sections 2.3.3.1 and Section 2.3.3 of the Part B Permit Application, regarding the nonacceptance of damaged shipments. In addition, class IV oxidizers (D003) greater than 10 pounds and explosives ("U" or "P" listed wastes) are identified in Section 3.2.6. Waste storage restrictions for each area in the 616 Storage Facility must be clearly delineated in tabular form in the waste analysis plan. The waste analysis plan must also cross reference the container management practices of Section 4.1.1.2 for regular and flammable liquid storage. The waste restrictions must be complete for all waste to ensure proper storage in the 616 NRDWSF and to determine the necessary parameters of the waste analysis plan for each waste stream in accordance with 40 CFR § 270.14(b)(3).

Insufficient Characterization of Specific Waste Properties: There is limited information regarding the acceptable ranges of specific waste properties relative to waste management concerns contained in Section 4.1.1 "Containers with Free Liquids," and Section 4.1.4.1 "Management of Reactive Waste

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in Containers," of the Part B Permit Application. There is no limit specified other than the number of gallons of waste stored in the Storage Cells at the 616 Facility. For example a restriction on the flash points of flammable liquids must be included in the Part B application to relate to requirements of storage of various classes of flammable compounds and related to the requirement of applicable fire codes. Only ethyl ether and 'dry' puric acid are stated to be not allowed to be stored in the 616 Storage Facility. Since additional shock sensitive and peroxide forming chemicals could present an explosive hazard, the waste analysis plan should state the acceptable classifications and ranges and describe how these parameters will be determined. The specific storage conditions which relate to the chemical and physical waste characteristics must be identified and included in Section 3.1, "Chemical, Biological, and Physical Analyses", of the waste analysis plan to restrict storage of disallowed materials. This information must also be included in the waste storage restrictions table.

Limited On-site Waste Analyses: The waste analysis plan does not adequately address the required analyses to ensure proper storage of hazardous waste. Specifically, there is limited oversight of the generator waste analyses. The Westinghouse Hanford Company (WHC) Environmental Compliance Verification Group conducts independent assessments of the generator at less than 90 day storage areas, but does not include waste analysis as part of this oversight as discussed during the December 17-18, 1992 site visit. The specific waste analyses must also be provided, even if process knowledge is used, to characterize the initial waste parameters. Laboratory verification will be required annually for 5% of all waste stream shipments received. See comment C-2.a.

Limited Off-site Waste Analysis Verification: The verification of the waste analysis is currently completed by the commercial Treatment, Storage or Disposal (TSD) Facility upon receipt of the hazardous waste for disposal. The reliance on off-site TSDs over which the US Department of Energy has no control is not acceptable for serving as part of the quality assurance/quality control needs of the waste analysis plan. Limited analyses are completed at an off-facility contract laboratory only if the information is "not sufficient." In addition there is no mention of the Office of Sample Management which manages the off-site contract laboratory contracts. See Comment C-2.a.

a. Parameters and Rationale: 40 CFR § 264.13(b)(1)

List parameters chosen for analyses and explain the rationale for their selection.

Deficiency:

Inconsistent Parameters and Rationale: Although the parameters and their rationale are noted in Section 3.2.1, "Parameters and Rationale," this section is inconsistent with Table 3-4, "Analytical Methodologies." The parameters and rationale should be consistent with the analysis selected to measure those parameters to ensure proper waste management during storage in the 616 Storage Facility. The US Department of Energy must develop and provide a table which includes parameters, rationale, and appropriate sampling and analytical methodologies. See Comment C-2.b.

Incomplete Analytical Methods: The specific parameters need to be tied to both the analytical methods of Tables 2-3 and 2-4 as well as the rationale for the selection of the parameter under 40 CFR § 264.13(b)(1). The waste analysis plans must address waste stream parameters that are required in order to properly manage the waste. See Comment C-2.b.

b. Test Methods: 40 CFR § 264.13(b)(2)

Identify and reference (e.g., EPA Test Number, as given in SW-846) the test method to be used for parameters chosen.

Deficiency:

Incomplete Test Methods: The test methods Section 3.2.4 and in Table 3-4 of the Part B Permit Application do not reflect all the parameters and rationale listed in Section 3.2.2 and Table 3-2. This discrepancy must be corrected in the Part B Permit Application. See Comment C-2.a.

Limited Waste Verification: The waste analysis plan must address waste verification in accordance with 40 CFR §§ 264.13(a)(3) and (b)(4). Section 3.2.4 entitled "Waste Samples and Frequency of Analysis of Waste Samples" specifies that waste verification sampling will be conducted only when there is a question regarding the designation of the waste. This section must also address the potential for restricted wastes from the facility being included by mistake, process design limitations, variability of waste composition, chemical/physical instability of the waste, and include information regarding the reliability of waste analysis data. The waste analysis plan must also address the procedures to verify the waste and include this information in Section 3.2.4 in accordance with 40 CFR § 264.13(b)(5).

c. Sampling Methods: 40 CFR § 264.13(b)(3), Part 261, Appendix I

Identify and reference (e.g., ASTM) the sampling methods used to obtain a representative sample of each waste to be analyzed and document that the chosen method is appropriate for the type and nature of the waste.

Deficiency:

Incomplete Sampling Methods: Section 3.2.3, "Sampling Methods," does not document that the selected method is appropriate for the type and nature of the waste.

Incomplete Analytical Procedures: In addition, the waste analysis plans must provide documentation of the analytical procedures and representative samples. The screening process at the 616 Storage Facility must address the requirements of 40 CFR § 264.13(c). This information is included in Section 12.4.1.1.1, Section 2.8.1, Section 4.1.1.2 and Section 6.4.1 of the Part B Permit Application.

d. Frequency of Analyses: 40 CFR § 264.13(b)(4)

Describe the frequency at which analyses will be repeated.

Deficiency:

Limited Frequency of Analyses: Section 3.2.4., "Frequency of Analyses," does not address the requirement for annual sampling for land disposal restricted waste. The waste analysis plan must also be revised to comply with the requirement for at least annual sampling and analysis of land disposal restricted waste streams. See Comment C-3.c.

Incomplete Documentation of Process Changes: The waste analysis plan must include data to document completed waste analyses, when there has been a change in process that could change to waste characteristics, as required under 40 CFR § 264.13(a)(3)(i). Additional information is required under 40 CFR § 264.13(a)(3)(i) regarding the specific procedures by which the generator notifies the owner/operator that a change in process has occurred. Additional information regarding procedures to obtain information regarding process changes, criteria for evaluating waste process change information and sampling and analysis procedures must be included in the waste analysis plan.

Waste Verification Requirements: In addition, the January draft facility permit condition III.1.B.v specifies that a minimum of 5% verification sampling will be completed during each fiscal year on hazardous waste containers stored at the

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616 Storage Facility. This language was placed in the draft permit because the 616 Waste Analysis Plan was deficient in this area. The Waste Analysis Plans should be amended to provide procedures for verification of designation by sampling and analysis of 5% of the incoming waste shipments.

e. Additional Requirements for Waste Generated Off-site:
40 CFR §§ 264.13(c), 264.13(a)(4) and (b)(5)

Describe the procedures used to inspect and/or analyze a representative portion of wastes generated off-site. Describe the statistical method used to determine a representative sample of the incoming wastes (e.g. number of drums sampled).

Deficiency:

Incomplete Off-site Waste Requirements: Section 3.2.5, "Additional Requirements for Wastes Generated Off-site," states that no waste is received from "off-site" and therefore these requirements do not apply to the 616 Storage Facility. This is an incorrect interpretation of "on-site" as defined in 40 CFR § 260.10. Although the 616 Storage Facility is geographically contiguous to the Hanford Facility, this storage facility receives wastes from "off-site" since wastes are transported on a public accessed highway from the 300 and 3000 Areas to the 600 Area. Section 3.2.5 of the waste analysis plan must be clarified regarding 40 CFR § 260.10 and the shipment of "off-site" wastes to the 616 Storage Facility. All wastes should be managed as if generated off-site.

f. Additional Requirements for Ignitable, Reactive or Incompatible Wastes: 40 CFR §§ 264.(b)(6), 264.17

Describe the methods used to meet additional analysis requirements necessary for storing or disposing of ignitable, reactive or incompatible wastes.

Deficiency:

Incomplete Figures: Although Section 3.2.6, "Additional Requirements for Ignitable, Reactive, or Incompatible Wastes," includes reference to Figures 3-6 and 3-7, Figure 3-6 is incomplete as there is no legend accompanying the figure in the waste analysis plan. See Comment C-1.a.

C-3. WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS

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a. Waste Characterization: 40 CFR §§ 268.7(a), 268.9, 268.32(j)

For each hazardous waste stored at the facility, provide analytical data necessary to determine if the waste is a restricted waste under 40 CFR Part 268. Alternatively, provide information from knowledge of the waste to determine if the waste is restricted. Whenever generator knowledge is used to make this determination, specify that all supporting data will be maintained in the operating record.

Supply analytical data or generator information to determine if the hazardous waste is an F001-F005 solvent waste or an F020-F023 or F026-F028 dioxin containing waste and whether it meets treatment standards as expressed in 40 CFR § 268.41.

Supply analytical data or generator information to determine if a) the waste is a liquid with pH equal or less than 2.0; b) the waste is a liquid containing concentrations of one or more of the California List constituents at or above levels specified in RCRA Section 3004(d); or c) liquid or non-liquid waste with a concentration of halogenated organic carbons (HOC) at or above 1000 mg/kg.

Deficiency:

Incomplete Description of LDR Waste Designation: Although 616 receives hazardous waste from some 150 "certified generators," the waste analysis plan does not provide detailed characterization data of representative samples of the wastes which are stored in the facility. The parameters must be established to specifically address the waste analysis requirements of land disposal restrictions appearing in 40 CFR §§ 268.7(a) and 268.9. Section 3.2, "Waste Analysis Plan," merely states that the designation process includes determining if a waste is subject to land disposal restrictions, but does not outline the methodology for such determinations. The waste analysis plan must outline the methodology. This Section 3.2 also references the waste designation process but does not include the reference to WHC-IP- 0756 entitled "Solid Waste Engineering Analysis Group Manual" used for waste designation, nor WHC-EP-0063-3 entitled "Hanford Site Solid Waste Acceptance Criteria" dated September 1991. The waste analysis plan must include any standard operating procedure used in the waste analysis process.

b. Sampling and Analytical Procedures: 40 CFR §§ 268.7(a), 268.7(b)(1), Appendix I 40 CFR Part 268.

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Specify the sampling and analytical procedures to be followed in characterizing the restricted wastes. The Toxic Characteristics Leaching Procedure (TCLP) described in Appendix I of Part 268 must be used to develop the extract of solvent or dioxin wastes. The actual liquid waste, not an extract or a filtrate, must be used when measuring pH, PCB, and HOC concentrations in making California list restriction determinations. The Paint Filter Test, as described in SW-846, must be used to determine if wastes are liquids.

Deficiency:

Incomplete Description LDR Waste Sampling and Analytical Procedures: Section 3.2, Waste Analysis Plan, does not address those requirements relating to sampling and analytical procedures for land disposal restricted wastes. See Comment C-2.b and C-2.c. It must so address these requirements.

c. Frequency of Analysis : 40 CFR Part 268.

Describe the frequency at which analyses will be repeated for identifying land disposal restricted wastes. A comprehensive analysis of each waste stream must be performed at least annually or anytime there is reason to believe the composition of the waste has changed in accordance with 40 CFR § 268.7.

Deficiency:

Incomplete Frequency of Analysis: Section 3.2.4, Frequency of Analysis, should specify that analysis of each waste stream is conducted annually as well as whenever there is a reason to believe the composition of the waste has changed. Section 3.2.4 as written implies that this annual analysis is optional in accordance with 40 CFR § 268.7.

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305-B STORAGE MIXED WASTE STORAGE FACILITY
AUGUST 1991

C-1. WASTE CHARACTERIZATION: 40 CFR § 264.13.(b)(6)

a. Chemical and Physical Analyses: 40 CFR § 270.14(b)(2),
264.13 (a), 268.7(a), 268.9

For each hazardous waste stored at the facility, describe the waste, the hazard characteristics, the basis for hazard designation, and provide a detailed laboratory report detailing the chemical, and physical analyses of representative samples which contains all the information which must be known to store, treat or dispose of the waste in accordance with 40 CFR Parts 264 and 268.

Deficiency:

Incomplete Chemical & Physical Analyses: Section 3.1, of the Part B Permit Application, entitled "Chemical, Biological, and Physical Analyses," is incomplete. Although the 305-B Storage facility receives hazardous waste from some 50 waste generators, the waste analysis plan, Section 3.1, "Chemical, Biological, and Physical Analyses," does not provide detailed characterization data of representatives samples of the wastes which are stored in the facility. Section 3.1 of the waste analysis plan must include detailed waste characterization data including chemical, and physical analyses for all known waste streams. The US Department of Energy must submit laboratory data for at least the initial representative sample for each different waste stream that is received at 305-B. This data must be updated whenever the owner/operator is notified or has reason to believe that the waste stream has changed.

Incomplete Listing of Waste Codes: This Section provides only a general listing of wastes (e.g. "U001 through U359", "P" and "F" numbers) received at the 305-B Facility. This is inconsistent with the Part A Permit Application dated 20 December 1990, which lists only U001 through U249, U238, U353 through U359 wastes. This Section must include a complete listing of all waste codes for wastes received at the 305-B Storage Facility.

Inconsistent Waste Codes: In addition, W001 as listed in the Part A Permit Application is not identified in Section 3.1 of the Waste Analysis Plan. Section 3.1 should reflect all the waste codes listed in the latest Part A Permit Application and identify waste streams in which they are found. This discrepancy of the W001 waste code in the Part A Permit application must be corrected.

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Incomplete Waste Stream Reports: Detailed laboratory reports for the waste stored in the 305-B Storage Facility are completed, as a first time initial assessment, for only 1% of the waste streams according to information provided at the December 18, 1992 site visit by representatives of Waste Management Section. These waste stream reports which are currently available should be included in the Part B Permit Application in accordance with 40 CFR §264.13, for each waste stream that is stored at the 305-B Storage Facility. These analyses must be updated least when there is a change in generating process, or when there is reason to believe that the waste stream has changed. The US Department of Energy must submit laboratory data to support waste designation. This data must be submitted in Section 3.2 of the waste analysis plan. See comment C-2.d.

Incomplete Toxicity Characteristic (TC) Inventory: Information regarding the management of Toxicity Characteristic (TC) wastes (D004-D043) listed on the Part A Permit Application was not available during the site visit on December 17-18, 1992. TC Wastes are only addressed in the description of discarded chemical products in Section 3.1 of the Part B Permit Application. The specific waste analysis of D004 through D043 wastes must be addressed in Section 3.1 of the waste analysis plan. There is no specific discussion of the TC waste analysis. A specific discussion of the waste analysis for TC waste must be included in Section 3.2 of the waste analysis plan.

Insufficient Waste Stream Information: There is a limited description of the waste streams at the facility in Section 3.2, "Waste Analysis Plan." The description of waste streams in Section 3.1 is limited to (1) waste from nonspecific sources; (2) discarded commercial chemical products; (3) waste from research activities using radioactive isotopes; (4) waste from chemicals synthesized or created in research laboratories; and (5) discarded commercial chemical products exhibiting dangerous waste characteristics and/or criteria. The description of each specific waste stream received at the 305-3 Storage Facility must be included in Section 3.1 on the waste analysis plan.

Insufficient Description of Waste Processes: There is insufficient information regarding each generating process to confirm that the wastes can be properly managed at the facility. The waste analysis plan must include detailed waste characterization and detailed chemical and physical analyses of representative samples of the wastes in accordance with 40 CFR § 264.13(a)(1). The facility's waste analyses records, or studies conducted on hazardous waste generated from similar processes to that which generated the waste to be managed at the facility, may be included in the

data base required to comply with 40 CFR § 264.13(a)(1). This data base must include a detailed description of all the waste streams which are stored in the 305-B Storage Facility. The data base must clearly demonstrate how the analysis provides sufficient information on the waste's properties to comply with 40 CFR § 264.13(a).

C-2. WASTE ANALYSIS PLAN: SECTION 3.0: 40 CFR § 270.14(b)(3), 264.13(b) and (c)

Provide a copy of the waste analysis plan that describes the methodologies for conducting analyses required to properly store or dispose of hazardous wastes.

Deficiencies:

Insufficient Characterization of Specific Waste Properties:

There is limited information regarding the ranges of specific waste properties which is contained in Section 4.1.1. There is no limit specified other than the number of gallons of waste stored in the Storage Cells at the 305-B Facility. The restriction on the flash point of flammable liquids is only specified as "UBC". There appears to be no restrictions as to the waste which can be stored in the 305-B Storage Facility. Shock sensitive and peroxide forming chemicals that could present an explosive hazard must also be identified. The specific storage conditions which relate to the chemical and physical waste characteristics must be identified and included in Section 3.1. Specific limits on the properties of waste stored at the facility (e.g. flammable liquids) other than through referral to the Part A must be included in the waste analysis plan. A referral to "UBC" (Uniform Building Code, pursuant to the Uniform Fire Code) must be defined.

Incomplete Waste Storage Restrictions: There is limited information regarding waste storage restrictions in the 305-B Storage Facility. This is limited to Section 6.2 regarding the nonacceptance of damaged shipments. In addition, flammable limits are identified in Section 3.2.6. This information needs to be consolidated in the waste analysis plan. The waste analysis plan must also cross reference the container management practices of Section 4.1.1.6 for regular and flammable liquid storage.

Insufficient On-site Waste Analyses: The waste analysis plan does not adequately address the required analyses to ensure proper storage of hazardous waste. The waste analyses performed by the generators does not fulfill the requirements in accordance with 40 CFR 270.14 (b)(2).

Specifically, there is limited oversight of the generator waste analyses. The Pacific Northwest Laboratory Environmental Compliance Section conducts independent assessments of the generator at less than 90 day storage areas and includes limited waste analysis as part of this oversight in Checklist B-3, "Dangerous Waste Generators" and Checklist B-4, "TSD Facility Checklist (General, Interim Status)." The specific waste analyses must also be provided, even if process knowledge is used, to characterize the initial waste parameters, since laboratory verification may be required for any waste stream. See Comment C-2.a.

Limited Off-site Waste Analysis Verification: Limited analyses are completed at an off-facility contract laboratory based on "questionable appearance, periodic confirmation of waste composition, or historically unreliable information from a particular waste generating unit." There is limited verification of the waste analysis completed by the commercial Treatment, Storage or Disposal (TSD) Facility upon receipt of the hazardous waste for disposal. The list of specific waste analyses must also be provided even if process knowledge is used to obtain the initial waste characterization, since laboratory verification may be required for any waste stream. See comment C-2.a.

Limited Integrated Waste Analysis: The list of wastes or description of waste types to be permitted are not identified by specific processes that generate the wastes. The list of wastes is limited to the waste codes in Section 3.1 of the waste analysis plan and there is no consolidated list of waste codes for waste stored in the 305-B Storage Facility. This list of waste codes must be tied to specific processes as required by 40 CFR § 270.14(b). In addition, the properties of the wastes must be provided by process. The information in the waste analysis plan is limited to that provided on the Chemical Disposal/ Recycle Request as described in PNL-MA-8 entitled "Waste Management & Environmental Compliance." While the hazardous waste code and basis for RCRA waste hazard designation are provided on the designation worksheet, there is a lack of documented chemical and physical data regarding the waste from a source other than this waste analysis or data from a similar process. See Comment C-1.a.

a. Parameters and Rationale: 40 CFR § 264.13(b)(1)

List parameters chosen for analyses and explain the rationale for their selection.

Deficiency:

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Inconsistent Parameters and Rationale: Although the parameters and their rationale are noted in Section 3.2.1, "Parameters and Rationale," this section is inconsistent with Table 3-2 "Summary of Test Parameters, Rationales, and Methods." The parameters and rationale should be consistent with the analysis selected to measure those parameters to ensure proper waste management during storage in the 305-B Storage Facility. See Comment C-2.b.

Incomplete Analytical Methods: The specific parameters need to be tied to both the specific EPA analytical methods listed Table 3-2 as well as the rationale for the selection of the parameter under 40 CFR § 264.13(b)(1). The waste analysis plans must address waste stream parameters that are required in order to properly manage the waste.

b. Test Methods: 40 CFR § 264.13(b)(2)

Identify and reference (e.g., EPA Test Number, as given in SW-846) the test method to be used for parameters chosen.

Deficiency:

Incomplete Test Methods: The test methods noted in Section 3.2.2 and Table 3-2 do not identify and reference the EPA Test Number as given in SW-846 or WDOE 83-13 for the test used for the chosen parameters. These test methods must identify and reference the EPA test number. See Comment 2-a.

Inconsistent Description of Test Methods: Section 3.2 states that analyses are required only for unknown wastes generated by the generators. However, analyses in fact are conducted on only 1% of the waste streams which include analyses of used oil and silver waste from photographic processing. The other 99% of the waste streams designation relies on process knowledge. The test methods must be specified for all waste streams since verification laboratory analyses may be required for all waste streams.

Limited Waste Verification: Section 3.2 of the waste analysis plan must address the verification of wastes in accordance with 40 CFR §§ 264.13(a)(3) and (b)(4). Section 3.2.4 "Frequency of Analysis," specifies that verification sampling occurs on an as needed basis. This section must also address the potential for restricted wastes from the facility being included by mistake, process design limitations, variability of waste composition, chemical/physical instability of the waste, and include information regarding the reliability of waste analysis data. The waste analysis plan must also address the

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procedures to verify the waste and include this information in Section 3.2.4 in accordance with 40 CFR § 264.13(b)(4).

c. Sampling Methods: 40 CFR § 264.13(b)(3), Part 261, Appendix I

Identify and reference (e.g., ASTM) the sampling methods used to obtain a representative sampling of each waste to be analyzed and document that the chosen method is appropriate for the type and nature of the waste.

Deficiency:

Incomplete Sampling Methods: Section 3.2.3, "Sampling Methods" does not document that the selected method is appropriate for the type and nature of the waste, as listed in Table 3-2.

Incomplete Analytical Procedures: In addition, the waste analysis plans must provide documentation of the analytical procedures and representative samples. The screening process by 305-B Storage Facility must address the requirements of 40 CFR § 264.13(c). The 305-B Facility procedure, dated May 15, 1990, states only that sampling will be conducted in accordance with SW-846. This information is included in Section 12.4.1.1.1, Section 4.1.1.2 and Section 6.4.1.

d. Frequency of Analyses: 40 CFR § 264.13 (b)(4)

Describe the frequency at which analyses will be repeated.

Deficiency:

Limited Frequency of Analyses: Section 3.2.4., "Frequency of Analyses," states that the analyses will be conducted "as needed on an individual container or batch basis before they are collected or prior to shipment." This is inconsistent with Section 3.2 which requires analyses for "questionable appearance, periodic confirmation of waste composition, or historically unreliable information from a particular generating unit." The frequency of "periodic confirmation" needs to be specified in Section 3.2.4. The section does not address the requirement for annual sampling for land disposal restricted waste. See Comment 3-c.

Incomplete Documentation of Process Changes: The waste analysis plan must include data documenting completed waste analyses, when there has been a change in process that could change to waste characteristics, as required under 40 CFR § 264.13(a)(3). Additional information is required under 40 CFR § 264.13(a)(3)(i) regarding the specific procedures

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by which the generator notifies the owner/operator that a change in process has occurred. Additional information regarding procedures to obtain information regarding process changes, criteria for evaluating waste process change information and sampling and analysis procedures must be included in the waste analysis plan.

Waste Verification Requirements: In addition, the January draft facility permit condition III.1.B.v specifies that a minimum of 5% verification sampling will be completed during each fiscal year on hazardous waste containers stored at the 616 Storage Facility.

e. Additional Requirements for Waste Generated Off-site: 40 CFR §§ 264.13(c), 264.13(a)(4) and (b)(5)

Describe the procedures used to inspect and/or analyze a representative portion of wastes generated off-site. Describe the statistical method used to determine a representative sample of the incoming wastes (e.g. number of drums sampled).

Deficiency:

Incomplete Off-Site Waste Requirements: Section 3.2.5, "Additional Requirements for Wastes Generated Off-site," states that although waste is received from "off-site, there are no additional requirements, therefore, for wastes generated off-site". The 305-B Storage Facility receives wastes which is transported on a public accessed highway from the 300 and 3000 Areas. This is inconsistent with statement in Section 3.2.5 that additional requirements for waste generated outside the 3000 Area include proper manifesting. Section 3.2.5 must be clarified to identify the additional requirements for waste shipments from Battelle (Private) and PNL (Government). The Hanford Facility Draft Permit condition III.3.B.k. requires compliance with appropriate regulations for off-site shipments.

f. Additional Requirements for Ignitable, Reactive or Incompatible Wastes: 40 CFR §§ 264.(b)(6), 264.17

Describe the methods used to meet additional analysis requirements necessary for storing or disposing of ignitable, reactive or incompatible wastes.

Deficiency:

Incomplete Storage Requirements: Section 3.2.6, "Additional Requirements for Ignitable, Reactive, or Incompatible Wastes," includes reference to Section 2.1, which is a

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general description that does not provide specific requirements. This Section should cite the applicable specific requirements for ignitable, reactive, or incompatible wastes e.g. (Section 4.3).

C-3. WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS

a. Waste Characterization: 40 CFR §§ 268.7(a), 268.9, 268.32(j)

For each hazardous waste stored at the facility, provide analytical data necessary to determine if the waste is a restricted waste under 40 CFR Part 268. Alternatively, provide information from knowledge of the waste to determine if the waste is restricted. Whenever generator knowledge is used to make this determination, specify that all supporting data will be maintained in the operating record.

Supply analytical data or generator information to determine if the hazardous waste is an F001-F005 solvent waste or an F020-F023 or F026-F028 dioxin containing waste and whether it meets treatment standards as expressed in 40 CFR § 268.41.

Supply analytical data or generator information to determine if a) the waste is a liquid with pH equal or less than 2.0; b) the waste is a liquid containing concentrations of one or more of the California List constituents at or above levels specified in RCRA Section 3004(d); or c) liquid or non-liquid waste with a concentration of halogenated organic carbons (HOC) at or above 1000 mg/kg.

Deficiency:

Incomplete Description of LDR Waste Analyses: Although there are some 50 generators which generate hazardous waste for storage, the 305-B waste analysis plan does not provide detailed characterization data of representative samples of the wastes which are stored in the facility. The data must specifically address the waste analysis requirements of land disposal restrictions appearing in 40 CFR §§ 268.7(a) and 268.9. Section 3.2, "Waste Analysis Plan," merely states that the designation process includes determining if a waste is subject to land disposal restrictions, but does not outline the methodology for such determinations. It must outline the methodology. This Section 3.2 also references the waste designation process but does not include the reference to the WHC-IP-0756 entitled "Solid Waste Engineering Analysis Group Manual," which is used by PNL for waste designation, nor the "Hanford Site Solid Waste Acceptance Criteria: WHC-

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EP-0063-3" dated September 1991 for shipments to WHC. Section 3.2 must include waste characterization to show how the treatment standards for LDR waste have been met.

b. Sampling and Analytical Procedures: 40 CFR §§ 268.7 (a), 268.7(b)(1), Appendix I 40 CFR Part 268.

Specify the sampling and analytical procedures to be followed in characterizing the restricted wastes. The Toxic Characteristics Leaching Procedure (TCLP) described in Appendix I of Part 268 must be used to develop the extract of solvent or dioxin wastes. The actual liquid waste, not an extract or a filtrate, must be used when measuring pH, PCB, and HOC concentrations in making California list restriction determinations. The Paint Filter Test, as described in SW-846, must be used to determine if wastes are liquids.

Deficiency:

Incomplete Description of LDR Waste Sampling and Analytical Procedures: Section 3.2, "Waste Analysis Plan," does not address those requirements relating to sampling and analytical procedures for land disposal restricted wastes. (See Comments C-2.b and C-2.c). It must so address these requirements.

c. Frequency of Analysis : 40 CFR Part 268.

Describe the frequency at which analyses will be repeated for identifying land disposal restricted wastes. A comprehensive analysis of each waste stream must be performed at least annually or anytime there is reason to believe the composition of the waste has changed.

Deficiency:

Incomplete Frequency of Analyses: Section 3.2.4, "Frequency of Analysis," should specify that the analysis of each waste stream is completed annually as well as whenever there is a reason to believe the composition of the waste has changed. Section 3.2.4 as written implies that this annual analysis is optional.

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