

Pond Discharge Notification Cover Sheet

Date: 3/23/11

Total pages including cover sheet = 13

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From: George Squibb, Rocky Flats Surface Water Lead, telephone (303) 994-0145

Re: Discharge notification for Rocky Flats Ponds A-4 and B-5.

Pre-discharge samples for Ponds A-4 and B-5 were collected on 3/3/11. All results indicate that water quality standards at downstream Points of Compliance (POCs) will be met during discharge. Discharge of Ponds A-4 and B-5 is scheduled to begin on 3/24/11 at 9:00 a.m.

Pond A-4 will be direct discharged using the outlet works to North Walnut Creek through POC GS11. All required monitoring at downstream POCs GS11 and GS03 (Walnut Creek at Indiana Street) will be performed according to the normal protocols in Attachment 2 to RFLMA. The discharge is expected to continue for approximately 6 days, with a total discharge volume of approximately 3.8 million gallons.

Pond B-5 will be direct discharged using the outlet works to South Walnut Creek through POC GS08. All required monitoring at downstream POCs GS08 and GS03 (Walnut Creek at Indiana Street) will be performed according to the normal protocols in Attachment 2 to RFLMA. The discharge is expected to continue for approximately 6 days, with a total discharge volume of approximately 3.8 million gallons.

All available analytical data accompany this notice.

Please contact me if you have questions.

PRELIMINARY RESULTS REPORT**RIN: 11033653****Site: Rocky Flats Surface Water****Site Code: RFS01 Location: A4 POND****Ticket Number: JER 753****Report Date: 3/21/2011**

Parameter	Units	Date Sampled	Date Analyzed	Result	Qualifier(s)	Uncertainty	Detection Limit	Method
Americium-241	pCi/L	03/03/2011	03/09/2011	-0.00517	U	0.00683	0.0195	Am-05-RC Modified
Uranium	ug/L	03/03/2011	03/11/2011	7.34			0.067	EPA 3005/6020
Plutonium-238	pCi/L	03/03/2011	03/09/2011	0.00415	U	0.00608	0.0137	Pu-11-RC Modified
Plutonium-239/240	pCi/L	03/03/2011	03/09/2011	6.59E-10	U	0.00857	0.0198	Pu-11-RC Modified
NO2+NO3 as N	mg/L	03/03/2011	03/08/2011	0.375	J		0.100	EPA 353.2

PRELIMINARY RESULTS REPORT**RIN: 11033653****Site: Rocky Flats Surface Water****Site Code: RFS01 Location: B5 POND****Ticket Number: JER 752****Report Date: 3/21/2011**

Parameter	Units	Date Sampled	Date Analyzed	Result	Qualifier(s)	Uncertainty	Detection Limit	Method
Americium-241	pCi/L	03/03/2011	03/09/2011	-0.00169	U	0.00905	0.0195	Am-05-RC Modified
Uranium	ug/L	03/03/2011	03/11/2011	7.05			0.067	EPA 3005/6020
Plutonium-238	pCi/L	03/03/2011	03/09/2011	0.0012	U	0.0102	0.0119	Pu-11-RC Modified
Plutonium-239/240	pCi/L	03/03/2011	03/09/2011	-0.0012	U	0.00622	0.0171	Pu-11-RC Modified
NO2+NO3 as N	mg/L	03/03/2011	03/08/2011	0.050	U		0.050	EPA 353.2



Data Review and Validation Report

General Information

Report Number (RIN): 11033653
Sample Event: March 8-11, 2011
Site(s): Rocky Flats, Colorado; Surface Water
Laboratory: GEL Laboratories, Charleston, South Carolina
Work Order No.: 273432
Analysis: Metals, Wet Chemistry, and Radiochemistry
Validator: Steve Donovan
Review Date: March 23, 2011

This validation was performed according to the *Environmental Procedures Catalog*, (LMS/PRO/S04325, continually updated) "Standard Practice for Validation of Laboratory Data." The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 1.

Table 1. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Americium-241	ASP-A-020	HASL-300, Am-05	HASL-300, Am-05-RC
Nitrate + Nitrite as N	WCH-A-019	EPA 353.2	EPA 353.2
Plutonium Isotopes	LMR-08	HASL-300, Pu-11	HASL-300, Pu-11-RC
Uranium	LMM-02	SW-846 3005A	SW-846 6020

Data Qualifier Summary

The analytical results did not require qualification.

Sample Shipping/Receiving

GEL Laboratories in Charleston, South Carolina, received two water samples on March 5, 2011, accompanied by a Chain of Custody (COC) form. The air waybill numbers were listed on the Sample Receipt and Review Form. The COC form was checked to confirm that all of the samples were listed with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. The COC form was complete with no errors or omissions.

Preservation and Holding Times

The sample shipments were received intact with the temperature within the cooler of 6.0 °C that is within the acceptance range. All samples were received in the correct container types and had been preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods. Calibration and laboratory spike standards were prepared from independent sources.

Methods EPA 353.2, Nitrate + Nitrite as N

Calibrations were performed using five calibration standards on March 8, 2011. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than three times the method detection limit (MDL). Initial and continuing calibration verification checks were made at the required frequency resulting in four verification checks. All calibration check results were within the acceptance criteria. A reporting limit verification check was made to verify the linearity of the calibration curve near the practical quantitation limit and all results were acceptable.

Method SW-846 6020, Uranium

Calibrations were performed on March 11, 2011, using two calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than three times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in nine verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

Radiochemical Analysis

Radiochemical results are qualified with a “U” flag (not detected) when the result is greater than the minimum detectable concentration (MDC) but less than the Decision Level Concentration, estimated as three times the one-sigma total propagated uncertainty. Results above the Decision Level Concentration and the MDC are qualified with a “J” flag (estimated) when the result is less than Determination Limit (three times the MDC).

Alpha Spectrometry

Alpha spectrometry calibrations and instrument backgrounds were performed within a month previous to sample analysis. Calibration standards were counted to obtain a minimum of 10,000 counts per peak. Daily instrument checks met the acceptance criteria. The tracer recoveries met the acceptance criteria of 30 to 110 percent for all samples. The full width at half maximum (FWHM) was reviewed to evaluate the spectral resolution. All internal standard FWHM values were below 100 kiloelectron volts (keV) demonstrating acceptable resolution. All internal standard peaks were within 50 keV of the expected position. The regions of interest (ROIs) for analyte peaks were reviewed. No manual integrations were performed and all ROIs were satisfactory. All results were blank-corrected using data from a blank population. Americium results were corrected for tracer impurity.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. All method blank and calibration blank results associated with metals and wet chemistry samples were below the practical quantitation limits and method detection limits for all analytes. The radiochemistry method blank results were less than the Decision Level Concentration.

Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Analysis

ICP interference check samples ICSA and ICSAB were analyzed at the required frequency to verify the instrumental interelement and background correction factors. All ICSAB check sample results met the acceptance criteria.

Matrix Spike Analysis

Matrix spike (MS) samples are used to measure method performance in the sample matrix. The MS data are not evaluated when the concentration of the unspiked sample is greater than four times the spike concentration. The spike recoveries met the acceptance criteria for all analytes evaluated.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference for non-radiochemical replicate results that are greater than 5 times the practical quantitation limit (PQL) should be less than 20 percent. For results that are less than the PQL, the range should be no greater than the PQL. The replicate results met these criteria, demonstrating acceptable laboratory precision. The relative error ratio for radiochemical replicate results (calculated using the one-sigma total propagated uncertainty) was less than three, indicating acceptable precision.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. All control sample results were acceptable.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 100 times the practical quantitation limit for method 6020. The serial dilution results met the acceptance criteria.

Detection Limits/Dilutions

No dilutions were required for sample analysis. The required detection limits were met for all metals and wet chemistry analytes. All radiochemical minimum detectable concentrations (MDCs) were calculated using data from a blank population as specified in *Quality Systems for Analytical Services*. All reported MDCs were less than the required MDCs.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers. The analytical report included the method detection limit (minimum detectable concentration for radiochemistry) and practical quantitation limit for all analytes and all required supporting documentation.

Electronic Data Deliverable (EDD) File

The EDD file arrived on March 21, 2011. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

Report Prepared By: _____

Steve Donovan
Laboratory Coordinator

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 11033653 Lab Code: GEN Validator: Steve Donovan Validation Date: 3/23/2011

Project: Rocky Flats Surface Water Analysis Type: Metals General Chem Rad Organics

of Samples: 2 Matrix: Water Requested Analysis Completed: Yes

Chain of Custody

Present: OK Signed: OK Dated: OK

Sample

Integrity: OK Preservation: OK Temperature: OK

Select Quality Parameters

- Holding Times
- Detection Limits
- Field/Trip Blanks
- Field Duplicates

All analyses were completed within the applicable holding times.

The reported detection limits are equal to or below contract requirements.

SAMPLE MANAGEMENT SYSTEM
Metals Data Validation Worksheet

RIN: 11033653 Lab Code: GEN Date Due: 3/19/2011
 Matrix: Water Site Code: RFS02 Date Completed: 3/22/2011

Analyte	Method Type	Date Analyzed	CALIBRATION					Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB								
Uranium	ICP/MS	03/11/2011			OK	OK	OK	OK	96.1	96.1		0.0	106.0	2.0	116.0

SAMPLE MANAGEMENT SYSTEM
Wet Chemistry Data Validation Worksheet

RIN: 11033653 **Lab Code:** GEN **Date Due:** 3/19/2011
Matrix: Water **Site Code:** RFS02 **Date Completed:** 3/22/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
NO2+NO3 as N	03/08/2011	0.000	1.0000	OK	OK	OK	OK	OK	104.00	94.4		3.00	

SAMPLE MANAGEMENT SYSTEM
Radiochemistry Data Validation Worksheet

RIN: 11033653 **Lab Code:** GEN **Date Due:** 3/19/2011
Matrix: Water **Site Code:** RFS02 **Date Completed:** 3/22/2011

Sample	Analyte	Date Analyzed	Result	Flag	Tracer %R	LCS %R	MS %R	Duplicate
A4 POND	Americium-241	03/09/2011			54.0			
B5 POND	Americium-241	03/09/2011			53.0			
Blank_Spike	Americium-241	03/09/2011			90.0	93.90		
Blank_Spike_Du	Americium-241	03/09/2011			103.0	79.40		1.60
Blank	Americium-241	03/09/2011	-0.0020	U	78.0			
A4 POND	Plutonium-238	03/09/2011			72.0			
B5 POND	Plutonium-238	03/09/2011			83.0			
Blank	Plutonium-238	03/09/2011	-0.0060	U	81.0			
Blank_Spike_Du	Plutonium-239/240	03/09/2011				91.00		1.70
Blank	Plutonium-239/240	03/09/2011	0	U				
Blank_Spike	Plutonium-239/240	03/12/2011				104.00		



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Laboratory Services Division
8100 Lowry Boulevard Denver, CO 80230
PO Box 17123 Denver, CO 80217
303-692-3090
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Laboratory Results For Sample Number: ENV-2011002445-

Site ID/PWSID		Contact	Carl Spreng
Site		Phone	x3358
Address		Fax	
	JEFFERSON CO	Email	
Site Description	ROCKY FLATS POND A4	Collected By	CS
Customer ID	00008835	Collected	03/03/2011 12:00:00
Customer	CDPHE - HMWMD - Rocky Flats Unit	Received	03/04/2011 09:52:00
	4300 Cherry Creek Drive South	Reported	03/23/2011 00:00:00
	Denver CO 80246	Bottles	2-CUB 1-250NEUT
		Matrix	Surface Water
		Field Fluoride	
		Residual Chlorine	
		Temperature at Receipt	12.0C

Test Name	Result+/-95%CI	Units	MCL	MDA	Method Name	Date Analyzed	Qualifier
Nitrogen, Nitrate*	0.17	mg/L	NA	0.1	EPA 300.0	03/05/2011 00:00:00	
Plutonium, Isotopic Package*							
Americium-241	0.008 +/- 0.003	pCi/L	NA	0.004	ASTM-3084-89	03/21/2011 00:00:00	
Plutonium-239+240	< 0.009	pCi/L	NA	Varies	ASTM-3084-89	03/21/2011 00:00:00	
Uranium, Total*	0.0059	mg/L	NA	0.001	EPA 200.8	03/10/2011 00:00:00	

Comments:

Pu-239 MDL= 0.009 pCi/L

Registry Comments:

PRE DISCHARGE SAMPLE



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Laboratory Results For Sample Number: ENV-2011002446-

Site ID/PWSID		Contact	Carl Spreng
Site	ROCKY FLATS	Phone	x3358
Address		Fax	
		Email	
Site Description	POND B5	Collected By	CS
Customer ID	00008835	Collected	03/03/2011 11:40:00
Customer	CDPHE - HMWMD - Rocky Flats Unit	Received	03/04/2011 09:52:00
	4300 Cherry Creek Drive South	Reported	03/23/2011 00:00:00
	Denver	Bottles	2-CUB 1-250NEUT
	CO 80246	Matrix	Surface Water
		Field Fluoride	
		Residual Chlorine	
		Temperature at Receipt	11.5C

Test Name	Result+/-95%CI	Units	MCL	MDA	Method Name	Date Analyzed	Qualifier
Nitrogen, Nitrate*	<0.1	mg/L	NA	0.1	EPA 300.0	03/05/2011 00:00:00	
Plutonium, Isotopic Package*							
Americium-241	0.012 +/- 0.006	pCi/L	NA	Varies	ASTM-3084-89	03/21/2011 00:00:00	
Plutonium-239+240	< 0.008	pCi/L	NA	Varies	ASTM-3084-89	03/21/2011 00:00:00	
Uranium, Total*	0.0069	mg/L	NA	0.001	EPA 200.8	03/10/2011 00:00:00	

Comments:

Pu-239 MDL= 0.008 pCi/L
Am-241 MDL= 0.008 pCi/L

Registry Comments:

PRE DISCHARGE SAMPLES