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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

APR 28 1997

97-EAP-399

Mr. Robert W. Wilson
Compliance Inspector
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336-6018

Dear Mr. Wilson:

222-S LABORATORY COMPLEX WASTE ANALYSIS PLAN ADDENDUM FOR THE 219-S WASTE HANDLING FACILITY

The U.S. Department of Energy, Richland Operations Office (RL) received a letter from the State of Washington Department of Ecology (Ecology) dated March 25, 1997, on the "Completion of Corrective Measures at the 222-S Laboratory Complex." RL provided an initial response to the March 25, 1997, Ecology letter on April 9, 1997. In the April 9, 1997, letter, RL requested a three week extension to develop and transmit a Waste Analysis Plan Addendum (WAP Addendum) for the 219-S Waste Handling Facility by April 28, 1997. This letter fulfills the commitment to transmit the enclosed WAP Addendum. 47148 ✓

The WAP addendum language is based upon: (1) gaining an understanding of Ecology's expectations from meetings held between RL/contractors and Ecology on April 4, 1997, and April 22, 1997; and (2) following appropriate portions of the "Verification Requirements for Solid Waste WAP Guidance" document developed between RL/contractor and Ecology personnel between November 1996 and April 1997.



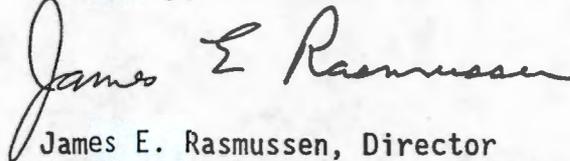
Mr. Robert W. Wilson
97-EAP-399

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Please review the enclosed WAP Addendum and indicate to RL any concerns identified. If you have any questions, please contact Gloria A. Williams, of my staff, on 372-0586.

Sincerely,



James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division

EAP:GAW

Enclosure

cc w/encl:

EDMC, H6-08

W. Adair, FDH

A. Huckaby, Ecology

R. Jim, YIN

A. King, RFSH

G. Mattsson, FDH

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S. Moore, Ecology

D. Powaukee, NPT

S. Price, FDH

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A. Stone, Ecology

J. Wilkinson, CTUIR

J. Winterhalder, RFSH



ENCLOSURE

219-S WASTE HANDLING FACILITY WASTE ANALYSIS PLAN ADDENDUM

Consisting of 18 pages
including cover sheet

219-S WASTE HANDLING FACILITY WASTE ANALYSIS PLAN ADDENDUM

A.0 PURPOSE AND SCOPE

The purpose of this addendum is to identify the aspects of waste confirmation performed in accordance with Washington Administrative Code (WAC) 173-303-300(1). This addendum will ensure all waste managed in the 219-S Waste Handling Facility has been properly verified and has undergone a thorough review of the process generating the waste to satisfy WAC 173-303-300(2). Wastes which are prohibited for acceptance into the 219-S Waste Handling Facility by this addendum include wastes which cannot meet the acceptance criteria imposed by this WAP Addendum.

A.1 222-S LABORATORY COMPLEX WASTE

Prior to acceptance of any 222-S Laboratory Complex waste into the 219-S Waste Handling Facility, the process described below will be followed. The process consists of a pre-shipment review and verification.

A.1.1 Pre-Shipment Review

The pre-shipment review involves steps taken by 222-S Laboratory personnel to ensure the 222-S Laboratory Complex waste has been properly designated, meets acceptance criteria for the 219-S Waste Handling Facility, and that the waste is compatible with the 219-S Waste Handling Facility equipment and waste already in storage.

- a. For 222-S Laboratory Complex wastes destined for the 219-S Waste Handling Facility, documentation will be maintained to meet the analysis obligations in WAC 173-303-300(2). For liquid waste generated during an analytical procedure, documentation (e.g., Waste Stream Fact Sheet (WSFS)) will be completed according to procedures developed within the 222-S Laboratory Complex. An example WSFS is included in Appendix 1.
- b. 222-S Laboratory personnel will ensure the documentation has properly identified accurate descriptions of all contributions to the waste stream from sources including rinses, sample preparation, and sample contribution.
- c. If documentation is not current and properly completed, 222-S Laboratory Complex waste will not be stored in the 219-S Waste Handling Facility.

A.1.2 Verification

With properly completed documentation, the verification provided on 222-S Laboratory Complex waste will be a container receipt inspection and waste log-in. Chemical screening and physical screening parameters are not necessary for these wastes to ensure they are properly managed in the 219-S Waste Handling Facility.

- a. A container receipt inspection will be performed on containerized 222-S Laboratory Complex waste transferred into hood 16 in room 2B. The

container receipt inspection will consist of inspecting the container label to ensure the waste transfer is allowed under the approved documentation.

- b. 222-S Laboratory Complex waste stored in the 219-S Waste Handling Facility will be logged in by entering information on the log sheet located near hood 16 in room 2B. An example log sheet is provided in Appendix 2.

A.2 OFF-UNIT WASTES

Prior to acceptance of any off-unit wastes into the 219-S Waste Handling Facility, the process described below will be followed. Off-unit wastes will consist of wastes generated from activities outside of the 222-S Laboratory Complex. The process described for off-unit wastes consists of a pre-shipment review and verification prior to acceptance for management in the 219-S Waste Handling Facility.

A.2.1 Pre-Shipment Review

The pre-shipment review involves steps taken by 222-S Laboratory Complex personnel to ensure the off-unit waste has been properly designated, meets acceptance criteria for the 219-S Waste Handling Facility, and the waste is compatible with the 219-S Waste Handling Facility equipment and waste already in storage.

- a. For off-unit wastes destined for the 219-S Waste Handling Facility, a Waste Stream Profile Sheet (WSPS) will be completed by the generator and submitted to 222-S Laboratory personnel. An example WSPS is included in Appendix 3.
- b. 222-S Laboratory personnel will review the WSPS submitted based on process knowledge, analytical data, or a combination of both and determine if the information provided constitutes acceptable knowledge. Based on the acceptable knowledge determination, 222-S Laboratory personnel will request additional analytical information necessary for receiving and accepting the waste. Table 1 identifies acceptance criteria for the WSPS parameters.
- c. 222-S Laboratory personnel perform a compatibility assessment of the off-unit waste based on the WSPS and determine the acceptability of the waste.
- d. 222-S Laboratory personnel notify the off-unit generator of the decision to accept or reject the waste.
- e. If accepted, transfer activities for the off-unit waste to the 219-S Waste Handling Facility are initiated.

Table 1. Acceptance Criteria for Waste Stream Profile Sheet Parameters

Parameter	Acceptance Criteria*
Chloride (moles/liter)	$< 3.5E^{-2}$
Energetics	No exotherms
Hydroxide (moles/liter)	< or equal to $7.0E^{-1}$
Moisture (volume %)	90 - 100
Nitrate (moles/liter)	$< 1.0E^{+0}$
Nitrite (moles/liter)	$< 5.0E^{-2}$
Organics, separable (visible or no visible organic layer)	No visible layer
pH (pH units)	No limit
$^{239/240}\text{Pu}$ or Total alpha (curies/liter)	$< 2.71E^{-5}$
Solids (volume %)	< 10
Specific gravity	.98 - 1.1
$^{235}\text{Uranium}$ (curies/liter)	$< 5.0E^{-1}$

* Acceptance criteria may be exceeded if 222-S Laboratory personnel can demonstrate shipment of 219-S Waste Handling Facility waste to the Double-Shell Tank System will still be allowed and this demonstration is maintained in the operating record.

A.2.2 Verification

With a properly completed WSPS, verification provided on off-unit waste will consist of a container receipt inspection, waste log-in, physical screening, and chemical screening.

- a. A container receipt inspection will be performed on all off-unit waste. The container receipt inspection will consist of:
 1. Inspecting the container label to ensure the off-unit waste is the waste described on the approved WSPS
 2. Checking the condition of the container
 3. Checking the piece count of the shipment including any inner containers
 4. Checking the shipping papers for discrepancies
- b. All off-unit waste stored in the 219-S Waste Handling Facility will be logged in by entering information on the log sheet located near hood 16 in room 2B.

- c. Physical screening will be performed on all off-unit wastes and will consist of two parameters.
1. Visual Inspection - Properly trained TSD unit personnel perform a visual inspection of the waste received at the 219-S Waste Handling Facility. The inspection will evaluate appropriate physical properties of the waste described on the approved WSPS.
 2. Radiological profile - Properly trained personnel will perform a dose rate check to assure the exposure levels are accurate and match shipping papers.
- d. Chemical Screening will be performed on three parameters for off-unit wastes. Off-site wastes will be verified 10% of each waste stream, per generator, per shipment. On-site wastes will be verified 5% per year of each Hanford Prime contractor and each of their sub-contractors. The three parameters were selected after considering the generator's acceptable knowledge, operational concerns, and worker health and safety issues.
1. pH - Incoming waste will be tested for pH to ensure the waste received is the waste described on the approved WSPS.
 2. Water compatibility/reactivity - Incoming waste will be examined for compatibility with waste in the 219-S Waste Handling Facility by mixing a small amount of incoming waste with water and observing any physical changes to the water such as bubbling, frothing and/or temperature increases.
 3. Cyanide - Incoming waste will be screened for the presence of cyanide to ensure the waste received is the waste described on the WSPS. In addition, an evaluation will be made to determine if a separable layer will form in the 219-S Waste Handling Facility tanks.

Appendix 1

Example Waste Stream Fact Sheet

**Consisting of 2 pages
including cover sheet**

**222-S LABORATORY
WASTE STREAM FACT SHEET**

Waste Stream:		Waste Stream: of
CONSTITUENTS OF WASTE GENERATED	CAS NUMBER	APPROXIMATE WEIGHT %
Summary: Waste Codes:		Waste Class:
Disposal:		Waste Container:
Comments:		

Waste Stream Labeling Requirements: (Waste Stream ID, Container type, Waste Codes, and Disposal criteria are required.) Waste Class is optional. This label is considered to be an example label, but contains the required information for waste stream identification. Other hazardous waste labeling requirements may apply.

WASTE STREAM LABEL
Waste Stream: Waste Container Type: Waste Codes: Waste Class: Disposal Criteria:
<input type="checkbox"/> Mark if waste has NOT been in contact with Tank Farm waste.

Appendix 2

Example Log-in Sheet for Hood 16 in Room 2B

**Consisting of 2 pages
including cover sheet**

Appendix 3

Example Waste Stream Profile Sheet

**Consisting of 9 pages
including cover sheet**

Profile Identification # _____
Approval Date _____

WASTE STREAM PROFILE SHEET

Follow attached instructions when filling out this waste stream profile sheet.

I. WASTE SHIPPER INFORMATION

1. 219-S customer (waste shipper/generator):

2. Contact: _____

3. Phone: _____

4. Mail stop: _____

II. GENERAL WASTE INFORMATION

1. 219-S customer: _____

2. Waste stream name: _____

3. Process generating waste: _____

4. Anticipated volume including any flush water:

5. Anticipated transfer frequency:

Profile Identification # _____
 Approval Date _____

6. Method of transfer (railcar, truck, pipeline):

7. Were analytical data used to fill out this profile sheet?

_____ Yes _____ No

If yes, cite document used as the basis for sampling and analysis (i.e., waste analysis plan and/or sampling analysis plan) and attach a complete copy of the latest results.

III. WASTE STREAM COMPOSITION

List all constituents which are greater than 1,000 mg/kg.

1. Component	2. Concentration range (units)	3. Average % (sum of average % of waste stream components must total 100)	4. Basis for composition
	_____ to _____		

Profile Identification # _____

Approval Date _____

IV. PHYSICAL PROPERTIES

1. Physical state at 70°F (circle all applicable)

Liquid
Slurry

Semisolid
Sludge

Solid
Gas

2. Viscosity at 70°F (degree) _____ < 10 mPa/ s¹ _____ > 10 mPa/ s¹

3. Is waste multi-layered? _____ Yes _____ No

If yes, describe and quantify each layer:

a. (Top) _____ %

b. _____ %

c. (Bottom) _____ %

d. Suspended solids: ___ < 1% ___ between 1% and 10% ___ > 10%

e. Flash point: ___ > 200 °F ___ between 100 and 200 °F ___ < 100 °F

f. Color: _____

4. Does the waste contain polychlorinated biphenyls (PCB) _____ Yes _____ No

If so what is the concentration range _____ Maximum _____ Minimum

5. Does the waste contain organics _____ Yes _____ No

If yes what is the range of the organics _____ Maximum _____ Minimum.

¹ Millipascals per second

Profile Identification # _____
 Approval Date _____

V. SPECIFIC ANALYSIS OF WASTE

Fill in the following chart giving maximum, minimum, or averages for each specific analyte. Also state whether this information is based on process knowledge or actual analytical data.

Parameter	Minimum (specify units)	Maximum (specify units)	Average (specify units)	Basis (process knowledge or analysis)
Chloride (only for waste going to 204-AR) (moles/liter)				
Energetics				
Hydroxide (moles/liter)				
Moisture (volume %)				
Nitrate (moles/liter)				
Nitrite (moles/liter)				
Organics, separable (visible or no visible organic layer)				
pH (pH units)				
^{239/240} Pu or total alpha (curies/liter)				
Solids (volume %)				
Specific gravity				
Uranium (if the concentration of ²³⁵ U is greater than 1% of the total uranium content) (curies/liter)				

Profile Identification # _____
Approval Date _____

VI. REACTIVITY AND STABILITY

1. What are the Reactivity Group¹ number(s) for this waste?

2. Is this material stable? _____ Yes _____ No

If no, explain: _____

3. Is this material shock sensitive? _____ Yes _____ No

If yes, explain: _____

1. From EPA, 1984, *Design and Development of Hazardous Waste Reactivity Testing Protocol*, EPA-600/2-84-057, U. S. Environmental Protection Agency, Washington D.C. Alternatively the categories specified in 40 CFR 265 appendix V may be specified.

VII. DANGEROUS WASTE INFORMATION

1. Is this waste a dangerous waste as defined by WAC 173-303?

_____ Yes _____ No

2. If it is a dangerous waste, list the applicable Hazardous and/or Dangerous Waste number(s) and explain the basis for the number. For example if you assign DOO1, the reason for selection is that the flash point is less than 140 °F.

Hazardous/Dangerous Waste number	Reason for selection

Profile Identification # _____
Approval Date _____

3. Is waste a mixed waste? _____ Yes _____ No

4. List any reportable quantities listed in 40 CFR 302.4 which are applicable to the waste.

Constituent	Reportable quantity

1.WAC 173-303, 1994, "Dangerous Waste Regulations," *Washington Administrative Code*

Profile Identification # _____

Approval Date _____

VIII. LAND DISPOSAL RESTRICTION INFORMATION

Fill in the following information pertaining to all applicable Land Disposal Restrictions (LDR) (See 40 CFR 268.40¹ and WAC 173-303-140²). For certain waste designated as D001, D002, and/or D0012-D043, also indicate any underlying hazardous constituents which do not meet LDR requirements (see 40 CFR 268.7¹).

Washington and/or EPA Dangerous (Hazardous) Waste Number	Waste Constituent for which the DST system must monitor Place an * before the entry if this is for an underlying hazardous constituent.	Treatability Group (wastewater or nonwastewater)	Is waste analysis data attached? (Yes or No)

1. 40 CFR 268, "Land Disposal Restrictions," *Code of Federal Regulations*, as amended.
2. WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

Profile Identification # _____
Approval Date _____

IX. SUPPLEMENTAL INFORMATION AND ACCOUNTABILITY STATEMENT

1. Is there an attachment containing additional information?

_____ Yes _____ No (list below)

2. I hereby certify that to the best of my knowledge all information submitted in this and all attached documents contain true and accurate descriptions of this waste. Any sample that was analyzed or submitted was representative as defined in 40 CFR 261 Appendix I¹ or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the 219-S customer and generator has been disclosed.

Authorized signature

Authorized signature

Name and title

Name and title

Date

Date