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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

1315 W. 4th Avenue • Kennewick, Washington 99336-6018 • (509) 735-7581

January 18, 2001

Mr. Steven Wisness, Director
Regulatory Compliance and Analysis Division
United States Department of Energy
Richland Operations Office
P.O. Box 550, MSIN: A5-18
Richland, Washington 99352

RECEIVED
JAN 30 2001

EDMC

Dear Mr. Wisness:

Re: Assessment and Inspection findings of the Waste Sampling and Characterization Facility (WSCF) for the State Wastewater Permits 4500 and 4502 conducted November 8, 2000, and November 9, 2000

On November 8th and November 9th, 2000, the Washington State Department of Ecology (Ecology) conducted an assessment and inspection of the U.S. Department of Energy's (USDOE) Hanford Site, WSCF laboratory. Fluor Hanford (FH) and WSCF staff participated. The inspection focused on verification of the laboratory capabilities in support of the permit requirements and the state water regulations for the Washington State Discharge Permits 4500 and 4502, as well as the Memorandum of Understanding (MOU) between the 200 Area Liquid Waste Processing Facility and WSCF. The assessment looked at collection, receiving, handling, and disposal of samples; analytical requirements; quality control; communications; reports; record keeping; and evidence of performance indicators being met.

This assessment and inspection revealed no violations and the following three (3) concerns:

Concern #1: There is no procedure for control charting.

Control charting is used for Quality Assurance and trending. Although control charts were readily available for the requested parameters, it is recommended that the laboratory develop a procedure for developing control charts for better consistency and trending.

Concern #2: The practical quantitative limits (PQL) and method detection levels (MDL) listed in the permits do not match the MOU, which is the guidance used by the laboratory.

The MOU needs to be updated to reflect the most current levels that are presently used in the permit and the laboratory. The MOU should also reflect any changes that occur due to a permit change, problem reports, or other correspondences.

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Concern #3: Discrepancies between the MOU and actual laboratory practices were found.

Ecology found discrepancies between the MOU and what is actually being done in the laboratory. Page 4 of the MOU lists the different data packages available. The client receives only one type. The list (in table form) should be deleted and a paragraph explaining what data package the client actually receives should be included.

Attachment 2A should be updated to reflect the most current methods, detection levels and PQLs. Mercury is currently being run by ICP, not Cold Vapor. Total Uranium is run by ICP-MS, with a new detection level of 0.1 ppb and a PQL of 5 ppb. Total Kjeldahl nitrogen should be deleted from the MOU because it has been deleted from the permits. Gross Alpha and Gross Beta should be changed to reflect the most current lower limit of detection.

The Trihalomethane action levels are unclear and should be represented consistently by the permit requirements and the MOU. Separate Trihalomethanes (bromoform, chloroform, bromo-dichloroform, di-bromochloroform) and list them individually with action levels or record them as a total value.

The action level of 4 on the permit for the TSS analysis is in question as to its applicability to the point of discharge. Ecology believes this is too low and verification of how the action level 4 was determined is necessary.

The semi-volatile and volatile organic detection levels should be updated. Total Organic Carbon is able to obtain the low detection level and PQL as listed with clean non- matrix effected samples.

If you have any questions concerning this letter, please feel free to contact me at (509) 736-3045.

Sincerely,



Kathy Conaway, Water Quality Coordinator
Nuclear Waste Program

KAC:sdb
Enclosure

cc w/encl.: Alex Temouri, USDOE
Roger Szelmeczka, FH
Steve Szendre, FH

Jay Warrick, WSCF
Mary Lou Blazek, OOE
Administrative Record: ST Permit 4500 and 4502



FACILITY INSPECTION FORM

FACILITY NAME ETF and TEDE

FACILITY NUMBER WA-7890-008-967

SECTION 1: INSPECTION INFORMATION

START DATE November 8, 2000

PRIMARY INSPECTOR Kathy Conaway

PERMIT# ST 4500 and ST 4502

INSPECTION TYPE (CHECK ONE)

- COMPLIANCE INSPECTION W/O SAMPLING XX
- COMPLIANCE INSPECTION W/ SAMPLING _____
- COVERAGE INSPECTION _____
- COMPLIANCE FOLLOW-UP INSPECTION _____
- TECHNICAL ASSISTANCE VISIT _____
- OPERATION & MAINTENANCE INSPECTION _____

COMPLAINT# N/A

LAB PROJECT # N/A

ENFORCEMENT DOCKET # N/A

Y/N
 SCHEDULED Y
 ANNOUNCED Y
 PART OF GROUP N

REASON FOR INSPECTION
 (CHECK ONE)
 ROUTINE XX
 COMPLAINT _____
 DRIVE-BY _____
 ENFORCEMENT _____
 QA _____
 BIOMONITORING _____
 OTHER SPECIFY) _____

PARTICIPANTS	AGENCY	FAC REP (Y/N)	PHONE
<u>Jerry Yokel</u>	<u>Ecology</u>	<u>N</u>	<u>736-3009</u>
<u>Deborah Singleton</u>	<u>Ecology</u>	<u>N</u>	<u>736-5722</u>
<u>Steve Szendro</u>	<u>FH</u>	<u>Y</u>	<u>376-7776</u>
<u>Roger Szelmeczka</u>	<u>FH</u>	<u>Y</u>	<u>373-4200</u>
<u>Jay Warrick</u>	<u>WSCE</u>	<u>Y</u>	<u>373-7076</u>
<u>Glenn Richardson</u>	<u>USDOE</u>	<u>Y</u>	<u>373-9629</u>

SECTION 2: FACILITY INFORMATION

FACILITY NAME & ADDRESS United States Dept of Energy
Hanford Site
Richland, WA

	DATE	TIME
ENTRY 1	<u>11/08/00</u>	<u>0900</u> hours
EXIT 1	<u>11/08/00</u>	<u>1600</u> hours
ENTRY 2	<u>11/09/00</u>	<u>0900</u> hours
EXIT 2	<u>11/09/00</u>	<u>1600</u> hours
ENTRY 3	_____	_____
EXIT 3	_____	_____

ENTRY TYPE (CHECK ONE)

- DENY _____
- DELAY _____
- WARRANT _____
- REGULAR XX

SECTION 3: AREAS EVALUATED DURING INSPECTION

N=NOT EVALUATED, S=SATISFACTORY, M=MARGINAL, U=UNSATISFACTORY

INSPECT BENCH SHEETS S
 INSPECT PERMIT S
 RECORDS/REPORTS S
 FLOW MEASUREMENT N
 LABORATORY S
 EFFLUENT/RECEIVING WATER N
 PRETREATMENT N
 COMPLIANCE SCHEDULES N
 SELF MONITORING PROGRAM S
 OPERATION & MAINTENANCE N
 SLUDGE DISPOSAL N
 FACILITY SITE REVIEW N
 LAB ACCREDITATION S
 OTHER _____
 (SPECIFY) _____

SECTION 4: SUMMARY OF FINDINGS/COMMENTS (ATTACH ADDITIONAL PAGES IF NEEDED)

There were no violations and three concerns found during this assessment and inspection of the WSCF laboratory.

Please refer to the WSCF Assessment report and closeout letter attached for the complete details and findings.

SECTION 5: FOLLOW-UPS (CHECK ALL THAT APPLY)

TYPE	DETAIL	RESP PERSON	SCHED	DONE
CONDUCT CLASS II				
LAB ACCRED MANUAL				
REINSPECT				
REOPEN PERMIT				
SEND APPLICATION				
TECH ASSIST-REGULAR				
TECH ASSIST-OUTREACH				
MOD PERMIT AT RENEWAL				
FACILITY ACTION				
ENFORCEMENT (WARN LET)				
NOV, ORDER, PENALTY				
OTHER (SPECIFY)				

SECTION 6: ACTIVITIES (CHECK ALL THAT APPLY)

DESCRIPTION	DATE COMPLETED	TRACKING NUMBER
DATA RECEIVED FROM LAB		
DRAFT INSPECTION REPORT COMPLETED		
FINAL INSPECTION REPORT COMPLETED		
FINAL INSPECTION RPT RCD FROM EILS		
FORM 3506 SENT TO EPA		
INSPECTION REPORT REVIEWED		
SAMPLES TO LAB		
OTHER		

SECTION 7: SIGNATURES

	NAME (PRINT)	SIGNATURE	DATE	AGENCY/PHONE
INSPECTOR 1	Jerry Yokel	<i>Jerry Yokel</i>	1/18/01	Ecology 736-3009
INSPECTOR 2	Deborah Singleton	<i>Deborah Singleton</i>	1/18/01	Ecology 736-5722
REVIEWER	Kathy Conaway	<i>Kathy Conaway</i>	1/16/01	Ecology 736-3045

Waste Sampling and Characterization Facility Assessment in Support of State of Washington Permits St 4500 and St 4502

Specific Observations and Recommendations

An assessment of the Waste Sampling and Characterization Facility (WSCF) was conducted on November 8 and 9, 2000. The purpose of this inspection was to verify laboratory capabilities in support of the Washington State discharge permits ST 4500 and 4502 and the Memorandum of Understanding between 200 Area Liquid Waste Processing Facility and WSCF. The assessment looked at collection, receiving, handling, and disposal of samples; analytical requirements, quality control; communications, reports, record keeping and evidence of performance indicators being met.

Personnel

All qualified staff was available for discussing issues on the two days of the onsite assessment. Follow-up questions were promptly addressed.

Facility

The facility was clean with adequate space for the analyses performed.

Equipment and Supplies

Standards and reagents were stored safely and separately.

Sample Management

As the samples from ETF or TEDF are brought into the lab the chain of custody is looked at and the sample is logged into the LIMS - Labcore system. It is the responsibility of the field personnel to filter or not to filter the samples in the field when they are taken. After the samples arrive at the lab the laboratory staff are only responsible for the work order that directs them in the lab. The sample management area has refrigerated rooms that are a repository for samples to be tested and also store unused sample material that will be returned to the client for disposal. Standards are not stored in this

area. Before the samples are taken to the areas in the lab for analysis a "trailer batch sheet " is printed which lists the testing required with the sample number. This sheet stays with the sample as it is sent throughout the lab for different analyses. This process ensures an internal chain of custody. The lab follows procedure LO-120-401 "Proper labeling and recertification of Chemicals, Standards, Reagents at WSCF,

Data Management and Records Keeping

The samples are logged into the LIMS-Labcore system and also logged into the room logbooks. They are given a new laboratory ID after the sample ID's are logged in from the sample containers. An "Acknowledgment of Samples Received" form was printed out off of Labcore and used to follow a sample from sample receipt through analysis and to final data package production. Gross Alpha/Beta and Lead analysis were tracked. All responsible staff were able to pull up the sample ID and identify the sample by its customer code, purchase order, group number, project number, project manager, sample number, sample ID, tests scheduled, matrix and sample dates as listed on the "Acknowledgement of Samples Received" tracking form.

The original data packages are kept in file cabinets at the responsible chemist work stations. The LIMS contains all of the final sample results but not the supporting Quality Control data.

No records have been destroyed since WSCF was first constructed and chemicals were analyzed. Quality Assurance Records Standards document HNF-PRO-222, Rev.2, outlines the standards to protect records and ensures their retrievability and accessibility. The Records Management Program Standards document HNF-PRO-210, Rev. 3, provides direction for the planning, directing, creation, maintenance, retrieval, and disposal of record and non-record information.

Performance Evaluation Samples

The lab has successfully participated in the ERA Quick Response Program, the Department of Energy Mixed Analyte Performance Evaluation Program (MAPEP) for water, the DOE Environmental Monitoring Laboratory Program, and the ERA Water Pollution .The most recent results were

checked and found acceptable. PE results were used to maintain the laboratory's Washington State Accreditation.

Data Packages

Page 4 of the MOU shows a table, which lists the different levels of data packages. The laboratory currently does not follow this system. The data package submitted to the client contains a summary of the data including duplicate, blank, and spikes data. Any abnormalities in data qualifications are explained in the narrative section of the data package.

Control Charting

Control charting is used for Quality Assurance and trending.

Although control charts were readily available for the requested parameters, it is suggested that the laboratory develop a procedure for developing control charts.

Quality Assurance / Quality Control

Check Standards are consistently used as outlined in the MOU.

Laboratory Quality Assurance Plan

The laboratory uses an up-to-date QAP, which implements the HASQARD, the Analytical Services Quality Assurance Program Plan, and the EPA Requirements for Quality Management Plans.

Standard Operating Procedures

As far as these two permits are concerned mercury is being run on the ICP-MS only.

All procedures found in the lab were goldenrod; indicating that they were the most current working copy.

Current Radiochemical methods which were read with their content being compared to questions addressed to chemists:

Tritium by Liquid Scintillation Counting (# LA-218-411)

Strontium 89 and 90 in Aqueous Samples by Sr-Spec Separation (# LA-220-406)

- 1) Chemical yield is tracked gravimetrically and radiochemically
- 2) Blanks, Duplicates and Spikes are run per batch.

Alpha and Beta in Liquid and Solid Samples (# LA-548-401)

- 1) The check standard (PCS) is averaged from all instruments daily
- 2) The standard is made up at the lab with an error of 25 to 30%
- 3) Laboratory Control, Blank and Spike are run with each batch

Other methods read during the assessment of metals and anion methods and data review included:

Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry (#LA-505-412)

- 1) Internal standards are used in all analyses
- 2) A laboratory Fortified Blank is run with each set of samples
- 3) At least one spike is added per batch

U. S. EPA Method 200.8, Version 5.4 (Metals – Inductively Coupled Plasma-Mass Spectrometry)

- 1) All samples are analyzed for total metals
- 2) Samples are not filtered

Anion Analysis by Ion Chromatography (#LA-533-410)

PQL's and MDL's

Practical Quantitation Limits and Method Detection Levels were discussed with all chemists. The MOU needs to be updated to reflect the most current levels that are presently used in the lab. It should also reflect any changes that are due to permit change, problem reports or other correspondences.

Problem Reporting

Problem reporting and discrepancy reporting are followed as outlined in the QAP. A separate form is used for each.

MOU

Discrepancies between the MOU and what is actually being done in the laboratory are as follows: Page 4 has a table, which lists the different data packages available. The client receives only one type. The table should be deleted and a paragraph explaining what data package the client actually receives should be included.

Attachment 2A should be updated to reflect the most current methods, detection levels and PQL's. Mercury is currently being run by ICP not Cold Vapor. Total Uranium is run by ICP-MS, with a new detection level of 0.1 ppb and a PQL of 5 ppb. Total Kjeldahl nitrogen should be deleted from the MOU because it has been deleted from the permits. Gross Alpha and Gross Beta should be changed to reflect the most current lower limit of detection.

The Trihalomethane action levels don't add up and should be represented consistently on the permits and the MOU. Either separate Trihalomethanes (bromoform, chloroform, bromo-dichloroform, di-bromochloroform) and list them individually with action levels or record them as a total value.

The action level of 4 on the permit for the TSS analysis is in question as to its applicability to the point of discharge.

The semi-volatile and volatile organic detection levels should be updated. Total Organic Carbon is able to obtain the low detection level and PQL as listed with clean non- matrix effected samples.

Accreditation Issues

The April 6, 2000, letter "Information Update Letter Number Two for the Waste Sampling and Characterization Facility Sample Analysis and Accreditation Issues" identified some regulatory compliance issues. During the assessment the issues pertaining to the aforementioned permits were discussed with staff. This issue of accreditation for Tritium has been resolved based on the letter from Ecology, Perry Brake - Lab Accreditation Unit Supervisor, to Michael Barnes on February 25, 2000. The Technetium 99 method is currently being updated in the lab but is run at Thermo Tech laboratory which is Washington State accredited. Ammonia is provisionally accredited and has acceptable performance on the most recent performance evaluation samples.

WSCF Laboratory Assessment Timeline

Date	Time	Time Spent	Staff
11/8/2000	8:30	Arrived at Lab	
	8:45	Introductions	
		Client Services	Karl Poole
		Quality Assurance	Russ Bisping
		ETF TEDF Client	Roger Smelzecki
	9:50	ACES station – enter lab	Jay Warwick
	10:00-11:45	Jerry Y. - assesses radiochemical sample receipt , analysis, and counting Deborah S. – assesses metals sample receipt, analysis and counting.	Scott Fitzgerald Troy Dale Bob Kearns Ken Iwatate Asok Gasputa
	12:30	Jerry Y. and Deborah S. go into lab land meet with ICP-MS chemists	Brian Wels
	2:00	Jerry Y. and Deborah S. discuss methods and data packages.	Kevin Beebe Mike Barnes
	3:00	Discuss TDS and TSS, Mercury , Anions and Cations, Kjeldahl Nitrogen	Bill Baird Stacey Bolling Karl Poole
	4:00	Exit Lab	
11/9/200	8:30	Arrive at lab	
	9:00	Meet with organic chemists	Ty Hamlin Don Nelson
	12:30	Discuss PQL's, Data packages, MOU, Check	Karl Poole Mike Barnes

		Standards, Data Validation	
	2:15	Exit Lab	
11/15/2000	3:00 -4:00	Closeout meeting- Federal Building	