Energy Fuels Resources (USA) Inc.
225 Union Blvd. Suite 600
Lakewood, CO, US, 80228
303 974 2140
www.energyfuels.com

August 29, 2014

VIA OVERNIGHT DELIVERY

Mr. Rusty Lundberg
Director of the Utah Division of Radiation Control
State of Utah Department of Environmental Quality
195 North 1950 West
P.O. Box 144850
Salt Lake City, UT 84116-4850

Dear Mr. Lundberg:

Re: State of Utah Radioactive Material License No. UT1900479
White Mesa Mill, Blanding, Utah
Semi-Annual Effluent Monitoring Report for Period
January 1 through June 30, 2014

As required by Utah Administrative Code, R 313-24-4 (incorporating by reference 10 CFR 40.65 (subpart1)), and License Condition 11.3A of State of Utah Radioactive Materials License No. UT1900479, enclosed is the Semi-Annual Effluent Monitoring Report for the White Mesa Mill for the period January 1, 2014 through June 30, 2014.

If you have any questions regarding this report, please contact the undersigned at (303) 389-4134.

Yours very truly,

Kathy Weinel

ENERGY FUELS RESOURCES (USA) INC.
Kathy Weinel
Quality Assurance Manager

cc: David C. Frydenlund
Harold R. Roberts
David E. Turk
Frank Filas
Jaime Massey

White Mesa Uranium Mill
Radioactive Materials License UT900479
Semi-Annual Effluent Monitoring Report
(January through June 2014)

Prepared For:
Utah Department of Environmental Quality
Division of Radiation Control

Prepared by:

Energy Fuels Resources (USA) Inc.
225 Union Boulevard, Suite 600
Lakewood, CO 80228

August 29, 2014

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WHITE MESA URANIUM MILL
SEMI-ANNUAL EFFLUENT REPORT, JANUARY THROUGH JUNE 2014

1.0 INTRODUCTION

The White Mesa Mill (the "Mill") has established monitoring programs to evaluate compliance with effluent limitations and to assess the potential for release of radioactive material into the local environment. These monitoring programs were developed and implemented at the time of Mill construction, operated with appropriate adaptation over time, and are consistent with the Mill's State of Utah Radioactive Materials License No. UT1900479 (the "License") and guidelines developed by the United States Nuclear Regulatory Commission ("NRC") (NRC Regulatory Guide 4.14, *Radiological Effluent and Environmental Monitoring at Uranium Mills-Rev. 1, ML003739941)*, 1980).

Under these programs, the Mill monitors the following environmental media and conditions:

a) Airborne particulate radionuclide concentrations obtained from the following sampling stations:

- North, east and south of the Mill Site: BHV-1 and BHV-2 (north), BHV-5 (east), and BHV-4 (south). BHV-1 serves as a surrogate for the nearest resident (BHV-1 is approximately 1.2 miles north of the Mill, but approximately 0.4 miles closer to the Mill than the nearest resident);
- A background location distant to and west of the Mill (BHV-3) that was monitored for airborne particulates up until November, 1995 (at which time background was established), which is no longer monitored for air particulates; and
- A station specifically requested by the White Mesa Ute Community south of the Mill Site (BVH-6);

b) External (direct) gamma radiation measured at air monitoring stations BHV-1, BHV-2, BHV-3, BHV-4, BHV-5 and BHV-6;

c) Vegetation at three site periphery locations, for uptake of radionuclides;

d) Stack release rates from the Mill's air emissions sources;

e) Surface water at Cottonwood Creek and, when flowing, Westwater Creek, both located west of the Mill;

f) Soil radionuclide activity obtained near the air particulate monitoring stations, during the third quarter of each year;

g) Groundwater (up and down gradient) of the Mill facility; and[1]

h) Seeps and springs in the vicinity of the Mill.[1]

This semi-annual effluent report provides the results of the specific monitoring and sampling activities that were undertaken during the subject reporting period.

2.0 ENVIRONMENTAL AIR PARTICULATE SAMPLING

2.1 Program Overview

The environmental airborne particulate monitoring program at the Mill utilizes four air sampling stations. Four high-volume continuous air sampling stations (BHV-1, BHV-2, BHV-4, and BHV-5) are required by the License. These sampling stations serve as sentinels for airborne particulate which could potentially emanate from the Mill site. In addition to its general site monitoring function, BHV-1 also serves as a conservative surrogate for concentrations at the nearest resident, because it is located approximately 1.2 miles north of the Mill just south of the nearest resident but between the Mill and that resident.

With regard to background monitoring, the Mill previously operated a continuous high-volume air sampling station (BHV-3) which was located approximately 3.5 miles west of the Mill site. With the approval of NRC, this station (BHV-3) was removed from the active air monitoring program in November 1995. At that time, NRC determined that a sufficient air monitoring database had been compiled at BHV-3 to establish a representative airborne radionuclide background for the Mill. While air sampling was discontinued at this location, gamma measurements and soil sampling continue at BHV-3.

In addition to the environmental air sampling locations described above, an additional station (BHV-6) was installed at the request of the White Mesa Ute Community. This station began operation in July of 1999 and provides airborne particulate information in the southerly direction between the Mill and the White Mesa Ute Community.

2.2 Sampling Protocol and Analytical Results

Airborne particulate monitors are operated continuously at each of the high-volume air sampling stations referenced above except BHV-3. Particulate sample collection filters are gathered by site technicians weekly in accordance with the Mill's environmental air sampling procedures and are composited on a quarterly basis for laboratory analyses. The collected filters are analyzed for Unat activity, Th-230 activity, Ra-226 activity, and Pb-210 activity. Fugitive dust standards for the facility are limited by the Mill's State of Utah Air Approval Order. The specific locations of the Mill's airborne particulate

[1] Groundwater sampling and seeps and springs sampling are reported separately pursuant to the Mill's State of Utah Ground Water Discharge Permit No. UGW370004, and are not included with this report.

monitoring stations are depicted on the figure entitled High Volume Air Monitoring Stations included as Attachment A. Station BHV-3, which is no longer sampled for air particulates, is located approximately 3.5 miles west of the Mill facility and is not shown on the Figure.

The analytical results of radionuclide particulate sampling for each monitoring station operated during this reporting period are provided in Attachment B under separate sampling station attachment tabs (Tabs 1-6). Each tab contains graphical illustrations of the radionuclide concentrations in log-scale presentation format. The graphs display reported data over time since the 1981 inception of the Mill's environmental air particulate monitoring program. The actual analytical results (and associated QA/QC information) reported by the laboratory for the reporting period are provided under Attachment C. In addition to the analyses for radionuclides, particulate loading is determined for each filter and composited as a quarterly mass-loading estimate for review purposes only. Graphs showing particulate loading at each station and the underlying data are included as Attachment D.

The first 2 sampling periods of 2012 have been omitted from particulate loading on the graph for BHV-6 in Attachment D. The timer on the airborne particulate monitoring station at BHV-6 malfunctioned, and the data are considered invalid due to the inability to measure the time sampled. The timer was replaced prior to the third sampling period in 2012 and all other measurements are valid.

For graphical illustration purposes, values reported at zero, values reported at less than the prescribed detection limit ($< 1 \times 10^{-16}$ uCi/ml), and missing values were plotted as 1×10^{-16} uCi/ml concentrations. Where other "less than" values were indicated (i.e., where detection limits for the data varied from 1×10^{-16} uCi/ml), the detection limit concentration was utilized for plotting the data point. This graphing convention is not utilized to formulate station average information, nor is it intended as a precedent for data treatment. Rather, the intent is to provide a conservative viewable depiction of site airborne radionuclide information. This is considered to be a conservative approach, because the actual concentration below the detection limit cannot be determined and, as a result, the plotted point will be at the same or a higher concentration than the actual activity concentration of the collected sample.

2.3 General Observations

The results of environmental air monitoring for this semi-annual period indicate that for all radionuclides at all monitoring stations, airborne radionuclide particulate activity concentrations were well below regulatory Effluent Concentration Limits ("ECL's") and the Mill's ALARA goals, which are set at 25% of the ECLs.

It is noteworthy and expected that Pb-210 concentrations are elevated when compared to the other parent radionuclide concentrations (i.e. U-nat, Th-230 and Ra-226). This phenomenon is due to the well-established controlling effect experienced worldwide as a

result of the ubiquitous presence of radon in the earth's atmosphere. Accordingly, the elevated Pb-210 presence in disequilibrium with parent radionuclides measured here is not associated with uranium milling operations. Rn-222 emanates as a decay-chain progeny of the Ra-226 contained in the soil of the earth's crust and is dispersed generally throughout the earth's atmosphere. The electrically charged short and long-lived decay products of Rn-222 attach to ambient dust particles found naturally in the atmosphere and are carried with the air. Pb-210 is the longest lived of these decay products and is the decay product of the shorter-lived radon progeny. As such, it accumulates as an electrical attachment on the natural ambient dust in the atmosphere and is generally measured at elevated activity when compared to local decay-chain parent radionuclide activity, regardless of uranium milling activity. At the Mill's BHV air monitoring stations, all dust (ambient natural and mill derived) is collected by the sample filter. Because of the natural elevation of Pb-210 accumulated as an attachment to the naturally occurring ambient dust particles collected by the air sampling equipment, Pb-210 is commonly elevated and in disequilibrium when compared to parent radionuclide activity, regardless of the Mill's presence. By way of illustration, average ground-level concentrations have been reported for selected States (NCRP Report 94, 1992) and are summarized in Table 1 below, demonstrating that elevated Pb-210 activity is present where no uranium milling operations are located nearby. In April 1977, prior to Mill construction and Mill operations, air particulate Pb-210 was measured at the Mill site to be 1.3E-14 uCi/ml (13.0E-3 pCi/m^3)[2].

Table 1- NCRP Report 94-Global Pb-210 Concentration Example

State	Pb-210 Concentration	
	uBq/M^3	uCi/ml
California	600	1.6E-14
Illinois	1500	4.1E-14
Ohio	300	8.1E-15
Massachusetts	700	1.9E-14

2.4 Site Specific Sampling Data

The results of airborne particulate monitoring for the period (without background subtraction) are provided by sampling station and radionuclide in Tables 2 through 5 below. Along with these data, the tables present comparative ECL's and the ECL percentage measured at each of the monitoring stations sampled during the period. A review of these data support the conclusion that airborne particulates are well controlled at the Mill. In all cases, the measured activity concentrations were well within the ECL, as well as the Mill's ALARA goal (i.e. 25% of the ECL). Lower Limits of Detection consistent with NRC Regulatory Guide 4.14 were maintained by the Mill's contract analytical laboratory for this reporting period.

[2] See the *Environmental Report, White Mesa Uranium Project, San Juan County, Utah for Energy Fuels Nuclear, Inc.* prepared by Dames & Moore, January 30, 1978, Section 2.9.1.1

The data obtained since program inception in 1981 indicates that only one individual quarterly measurement (Th-230 at BHV-5 for the 2nd Quarter of 1996) has ever exceeded the ECL at the Mill. While it is important to consider and evaluate an individual measurement exceeding the ECL, it is the average annual concentration that is of primary significance for public dose estimation purposes. In that instance, the average annual concentration of Th-230 for BHV-5 in 1996 was well below the ECL. Data obtained since program inception in 1981 also indicate that, with very few exceptions, the gross (background inclusive) measurements do not exceed the site's ALARA goal (i.e. only nine of the several thousand total gross radionuclide determinations to date exceeded the Mill's self-imposed 25% ALARA goal).

Table 2- Air Monitoring Station Results U-Nat (Comparison to Limits) 1st and 2nd Quarters 2014

Monitoring Station	1st Qtr. Result (uCi/ml)	2nd Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	1.07E-15	2.24E-15	9.00E-14	1.84E+00
BHV2	4.63E-16	3.04E-16	9.00E-14	4.26E-01
BHV4	4.69E-15	4.16E-15	9.00E-14	4.92E+00
BHV5	4.74E-15	8.18E-15	9.00E-14	7.18E+00
BHV6	8.92E-15	8.29E-15	9.00E-14	9.56E+00

Table 3- Air Monitoring Station Results Th-230 (Comparison to Limits) 1st and 2nd Quarters 2014

Monitoring Station	1st Qtr. Result (uCi/ml)	2nd Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	2.07E-16	5.14E-16	2.00E-14	1.80E+00
BHV2	4.97E-17	7.92E-17	2.00E-14	3.22E-01
BHV4	1.37E-16	6.96E-16	2.00E-14	2.08E+00
BHV5	1.42E-15	1.34E-15	2.00E-14	6.90E+00
BHV6	7.68E-16	5.35E-16	2.00E-14	3.26E+00

Table 4- Air Monitoring Station Results Ra-226 (Comparison to Limits) 1st and 2nd Quarters 2014

Monitoring Station	1st Qtr. Result (uCi/ml)	2nd Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	3.69E-16	1.09E-15	9.00E-13	8.11E-02
BHV2	1.15E-16	1.82E-16	9.00E-13	1.65E-02
BHV4	3.53E-16	1.77E-15	9.00E-13	1.18E-01
BHV5	3.48E-15	1.76E-15	9.00E-13	2.91E-01
BHV6	1.50E-15	6.72E-16	9.00E-13	1.21E-01

Table 5- Air Monitoring Station Results Pb-210 (Comparison to Limits) 1st and 2nd Quarters 2014

Monitoring Station	1st Qtr. Result (uCi/ml)	2nd Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	1.24E-14	1.23E-14	6.00E-13	2.06E+00
BHV2	1.49E-14	1.21E-14	6.00E-13	2.25E+00
BHV4	1.08E-14	1.06E-14	6.00E-13	1.78E+00
BHV5	1.50E-14	1.42E-14	6.00E-13	2.43E+00
BHV6	1.61E-14	1.20E-14	6.00E-13	2.34E+00

2.5 Radon-222

Due to the unavailability of monitoring equipment to detect the revised 10 CFR Part 20 standard, and with the approval of the NRC, Radon 222 monitoring at BHV stations was discontinued in 1995. Instead, compliance with these limits and the requirements of R313-15-301 is demonstrated by a calculation, authorized by the NRC and as contemplated by R313-15-302(2)(a). A copy of the Technical Evaluation Report evidencing such approval was enclosed with correspondence to the Division of Radiation Control ("DRC") on July 28, 2008.

This calculation is performed by use of the MILDOS code for estimating environmental radiation doses for uranium recovery operations (Strenge and Bender 1981) and more recently in 2003 by use of the updated MILDOS AREA code (Argonne 1998). The analysis under both the MILDOS and MILDOS AREA codes assumes the Mill to be processing high grade Arizona Strip ores at full capacity, and calculates the concentrations of radioactive dust and radon at individual receptor locations around the Mill.

The MILDOS and MILDOS AREA codes calculate the combined Total Effective Dose Equivalent ("TEDE") from all relevant pathways, including both air particulate and radon, at a number of locations including the nearest residence (the individual likely to receive the highest dose from the licensed operation), approximately 1.6 miles north of the Mill. These calculations reveal projected doses to the individual likely to receive the highest dose from the licensed operations to be well below the 100 mrem regulatory limit in R313-15-301(1)(a) for all pathways, including air particulate and radon, and well below the ALARA goal of 10 mrem/yr for air emissions excluding radon as set out in R313-15-101(4). MILDOS AREA modeling was recently conducted in support of the Mill's 2007 License Renewal Application, utilizing the MILDOS-AREA code (Version 2.20β), to estimate the dose commitments at various receptor locations for processing of Colorado Plateau ore (0.25% U_3O_8 and 1.5% V_2O_5) and Arizona Strip ore (0.637% U_3O_8). The process rate was assumed to be at full capacity of 730,000 tons per year (an average of 2,000 tons per day) with an average uranium recovery yield of 94%. That modeling showed a TEDE of 2 mrem per year at the nearest resident (3 mrem per year at the nearest potential residence, being the location of BHV-1 at the northern property boundary of the Mill site), which included the dose from all radionuclide sources, including radon. The modeled dose from radon itself was therefore a fraction of the TEDE and well within the regulatory limits.

3.0 EXTERNAL RADIATION (DIRECT GAMMA)

Gamma exposure rate estimates were measured for the reporting period utilizing optically stimulated luminescence dosimeters ("OSLs"). These dosimeters were located at each of the Mill's high-volume air sampling stations (BHV-1, BHV-2, BHV-4, BHV-5 and BHV-6) and at the designated background monitoring station (BHV-3). Measurements obtained from location BHV-3 have been designated as background due to BHV-3's remoteness from the Mill site (i.e., BHV-3 is located approximately 3.5 miles west of the Mill site). The results of the environmental OSL measurements and semi-annual cumulative above-background data are provided in Table 6 below. In addition, measurement data obtained at these locations are graphically presented in Attachment E to this report.

Table 6- Environmental Optically Stimulated Luminescence Dosimeter Measurements (Gamma)

Monitoring Station	1st Qtr Result (mrem)	2nd Qtr Result (mrem)	1st Qtr Result Less Background (mrem)	2nd Qtr Result Less Background (mrem)	Cumulative Semi-Annual Estimate (mrem)
BHV1	32.0	37.7	3.9	4.1	8.0
BHV2	28.9	30.8	0.8	0.0	0.8
BHV3	28.1	33.6	0.0	0.0	0.0
BHV4	31.5	32.0	3.4	0.0	3.4
BHV5	32.6	37.2	4.5	3.6	8.1
BHV6	33.2	31.1	5.1	0.0	5.1

The results for this period indicate that above background measurements for stations BHV-1, BHV-2, BHV-4, BHV-5 and BHV-6 are within regulatory limits. BHV-1 is at the location of the nearest potential residence. The nearest actual residence is approximately 0.4 miles north of BHV-1. The annual limit for an individual member of the public is 100 mrem/yr for combined internal and external exposure.

4.0 VEGETATION SAMPLES

Vegetation samples are collected at three locations around the Mill property. The sampling locations are: 1) northeast, 2) northwest and 3) southwest of the Mill facility. The NRC Regulatory Guide 4.14 requires that three samples be collected during the grazing season, without specifying exact months or times during the season. During the 2014 grazing season, two sets of samples were collected on April 16, 2014 and June 10, 2014. A third set of samples is planned for the fall season. The data from the fall season sampling will be included in the July through December 2015 Semi-Annual Effluent Report ("SAER") which will be submitted to the DRC on March 1, 2015. Data from the April and June sampling events are included in this report.

Graphical log-scale presentation of the vegetation sampling results, together with the analytical results reported by the Mill's contract laboratory (including QA/QC information) for this sampling period, are included as Attachment F of this report. The 2014 data results are within the variation of previous sampling episodes.

5.0 STACK SAMPLING

Under Section 5.0 of Tab 1.4 of the Mill's *Environmental Protection Manual,* Revision: EFR-3, 12/12 (the "*Environmental Protection Manual*") gas stack samples are collected at the Mill in accordance with the calendar year schedule shown below:

Table 7 – Stack Sampling Requirements

Frequency	Feed Stack (Grizzly Baghouse)	Stack for Yellowcake Dryer	Packaging (Yellowcake Baghouse)
Quarterly	None	If operating, U-nat	If operating, U-nat
Semi-annually	If operating, U-nat, Th-230	If operating, U-nat, Th-230, Ra-226, Pb-210	If operating, U-nat, Th-230, Ra-226, Pb-210

The analytical results of stack sampling conducted for the 1st and 2nd quarters of 2014, as well as for the 3rd and 4th quarters of 2013, are provided in Table 8 below, indicating the uCi/cc concentration in the stack emissions and the stack's radionuclide release rate (uCi/sec) for U-Nat, Th-230, and Ra-226 at each of the stacks sampled. The Pb-210 results are discussed below. The actual analytical results reported by the laboratory for the 1st and 2nd quarters of 2014 are provided in Attachment G to this report.

As shown on Table 8, the laboratory did not report the Pb-210 data for the 2nd quarter of 2014. The tracer yield for the samples was too low and insufficient for completion of the analyses. The entire sample volume was consumed during the initial analysis and there was no opportunity for reanalysis. EFRI was not notified of the issue by the laboratory until August of 2014, and therefore, could not recollect the samples. EFRI is exploring other laboratory options to prevent reoccurrence of data loss in the future.

The south yellowcake dryer, yellowcake baghouse, and grizzly baghouse operated during the 1st and 2nd quarters of 2014. The north yellowcake dryer has not been in operation since the 3rd quarter of 2012, and therefore, has not been sampled since it was last in operation.

It is also important to note that stack effluent concentrations are not comparable to environmental air sampling station ECL's for regulatory compliance purposes. The ECL is a limit that applies to the receptor locations and is not applicable to effluents from mill processes on the Mill site. These stack release data are more appropriately utilized for dose modeling purposes, and dose modeling is not computed for semi-annual reporting purposes.

Table 8- Stack Effluent Concentrations and Release Rates

	U-Nat u/Ci/cc	U-Nat. uCi/sec	Th-230 uCi/cc	Th-230 uCi/sec	Ra-226 uCi/cc	Ra-226 uCi/sec	Pb-210 uCi/cc	Pb-210 uCi/sec
3rd Qtr, 2013*								
South YC Dryer, Run 1	3.89E-10	2.50E-04	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
South YC Dryer, Run 2	4.86E-10	2.82E-04	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
Yellowcake Baghouse	1.04E-08	1.73E-02	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
4th Qtr, 2013*								
South YC Dryer, Run 1	2.70E-10	1.66E-04	2.33E-14	1.43E-08	7.77E-15	4.76E-09	2.11E-13	1.29E-07
South YC Dryer, Run 2	2.66E-10	1.65E-04	1.48E-13	9.13E-08	2.35E-14	1.46E-08	1.65E-13	1.02E-07
Yellowcake Baghouse	8.91E-09	1.55E-02	1.67E-11	2.91E-05	4.60E-13	8.01E-07	1.16E-12	2.03E-06
Grizzly Baghouse**	Not in operation	Not in operation	Not in operation	Not in operation	Not Required	Not Required	Not Required	Not Required
1st Qtr 2014*								
South YC Dryer, Run 1	2.53E-10	1.65E-04	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
South YC Dryer, Run 2	2.45E-10	1.67E-04	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
Yellowcake Baghouse	9.87E-10	1.83E-03	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
2nd Qtr, 2014*								
South YC Dryer, Run 1	1.79E-09	1.04E-03	2.22E-14	1.29E-08	3.40E-14	1.97E-08	No data reported. See Section 5.0 above for details.	
South YC Dryer, Run 2	2.19E-12	1.25E-06	3.25E-14	1.86E-08	3.44E-14	1.97E-08		
Yellowcake Baghouse	8.48E-10	1.25E-03	2.82E-13	4.17E-07	2.11E-13	3.11E-07		
Grizzly Baghouse	9.10E-12	6.40E-06	2.04E-12	1.43E-06	Not Required	Not Required	Not Required	Not Required

*The North Yellowcake Dryer was not in operation during 2013 or the first half of 2014.
** The Grizzly Baghouse was not in operations during the 3rd and 4th quarters of 2013.

6.0 SURFACE WATER MONITORING

Under the License, Part 11.2 B surface water samples are required to be obtained annually from Westwater Canyon and semi-annually from Cottonwood Creek. Sediment samples from Westwater Canyon are taken in place of the Westwater Canyon surface water sample where surface water is not available for sampling. Westwater Canyon surface water was not sampled in the first or second quarter of 2014, because no water was present during this reporting period. Attempts to collect a surface water sample from Westwater Canyon will continue through the next reporting period. If no surface water is available, a sediment sample will be collected as required.

The Mill's *Environmental Protection Manual* requires that samples from Cottonwood Creek be analyzed for TDS and total suspended solids ("TSS") quarterly, and the License, Part 11.2 B requires that samples from Cottonwood Creek be analyzed for dissolved and suspended radionuclides including Gross Alpha, U-nat, Ra-226, and Th-230 semi-annually. In accordance with these requirements, Cottonwood Creek was sampled for TDS and TSS during the 1st quarter, and was sampled for TDS, TSS, and the radionuclides during the 2nd quarter.

The field data sheets for the surface water sampling events, along with graphs showing historic results are included as Attachment H. The results of this sampling indicate that surface water concentrations remain low and within the range of typical background levels.

7.0 SOIL SAMPLING

Under Tab 4.1 of the Mill's *Environmental Protection Manual*, surface soils are required to be sampled at the Mill's air monitoring stations (BHV-1, BHV-2, BHV-3, BHV-4, BHV-5 and BHV-6) once per year during August or as soon as possible thereafter, but no later than September 30 of each year. In accordance with the Mill's *Environmental Protection Manual*, surface soils will be collected during the third quarter of 2014 and will be discussed in the July through December 2014 report.

8.0 METEOROLOGICAL MONITORING

As in prior reporting periods, an independent contractor has prepared the White Mesa Mill Semi-annual Meteorological Monitoring Report for the period of January through June 2014. This information is retained at the Mill site for agency review.

9.0 SIGNATURE

This report was prepared by Energy Fuels Resources (USA) Inc. on August 29, 2014.

Energy Fuels Resources (USA) Inc.

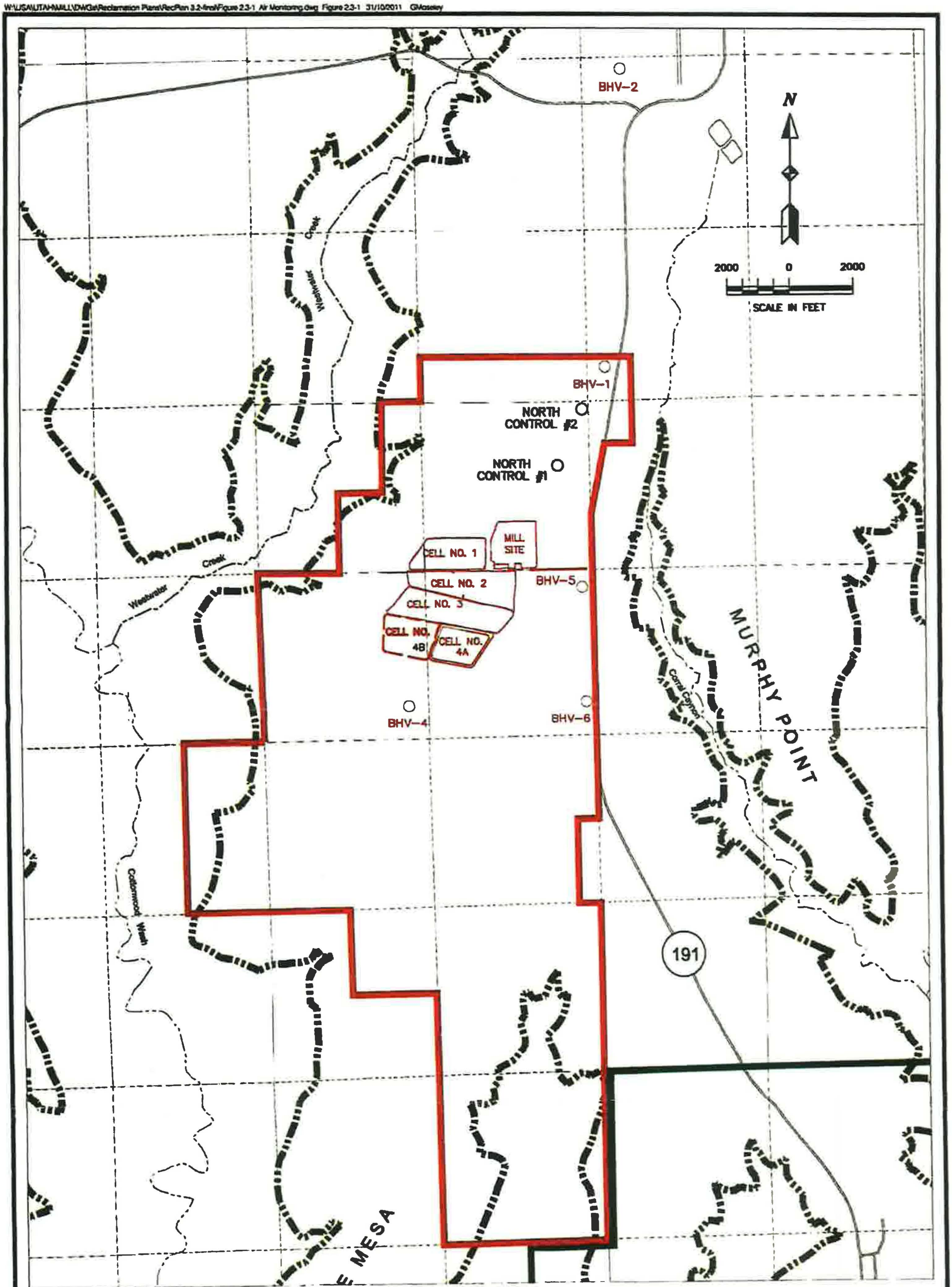
By:

Frank Filas
Vice President, Permitting and Environmental Affairs

ATTACHMENT A

HIGH VOLUME AIR MONITORING STATIONS

W:\USA\UTAHMILL\DWG\Reclamation Plans\RecPlan 3.2-final\Figure 2.3-1 Air Monitoring.dwg Figure 2.3-1 31/10/2011 GMoseley



Property Boundary
Reservation Boundary
Canyon Rim
Air Monitor Stations

Energy Fuels Resources (USA) Inc.			
Project	WHITE MESA MILL		
REVISIONS	County: SAN JUAN	State: UT	
Date / By	Location:		
11/09 / db	High Volume Air Monitoring Stations		
1/13/11 / BM			
1/27/11 / BM			
3/8/12 / GM			
	Scale: as shown	Date: JAN 2011	Figure 2.3-1_air monitoring.dwg
	Author: HBR	Drafted By: B. Hershbarger	

ATTACHMENT B

BHV AIR SAMPLING GRAPHS AND DATA TABLES

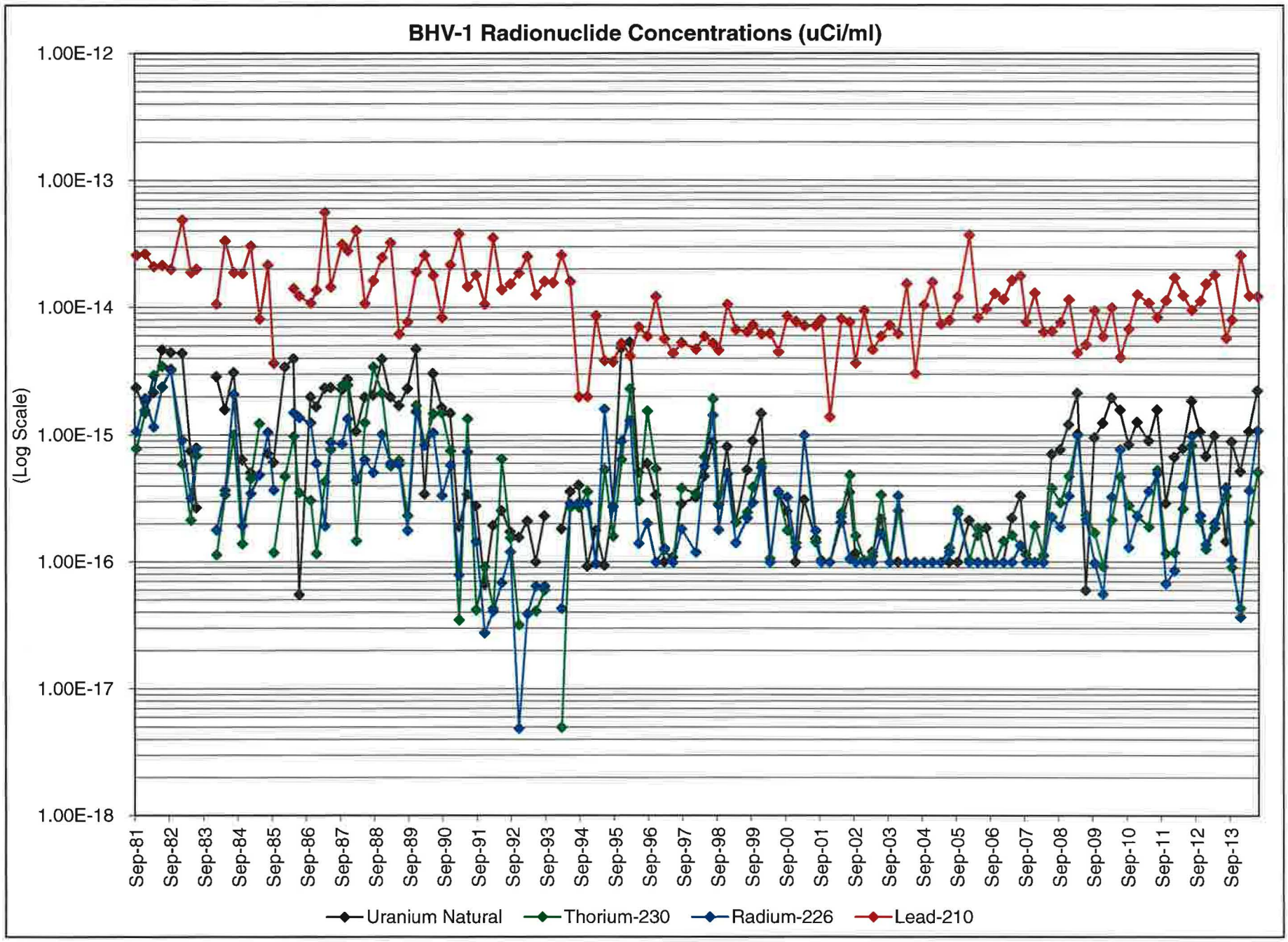
TAB 1

BHV-1 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	2.35E-15	5.00E-12	1.25E-12	7.82E-16	8.00E-14	2.00E-14	1.06E-15	2.00E-12	5.00E-13	2.57E-14	4.00E-12	1.00E-12
12/14/1981	1.56E-15	5.00E-12	1.25E-12	1.49E-15	8.00E-14	2.00E-14	1.93E-15	2.00E-12	5.00E-13	2.64E-14	4.00E-12	1.00E-12
3/29/1982	2.16E-15	5.00E-12	1.25E-12	2.93E-15	8.00E-14	2.00E-14	1.16E-15	2.00E-12	5.00E-13	2.09E-14	4.00E-12	1.00E-12
6/30/1982	4.69E-15	5.00E-12	1.25E-12	3.46E-15	8.00E-14	2.00E-14	2.38E-15	2.00E-12	5.00E-13	2.14E-14	4.00E-12	1.00E-12
9/27/1982	4.45E-15	5.00E-12	1.25E-12	3.29E-15	8.00E-14	2.00E-14	3.23E-15	2.00E-12	5.00E-13	1.99E-14	4.00E-12	1.00E-12
1/3/1983	4.39E-15	5.00E-12	1.25E-12	5.91E-16	8.00E-14	2.00E-14	9.14E-16	2.00E-12	5.00E-13	4.87E-14	4.00E-12	1.00E-12
4/4/1983	7.51E-16	5.00E-12	1.25E-12	2.13E-16	8.00E-14	2.00E-14	3.20E-16	2.00E-12	5.00E-13	1.88E-14	4.00E-12	1.00E-12
6/30/1983	2.68E-16	5.00E-12	1.25E-12	6.92E-16	8.00E-14	2.00E-14	7.92E-16	2.00E-12	5.00E-13	2.00E-14	4.00E-12	1.00E-12
10/3/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14	0.00E+00	2.00E-12	5.00E-13		4.00E-12	1.00E-12
1/3/1984	2.87E-15	5.00E-12	1.25E-12	1.14E-16	8.00E-14	2.00E-14	1.79E-16	2.00E-12	5.00E-13	1.06E-14	4.00E-12	1.00E-12
4/2/1984	1.59E-15	5.00E-12	1.25E-12	3.40E-16	8.00E-14	2.00E-14	3.71E-16	2.00E-12	5.00E-13	3.34E-14	4.00E-12	1.00E-12
7/2/1984	3.10E-15	5.00E-12	1.25E-12	1.00E-15	8.00E-14	2.00E-14	2.09E-15	2.00E-12	5.00E-13	1.88E-14	4.00E-12	1.00E-12
10/1/1984	6.42E-16	5.00E-12	1.25E-12	1.39E-16	8.00E-14	2.00E-14	1.94E-16	2.00E-12	5.00E-13	1.85E-14	4.00E-12	1.00E-12
1/2/1985	5.06E-16	5.00E-12	1.25E-12	4.56E-16	8.00E-14	2.00E-14	3.49E-16	2.00E-12	5.00E-13	3.03E-14	4.00E-12	1.00E-12
4/1/1985	0.00E+00	5.00E-12	1.25E-12	1.23E-15	8.00E-14	2.00E-14	4.88E-16	2.00E-12	5.00E-13	8.06E-15	4.00E-12	1.00E-12
7/1/1985	7.17E-16	5.00E-12	1.25E-12		8.00E-14	2.00E-14	1.05E-15	2.00E-12	5.00E-13	2.15E-14	4.00E-12	1.00E-12
9/30/1985	6.13E-16	5.00E-12	1.25E-12	1.18E-16	8.00E-14	2.00E-14	3.71E-16	2.00E-12	5.00E-13	3.64E-15	4.00E-12	1.00E-12
1/2/1986	3.42E-15	5.00E-12	1.25E-12	4.74E-16	8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
4/1/1986	3.98E-15	5.00E-12	1.25E-12	9.74E-16	8.00E-14	2.00E-14	1.50E-15	2.00E-12	5.00E-13	1.41E-14	4.00E-12	1.00E-12
6/30/1986	5.51E-17	5.00E-12	1.25E-12	3.52E-16	8.00E-14	2.00E-14	1.37E-15	2.00E-12	5.00E-13	1.23E-14	4.00E-12	1.00E-12
10/27/1986	1.99E-15	5.00E-12	1.25E-12	3.06E-16	8.00E-14	2.00E-14	1.25E-15	2.00E-12	5.00E-13	1.08E-14	4.00E-12	1.00E-12
12/15/1986	1.67E-15	5.00E-12	1.25E-12	1.16E-16	8.00E-14	2.00E-14	5.98E-16	2.00E-12	5.00E-13	1.37E-14	4.00E-12	1.00E-12
3/16/1987	2.33E-15	5.00E-12	1.25E-12	4.30E-16	8.00E-14	2.00E-14	1.92E-16	2.00E-12	5.00E-13	5.59E-14	4.00E-12	1.00E-12
5/11/1987	2.36E-15	5.00E-12	1.25E-12	7.69E-16	8.00E-14	2.00E-14	8.76E-16	2.00E-12	5.00E-13	1.45E-14	4.00E-12	1.00E-12
9/9/1987	2.27E-15	5.00E-12	1.25E-12	2.44E-15	8.00E-14	2.00E-14	8.51E-16	2.00E-12	5.00E-13	3.14E-14	4.00E-12	1.00E-12
11/2/1987	2.75E-15	5.00E-12	1.25E-12	2.46E-15	8.00E-14	2.00E-14	1.34E-15	2.00E-12	5.00E-13	2.79E-14	4.00E-12	1.00E-12
2/16/1988	1.07E-15	5.00E-12	1.25E-12	1.47E-16	8.00E-14	2.00E-14	4.44E-16	2.00E-12	5.00E-13	4.01E-14	4.00E-12	1.00E-12
5/18/1988	1.98E-15	5.00E-12	1.25E-12	1.25E-15	8.00E-14	2.00E-14	6.40E-16	2.00E-12	5.00E-13	1.07E-14	4.00E-12	1.00E-12
8/15/1988	2.06E-15	5.00E-12	1.25E-12	3.41E-15	8.00E-14	2.00E-14	5.08E-16	2.00E-12	5.00E-13	1.62E-14	4.00E-12	1.00E-12
11/14/1988	3.94E-15	5.00E-12	1.25E-12	2.12E-15	8.00E-14	2.00E-14	1.01E-15	2.00E-12	5.00E-13	2.47E-14	4.00E-12	1.00E-12
2/13/1989	1.99E-15	5.00E-12	1.25E-12	5.73E-16	8.00E-14	2.00E-14	5.99E-16	2.00E-12	5.00E-13	3.23E-14	4.00E-12	1.00E-12
5/15/1989	1.70E-15	5.00E-12	1.25E-12	6.32E-16	8.00E-14	2.00E-14	5.86E-16	2.00E-12	5.00E-13	6.16E-15	4.00E-12	1.00E-12
8/14/1989	2.31E-15	5.00E-12	1.25E-12	2.31E-16	8.00E-14	2.00E-14	1.77E-16	2.00E-12	5.00E-13	7.65E-15	4.00E-12	1.00E-12
11/13/1989	4.72E-15	5.00E-12	1.25E-12	1.71E-15	8.00E-14	2.00E-14	1.52E-15	2.00E-12	5.00E-13	1.89E-14	4.00E-12	1.00E-12
2/12/1990	3.44E-16	5.00E-12	1.25E-12	8.39E-16	8.00E-14	2.00E-14	8.31E-16	2.00E-12	5.00E-13	2.57E-14	4.00E-12	1.00E-12
5/14/1990	3.03E-15	5.00E-12	1.25E-12	1.47E-15	8.00E-14	2.00E-14	1.04E-15	2.00E-12	5.00E-13	1.79E-14	4.00E-12	1.00E-12
8/13/1990	1.64E-15	5.00E-12	1.25E-12	1.49E-15	8.00E-14	2.00E-14	3.34E-16	2.00E-12	5.00E-13	8.27E-15	4.00E-12	1.00E-12
11/12/1990	1.48E-15	5.00E-12	1.25E-12	7.50E-16	8.00E-14	2.00E-14	5.80E-16	2.00E-12	5.00E-13	2.16E-14	4.00E-12	1.00E-12
2/11/1991	1.90E-16	5.00E-12	1.25E-12	3.48E-17	8.00E-14	2.00E-14	7.91E-17	2.00E-12	5.00E-13	3.79E-14	4.00E-12	1.00E-12
5/13/1991	3.42E-16	5.00E-12	1.25E-12	1.34E-15	8.00E-14	2.00E-14	7.39E-16	2.00E-12	5.00E-13	1.46E-14	4.00E-12	1.00E-12
8/12/1991	2.77E-16	5.00E-12	1.25E-12	4.17E-17	8.00E-14	2.00E-14	1.45E-16	2.00E-12	5.00E-13	1.80E-14	4.00E-12	1.00E-12
11/11/1991	6.65E-17	5.00E-12	1.25E-12	9.13E-17	8.00E-14	2.00E-14	2.77E-17	2.00E-12	5.00E-13	1.06E-14	4.00E-12	1.00E-12
2/10/1992	1.94E-16	5.00E-12	1.25E-12	4.28E-17	8.00E-14	2.00E-14	4.08E-17	2.00E-12	5.00E-13	3.51E-14	4.00E-12	1.00E-12
5/11/1992	2.54E-16	5.00E-12	1.25E-12	6.49E-16	8.00E-14	2.00E-14	6.86E-17	2.00E-12	5.00E-13	1.38E-14	4.00E-12	1.00E-12
8/10/1992	1.73E-16	5.00E-12	1.25E-12	1.55E-16	8.00E-14	2.00E-14	1.20E-16	2.00E-12	5.00E-13	1.53E-14	4.00E-12	1.00E-12
11/9/1992	1.56E-16	5.00E-12	1.25E-12	3.19E-17	8.00E-14	2.00E-14	4.90E-18	2.00E-12	5.00E-13	1.86E-14	4.00E-12	1.00E-12
2/9/1993	2.10E-16	5.00E-12	1.25E-12		8.00E-14	2.00E-14	3.89E-17	2.00E-12	5.00E-13	2.52E-14	4.00E-12	1.00E-12
5/10/1993	1.00E-16	5.00E-12	1.25E-12	4.11E-17	8.00E-14	2.00E-14	6.43E-17	2.00E-12	5.00E-13	1.26E-14	4.00E-12	1.00E-12
8/10/1993	2.30E-16	5.00E-12	1.25E-12	6.00E-17	8.00E-14	2.00E-14	6.43E-17	2.00E-12	5.00E-13	1.60E-14	4.00E-12	1.00E-12
11/8/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14	0.00E+00	2.00E-12	5.00E-13	1.57E-14	4.00E-12	1.00E-12
2/7/1994	1.82E-16	5.00E-12	1.25E-12	5.00E-18	8.00E-14	2.00E-14	4.30E-17	2.00E-12	5.00E-13	2.59E-14	4.00E-12	1.00E-12
5/9/1994	3.60E-16	5.00E-12	1.25E-12	2.70E-16	8.00E-14	2.00E-14	2.87E-16	2.00E-12	5.00E-13	1.60E-14	4.00E-12	1.00E-12
8/9/1994	4.04E-16	5.00E-12	1.25E-12	2.70E-16	8.00E-14	2.00E-14	2.94E-16	2.00E-12	5.00E-13	2.00E-15	4.00E-12	1.00E-12
11/7/1994	9.18E-17	5.00E-12	1.25E-12	3.60E-16	8.00E-14	2.00E-14	2.91E-16	2.00E-12	5.00E-13	2.00E-15	4.00E-12	1.00E-12

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
2/7/1995	1.77E-16	9.00E-14	2.25E-14	9.70E-17	2.00E-14	5.00E-15	9.70E-17	9.00E-13	2.25E-13	8.60E-15	6.00E-13	1.50E-13
5/9/1995	9.40E-17	9.00E-14	2.25E-14	5.36E-16	2.00E-14	5.00E-15	1.60E-15	9.00E-13	2.25E-13	3.84E-15	6.00E-13	1.50E-13
8/9/1995	2.70E-16	9.00E-14	2.25E-14	1.60E-16	2.00E-14	5.00E-15	2.76E-16	9.00E-13	2.25E-13	3.76E-15	6.00E-13	1.50E-13
11/11/1995	4.80E-15	9.00E-14	2.25E-14	6.41E-16	2.00E-14	5.00E-15	8.93E-16	9.00E-13	2.25E-13	5.20E-15	6.00E-13	1.50E-13
2/5/1996	5.34E-15	9.00E-14	2.25E-14	2.30E-15	2.00E-14	5.00E-15	1.30E-15	9.00E-13	2.25E-13	4.20E-15	6.00E-13	1.50E-13
5/6/1996	5.11E-16	9.00E-14	2.25E-14	3.06E-16	2.00E-14	5.00E-15	1.40E-16	9.00E-13	2.25E-13	7.03E-15	6.00E-13	1.50E-13
8/5/1996	5.99E-16	9.00E-14	2.25E-14	1.55E-15	2.00E-14	5.00E-15	2.03E-16	9.00E-13	2.25E-13	5.94E-15	6.00E-13	1.50E-13
11/6/1996	3.38E-16	9.00E-14	2.25E-14	5.45E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.22E-14	6.00E-13	1.50E-13
2/6/1997	1.00E-16	9.00E-14	2.25E-14	1.25E-16	2.00E-14	5.00E-15	1.28E-16	9.00E-13	2.25E-13	5.68E-15	6.00E-13	1.50E-13
5/5/1997	1.09E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.39E-15	6.00E-13	1.50E-13
8/11/1997	2.88E-16	9.00E-14	2.25E-14	3.83E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	5.29E-15	6.00E-13	1.50E-13
1/5/1998	3.24E-16	9.00E-14	2.25E-14	3.47E-16	2.00E-14	5.00E-15	1.19E-16	9.00E-13	2.25E-13	4.73E-15	6.00E-13	1.50E-13
4/28/1998	4.75E-16	9.00E-14	2.25E-14	6.73E-16	2.00E-14	5.00E-15	5.69E-16	9.00E-13	2.25E-13	5.94E-15	6.00E-13	1.50E-13
7/31/1998	8.84E-16	9.00E-14	2.25E-14	1.93E-15	2.00E-14	5.00E-15	1.43E-15	9.00E-13	2.25E-13	5.22E-15	6.00E-13	1.50E-13
9/28/1998	2.81E-16	9.00E-14	2.25E-14	2.89E-16	2.00E-14	5.00E-15	1.80E-16	9.00E-13	2.25E-13	4.64E-15	6.00E-13	1.50E-13
12/28/1998	8.08E-16	9.00E-14	2.25E-14	4.93E-16	2.00E-14	5.00E-15	5.01E-16	9.00E-13	2.25E-13	1.06E-14	6.00E-13	1.50E-13
3/29/1999	2.06E-16	9.00E-14	2.25E-14	2.06E-16	2.00E-14	5.00E-15	1.42E-16	9.00E-13	2.25E-13	6.69E-15	6.00E-13	1.50E-13
7/3/1999	5.31E-16	9.00E-14	2.25E-14	2.47E-16	2.00E-14	5.00E-15	2.23E-16	9.00E-13	2.25E-13	6.44E-15	6.00E-13	1.50E-13
9/27/1999	8.98E-16	9.00E-14	2.25E-14	3.90E-16	2.00E-14	5.00E-15	2.96E-16	9.00E-13	2.25E-13	7.29E-15	6.00E-13	1.50E-13
12/28/1999	1.48E-15	9.00E-14	2.25E-14	6.00E-16	2.00E-14	5.00E-15	5.57E-16	9.00E-13	2.25E-13	6.19E-15	6.00E-13	1.50E-13
3/27/2000	1.00E-16	9.00E-14	2.25E-14	1.06E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.23E-15	6.00E-13	1.50E-13
6/26/2000	3.47E-16	9.00E-14	2.25E-14	3.46E-16	2.00E-14	5.00E-15	3.62E-16	9.00E-13	2.25E-13	4.50E-15	6.00E-13	1.50E-13
9/26/2000	2.51E-16	9.00E-14	2.25E-14	1.78E-16	2.00E-14	5.00E-15	3.25E-16	9.00E-13	2.25E-13	8.55E-15	6.00E-13	1.50E-13
12/26/2000	1.00E-16	9.00E-14	2.25E-14	1.42E-16	2.00E-14	5.00E-15	1.31E-16	9.00E-13	2.25E-13	7.77E-15	6.00E-13	1.50E-13
3/26/2001	3.10E-16	9.00E-14	2.25E-14	1.00E-15	2.00E-14	5.00E-15	1.00E-15	9.00E-13	2.25E-13	7.19E-15	6.00E-13	1.50E-13
7/29/2001	1.52E-16	9.00E-14	2.25E-14	1.44E-16	2.00E-14	5.00E-15	1.77E-16	9.00E-13	2.25E-13	7.21E-15	6.00E-13	1.50E-13
9/24/2001	1.03E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.09E-15	6.00E-13	1.50E-13
12/31/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.39E-15	6.00E-13	1.50E-13
4/1/2002	2.05E-16	9.00E-14	2.25E-14	2.44E-16	2.00E-14	5.00E-15	2.29E-16	9.00E-13	2.25E-13	8.15E-15	6.00E-13	1.50E-13
7/1/2002	3.55E-16	9.00E-14	2.25E-14	4.85E-16	2.00E-14	5.00E-15	1.06E-16	9.00E-13	2.25E-13	7.65E-15	6.00E-13	1.50E-13
9/30/2002	1.17E-16	9.00E-14	2.25E-14	1.61E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.68E-15	6.00E-13	1.50E-13
12/30/2002	1.00E-16	9.00E-14	2.25E-14	1.03E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.46E-15	6.00E-13	1.50E-13
3/31/2003	1.20E-16	9.00E-14	2.25E-14	1.12E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.68E-15	6.00E-13	1.50E-13
6/30/2003	2.18E-16	9.00E-14	2.25E-14	3.40E-16	2.00E-14	5.00E-15	1.67E-16	9.00E-13	2.25E-13	5.96E-15	6.00E-13	1.50E-13
9/29/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.28E-15	6.00E-13	1.50E-13
12/29/2003	1.00E-16	9.00E-14	2.25E-14	2.54E-16	2.00E-14	5.00E-15	3.35E-16	9.00E-13	2.25E-13	6.25E-15	6.00E-13	1.50E-13
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.54E-14	6.00E-13	1.50E-13
6/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.04E-15	6.00E-13	1.50E-13
9/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.05E-14	6.00E-13	1.50E-13
12/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.59E-14	6.00E-13	1.50E-13
3/28/2005	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.42E-15	6.00E-13	1.50E-13
6/29/2005	1.00E-16	9.00E-14	2.25E-14	1.30E-16	2.00E-14	5.00E-15	1.20E-16	9.00E-13	2.25E-13	7.94E-15	6.00E-13	1.50E-13
9/26/2005	1.00E-16	9.00E-14	2.25E-14	2.56E-16	2.00E-14	5.00E-15	2.42E-16	9.00E-13	2.25E-13	1.22E-14	6.00E-13	1.50E-13
1/3/2006	2.13E-16	9.00E-14	2.25E-14	1.04E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.73E-14	6.00E-13	1.50E-13
4/3/2006	1.62E-16	9.00E-14	2.25E-14	1.86E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.36E-15	6.00E-13	1.50E-13
7/3/2006	1.86E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.77E-15	6.00E-13	1.50E-13
10/2/2006	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13
1/1/2007	1.00E-16	9.00E-14	2.25E-14	1.47E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.17E-14	6.00E-13	1.50E-13
4/2/2007	2.23E-16	9.00E-14	2.25E-14	1.63E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.65E-14	6.00E-13	1.50E-13
7/2/2007	3.35E-16	9.00E-14	2.25E-14	1.34E-16	2.00E-14	5.00E-15	1.36E-16	9.00E-13	2.25E-13	1.78E-14	6.00E-13	1.50E-13
9/30/2007	1.15E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.68E-15	6.00E-13	1.50E-13
12/31/2007	1.00E-16	9.00E-14	2.25E-14	1.93E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
3/31/2008	1.14E-16	9.00E-14	2.25E-14	1.13E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.44E-15	6.00E-13	1.50E-13
6/30/2008	7.09E-16	9.00E-14	2.25E-14	3.83E-16	2.00E-14	5.00E-15	2.27E-16	9.00E-13	2.25E-13	6.52E-15	6.00E-13	1.50E-13

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-1U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-1T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-1R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-1PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/30/2008	7.69E-16	9.00E-14	2.25E-14	2.94E-16	2.00E-14	5.00E-15	1.90E-16	9.00E-13	2.25E-13	7.64E-15	6.00E-13	1.50E-13
12/31/2008	1.21E-15	9.00E-14	2.25E-14	4.76E-16	2.00E-14	5.00E-15	3.34E-16	9.00E-13	2.25E-13	1.16E-14	6.00E-13	1.50E-13
3/15/2009	2.14E-15	9.00E-14	2.25E-14	1.02E-15	2.00E-14	5.00E-15	1.00E-15	9.00E-13	2.25E-13	4.44E-15	6.00E-13	1.50E-13
6/15/2009	5.97E-17	9.00E-14	2.25E-14	2.35E-16	2.00E-14	5.00E-15	2.18E-16	9.00E-13	2.25E-13	5.13E-15	6.00E-13	1.50E-13
9/15/2009	9.55E-16	9.00E-14	2.25E-14	1.71E-16	2.00E-14	5.00E-15	9.87E-17	9.00E-13	2.25E-13	9.47E-15	6.00E-13	1.50E-13
12/15/2009	1.24E-15	9.00E-14	2.25E-14	9.25E-17	2.00E-14	5.00E-15	5.60E-17	9.00E-13	2.25E-13	5.95E-15	6.00E-13	1.50E-13
3/31/2010	1.97E-15	9.00E-14	2.25E-14	2.15E-16	2.00E-14	5.00E-15	3.27E-16	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13
6/30/2010	1.58E-15	9.00E-14	2.25E-14	4.71E-16	2.00E-14	5.00E-15	7.70E-16	9.00E-13	2.25E-13	4.07E-15	6.00E-13	1.50E-13
9/30/2010	8.42E-16	9.00E-14	2.25E-14	2.80E-16	2.00E-14	5.00E-15	1.31E-16	9.00E-13	2.25E-13	6.80E-15	6.00E-13	1.50E-13
12/31/2010	1.27E-15	9.00E-14	2.25E-14	2.32E-16	2.00E-14	5.00E-15	2.30E-16	9.00E-13	2.25E-13	1.27E-14	6.00E-13	1.50E-13
4/4/2011	9.01E-16	9.00E-14	2.25E-14	1.90E-16	2.00E-14	5.00E-15	3.64E-16	9.00E-13	2.25E-13	1.09E-14	6.00E-13	1.50E-13
7/4/2011	1.59E-15	9.00E-14	2.25E-14	5.31E-16	2.00E-14	5.00E-15	4.99E-16	9.00E-13	2.25E-13	8.38E-15	6.00E-13	1.50E-13
10/3/2011	2.92E-16	9.00E-14	2.25E-14	1.17E-16	2.00E-14	5.00E-15	6.76E-17	9.00E-13	2.25E-13	1.14E-14	6.00E-13	1.50E-13
1/3/2012	6.73E-16	9.00E-14	2.25E-14	1.19E-16	2.00E-14	5.00E-15	8.58E-17	9.00E-13	2.25E-13	1.73E-14	6.00E-13	1.50E-13
4/3/2012	7.87E-16	9.00E-14	2.25E-14	2.64E-16	2.00E-14	5.00E-15	3.95E-16	9.00E-13	2.25E-13	1.25E-14	6.00E-13	1.50E-13
7/2/2012	1.86E-15	9.00E-14	2.25E-14	8.33E-16	2.00E-14	5.00E-15	9.85E-16	9.00E-13	2.25E-13	9.55E-15	6.00E-13	1.50E-13
10/1/2012	1.06E-15	9.00E-14	2.25E-14	2.11E-16	2.00E-14	5.00E-15	2.34E-16	9.00E-13	2.25E-13	1.13E-14	6.00E-13	1.50E-13
12/31/2012	6.86E-16	9.00E-14	2.25E-14	1.27E-16	2.00E-14	5.00E-15	1.38E-16	9.00E-13	2.25E-13	1.54E-14	6.00E-13	1.50E-13
3/25/2013	9.91E-16	9.00E-14	2.25E-14	1.86E-16	2.00E-14	5.00E-15	2.04E-16	9.00E-13	2.25E-13	1.82E-14	6.00E-13	1.50E-13
7/2/2013	1.46E-16	9.00E-14	2.25E-14	3.34E-16	2.00E-14	5.00E-15	3.91E-16	9.00E-13	2.25E-13	5.78E-15	6.00E-13	1.50E-13
9/30/2013	8.89E-16	9.00E-14	2.25E-14	9.13E-17	2.00E-14	5.00E-15	1.05E-16	9.00E-13	2.25E-13	8.00E-15	6.00E-13	1.50E-13
12/30/2013	5.21E-16	9.00E-14	2.25E-14	4.34E-17	2.00E-14	5.00E-15	3.70E-17	9.00E-13	2.25E-13	2.59E-14	6.00E-13	1.50E-13
3/31/2014	1.07E-15	9.00E-14	2.25E-14	2.07E-16	2.00E-14	5.00E-15	3.69E-16	9.00E-13	2.25E-13	1.24E-14	6.00E-13	1.50E-13
6/30/2014	2.24E-15	9.00E-14	2.25E-14	5.14E-16	2.00E-14	5.00E-15	1.09E-15	9.00E-13	2.25E-13	1.23E-14	6.00E-13	1.50E-13


BHV-1 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
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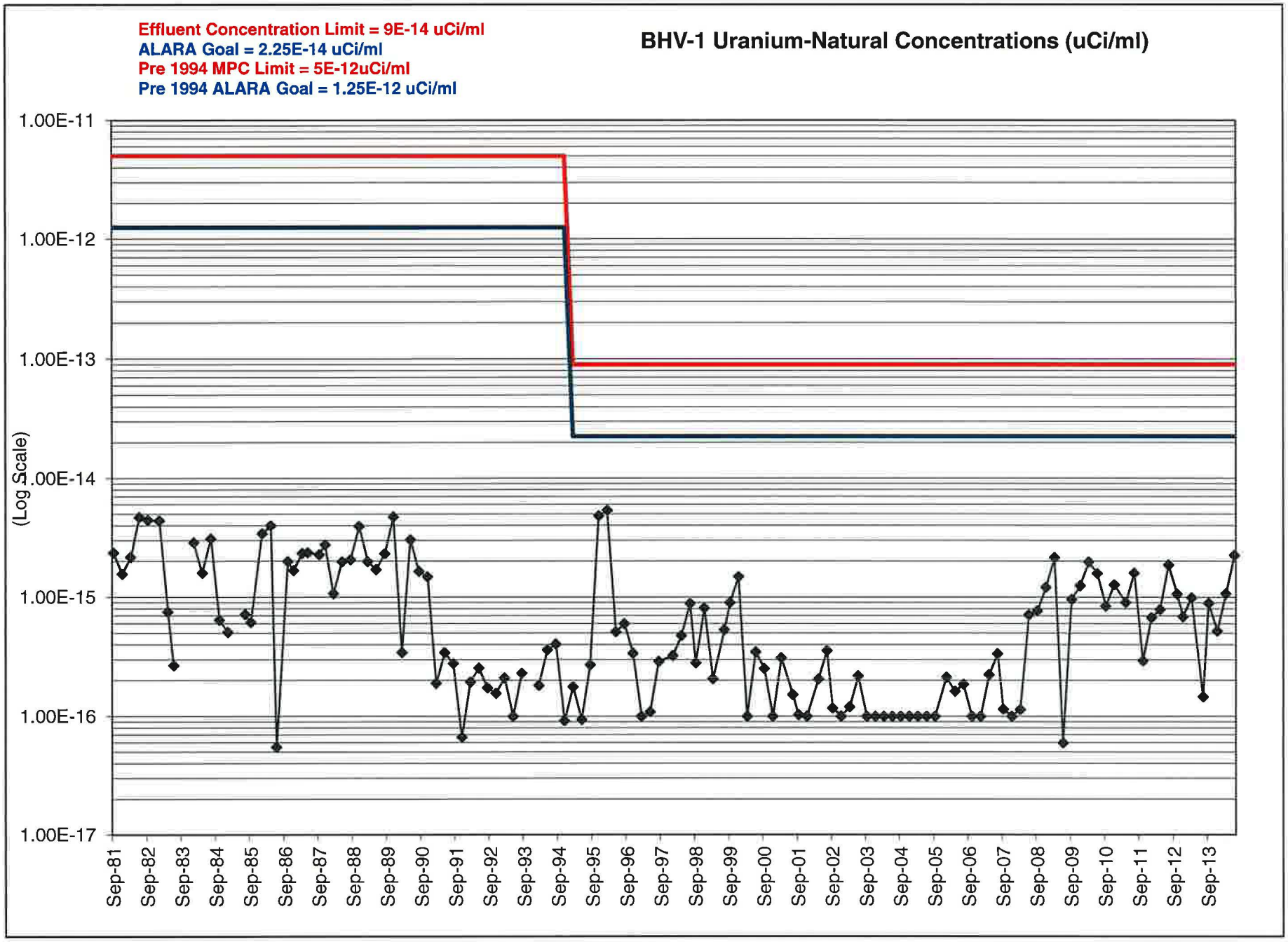
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-1 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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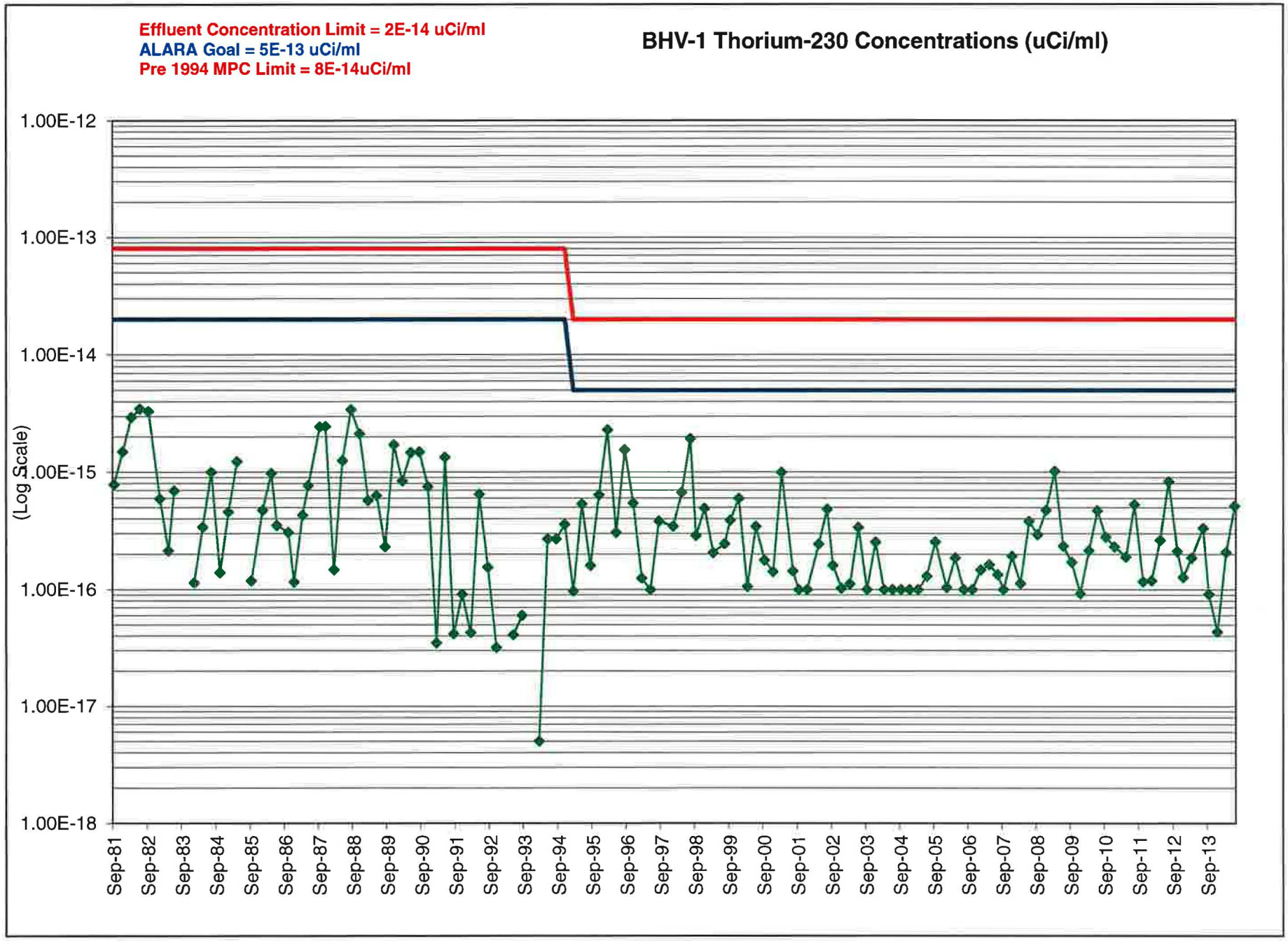
Sep-13


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-1 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
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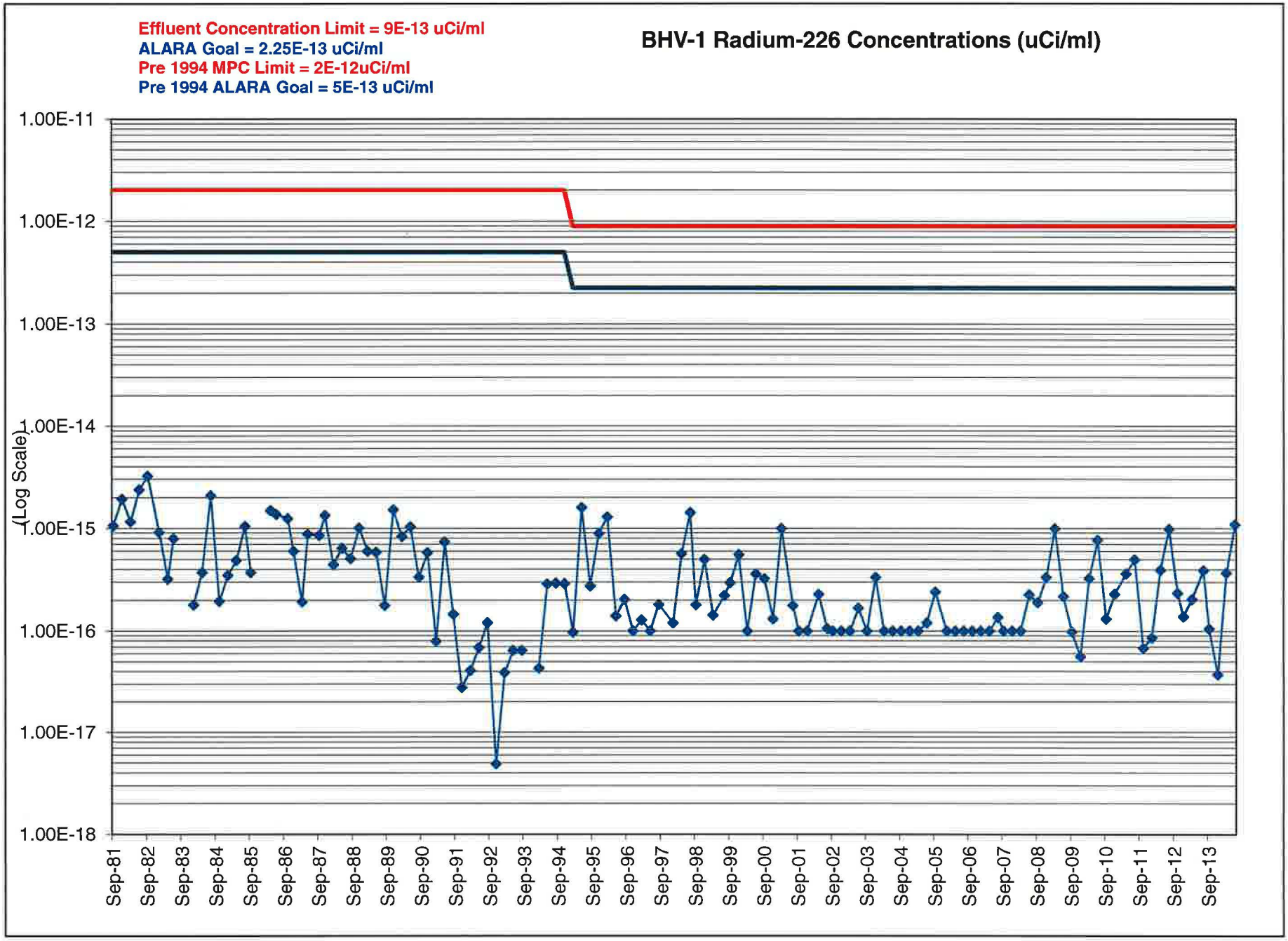
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-1 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
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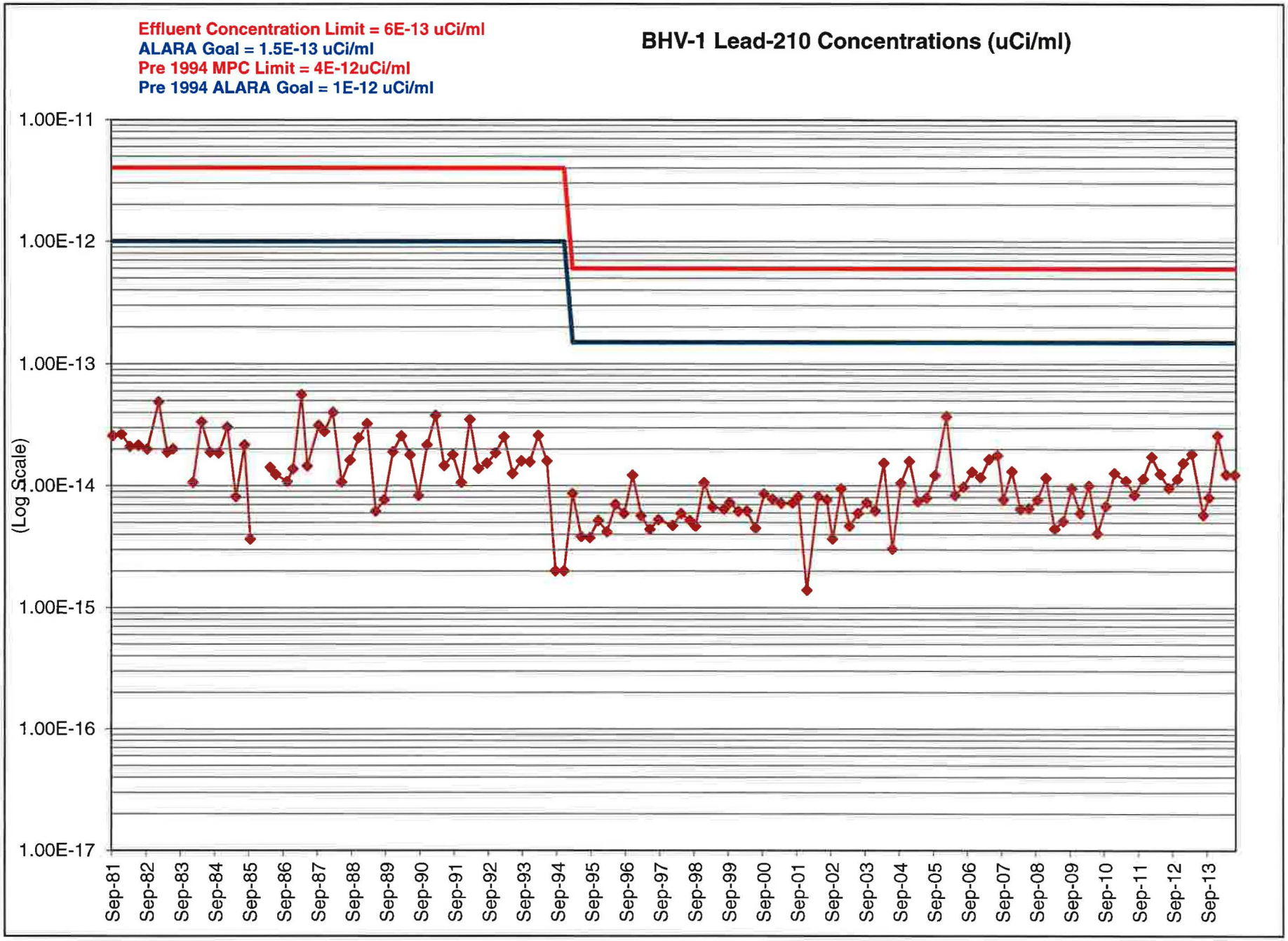
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-1 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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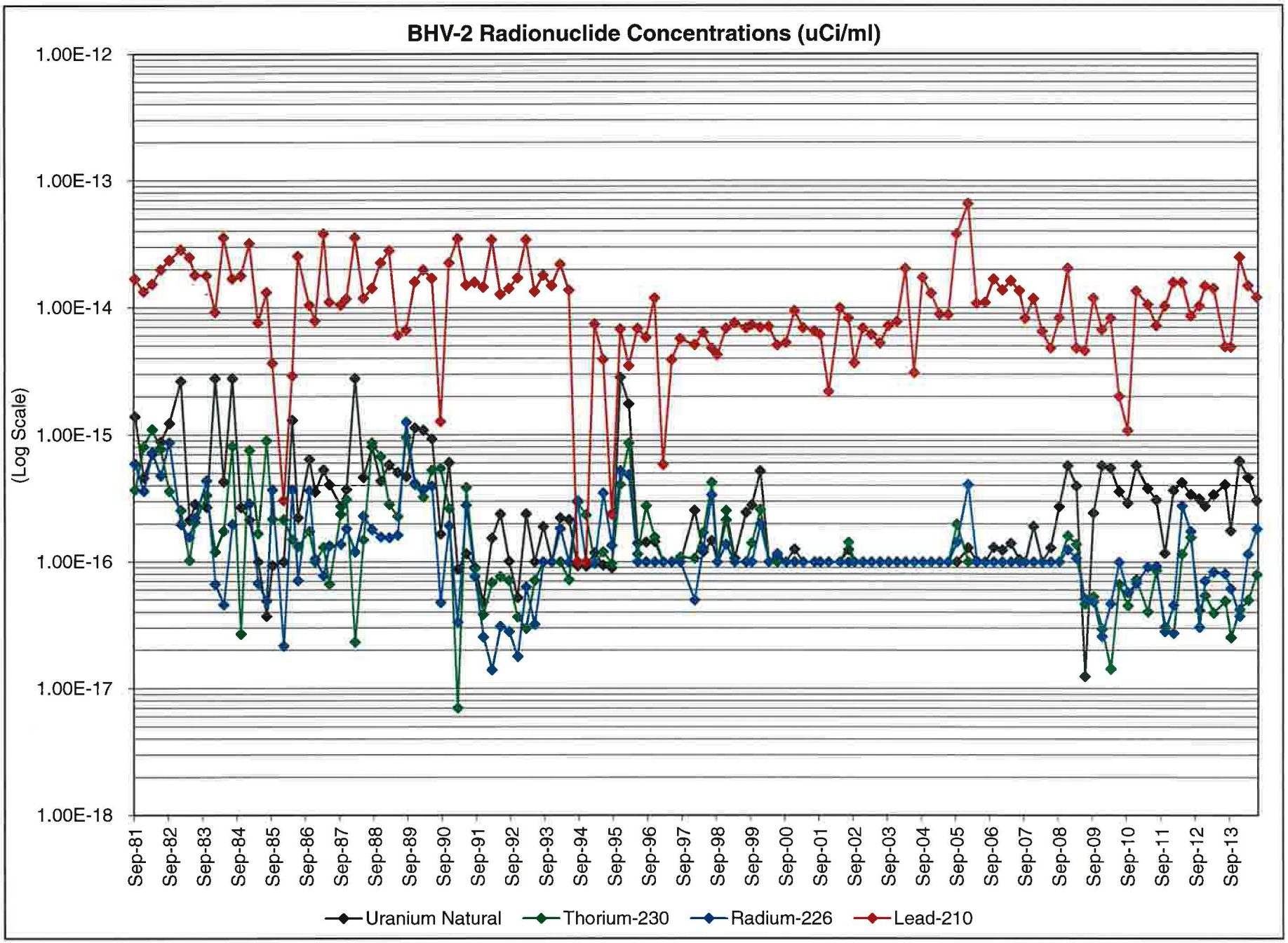
TAB 2

BHV-2 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	1.39E-15	5.00E-12	1.25E-12	3.69E-16	8.00E-14	2.00E-14	5.92E-16	2.00E-12	5.00E-13	1.67E-14	4.00E-12	1.00E-12
12/14/1981	4.62E-16	5.00E-12	1.25E-12	8.03E-16	8.00E-14	2.00E-14	3.62E-16	2.00E-12	5.00E-13	1.33E-14	4.00E-12	1.00E-12
3/29/1982	7.07E-16	5.00E-12	1.25E-12	1.10E-15	8.00E-14	2.00E-14	7.27E-16	2.00E-12	5.00E-13	1.52E-14	4.00E-12	1.00E-12
6/30/1982	8.84E-16	5.00E-12	1.25E-12	7.73E-16	8.00E-14	2.00E-14	4.78E-16	2.00E-12	5.00E-13	1.98E-14	4.00E-12	1.00E-12
9/27/1982	1.23E-15	5.00E-12	1.25E-12	3.60E-16	8.00E-14	2.00E-14	8.73E-16	2.00E-12	5.00E-13	2.35E-14	4.00E-12	1.00E-12
1/3/1983	2.64E-15	5.00E-12	1.25E-12	2.55E-16	8.00E-14	2.00E-14	1.98E-16	2.00E-12	5.00E-13	2.85E-14	4.00E-12	1.00E-12
4/4/1983	2.14E-16	5.00E-12	1.25E-12	1.02E-16	8.00E-14	2.00E-14	1.57E-16	2.00E-12	5.00E-13	2.48E-14	4.00E-12	1.00E-12
6/30/1983	2.85E-16	5.00E-12	1.25E-12	2.06E-16	8.00E-14	2.00E-14	2.24E-16	2.00E-12	5.00E-13	1.79E-14	4.00E-12	1.00E-12
10/3/1983	2.70E-16	5.00E-12	1.25E-12	3.36E-16	8.00E-14	2.00E-14	4.37E-16	2.00E-12	5.00E-13	1.78E-14	4.00E-12	1.00E-12
1/3/1984	2.78E-15	5.00E-12	1.25E-12	1.20E-16	8.00E-14	2.00E-14	6.64E-17	2.00E-12	5.00E-13	9.14E-15	4.00E-12	1.00E-12
4/2/1984	4.28E-16	5.00E-12	1.25E-12	1.75E-16	8.00E-14	2.00E-14	4.57E-17	2.00E-12	5.00E-13	3.55E-14	4.00E-12	1.00E-12
7/2/1984	2.78E-15	5.00E-12	1.25E-12	8.12E-16	8.00E-14	2.00E-14	1.98E-16	2.00E-12	5.00E-13	1.68E-14	4.00E-12	1.00E-12
10/1/1984	2.69E-16	5.00E-12	1.25E-12	2.66E-17	8.00E-14	2.00E-14	0.00E+00	2.00E-12	5.00E-13	1.77E-14	4.00E-12	1.00E-12
1/2/1985	2.15E-16	5.00E-12	1.25E-12	7.55E-16	8.00E-14	2.00E-14	2.87E-16	2.00E-12	5.00E-13	3.19E-14	4.00E-12	1.00E-12
4/1/1985	1.00E-16	5.00E-12	1.25E-12	1.67E-16	8.00E-14	2.00E-14	6.75E-17	2.00E-12	5.00E-13	7.56E-15	4.00E-12	1.00E-12
7/1/1985	3.70E-17	5.00E-12	1.25E-12	9.00E-16	8.00E-14	2.00E-14	4.90E-17	2.00E-12	5.00E-13	1.31E-14	4.00E-12	1.00E-12
9/30/1985	9.32E-17	5.00E-12	1.25E-12	2.18E-16	8.00E-14	2.00E-14	3.71E-16	2.00E-12	5.00E-13	3.64E-15	4.00E-12	1.00E-12
1/2/1986	1.00E-16	5.00E-12	1.25E-12	2.16E-16	8.00E-14	2.00E-14	2.15E-17	2.00E-12	5.00E-13	3.04E-16	4.00E-12	1.00E-12
4/1/1986	1.31E-15	5.00E-12	1.25E-12	1.50E-16	8.00E-14	2.00E-14	3.71E-16	2.00E-12	5.00E-13	2.90E-15	4.00E-12	1.00E-12
6/30/1986	2.23E-16	5.00E-12	1.25E-12	1.32E-16	8.00E-14	2.00E-14	7.09E-17	2.00E-12	5.00E-13	2.53E-14	4.00E-12	1.00E-12
10/27/1986	6.41E-16	5.00E-12	1.25E-12	1.74E-16	8.00E-14	2.00E-14	3.67E-16	2.00E-12	5.00E-13	1.04E-14	4.00E-12	1.00E-12
12/15/1986	3.56E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.05E-16	2.00E-12	5.00E-13	7.81E-15	4.00E-12	1.00E-12
3/16/1987	5.31E-16	5.00E-12	1.25E-12	1.30E-16	8.00E-14	2.00E-14	7.74E-17	2.00E-12	5.00E-13	3.80E-14	4.00E-12	1.00E-12
5/11/1987	4.06E-16	5.00E-12	1.25E-12	6.63E-17	8.00E-14	2.00E-14	1.34E-16	2.00E-12	5.00E-13	1.10E-14	4.00E-12	1.00E-12
9/9/1987	2.74E-16	5.00E-12	1.25E-12	2.38E-16	8.00E-14	2.00E-14	1.38E-16	2.00E-12	5.00E-13	1.04E-14	4.00E-12	1.00E-12
11/2/1987	3.73E-16	5.00E-12	1.25E-12	3.11E-16	8.00E-14	2.00E-14	1.83E-16	2.00E-12	5.00E-13	1.17E-14	4.00E-12	1.00E-12
2/16/1988	2.78E-15	5.00E-12	1.25E-12	2.31E-17	8.00E-14	2.00E-14	1.20E-16	2.00E-12	5.00E-13	3.55E-14	4.00E-12	1.00E-12
5/18/1988	4.63E-16	5.00E-12	1.25E-12	1.49E-16	8.00E-14	2.00E-14	2.30E-16	2.00E-12	5.00E-13	1.18E-14	4.00E-12	1.00E-12
8/15/1988	8.06E-16	5.00E-12	1.25E-12	8.69E-16	8.00E-14	2.00E-14	1.80E-16	2.00E-12	5.00E-13	1.42E-14	4.00E-12	1.00E-12
11/14/1988	4.34E-16	5.00E-12	1.25E-12	6.76E-16	8.00E-14	2.00E-14	1.57E-16	2.00E-12	5.00E-13	2.25E-14	4.00E-12	1.00E-12
2/13/1989	5.80E-16	5.00E-12	1.25E-12	2.85E-16	8.00E-14	2.00E-14	1.55E-16	2.00E-12	5.00E-13	2.80E-14	4.00E-12	1.00E-12
5/15/1989	5.06E-16	5.00E-12	1.25E-12	2.28E-16	8.00E-14	2.00E-14	1.63E-16	2.00E-12	5.00E-13	6.05E-15	4.00E-12	1.00E-12
8/14/1989	4.71E-16	5.00E-12	1.25E-12	9.60E-16	8.00E-14	2.00E-14	1.26E-15	2.00E-12	5.00E-13	6.65E-15	4.00E-12	1.00E-12
11/13/1989	1.14E-15	5.00E-12	1.25E-12	4.08E-16	8.00E-14	2.00E-14	4.18E-16	2.00E-12	5.00E-13	1.59E-14	4.00E-12	1.00E-12
2/12/1990	1.09E-15	5.00E-12	1.25E-12	3.25E-16	8.00E-14	2.00E-14	3.74E-16	2.00E-12	5.00E-13	1.98E-14	4.00E-12	1.00E-12
5/14/1990	9.32E-16	5.00E-12	1.25E-12	5.27E-16	8.00E-14	2.00E-14	3.97E-16	2.00E-12	5.00E-13	1.69E-14	4.00E-12	1.00E-12
8/13/1990	1.66E-16	5.00E-12	1.25E-12	5.49E-16	8.00E-14	2.00E-14	4.75E-17	2.00E-12	5.00E-13	1.27E-15	4.00E-12	1.00E-12
11/12/1990	6.05E-16	5.00E-12	1.25E-12	2.64E-16	8.00E-14	2.00E-14	1.93E-16	2.00E-12	5.00E-13	2.25E-14	4.00E-12	1.00E-12
2/11/1991	8.72E-17	5.00E-12	1.25E-12	7.00E-18	8.00E-14	2.00E-14	3.33E-17	2.00E-12	5.00E-13	3.49E-14	4.00E-12	1.00E-12
5/13/1991	1.16E-16	5.00E-12	1.25E-12	3.86E-16	8.00E-14	2.00E-14	2.80E-16	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12
8/12/1991	9.02E-17	5.00E-12	1.25E-12	8.82E-17	8.00E-14	2.00E-14	7.65E-17	2.00E-12	5.00E-13	1.58E-14	4.00E-12	1.00E-12
11/11/1991	4.81E-17	5.00E-12	1.25E-12	3.82E-17	8.00E-14	2.00E-14	2.54E-17	2.00E-12	5.00E-13	1.45E-14	4.00E-12	1.00E-12
2/10/1992	1.54E-16	5.00E-12	1.25E-12	6.82E-17	8.00E-14	2.00E-14	1.40E-17	2.00E-12	5.00E-13	3.41E-14	4.00E-12	1.00E-12
5/11/1992	2.38E-16	5.00E-12	1.25E-12	7.63E-17	8.00E-14	2.00E-14	3.07E-17	2.00E-12	5.00E-13	1.27E-14	4.00E-12	1.00E-12
8/10/1992	1.01E-16	5.00E-12	1.25E-12	7.07E-17	8.00E-14	2.00E-14	2.80E-17	2.00E-12	5.00E-13	1.41E-14	4.00E-12	1.00E-12
11/9/1992	5.20E-17	5.00E-12	1.25E-12	3.65E-17	8.00E-14	2.00E-14	1.78E-17	2.00E-12	5.00E-13	1.71E-14	4.00E-12	1.00E-12
2/9/1993	2.39E-16	5.00E-12	1.25E-12	2.97E-17	8.00E-14	2.00E-14	6.31E-17	2.00E-12	5.00E-13	3.41E-14	4.00E-12	1.00E-12
5/10/1993	1.00E-16	5.00E-12	1.25E-12	7.11E-17	8.00E-14	2.00E-14	3.19E-17	2.00E-12	5.00E-13	1.34E-14	4.00E-12	1.00E-12
8/10/1993	1.90E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.80E-14	4.00E-12	1.00E-12
11/8/1993	1.00E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.49E-14	4.00E-12	1.00E-12
2/7/1994	2.23E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.84E-16	2.00E-12	5.00E-13	2.19E-14	4.00E-12	1.00E-12
5/9/1994	2.16E-16	5.00E-12	1.25E-12	7.20E-17	8.00E-14	2.00E-14	9.89E-17	2.00E-12	5.00E-13	1.37E-14	4.00E-12	1.00E-12
8/9/1994	9.29E-17	5.00E-12	1.25E-12	2.96E-16	8.00E-14	2.00E-14	3.04E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12
11/7/1994	9.21E-17	5.00E-12	1.25E-12	2.35E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
2/7/1995	1.18E-16	9.00E-14	2.25E-14	9.70E-17	2.00E-14	5.00E-15	9.70E-17	9.00E-13	2.25E-13	7.42E-15	6.00E-13	1.50E-13
5/9/1995	9.40E-17	9.00E-14	2.25E-14	1.20E-16	2.00E-14	5.00E-15	3.50E-16	9.00E-13	2.25E-13	3.90E-15	6.00E-13	1.50E-13
8/9/1995	8.90E-17	9.00E-14	2.25E-14	9.67E-17	2.00E-14	5.00E-15	1.35E-16	9.00E-13	2.25E-13	2.38E-16	6.00E-13	1.50E-13
11/11/1995	2.83E-15	9.00E-14	2.25E-14	4.09E-16	2.00E-14	5.00E-15	5.23E-16	9.00E-13	2.25E-13	6.77E-15	6.00E-13	1.50E-13
2/5/1996	1.75E-15	9.00E-14	2.25E-14	8.66E-16	2.00E-14	5.00E-15	4.86E-16	9.00E-13	2.25E-13	3.50E-15	6.00E-13	1.50E-13
5/6/1996	1.40E-16	9.00E-14	2.25E-14	1.15E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.85E-15	6.00E-13	1.50E-13
8/5/1996	1.43E-16	9.00E-14	2.25E-14	2.78E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.83E-15	6.00E-13	1.50E-13
11/6/1996	1.45E-16	9.00E-14	2.25E-14	1.57E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.19E-14	6.00E-13	1.50E-13
2/6/1997	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.84E-16	6.00E-13	1.50E-13
5/5/1997	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.89E-15	6.00E-13	1.50E-13
8/11/1997	1.00E-16	9.00E-14	2.25E-14	1.09E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.69E-15	6.00E-13	1.50E-13
1/5/1998	2.55E-16	9.00E-14	2.25E-14	1.07E-16	2.00E-14	5.00E-15	5.00E-17	9.00E-13	2.25E-13	5.11E-15	6.00E-13	1.50E-13
4/28/1998	1.20E-16	9.00E-14	2.25E-14	1.71E-16	2.00E-14	5.00E-15	1.28E-16	9.00E-13	2.25E-13	6.40E-15	6.00E-13	1.50E-13
7/31/1998	1.47E-16	9.00E-14	2.25E-14	4.24E-16	2.00E-14	5.00E-15	3.39E-16	9.00E-13	2.25E-13	4.80E-15	6.00E-13	1.50E-13
9/28/1998	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.26E-15	6.00E-13	1.50E-13
12/28/1998	2.54E-16	9.00E-14	2.25E-14	2.15E-16	2.00E-14	5.00E-15	1.38E-16	9.00E-13	2.25E-13	6.88E-15	6.00E-13	1.50E-13
3/29/1999	1.07E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.61E-15	6.00E-13	1.50E-13
7/3/1999	2.46E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.95E-15	6.00E-13	1.50E-13
9/27/1999	2.81E-16	9.00E-14	2.25E-14	1.41E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.35E-15	6.00E-13	1.50E-13
12/28/1999	5.20E-16	9.00E-14	2.25E-14	2.60E-16	2.00E-14	5.00E-15	2.01E-16	9.00E-13	2.25E-13	7.00E-15	6.00E-13	1.50E-13
3/27/2000	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.12E-15	6.00E-13	1.50E-13
6/26/2000	1.10E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.16E-16	9.00E-13	2.25E-13	5.07E-15	6.00E-13	1.50E-13
9/26/2000	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.31E-15	6.00E-13	1.50E-13
12/26/2000	1.26E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.45E-15	6.00E-13	1.50E-13
3/26/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.95E-15	6.00E-13	1.50E-13
7/2/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.56E-15	6.00E-13	1.50E-13
9/24/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.16E-15	6.00E-13	1.50E-13
12/31/2001	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.20E-15	6.00E-13	1.50E-13
4/1/2002	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.95E-15	6.00E-13	1.50E-13
7/1/2002	1.25E-16	9.00E-14	2.25E-14	1.43E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.25E-15	6.00E-13	1.50E-13
9/30/2002	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.69E-15	6.00E-13	1.50E-13
12/30/2002	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.91E-15	6.00E-13	1.50E-13
3/31/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.16E-15	6.00E-13	1.50E-13
6/30/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.27E-15	6.00E-13	1.50E-13
9/29/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.23E-15	6.00E-13	1.50E-13
12/29/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.80E-15	6.00E-13	1.50E-13
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.04E-14	6.00E-13	1.50E-13
6/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.09E-15	6.00E-13	1.50E-13
9/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.73E-14	6.00E-13	1.50E-13
12/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13
3/28/2005	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.88E-15	6.00E-13	1.50E-13
6/29/2005	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.85E-15	6.00E-13	1.50E-13
9/26/2005	1.00E-16	9.00E-14	2.25E-14	1.99E-16	2.00E-14	5.00E-15	1.44E-16	9.00E-13	2.25E-13	3.81E-14	6.00E-13	1.50E-13
1/3/2006	1.29E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	4.08E-16	9.00E-13	2.25E-13	6.58E-14	6.00E-13	1.50E-13
4/3/2006	1.02E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.08E-14	6.00E-13	1.50E-13
7/3/2006	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13
10/2/2006	1.30E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.68E-14	6.00E-13	1.50E-13
1/1/2007	1.24E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.38E-14	6.00E-13	1.50E-13
4/2/2007	1.40E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.63E-14	6.00E-13	1.50E-13
7/2/2007	1.04E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.36E-14	6.00E-13	1.50E-13
9/30/2007	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.24E-15	6.00E-13	1.50E-13
12/31/2007	1.91E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.18E-14	6.00E-13	1.50E-13
3/30/2008	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.49E-15	6.00E-13	1.50E-13
6/30/2008	1.29E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.82E-15	6.00E-13	1.50E-13

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-2U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-2T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-2R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-2PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/30/2008	2.73E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.30E-15	6.00E-13	1.50E-13
12/31/2008	5.71E-16	9.00E-14	2.25E-14	1.61E-16	2.00E-14	5.00E-15	1.25E-16	9.00E-13	2.25E-13	2.04E-14	6.00E-13	1.50E-13
3/15/2009	3.96E-16	9.00E-14	2.25E-14	1.38E-16	2.00E-14	5.00E-15	1.07E-16	9.00E-13	2.25E-13	4.81E-15	6.00E-13	1.50E-13
6/15/2009	1.24E-17	9.00E-14	2.25E-14	4.64E-17	2.00E-14	5.00E-15	5.11E-17	9.00E-13	2.25E-13	4.58E-15	6.00E-13	1.50E-13
9/15/2009	2.43E-16	9.00E-14	2.25E-14	5.28E-17	2.00E-14	5.00E-15	4.84E-17	9.00E-13	2.25E-13	1.19E-14	6.00E-13	1.50E-13
12/15/2009	5.72E-16	9.00E-14	2.25E-14	2.94E-17	2.00E-14	5.00E-15	2.57E-17	9.00E-13	2.25E-13	6.70E-15	6.00E-13	1.50E-13
3/31/2010	5.47E-16	9.00E-14	2.25E-14	1.42E-17	2.00E-14	5.00E-15	4.66E-17	9.00E-13	2.25E-13	8.24E-15	6.00E-13	1.50E-13
6/30/2010	3.58E-16	9.00E-14	2.25E-14	6.64E-17	2.00E-14	5.00E-15	9.90E-17	9.00E-13	2.25E-13	2.01E-15	6.00E-13	1.50E-13
9/30/2010	2.91E-16	9.00E-14	2.25E-14	4.48E-17	2.00E-14	5.00E-15	5.72E-17	9.00E-13	2.25E-13	1.08E-15	6.00E-13	1.50E-13
12/31/2010	5.73E-16	9.00E-14	2.25E-14	7.24E-17	2.00E-14	5.00E-15	6.76E-17	9.00E-13	2.25E-13	1.35E-14	6.00E-13	1.50E-13
4/4/2011	3.79E-16	9.00E-14	2.25E-14	4.01E-17	2.00E-14	5.00E-15	9.11E-17	9.00E-13	2.25E-13	1.06E-14	6.00E-13	1.50E-13
7/4/2011	3.07E-16	9.00E-14	2.25E-14	8.54E-17	2.00E-14	5.00E-15	9.21E-17	9.00E-13	2.25E-13	7.21E-15	6.00E-13	1.50E-13
10/3/2011	1.17E-16	9.00E-14	2.25E-14	3.04E-17	2.00E-14	5.00E-15	2.81E-17	9.00E-13	2.25E-13	1.03E-14	6.00E-13	1.50E-13
1/3/2012	3.65E-16	9.00E-14	2.25E-14	2.72E-17	2.00E-14	5.00E-15	4.54E-17	9.00E-13	2.25E-13	1.58E-14	6.00E-13	1.50E-13
4/3/2012	4.22E-16	9.00E-14	2.25E-14	1.15E-16	2.00E-14	5.00E-15	2.77E-16	9.00E-13	2.25E-13	1.58E-14	6.00E-13	1.50E-13
7/2/2012	3.39E-16	9.00E-14	2.25E-14	1.56E-16	2.00E-14	5.00E-15	1.74E-16	9.00E-13	2.25E-13	8.60E-15	6.00E-13	1.50E-13
10/1/2012	3.13E-16	9.00E-14	2.25E-14	4.13E-17	2.00E-14	5.00E-15	3.04E-17	9.00E-13	2.25E-13	1.03E-14	6.00E-13	1.50E-13
12/31/2012	2.76E-16	9.00E-14	2.25E-14	5.41E-17	2.00E-14	5.00E-15	7.05E-17	9.00E-13	2.25E-13	1.48E-14	6.00E-13	1.50E-13
3/25/2013	3.38E-16	9.00E-14	2.25E-14	3.94E-17	2.00E-14	5.00E-15	8.32E-17	9.00E-13	2.25E-13	1.42E-14	6.00E-13	1.50E-13
7/2/2013	4.06E-16	9.00E-14	2.25E-14	4.89E-17	2.00E-14	5.00E-15	8.06E-17	9.00E-13	2.25E-13	4.93E-15	6.00E-13	1.50E-13
9/30/2013	1.76E-16	9.00E-14	2.25E-14	2.52E-17	2.00E-14	5.00E-15	6.13E-17	9.00E-13	2.25E-13	4.90E-15	6.00E-13	1.50E-13
12/30/2013	6.20E-16	9.00E-14	2.25E-14	4.19E-17	2.00E-14	5.00E-15	3.72E-17	9.00E-13	2.25E-13	2.50E-14	6.00E-13	1.50E-13
3/31/2014	4.63E-16	9.00E-14	2.25E-14	4.97E-17	2.00E-14	5.00E-15	1.15E-16	9.00E-13	2.25E-13	1.49E-14	6.00E-13	1.50E-13
6/30/2014	3.04E-16	9.00E-14	2.25E-14	7.92E-17	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.21E-14	6.00E-13	1.50E-13


BHV-2 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
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Sep-98
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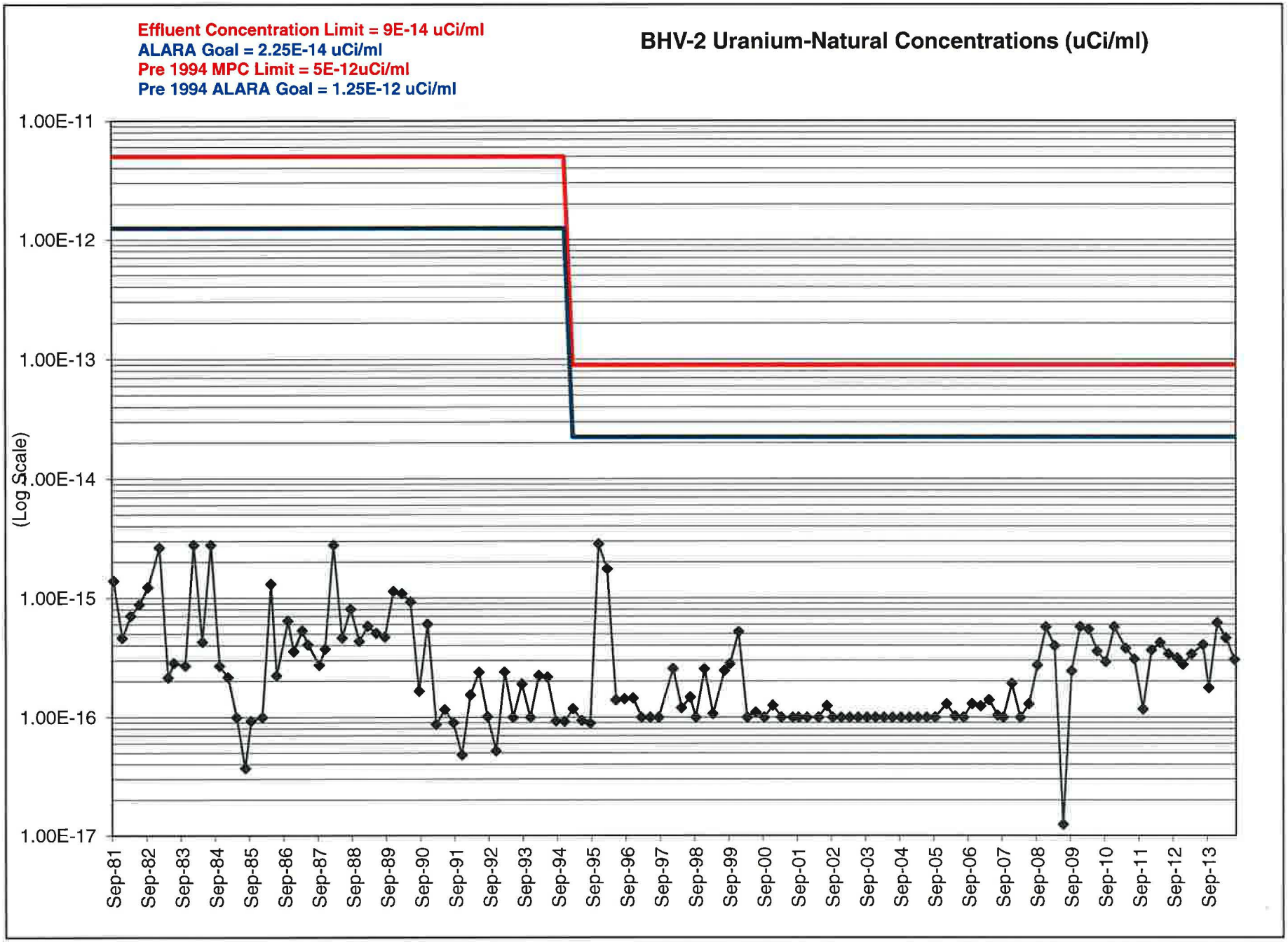
Sep-11
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-2 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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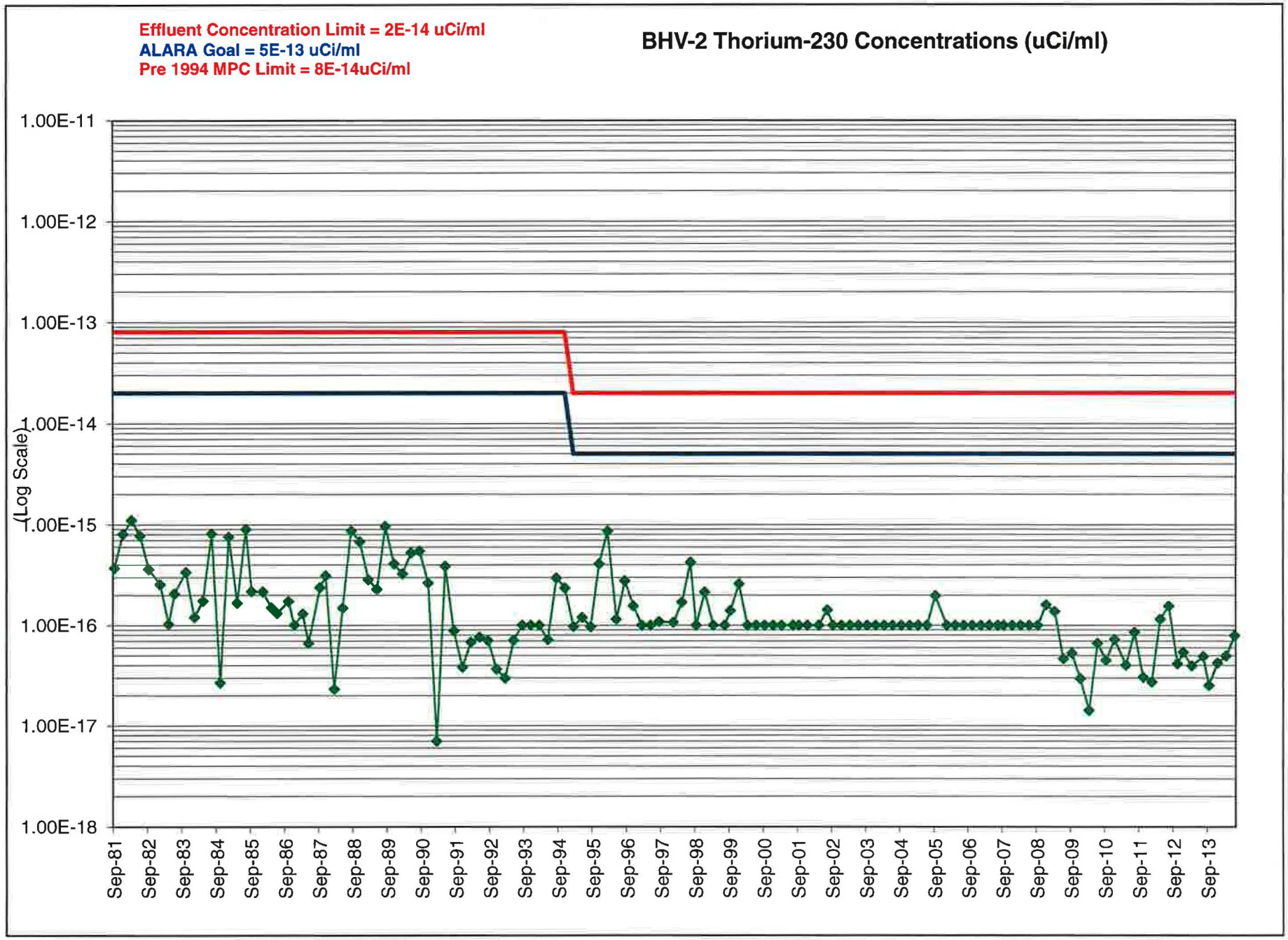
Sep-11
Sep-12
Sep-13


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-2 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
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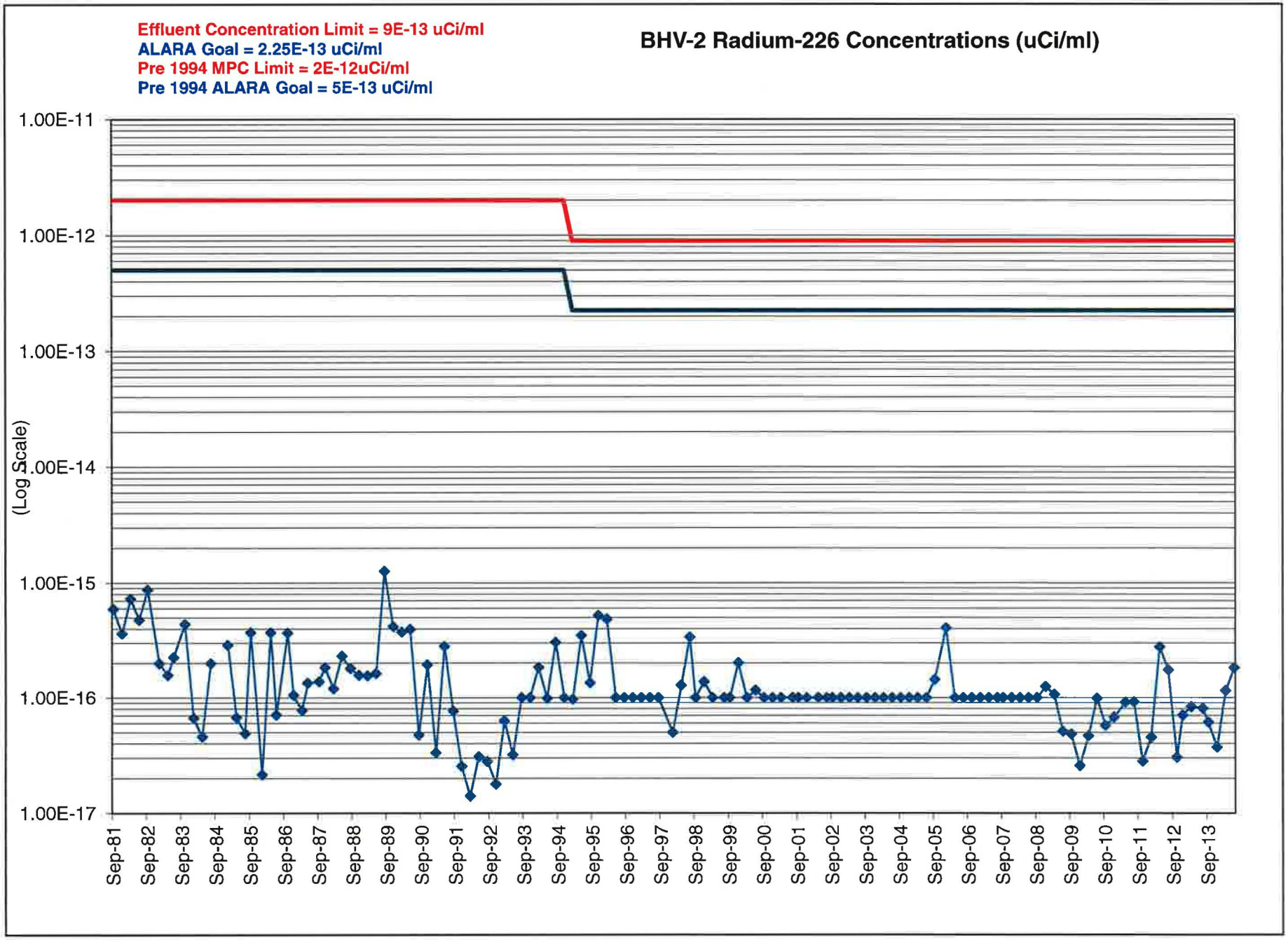
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-2 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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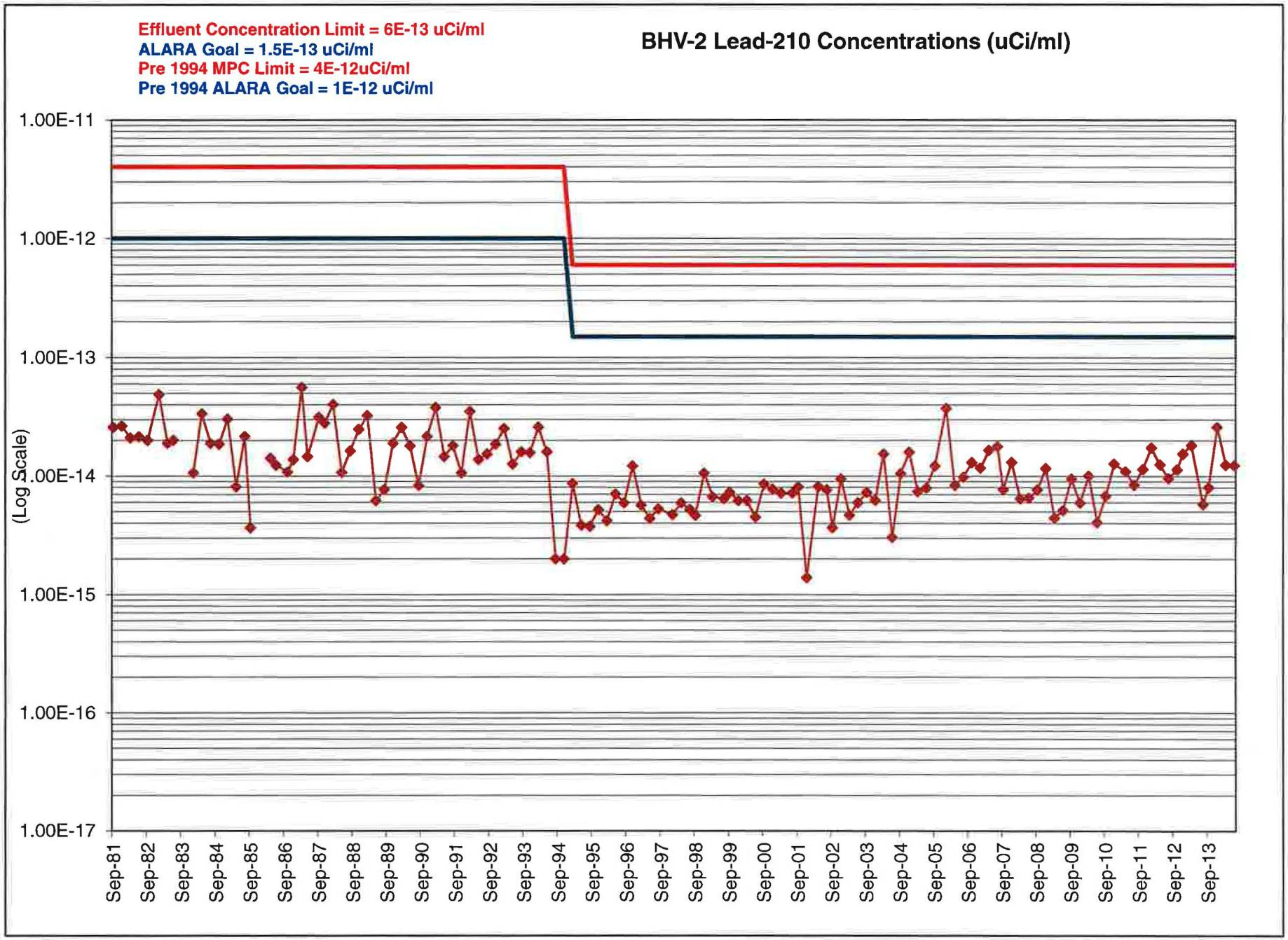
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-2 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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Sep-87
Sep-88
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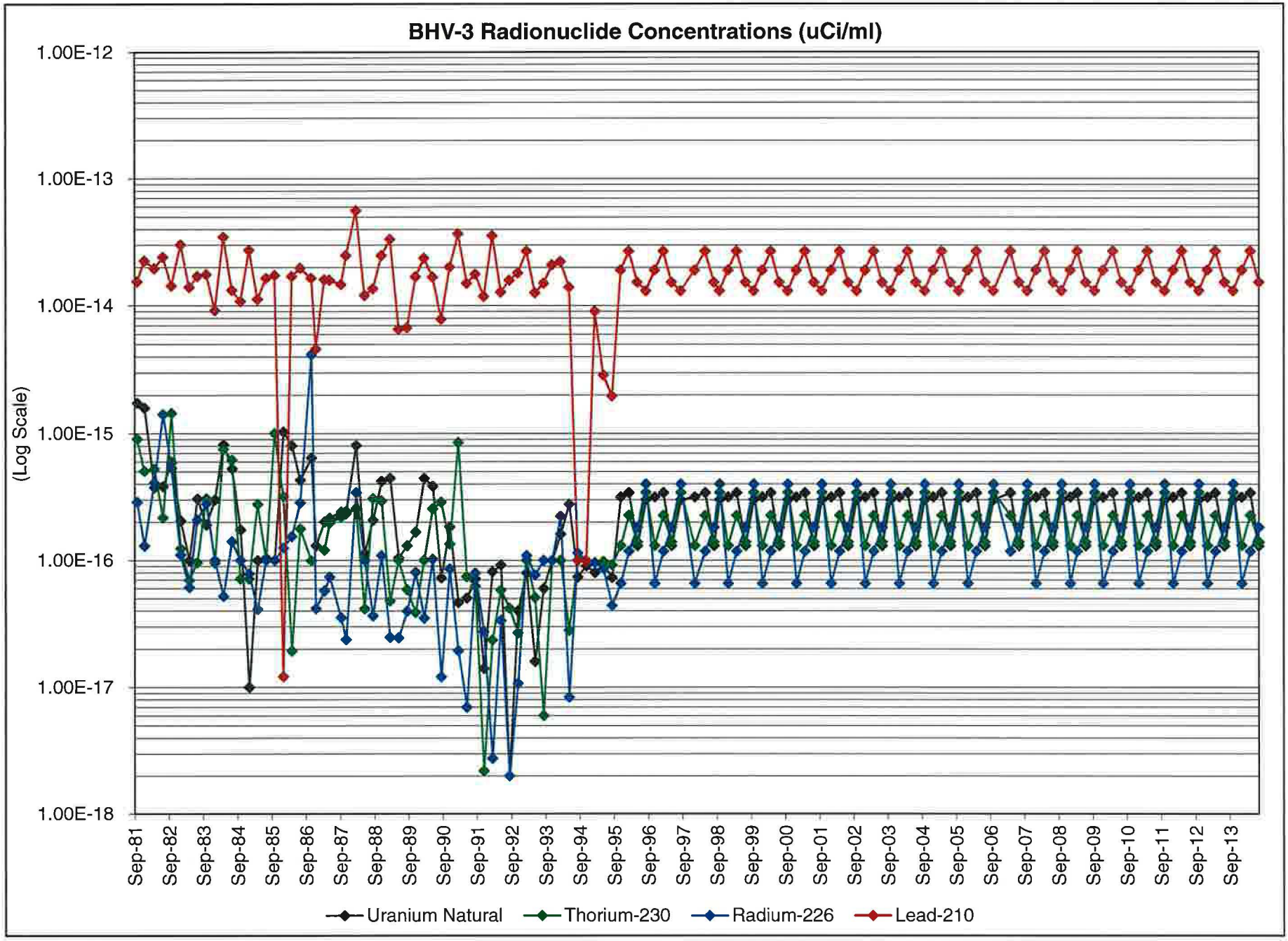
TAB 3

BHV-3 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-3R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-3PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	1.74E-15	5.00E-12	1.25E-12	9.02E-16	8.00E-14	2.00E-14	2.87E-16	2.00E-12	5.00E-13	1.54E-14	4.00E-12	1.00E-12
12/14/1981	1.59E-15	5.00E-12	1.25E-12	5.03E-16	8.00E-14	2.00E-14	1.30E-16	2.00E-12	5.00E-13	2.25E-14	4.00E-12	1.00E-12
3/29/1982	3.76E-16	5.00E-12	1.25E-12	5.25E-16	8.00E-14	2.00E-14	4.08E-16	2.00E-12	5.00E-13	1.96E-14	4.00E-12	1.00E-12
6/30/1982	3.83E-16	5.00E-12	1.25E-12	2.16E-16	8.00E-14	2.00E-14	1.41E-15	2.00E-12	5.00E-13	2.40E-14	4.00E-12	1.00E-12
9/27/1982	5.95E-16	5.00E-12	1.25E-12	1.44E-15	8.00E-14	2.00E-14	5.36E-16	2.00E-12	5.00E-13	1.43E-14	4.00E-12	1.00E-12
1/3/1983	2.05E-16	5.00E-12	1.25E-12	1.23E-16	8.00E-14	2.00E-14	1.10E-16	2.00E-12	5.00E-13	3.01E-14	4.00E-12	1.00E-12
4/4/1983	1.00E-16	5.00E-12	1.25E-12	6.94E-17	8.00E-14	2.00E-14	6.11E-17	2.00E-12	5.00E-13	1.39E-14	4.00E-12	1.00E-12
6/30/1983	3.06E-16	5.00E-12	1.25E-12	9.59E-17	8.00E-14	2.00E-14	2.08E-16	2.00E-12	5.00E-13	1.70E-14	4.00E-12	1.00E-12
10/3/1983	1.91E-16	5.00E-12	1.25E-12	3.05E-16	8.00E-14	2.00E-14	2.79E-16	2.00E-12	5.00E-13	1.76E-14	4.00E-12	1.00E-12
1/3/1984	3.01E-16	5.00E-12	1.25E-12	9.51E-17	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	9.17E-15	4.00E-12	1.00E-12
4/2/1984	8.22E-16	5.00E-12	1.25E-12	7.52E-16	8.00E-14	2.00E-14	5.20E-17	2.00E-12	5.00E-13	3.47E-14	4.00E-12	1.00E-12
7/2/1984	5.29E-16	5.00E-12	1.25E-12	6.18E-16	8.00E-14	2.00E-14	1.40E-16	2.00E-12	5.00E-13	1.32E-14	4.00E-12	1.00E-12
10/1/1984	1.74E-16	5.00E-12	1.25E-12	7.10E-17	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.08E-14	4.00E-12	1.00E-12
1/2/1985	1.00E-17	5.00E-12	1.25E-12	7.10E-17	8.00E-14	2.00E-14	7.80E-17	2.00E-12	5.00E-13	2.73E-14	4.00E-12	1.00E-12
4/1/1985	1.00E-16	5.00E-12	1.25E-12	2.76E-16	8.00E-14	2.00E-14	4.10E-17	2.00E-12	5.00E-13	1.12E-14	4.00E-12	1.00E-12
7/1/1985	1.04E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.64E-14	4.00E-12	1.00E-12
9/30/1985	1.00E-16	5.00E-12	1.25E-12	1.00E-15	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.73E-14	4.00E-12	1.00E-12
1/2/1986	1.03E-15	5.00E-12	1.25E-12	3.17E-16	8.00E-14	2.00E-14	1.25E-16	2.00E-12	5.00E-13	1.21E-17	4.00E-12	1.00E-12
4/1/1986	8.04E-16	5.00E-12	1.25E-12	1.93E-17	8.00E-14	2.00E-14	1.54E-16	2.00E-12	5.00E-13	1.69E-14	4.00E-12	1.00E-12
6/30/1986	4.29E-16	5.00E-12	1.25E-12	1.77E-16	8.00E-14	2.00E-14	2.83E-16	2.00E-12	5.00E-13	1.97E-14	4.00E-12	1.00E-12
10/27/1986	6.45E-16	5.00E-12	1.25E-12	9.89E-17	8.00E-14	2.00E-14	4.16E-15	2.00E-12	5.00E-13	1.64E-14	4.00E-12	1.00E-12
12/15/1986	1.31E-16	5.00E-12	1.25E-12	0.00E+00	8.00E-14	2.00E-14	4.16E-17	2.00E-12	5.00E-13	4.60E-15	4.00E-12	1.00E-12
3/16/1987	2.01E-16	5.00E-12	1.25E-12	1.20E-16	8.00E-14	2.00E-14	5.73E-17	2.00E-12	5.00E-13	1.60E-14	4.00E-12	1.00E-12
5/11/1987	2.16E-16	5.00E-12	1.25E-12	1.96E-16	8.00E-14	2.00E-14	7.38E-17	2.00E-12	5.00E-13	1.59E-14	4.00E-12	1.00E-12
9/9/1987	2.41E-16	5.00E-12	1.25E-12	2.18E-16	8.00E-14	2.00E-14	3.52E-17	2.00E-12	5.00E-13	1.46E-14	4.00E-12	1.00E-12
11/2/1987	2.44E-16	5.00E-12	1.25E-12	2.32E-16	8.00E-14	2.00E-14	2.37E-17	2.00E-12	5.00E-13	2.48E-14	4.00E-12	1.00E-12
2/16/1988	8.08E-16	5.00E-12	1.25E-12	2.55E-16	8.00E-14	2.00E-14	3.42E-16	2.00E-12	5.00E-13	5.61E-14	4.00E-12	1.00E-12
5/18/1988	1.14E-16	5.00E-12	1.25E-12	4.14E-17	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.20E-14	4.00E-12	1.00E-12
8/15/1988	2.08E-16	5.00E-12	1.25E-12	3.06E-16	8.00E-14	2.00E-14	3.65E-17	2.00E-12	5.00E-13	1.36E-14	4.00E-12	1.00E-12
11/14/1988	4.21E-16	5.00E-12	1.25E-12	2.93E-16	8.00E-14	2.00E-14	1.09E-16	2.00E-12	5.00E-13	2.48E-14	4.00E-12	1.00E-12
2/13/1989	4.45E-16	5.00E-12	1.25E-12	4.78E-17	8.00E-14	2.00E-14	2.47E-17	2.00E-12	5.00E-13	3.34E-14	4.00E-12	1.00E-12
5/15/1989	1.05E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	2.45E-17	2.00E-12	5.00E-13	6.56E-15	4.00E-12	1.00E-12
8/14/1989	1.31E-16	5.00E-12	1.25E-12	5.85E-17	8.00E-14	2.00E-14	3.97E-17	2.00E-12	5.00E-13	6.75E-15	4.00E-12	1.00E-12
11/13/1989	1.67E-16	5.00E-12	1.25E-12	3.87E-17	8.00E-14	2.00E-14	8.03E-17	2.00E-12	5.00E-13	1.69E-14	4.00E-12	1.00E-12
2/12/1990	4.43E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	3.50E-17	2.00E-12	5.00E-13	2.37E-14	4.00E-12	1.00E-12
5/14/1990	3.84E-16	5.00E-12	1.25E-12	2.54E-16	8.00E-14	2.00E-14	1.02E-16	2.00E-12	5.00E-13	1.68E-14	4.00E-12	1.00E-12
8/13/1990	7.27E-17	5.00E-12	1.25E-12	2.87E-16	8.00E-14	2.00E-14	1.21E-17	2.00E-12	5.00E-13	7.86E-15	4.00E-12	1.00E-12
11/12/1990	1.84E-16	5.00E-12	1.25E-12	1.34E-16	8.00E-14	2.00E-14	8.53E-17	2.00E-12	5.00E-13	2.01E-14	4.00E-12	1.00E-12
2/11/1991	4.66E-17	5.00E-12	1.25E-12	8.48E-16	8.00E-14	2.00E-14	1.94E-17	2.00E-12	5.00E-13	3.69E-14	4.00E-12	1.00E-12
5/13/1991	5.05E-17	5.00E-12	1.25E-12	7.40E-17	8.00E-14	2.00E-14	7.00E-18	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12
8/12/1991	7.14E-17	5.00E-12	1.25E-12	6.22E-17	8.00E-14	2.00E-14	7.95E-17	2.00E-12	5.00E-13	1.77E-14	4.00E-12	1.00E-12
11/11/1991	1.41E-17	5.00E-12	1.25E-12	2.19E-18	8.00E-14	2.00E-14	2.75E-17	2.00E-12	5.00E-13	1.18E-14	4.00E-12	1.00E-12
2/10/1992	8.12E-17	5.00E-12	1.25E-12	2.35E-17	8.00E-14	2.00E-14	2.76E-18	2.00E-12	5.00E-13	3.57E-14	4.00E-12	1.00E-12
5/11/1992	9.18E-17	5.00E-12	1.25E-12	5.80E-17	8.00E-14	2.00E-14	3.36E-17	2.00E-12	5.00E-13	1.28E-14	4.00E-12	1.00E-12
8/10/1992	2.00E-18	5.00E-12	1.25E-12	4.19E-17	8.00E-14	2.00E-14	2.00E-18	2.00E-12	5.00E-13	1.59E-14	4.00E-12	1.00E-12
11/9/1992	4.00E-17	5.00E-12	1.25E-12	2.68E-17	8.00E-14	2.00E-14	1.07E-17	2.00E-12	5.00E-13	1.81E-14	4.00E-12	1.00E-12
2/9/1993	7.94E-17	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.09E-16	2.00E-12	5.00E-13	2.69E-14	4.00E-12	1.00E-12
5/10/1993	1.60E-17	5.00E-12	1.25E-12	5.07E-17	8.00E-14	2.00E-14	7.64E-17	2.00E-12	5.00E-13	1.26E-14	4.00E-12	1.00E-12
8/10/1993	6.00E-17	5.00E-12	1.25E-12	6.00E-18	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12
11/8/1993	1.00E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	2.10E-14	4.00E-12	1.00E-12
2/7/1994	1.61E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	2.22E-16	2.00E-12	5.00E-13	2.23E-14	4.00E-12	1.00E-12
5/9/1994	2.77E-16	5.00E-12	1.25E-12	2.80E-17	8.00E-14	2.00E-14	8.37E-18	2.00E-12	5.00E-13	1.40E-14	4.00E-12	1.00E-12
8/9/1994	7.39E-17	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.14E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12
11/7/1994	9.05E-17	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-3R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-3PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
2/7/1995	7.99E-17	9.00E-14	2.25E-14	9.60E-17	2.00E-14	5.00E-15	9.60E-17	9.00E-13	2.25E-13	9.05E-15	6.00E-13	1.50E-13
5/9/1995	9.40E-17	9.00E-14	2.25E-14	9.80E-17	2.00E-14	5.00E-15	8.60E-17	9.00E-13	2.25E-13	2.88E-15	6.00E-13	1.50E-13
8/9/1995	7.30E-17	9.00E-14	2.25E-14	9.20E-17	2.00E-14	5.00E-15	4.40E-17	9.00E-13	2.25E-13	1.96E-15	6.00E-13	1.50E-13
11/11/1995	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
2/5/1996	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
5/6/1996	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
8/5/1996	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
11/6/1996	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
2/6/1997	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
5/5/1997	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
8/11/1997	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/5/1998	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/28/1998	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/31/1998	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/28/1998	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/28/1998	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/29/1999	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/3/1999	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/27/1999	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/28/1999	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/28/2000	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/26/2000	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/26/2000	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/26/2000	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/26/2001	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/2/2001	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/24/2001	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2001	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/1/2002	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/1/2002	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2002	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/30/2002	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/31/2003	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/30/2003	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/29/2003	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/29/2003	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/29/2004	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/27/2004	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/27/2004	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/27/2004	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/28/2005	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/29/2005	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/26/2005	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/3/2006	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/3/2006	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/3/2006	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
10/2/2006	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/1/2006	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/2/2007	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/2/2007	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2007	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2007	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/31/2008	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/30/2008	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-3U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-3T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-3R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-3PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/30/2008	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2008	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/15/2009	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/15/2009	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/15/2009	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/15/2009	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/31/2010	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/30/2010	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2010	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2010	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/4/2011	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/4/2011	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
10/3/2011	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
1/3/2012	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
4/3/2012	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/2/2012	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
10/1/2012	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/31/2012	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/25/2013	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
7/2/2013	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
9/30/2013	3.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	3.99E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
12/30/2013	3.16E-16	9.00E-14	2.25E-14	1.31E-16	2.00E-14	5.00E-15	6.58E-17	9.00E-13	2.25E-13	1.91E-14	6.00E-13	1.50E-13
3/31/2014	3.41E-16	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	2.69E-14	6.00E-13	1.50E-13
6/30/2014	1.31E-16	9.00E-14	2.25E-14	1.39E-16	2.00E-14	5.00E-15	1.82E-16	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13


BHV-3 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
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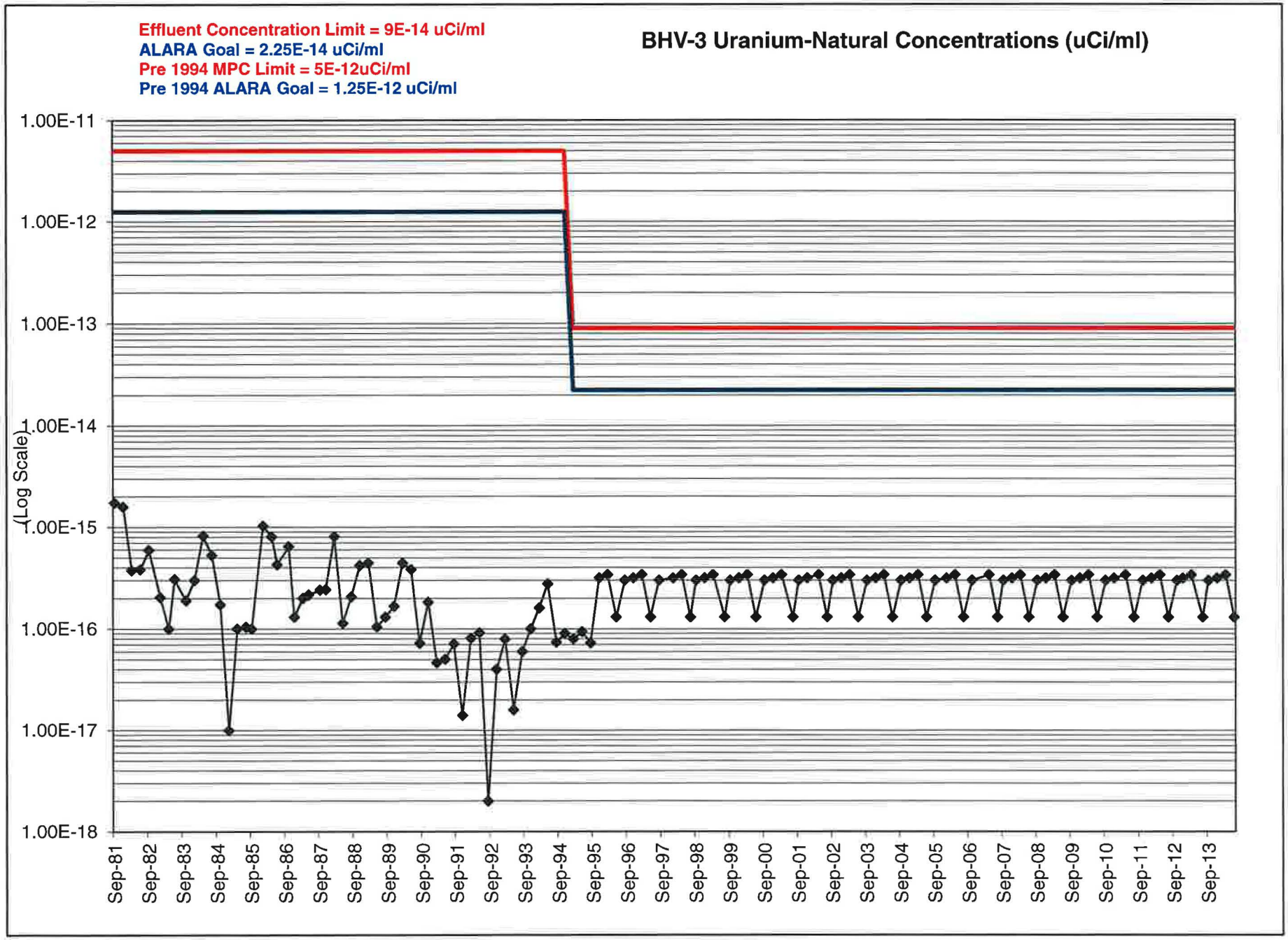
Sep-11
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-3 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
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Sep-89
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Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
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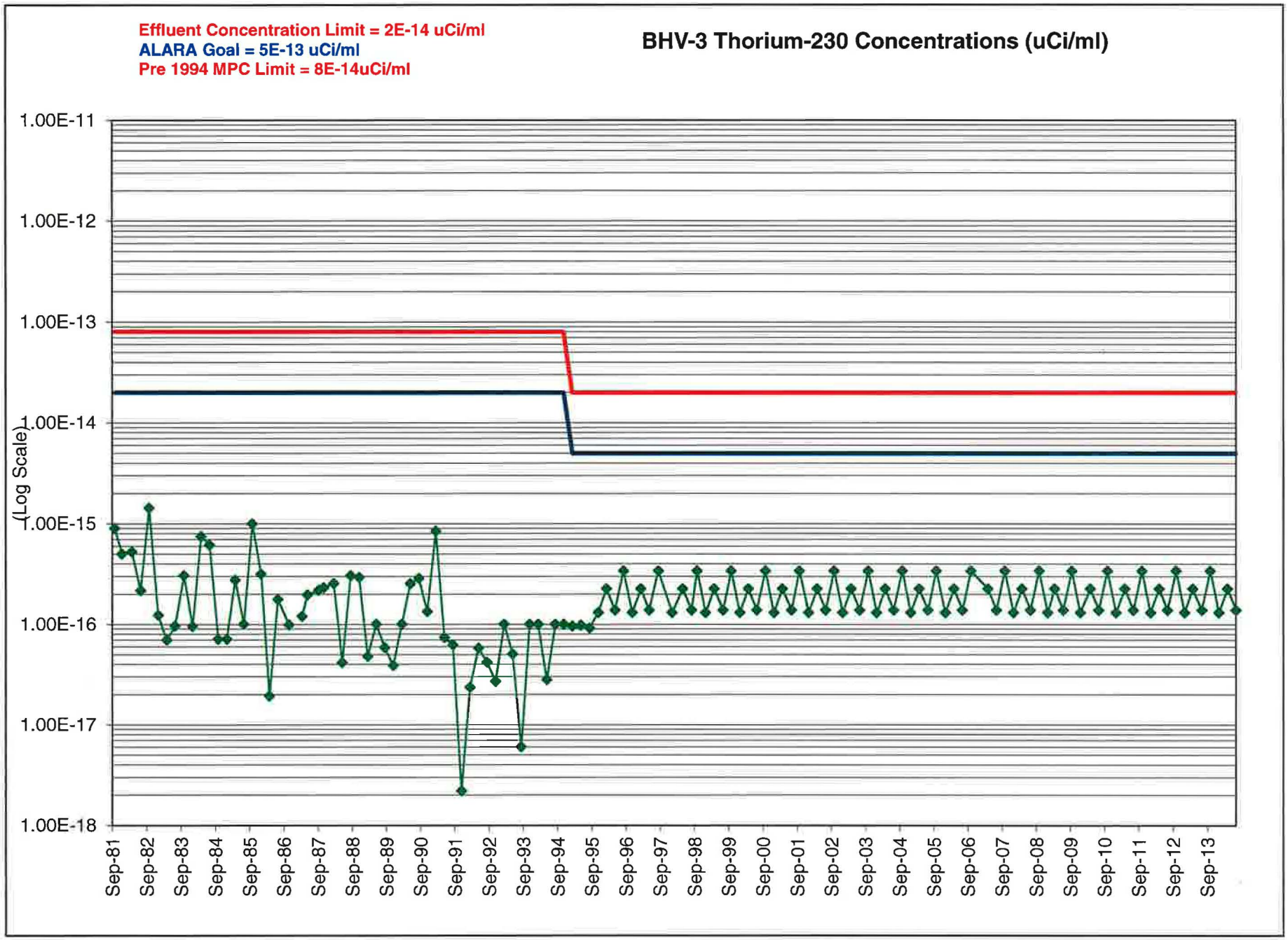
Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-3 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
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Sep-12
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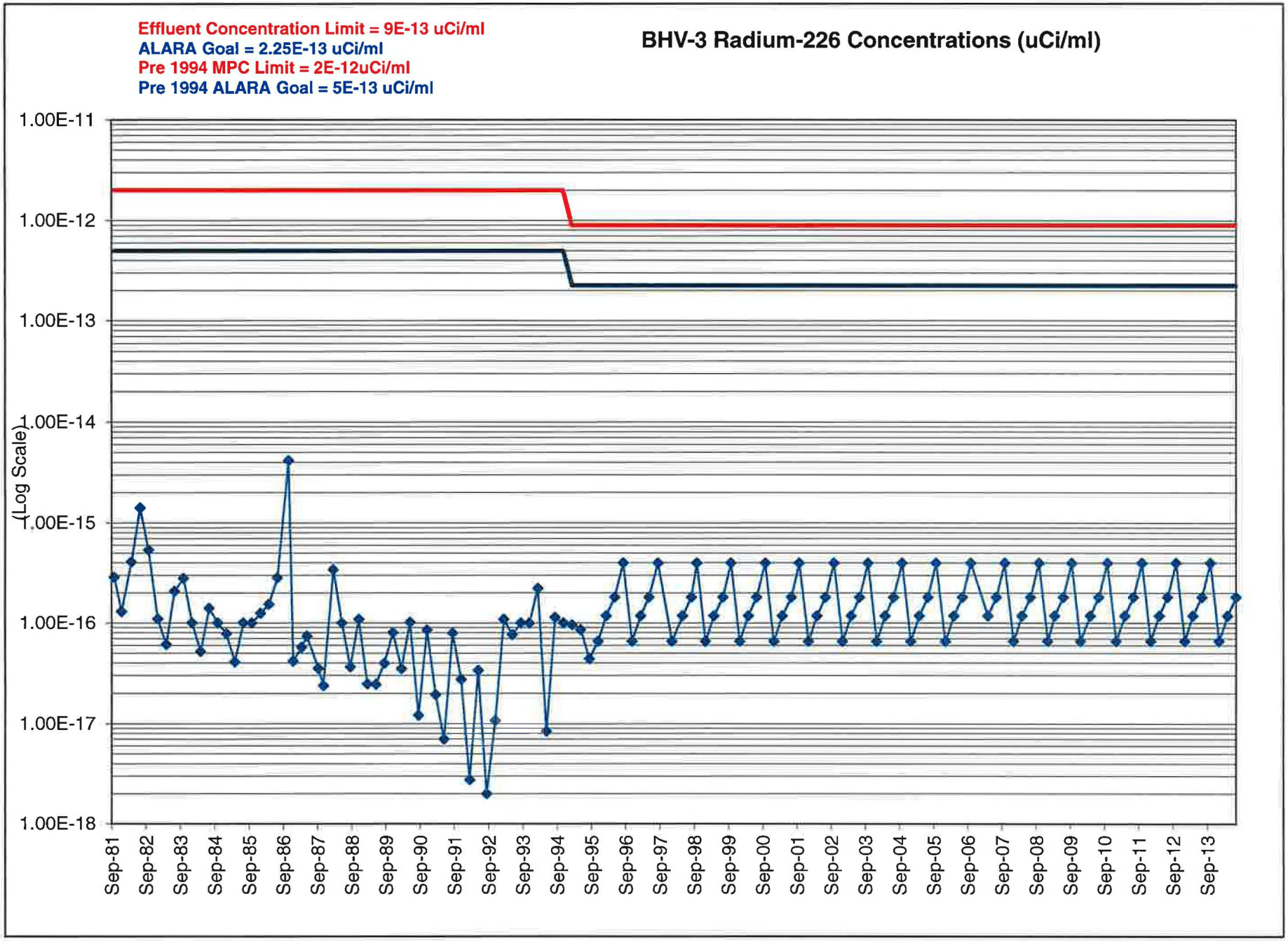
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-3 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
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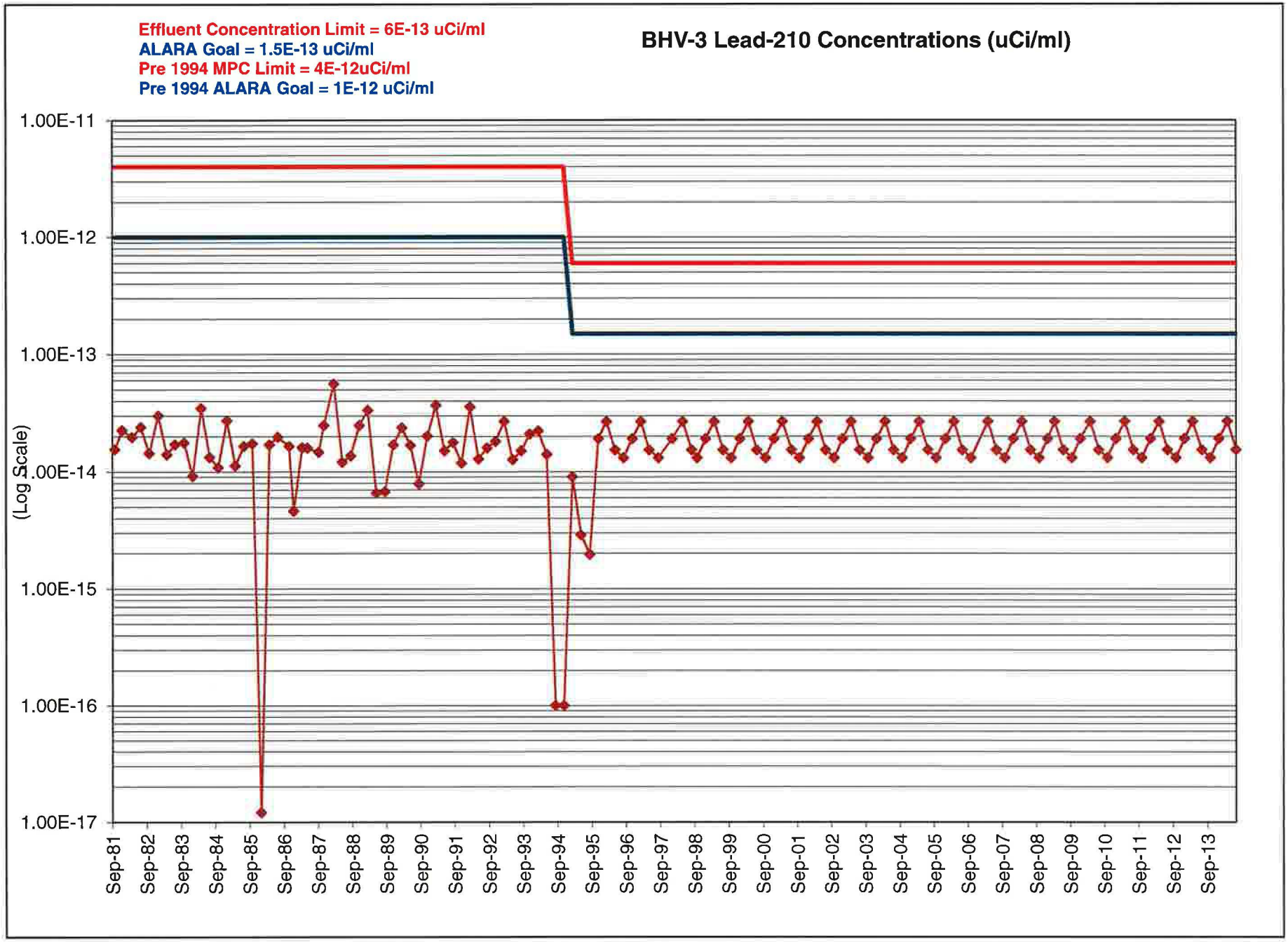
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-3 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
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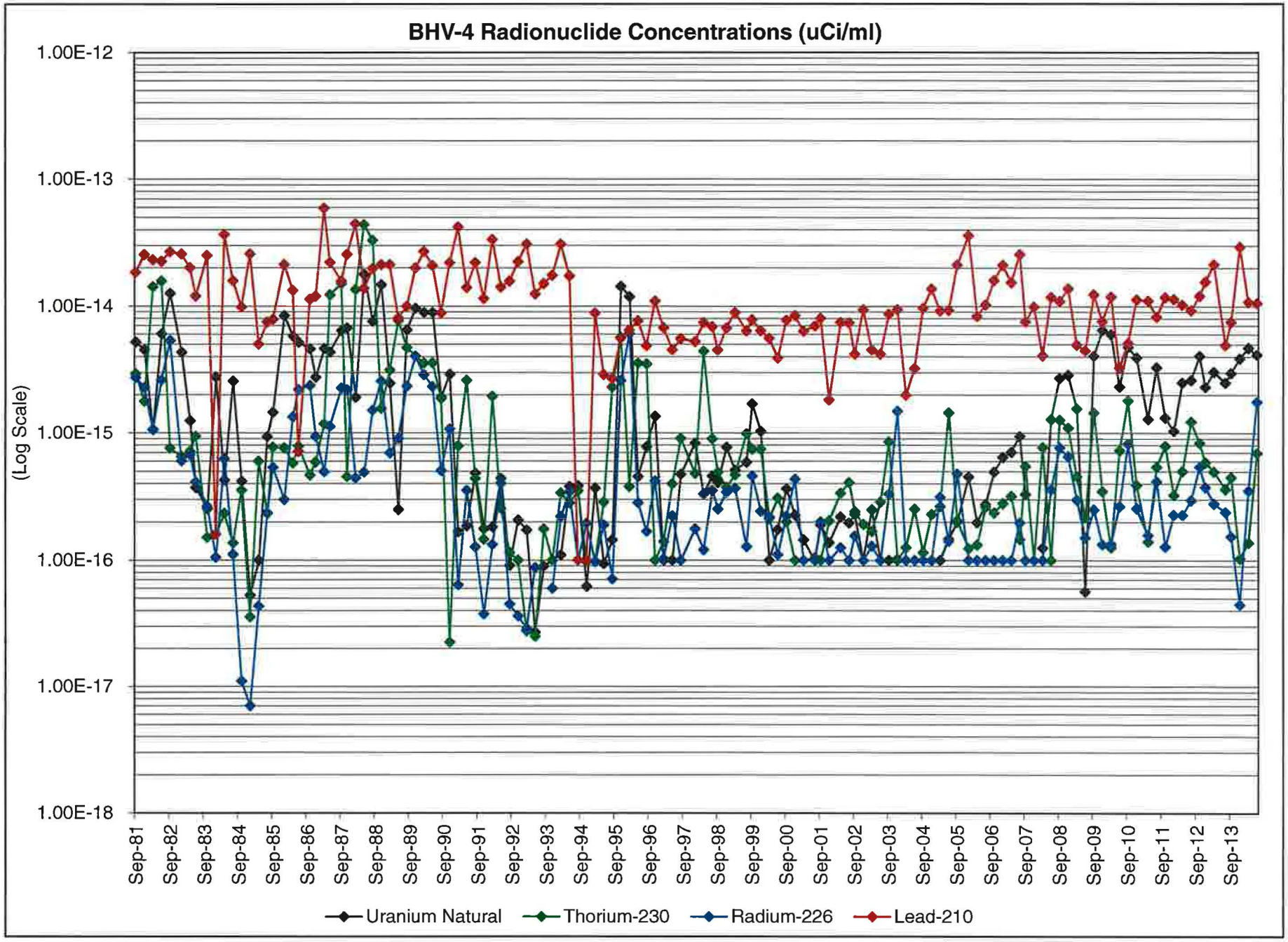
TAB 4

BHV-4 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	5.20E-15	5.00E-12	1.25E-12	2.93E-15	8.00E-14	2.00E-14	2.74E-15	2.00E-12	5.00E-13	1.84E-14	4.00E-12	1.00E-12
12/14/1981	4.53E-15	5.00E-12	1.25E-12	1.78E-15	8.00E-14	2.00E-14	2.29E-15	2.00E-12	5.00E-13	2.54E-14	4.00E-12	1.00E-12
3/29/1982	1.06E-15	5.00E-12	1.25E-12	1.42E-14	8.00E-14	2.00E-14	1.07E-15	2.00E-12	5.00E-13	2.31E-14	4.00E-12	1.00E-12
6/30/1982	6.03E-15	5.00E-12	1.25E-12	1.57E-14	8.00E-14	2.00E-14	2.62E-15	2.00E-12	5.00E-13	2.25E-14	4.00E-12	1.00E-12
9/27/1982	1.26E-14	5.00E-12	1.25E-12	7.58E-16	8.00E-14	2.00E-14	5.35E-15	2.00E-12	5.00E-13	2.68E-14	4.00E-12	1.00E-12
1/3/1983	4.33E-15	5.00E-12	1.25E-12	6.52E-16	8.00E-14	2.00E-14	6.04E-16	2.00E-12	5.00E-13	2.57E-14	4.00E-12	1.00E-12
4/4/1983	1.25E-15	5.00E-12	1.25E-12	7.17E-16	8.00E-14	2.00E-14	6.76E-16	2.00E-12	5.00E-13	2.00E-14	4.00E-12	1.00E-12
6/30/1983	3.73E-16	5.00E-12	1.25E-12	9.43E-16	8.00E-14	2.00E-14	4.13E-16	2.00E-12	5.00E-13	1.20E-14	4.00E-12	1.00E-12
10/3/1983	2.54E-16	5.00E-12	1.25E-12	1.51E-16	8.00E-14	2.00E-14	2.65E-16	2.00E-12	5.00E-13	2.50E-14	4.00E-12	1.00E-12
1/3/1984	2.76E-15	5.00E-12	1.25E-12	1.60E-16	8.00E-14	2.00E-14	1.05E-16	2.00E-12	5.00E-13	1.59E-16	4.00E-12	1.00E-12
4/2/1984	4.27E-16	5.00E-12	1.25E-12	2.33E-16	8.00E-14	2.00E-14	6.28E-16	2.00E-12	5.00E-13	3.67E-14	4.00E-12	1.00E-12
7/2/1984	2.57E-15	5.00E-12	1.25E-12	1.36E-16	8.00E-14	2.00E-14	1.11E-16	2.00E-12	5.00E-13	1.58E-14	4.00E-12	1.00E-12
10/1/1984	4.18E-16	5.00E-12	1.25E-12	3.54E-16	8.00E-14	2.00E-14	1.10E-17	2.00E-12	5.00E-13	9.83E-15	4.00E-12	1.00E-12
1/2/1985	5.30E-17	5.00E-12	1.25E-12	3.55E-17	8.00E-14	2.00E-14	7.00E-18	2.00E-12	5.00E-13	2.57E-14	4.00E-12	1.00E-12
4/1/1985	1.00E-16	5.00E-12	1.25E-12	6.00E-16	8.00E-14	2.00E-14	4.35E-17	2.00E-12	5.00E-13	5.02E-15	4.00E-12	1.00E-12
7/1/1985	9.36E-16	5.00E-12	1.25E-12	2.33E-16	8.00E-14	2.00E-14	2.36E-16	2.00E-12	5.00E-13	7.48E-15	4.00E-12	1.00E-12
9/30/1985	1.46E-15	5.00E-12	1.25E-12	7.69E-16	8.00E-14	2.00E-14	5.38E-16	2.00E-12	5.00E-13	7.86E-15	4.00E-12	1.00E-12
1/2/1986	8.40E-15	5.00E-12	1.25E-12	7.60E-16	8.00E-14	2.00E-14	2.99E-16	2.00E-12	5.00E-13	2.12E-14	4.00E-12	1.00E-12
4/1/1986	5.79E-15	5.00E-12	1.25E-12	5.80E-16	8.00E-14	2.00E-14	1.34E-15	2.00E-12	5.00E-13	1.33E-14	4.00E-12	1.00E-12
6/30/1986	5.19E-15	5.00E-12	1.25E-12	7.83E-16	8.00E-14	2.00E-14	2.20E-15	2.00E-12	5.00E-13	7.14E-16	4.00E-12	1.00E-12
10/27/1986	4.60E-15	5.00E-12	1.25E-12	4.67E-16	8.00E-14	2.00E-14	2.37E-15	2.00E-12	5.00E-13	1.13E-14	4.00E-12	1.00E-12
12/15/1986	2.75E-15	5.00E-12	1.25E-12	5.90E-16	8.00E-14	2.00E-14	9.39E-16	2.00E-12	5.00E-13	1.20E-14	4.00E-12	1.00E-12
3/16/1987	4.64E-15	5.00E-12	1.25E-12	1.18E-15	8.00E-14	2.00E-14	4.97E-16	2.00E-12	5.00E-13	5.89E-14	4.00E-12	1.00E-12
5/11/1987	4.35E-15	5.00E-12	1.25E-12	1.23E-14	8.00E-14	2.00E-14	1.13E-15	2.00E-12	5.00E-13	2.21E-14	4.00E-12	1.00E-12
9/9/1987	6.39E-15	5.00E-12	1.25E-12	1.50E-14	8.00E-14	2.00E-14	2.26E-15	2.00E-12	5.00E-13	1.57E-14	4.00E-12	1.00E-12
11/2/1987	6.72E-15	5.00E-12	1.25E-12	4.53E-16	8.00E-14	2.00E-14	2.20E-15	2.00E-12	5.00E-13	2.55E-14	4.00E-12	1.00E-12
2/16/1988	1.91E-15	5.00E-12	1.25E-12	1.35E-14	8.00E-14	2.00E-14	4.42E-16	2.00E-12	5.00E-13	4.44E-14	4.00E-12	1.00E-12
5/18/1988	1.78E-14	5.00E-12	1.25E-12	4.39E-14	8.00E-14	2.00E-14	4.92E-16	2.00E-12	5.00E-13	1.38E-14	4.00E-12	1.00E-12
8/15/1988	7.56E-15	5.00E-12	1.25E-12	3.31E-14	8.00E-14	2.00E-14	1.51E-15	2.00E-12	5.00E-13	1.97E-14	4.00E-12	1.00E-12
11/14/1988	1.47E-14	5.00E-12	1.25E-12	1.56E-15	8.00E-14	2.00E-14	2.57E-15	2.00E-12	5.00E-13	2.12E-14	4.00E-12	1.00E-12
2/13/1989	2.47E-15	5.00E-12	1.25E-12	3.14E-15	8.00E-14	2.00E-14	6.94E-16	2.00E-12	5.00E-13	2.12E-14	4.00E-12	1.00E-12
5/15/1989	2.50E-16	5.00E-12	1.25E-12	7.68E-15	8.00E-14	2.00E-14	9.03E-16	2.00E-12	5.00E-13	8.05E-15	4.00E-12	1.00E-12
8/14/1989	6.50E-15	5.00E-12	1.25E-12	4.72E-15	8.00E-14	2.00E-14	2.35E-15	2.00E-12	5.00E-13	9.95E-15	4.00E-12	1.00E-12
11/13/1989	9.63E-15	5.00E-12	1.25E-12	4.05E-15	8.00E-14	2.00E-14	4.03E-15	2.00E-12	5.00E-13	1.99E-14	4.00E-12	1.00E-12
2/12/1990	8.92E-15	5.00E-12	1.25E-12	3.56E-15	8.00E-14	2.00E-14	2.89E-15	2.00E-12	5.00E-13	2.69E-14	4.00E-12	1.00E-12
5/14/1990	8.90E-15	5.00E-12	1.25E-12	3.58E-15	8.00E-14	2.00E-14	2.33E-15	2.00E-12	5.00E-13	2.09E-14	4.00E-12	1.00E-12
8/13/1990	1.92E-15	5.00E-12	1.25E-12	1.87E-15	8.00E-14	2.00E-14	5.06E-16	2.00E-12	5.00E-13	8.86E-15	4.00E-12	1.00E-12
11/12/1990	2.91E-15	5.00E-12	1.25E-12	2.25E-17	8.00E-14	2.00E-14	1.08E-15	2.00E-12	5.00E-13	2.19E-14	4.00E-12	1.00E-12
2/11/1991	1.67E-16	5.00E-12	1.25E-12	7.89E-16	8.00E-14	2.00E-14	6.38E-17	2.00E-12	5.00E-13	4.19E-14	4.00E-12	1.00E-12
5/13/1991	1.87E-16	5.00E-12	1.25E-12	2.61E-15	8.00E-14	2.00E-14	3.54E-16	2.00E-12	5.00E-13	1.40E-14	4.00E-12	1.00E-12
8/12/1991	4.85E-16	5.00E-12	1.25E-12	4.38E-16	8.00E-14	2.00E-14	1.27E-16	2.00E-12	5.00E-13	2.20E-14	4.00E-12	1.00E-12
11/11/1991	1.77E-16	5.00E-12	1.25E-12	1.46E-16	8.00E-14	2.00E-14	3.76E-17	2.00E-12	5.00E-13	1.15E-14	4.00E-12	1.00E-12
2/10/1992	1.83E-16	5.00E-12	1.25E-12	1.95E-15	8.00E-14	2.00E-14	1.33E-16	2.00E-12	5.00E-13	3.35E-14	4.00E-12	1.00E-12
5/11/1992	4.40E-16	5.00E-12	1.25E-12	2.56E-16	8.00E-14	2.00E-14	4.04E-16	2.00E-12	5.00E-13	1.41E-14	4.00E-12	1.00E-12
8/10/1992	9.09E-17	5.00E-12	1.25E-12	1.15E-16	8.00E-14	2.00E-14	4.50E-17	2.00E-12	5.00E-13	1.57E-14	4.00E-12	1.00E-12
11/9/1992	2.07E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	3.62E-17	2.00E-12	5.00E-13	2.24E-14	4.00E-12	1.00E-12
2/9/1993	1.73E-16	5.00E-12	1.25E-12	2.76E-17	8.00E-14	2.00E-14	2.89E-17	2.00E-12	5.00E-13	3.08E-14	4.00E-12	1.00E-12
5/10/1993	2.70E-17	5.00E-12	1.25E-12	2.50E-17	8.00E-14	2.00E-14	8.74E-17	2.00E-12	5.00E-13	1.25E-14	4.00E-12	1.00E-12
8/10/1993	9.00E-17	5.00E-12	1.25E-12	1.76E-16	8.00E-14	2.00E-14	0.00E+00	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12
11/8/1993	1.00E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	6.00E-17	2.00E-12	5.00E-13	1.75E-14	4.00E-12	1.00E-12
2/7/1994	1.10E-16	5.00E-12	1.25E-12	3.38E-16	8.00E-14	2.00E-14	2.21E-16	2.00E-12	5.00E-13	3.08E-14	4.00E-12	1.00E-12
5/9/1994	3.80E-16	5.00E-12	1.25E-12	2.82E-16	8.00E-14	2.00E-14	3.46E-16	2.00E-12	5.00E-13	1.73E-14	4.00E-12	1.00E-12
8/9/1994	3.85E-16	5.00E-12	1.25E-12	3.53E-16	8.00E-14	2.00E-14	1.00E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12
11/7/1994	6.21E-17	5.00E-12	1.25E-12	9.70E-17	8.00E-14	2.00E-14	1.96E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
2/7/1995	3.70E-16	9.00E-14	2.25E-14	9.80E-17	2.00E-14	5.00E-15	9.70E-17	9.00E-13	2.25E-13	8.84E-15	6.00E-13	1.50E-13
5/9/1995	9.40E-17	9.00E-14	2.25E-14	2.86E-16	2.00E-14	5.00E-15	1.90E-16	9.00E-13	2.25E-13	2.90E-15	6.00E-13	1.50E-13
8/9/1995	1.45E-16	9.00E-14	2.25E-14	2.31E-15	2.00E-14	5.00E-15	7.10E-17	9.00E-13	2.25E-13	2.70E-15	6.00E-13	1.50E-13
11/11/1995	1.43E-14	9.00E-14	2.25E-14	5.70E-15	2.00E-14	5.00E-15	2.61E-15	9.00E-13	2.25E-13	5.60E-15	6.00E-13	1.50E-13
2/5/1996	1.19E-14	9.00E-14	2.25E-14	3.80E-16	2.00E-14	5.00E-15	6.10E-15	9.00E-13	2.25E-13	6.48E-15	6.00E-13	1.50E-13
5/6/1996	4.55E-16	9.00E-14	2.25E-14	3.57E-15	2.00E-14	5.00E-15	2.84E-16	9.00E-13	2.25E-13	7.68E-15	6.00E-13	1.50E-13
8/5/1996	7.78E-16	9.00E-14	2.25E-14	3.51E-15	2.00E-14	5.00E-15	1.69E-16	9.00E-13	2.25E-13	4.90E-15	6.00E-13	1.50E-13
11/6/1996	1.36E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	4.21E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13
2/6/1997	1.00E-16	9.00E-14	2.25E-14	1.40E-16	2.00E-14	5.00E-15	1.03E-16	9.00E-13	2.25E-13	6.76E-15	6.00E-13	1.50E-13
5/5/1997	1.00E-16	9.00E-14	2.25E-14	4.00E-16	2.00E-14	5.00E-15	2.24E-16	9.00E-13	2.25E-13	4.55E-15	6.00E-13	1.50E-13
8/11/1997	4.74E-16	9.00E-14	2.25E-14	9.07E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.55E-15	6.00E-13	1.50E-13
1/5/1998	8.31E-16	9.00E-14	2.25E-14	4.82E-16	2.00E-14	5.00E-15	1.77E-16	9.00E-13	2.25E-13	5.28E-15	6.00E-13	1.50E-13
4/28/1998	3.32E-16	9.00E-14	2.25E-14	4.43E-15	2.00E-14	5.00E-15	1.21E-16	9.00E-13	2.25E-13	7.43E-15	6.00E-13	1.50E-13
7/31/1998	4.60E-16	9.00E-14	2.25E-14	9.02E-16	2.00E-14	5.00E-15	3.54E-16	9.00E-13	2.25E-13	6.91E-15	6.00E-13	1.50E-13
9/28/1998	4.08E-16	9.00E-14	2.25E-14	4.93E-16	2.00E-14	5.00E-15	2.53E-16	9.00E-13	2.25E-13	4.52E-15	6.00E-13	1.50E-13
12/28/1998	7.72E-16	9.00E-14	2.25E-14	3.75E-16	2.00E-14	5.00E-15	3.43E-16	9.00E-13	2.25E-13	6.73E-15	6.00E-13	1.50E-13
3/29/1999	5.11E-16	9.00E-14	2.25E-14	4.70E-16	2.00E-14	5.00E-15	3.70E-16	9.00E-13	2.25E-13	8.96E-15	6.00E-13	1.50E-13
7/3/1999	5.90E-16	9.00E-14	2.25E-14	9.89E-16	2.00E-14	5.00E-15	1.28E-16	9.00E-13	2.25E-13	6.40E-15	6.00E-13	1.50E-13
9/27/1999	1.70E-15	9.00E-14	2.25E-14	7.50E-16	2.00E-14	5.00E-15	4.61E-16	9.00E-13	2.25E-13	7.86E-15	6.00E-13	1.50E-13
12/28/1999	1.03E-15	9.00E-14	2.25E-14	7.50E-16	2.00E-14	5.00E-15	2.43E-16	9.00E-13	2.25E-13	6.42E-15	6.00E-13	1.50E-13
3/27/2000	1.00E-16	9.00E-14	2.25E-14	2.13E-16	2.00E-14	5.00E-15	2.20E-16	9.00E-13	2.25E-13	5.61E-15	6.00E-13	1.50E-13
6/26/2000	1.75E-16	9.00E-14	2.25E-14	3.08E-16	2.00E-14	5.00E-15	1.11E-16	9.00E-13	2.25E-13	3.92E-15	6.00E-13	1.50E-13
9/26/2000	3.65E-16	9.00E-14	2.25E-14	2.01E-16	2.00E-14	5.00E-15	2.24E-16	9.00E-13	2.25E-13	7.79E-15	6.00E-13	1.50E-13
12/26/2000	2.27E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	4.35E-16	9.00E-13	2.25E-13	8.45E-15	6.00E-13	1.50E-13
3/26/2001	1.45E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.37E-15	6.00E-13	1.50E-13
7/2/2001	1.00E-16	9.00E-14	2.25E-14	1.05E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.99E-15	6.00E-13	1.50E-13
9/24/2001	1.91E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	2.01E-16	9.00E-13	2.25E-13	8.04E-15	6.00E-13	1.50E-13
12/31/2001	1.38E-16	9.00E-14	2.25E-14	2.05E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.83E-15	6.00E-13	1.50E-13
4/1/2002	2.20E-16	9.00E-14	2.25E-14	3.38E-16	2.00E-14	5.00E-15	1.26E-16	9.00E-13	2.25E-13	7.48E-15	6.00E-13	1.50E-13
7/1/2002	1.97E-16	9.00E-14	2.25E-14	4.10E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.40E-15	6.00E-13	1.50E-13
9/30/2002	2.30E-16	9.00E-14	2.25E-14	2.42E-16	2.00E-14	5.00E-15	1.56E-16	9.00E-13	2.25E-13	4.21E-15	6.00E-13	1.50E-13
12/30/2002	1.00E-16	9.00E-14	2.25E-14	1.92E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.42E-15	6.00E-13	1.50E-13
3/31/2003	2.50E-16	9.00E-14	2.25E-14	1.69E-16	2.00E-14	5.00E-15	1.29E-16	9.00E-13	2.25E-13	4.55E-15	6.00E-13	1.50E-13
6/30/2003	1.00E-16	9.00E-14	2.25E-14	2.87E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.20E-15	6.00E-13	1.50E-13
9/29/2003	1.00E-16	9.00E-14	2.25E-14	8.53E-16	2.00E-14	5.00E-15	3.32E-16	9.00E-13	2.25E-13	8.69E-15	6.00E-13	1.50E-13
12/29/2003	1.02E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.49E-15	9.00E-13	2.25E-13	9.45E-15	6.00E-13	1.50E-13
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.26E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.00E-15	6.00E-13	1.50E-13
6/27/2004	1.00E-16	9.00E-14	2.25E-14	2.53E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.23E-15	6.00E-13	1.50E-13
9/27/2004	1.00E-16	9.00E-14	2.25E-14	1.15E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.68E-15	6.00E-13	1.50E-13
12/27/2004	1.00E-16	9.00E-14	2.25E-14	2.30E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.37E-14	6.00E-13	1.50E-13
3/28/2005	1.00E-16	9.00E-14	2.25E-14	2.66E-16	2.00E-14	5.00E-15	3.15E-16	9.00E-13	2.25E-13	9.22E-15	6.00E-13	1.50E-13
6/29/2005	1.47E-16	9.00E-14	2.25E-14	1.45E-15	2.00E-14	5.00E-15	1.42E-16	9.00E-13	2.25E-13	9.34E-15	6.00E-13	1.50E-13
9/26/2005	2.01E-16	9.00E-14	2.25E-14	2.06E-16	2.00E-14	5.00E-15	4.80E-16	9.00E-13	2.25E-13	2.12E-14	6.00E-13	1.50E-13
1/3/2006	4.54E-16	9.00E-14	2.25E-14	1.24E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.60E-14	6.00E-13	1.50E-13
4/3/2006	1.99E-16	9.00E-14	2.25E-14	1.32E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.36E-15	6.00E-13	1.50E-13
7/3/2006	2.76E-16	9.00E-14	2.25E-14	2.63E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.03E-14	6.00E-13	1.50E-13
10/2/2006	4.97E-16	9.00E-14	2.25E-14	2.37E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.60E-14	6.00E-13	1.50E-13
1/1/2007	6.46E-16	9.00E-14	2.25E-14	2.81E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	2.10E-14	6.00E-13	1.50E-13
4/2/2007	7.08E-16	9.00E-14	2.25E-14	3.20E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.54E-14	6.00E-13	1.50E-13
7/2/2007	9.41E-16	9.00E-14	2.25E-14	1.46E-16	2.00E-14	5.00E-15	1.99E-16	9.00E-13	2.25E-13	2.56E-14	6.00E-13	1.50E-13
9/30/2007	3.30E-16	9.00E-14	2.25E-14	5.50E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.57E-15	6.00E-13	1.50E-13
12/31/2007	1.42 E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.93E-15	6.00E-13	1.50E-13
3/31/2008	1.25E-16	9.00E-14	2.25E-14	7.72E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	4.09E-15	6.00E-13	1.50E-13
6/30/2008	1.28E-15	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	3.61E-16	9.00E-13	2.25E-13	1.18E-14	6.00E-13	1.50E-13

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-4U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-4T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-4R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-4PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/30/2008	2.72E-15	9.00E-14	2.25E-14	1.27E-15	2.00E-14	5.00E-15	7.66E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13
12/31/2008	2.88E-15	9.00E-14	2.25E-14	1.10E-15	2.00E-14	5.00E-15	6.56E-16	9.00E-13	2.25E-13	1.38E-14	6.00E-13	1.50E-13
3/15/2009	1.56E-15	9.00E-14	2.25E-14	4.57E-16	2.00E-14	5.00E-15	2.99E-16	9.00E-13	2.25E-13	4.97E-15	6.00E-13	1.50E-13
6/15/2009	5.67E-17	9.00E-14	2.25E-14	2.17E-16	2.00E-14	5.00E-15	1.51E-16	9.00E-13	2.25E-13	4.47E-15	6.00E-13	1.50E-13
9/15/2009	4.05E-15	9.00E-14	2.25E-14	1.45E-15	2.00E-14	5.00E-15	2.52E-16	9.00E-13	2.25E-13	1.24E-14	6.00E-13	1.50E-13
12/15/2009	6.50E-15	9.00E-14	2.25E-14	3.48E-16	2.00E-14	5.00E-15	1.33E-16	9.00E-13	2.25E-13	7.60E-15	6.00E-13	1.50E-13
3/31/2010	6.01E-15	9.00E-14	2.25E-14	1.26E-16	2.00E-14	5.00E-15	1.34E-16	9.00E-13	2.25E-13	1.19E-14	6.00E-13	1.50E-13
6/30/2010	2.33E-15	9.00E-14	2.25E-14	7.29E-16	2.00E-14	5.00E-15	2.66E-16	9.00E-13	2.25E-13	3.27E-15	6.00E-13	1.50E-13
9/30/2010	4.77E-15	9.00E-14	2.25E-14	1.80E-15	2.00E-14	5.00E-15	8.23E-16	9.00E-13	2.25E-13	5.11E-15	6.00E-13	1.50E-13
12/31/2010	3.93E-15	9.00E-14	2.25E-14	3.90E-16	2.00E-14	5.00E-15	2.56E-16	9.00E-13	2.25E-13	1.13E-14	6.00E-13	1.50E-13
4/4/2011	1.29E-15	9.00E-14	2.25E-14	1.40E-16	2.00E-14	5.00E-15	1.58E-16	9.00E-13	2.25E-13	1.11E-14	6.00E-13	1.50E-13
7/4/2011	3.30E-15	9.00E-14	2.25E-14	5.44E-16	2.00E-14	5.00E-15	4.18E-16	9.00E-13	2.25E-13	8.26E-15	6.00E-13	1.50E-13
10/3/2011	1.32E-15	9.00E-14	2.25E-14	7.89E-16	2.00E-14	5.00E-15	1.28E-16	9.00E-13	2.25E-13	1.18E-14	6.00E-13	1.50E-13
1/3/2012	1.04E-15	9.00E-14	2.25E-14	3.25E-16	2.00E-14	5.00E-15	2.28E-16	9.00E-13	2.25E-13	1.14E-14	6.00E-13	1.50E-13
4/3/2012	2.51E-15	9.00E-14	2.25E-14	5.02E-16	2.00E-14	5.00E-15	2.27E-16	9.00E-13	2.25E-13	1.03E-14	6.00E-13	1.50E-13
7/2/2012	2.62E-15	9.00E-14	2.25E-14	1.23E-15	2.00E-14	5.00E-15	2.97E-16	9.00E-13	2.25E-13	9.27E-15	6.00E-13	1.50E-13
10/1/2012	4.05E-15	9.00E-14	2.25E-14	8.33E-16	2.00E-14	5.00E-15	5.43E-16	9.00E-13	2.25E-13	1.21E-14	6.00E-13	1.50E-13
12/31/2012	2.32E-15	9.00E-14	2.25E-14	5.89E-16	2.00E-14	5.00E-15	3.75E-16	9.00E-13	2.25E-13	1.56E-14	6.00E-13	1.50E-13
3/25/2013	3.04E-15	9.00E-14	2.25E-14	4.99E-16	2.00E-14	5.00E-15	2.79E-16	9.00E-13	2.25E-13	2.13E-14	6.00E-13	1.50E-13
7/2/2013	2.50E-15	9.00E-14	2.25E-14	3.62E-16	2.00E-14	5.00E-15	2.40E-16	9.00E-13	2.25E-13	4.93E-15	6.00E-13	1.50E-13
9/30/2013	2.98E-15	9.00E-14	2.25E-14	4.49E-16	2.00E-14	5.00E-15	1.54E-16	9.00E-13	2.25E-13	7.49E-15	6.00E-13	1.50E-13
12/30/2013	3.88E-15	9.00E-14	2.25E-14	1.03E-16	2.00E-14	5.00E-15	4.47E-17	9.00E-13	2.25E-13	2.93E-14	6.00E-13	1.50E-13
3/31/2014	4.69E-15	9.00E-14	2.25E-14	1.37E-16	2.00E-14	5.00E-15	3.53E-16	9.00E-13	2.25E-13	1.08E-14	6.00E-13	1.50E-13
6/30/2014	4.16E-15	9.00E-14	2.25E-14	6.96E-16	2.00E-14	5.00E-15	1.77E-15	9.00E-13	2.25E-13	1.06E-14	6.00E-13	1.50E-13


BHV-4 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
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Sep-94
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Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
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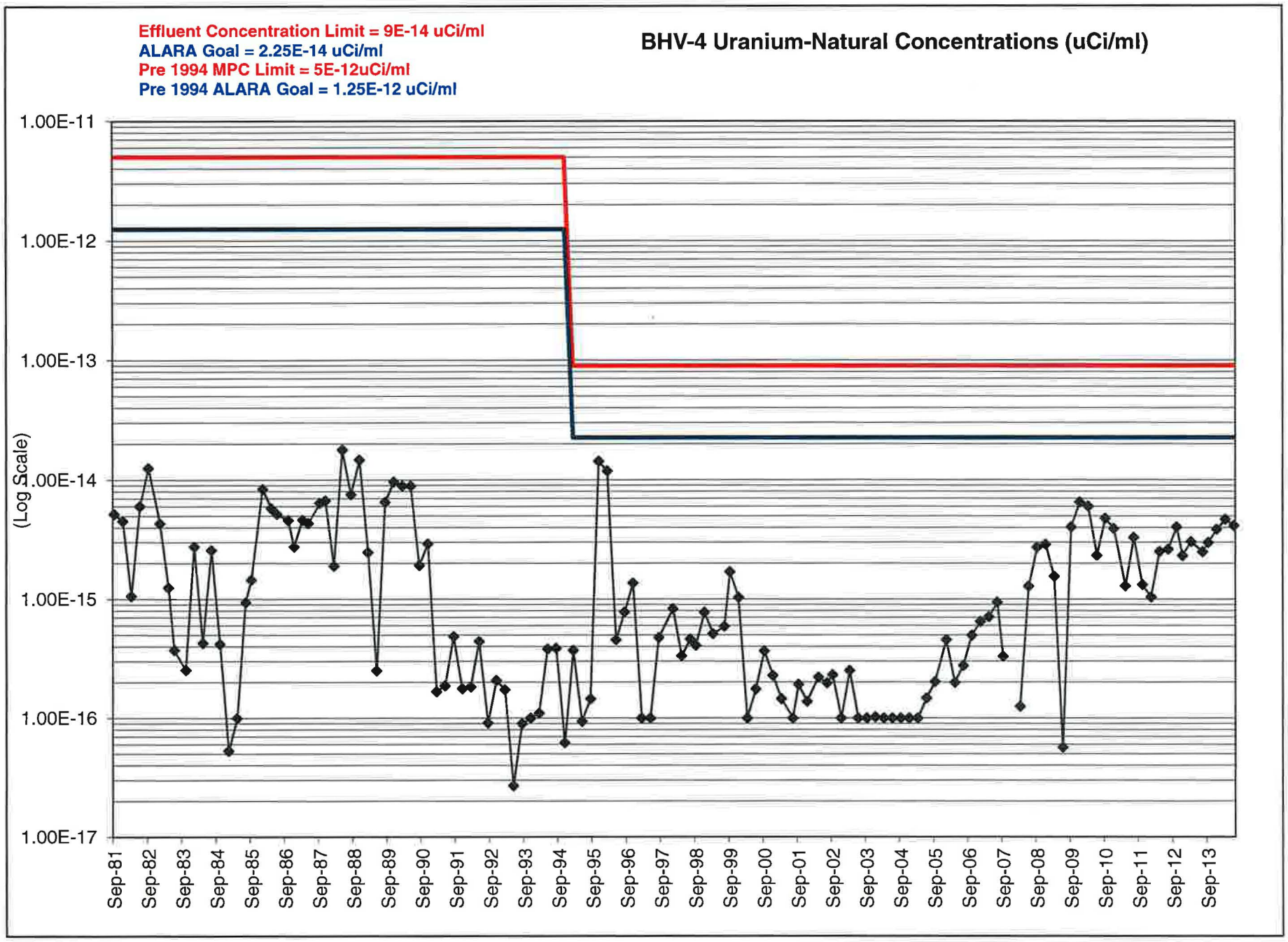
Sep-11
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-4 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
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Sep-96
Sep-97
Sep-98
Sep-99
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Sep-01
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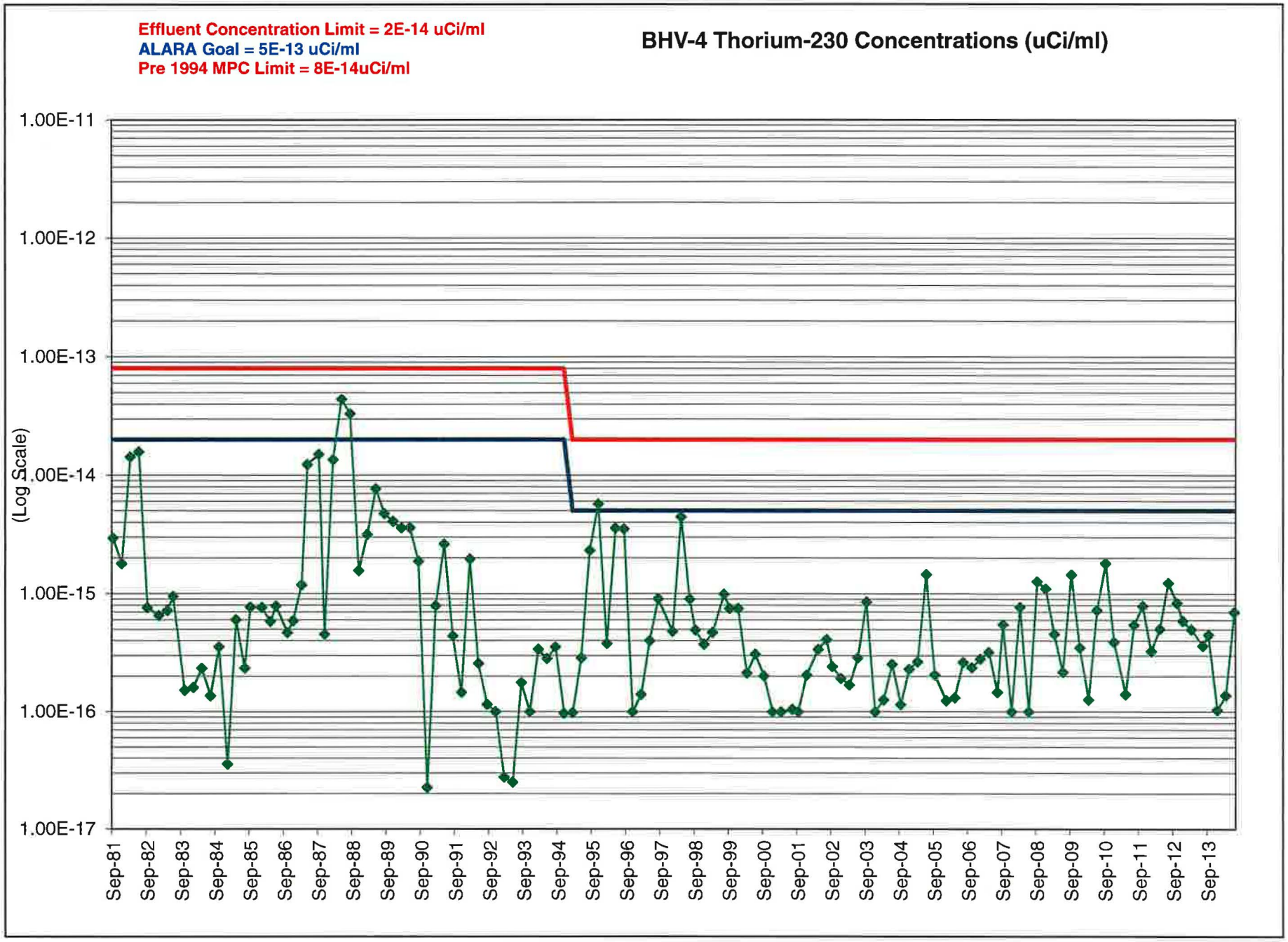
Sep-12
Sep-13


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-4 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
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Sep-89
Sep-90
Sep-91
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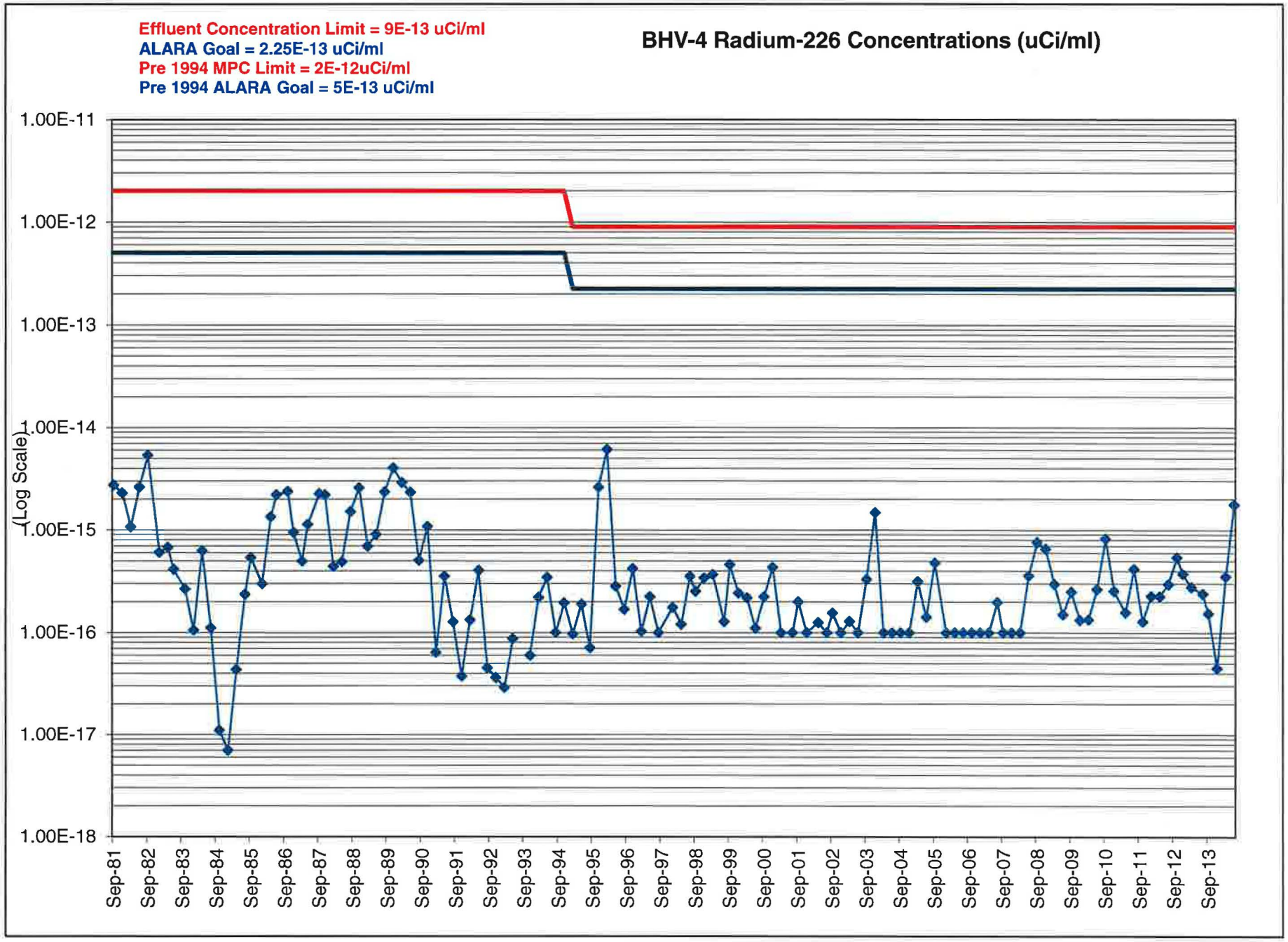
Sep-13


Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-4 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
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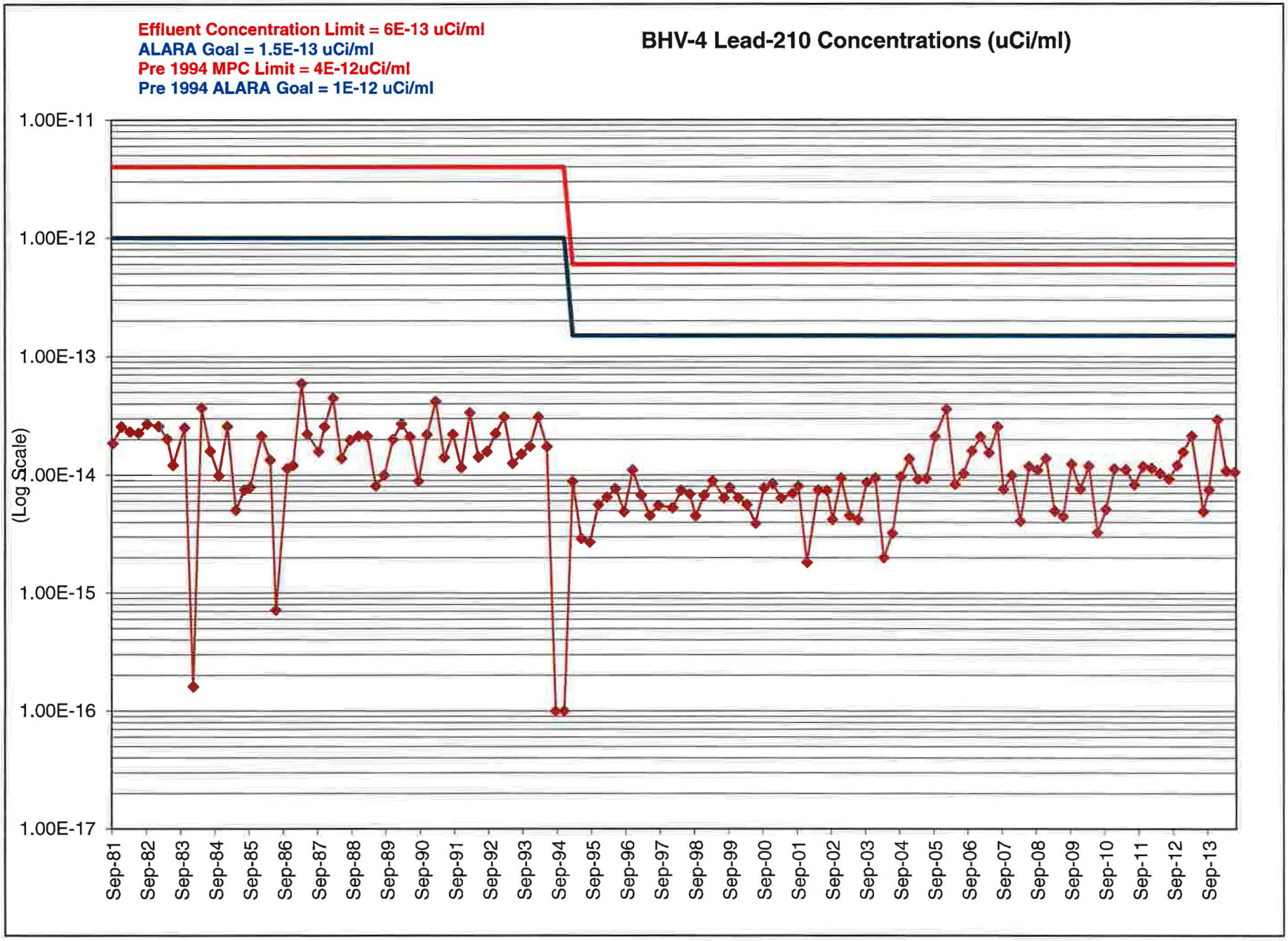
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-4 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
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Sep-97
Sep-98
Sep-99
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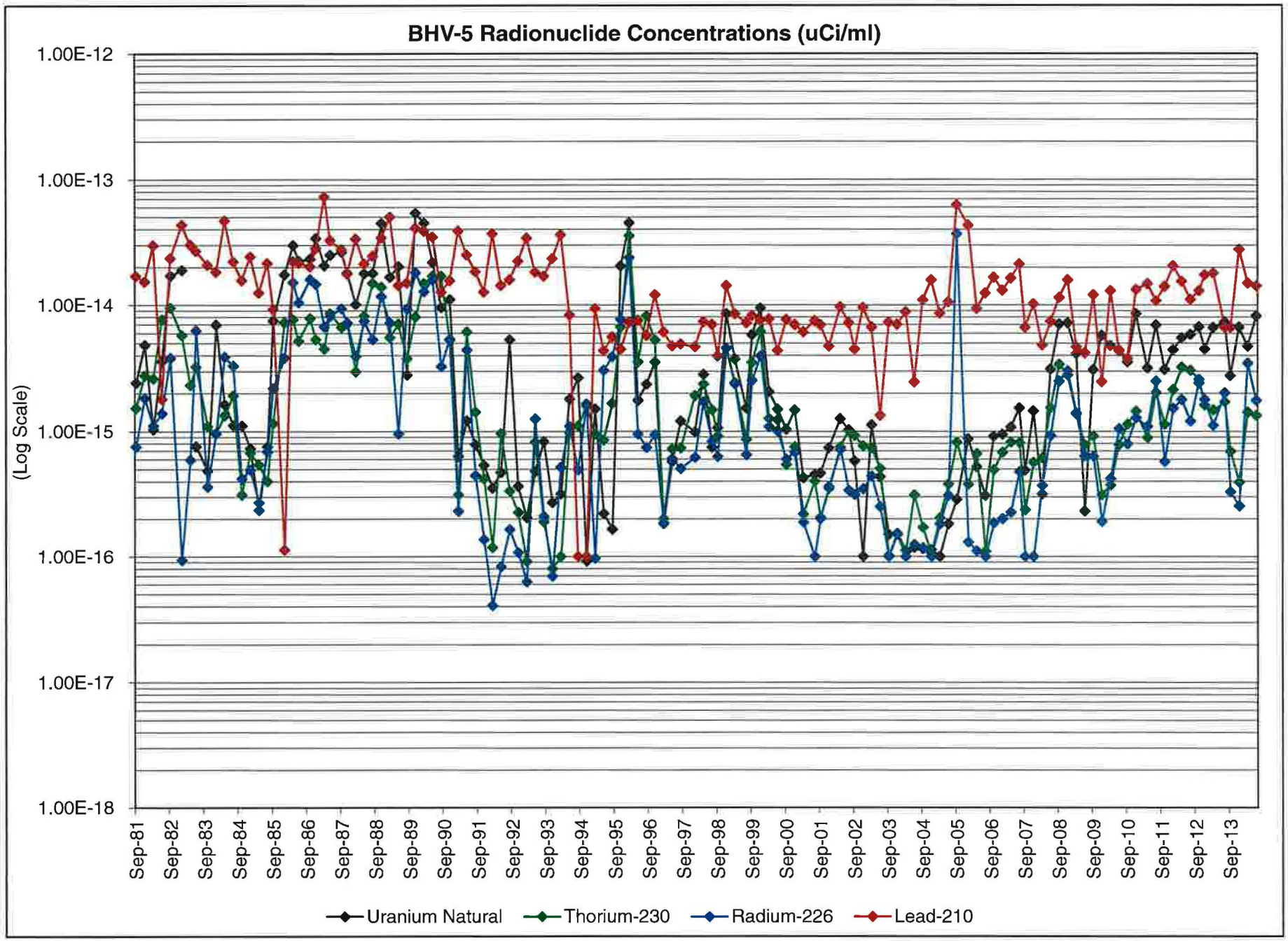
TAB 5

BHV-5 AIR SAMPLING GRAPHS AND DATA TABLE

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981	2.44E-15	5.00E-12	1.25E-12	1.53E-15	8.00E-14	2.00E-14	7.54E-16	2.00E-12	5.00E-13	1.69E-14	4.00E-12	1.00E-12
12/14/1981	4.84E-15	5.00E-12	1.25E-12	2.78E-15	8.00E-14	2.00E-14	1.84E-15	2.00E-12	5.00E-13	1.53E-14	4.00E-12	1.00E-12
3/29/1982	1.04E-15	5.00E-12	1.25E-12	2.62E-15	8.00E-14	2.00E-14	1.11E-15	2.00E-12	5.00E-13	2.98E-14	4.00E-12	1.00E-12
6/30/1982	3.61E-15	5.00E-12	1.25E-12	7.61E-15	8.00E-14	2.00E-14	1.39E-15	2.00E-12	5.00E-13	1.80E-15	4.00E-12	1.00E-12
9/27/1982	1.71E-14	5.00E-12	1.25E-12	9.46E-15	8.00E-14	2.00E-14	3.80E-15	2.00E-12	5.00E-13	2.35E-14	4.00E-12	1.00E-12
1/3/1983	1.90E-14	5.00E-12	1.25E-12	5.77E-15	8.00E-14	2.00E-14	9.34E-17	2.00E-12	5.00E-13	4.32E-14	4.00E-12	1.00E-12
4/4/1983		5.00E-12	1.25E-12	2.33E-15	8.00E-14	2.00E-14	5.93E-16	2.00E-12	5.00E-13	3.01E-14	4.00E-12	1.00E-12
6/30/1983	7.62E-16	5.00E-12	1.25E-12	3.25E-15	8.00E-14	2.00E-14	6.28E-15	2.00E-12	5.00E-13	2.69E-14	4.00E-12	1.00E-12
10/3/1983	4.86E-16	5.00E-12	1.25E-12	1.10E-15	8.00E-14	2.00E-14	3.63E-16	2.00E-12	5.00E-13	2.08E-14	4.00E-12	1.00E-12
1/3/1984	6.96E-15	5.00E-12	1.25E-12	9.69E-16	8.00E-14	2.00E-14	9.60E-16	2.00E-12	5.00E-13	1.83E-14	4.00E-12	1.00E-12
4/2/1984	1.64E-15	5.00E-12	1.25E-12	1.34E-15	8.00E-14	2.00E-14	3.88E-15	2.00E-12	5.00E-13	4.67E-14	4.00E-12	1.00E-12
7/2/1984	1.12E-15	5.00E-12	1.25E-12	1.92E-15	8.00E-14	2.00E-14	3.31E-15	2.00E-12	5.00E-13	2.21E-14	4.00E-12	1.00E-12
10/1/1984	1.11E-15	5.00E-12	1.25E-12	3.13E-16	8.00E-14	2.00E-14	4.21E-16	2.00E-12	5.00E-13	1.57E-14	4.00E-12	1.00E-12
1/2/1985	7.32E-16	5.00E-12	1.25E-12	6.71E-16	8.00E-14	2.00E-14	4.94E-16	2.00E-12	5.00E-13	2.42E-14	4.00E-12	1.00E-12
4/1/1985	2.36E-16	5.00E-12	1.25E-12	5.43E-16	8.00E-14	2.00E-14	2.71E-16	2.00E-12	5.00E-13	1.25E-14	4.00E-12	1.00E-12
7/1/1985	7.58E-16	5.00E-12	1.25E-12	4.00E-16	8.00E-14	2.00E-14	6.90E-16	2.00E-12	5.00E-13	2.15E-14	4.00E-12	1.00E-12
9/30/1985	7.47E-15	5.00E-12	1.25E-12	1.16E-15	8.00E-14	2.00E-14	2.19E-15	2.00E-12	5.00E-13	9.20E-15	4.00E-12	1.00E-12
1/2/1986	1.75E-14	5.00E-12	1.25E-12	7.24E-15	8.00E-14	2.00E-14	3.83E-15	2.00E-12	5.00E-13	1.13E-16	4.00E-12	1.00E-12
4/1/1986	2.99E-14	5.00E-12	1.25E-12	7.64E-15	8.00E-14	2.00E-14	1.51E-14	2.00E-12	5.00E-13	2.22E-14	4.00E-12	1.00E-12
6/30/1986	2.23E-14	5.00E-12	1.25E-12	5.19E-15	8.00E-14	2.00E-14	1.05E-14	2.00E-12	5.00E-13	2.16E-14	4.00E-12	1.00E-12
10/27/1986	2.33E-14	5.00E-12	1.25E-12	7.78E-15	8.00E-14	2.00E-14	1.60E-14	2.00E-12	5.00E-13	2.02E-14	4.00E-12	1.00E-12
12/15/1986	3.40E-14	5.00E-12	1.25E-12	5.35E-15	8.00E-14	2.00E-14	1.47E-14	2.00E-12	5.00E-13	2.82E-14	4.00E-12	1.00E-12
3/16/1987	2.06E-14	5.00E-12	1.25E-12	4.50E-15	8.00E-14	2.00E-14	6.74E-15	2.00E-12	5.00E-13	7.29E-14	4.00E-12	1.00E-12
5/11/1987	2.50E-14	5.00E-12	1.25E-12	8.54E-15	8.00E-14	2.00E-14	8.15E-15	2.00E-12	5.00E-13	3.28E-14	4.00E-12	1.00E-12
9/9/1987	2.65E-14	5.00E-12	1.25E-12	6.62E-15	8.00E-14	2.00E-14	9.34E-15	2.00E-12	5.00E-13	2.77E-14	4.00E-12	1.00E-12
11/2/1987	1.80E-14	5.00E-12	1.25E-12	7.09E-15	8.00E-14	2.00E-14	7.20E-15	2.00E-12	5.00E-13	1.77E-14	4.00E-12	1.00E-12
2/16/1988	1.01E-14	5.00E-12	1.25E-12	2.98E-15	8.00E-14	2.00E-14	3.93E-15	2.00E-12	5.00E-13	3.36E-14	4.00E-12	1.00E-12
5/18/1988	1.78E-14	5.00E-12	1.25E-12	8.14E-15	8.00E-14	2.00E-14	7.43E-15	2.00E-12	5.00E-13	2.12E-14	4.00E-12	1.00E-12
8/15/1988	1.79E-14	5.00E-12	1.25E-12	1.49E-14	8.00E-14	2.00E-14	5.34E-15	2.00E-12	5.00E-13	2.45E-14	4.00E-12	1.00E-12
11/14/1988	4.46E-14	5.00E-12	1.25E-12	1.39E-14	8.00E-14	2.00E-14	1.17E-14	2.00E-12	5.00E-13	3.43E-14	4.00E-12	1.00E-12
2/13/1989	1.67E-14	5.00E-12	1.25E-12	5.54E-15	8.00E-14	2.00E-14	7.20E-15	2.00E-12	5.00E-13	5.02E-14	4.00E-12	1.00E-12
5/15/1989	2.03E-14	5.00E-12	1.25E-12	7.05E-15	8.00E-14	2.00E-14	9.56E-16	2.00E-12	5.00E-13	1.43E-14	4.00E-12	1.00E-12
8/14/1989	2.81E-15	5.00E-12	1.25E-12	3.78E-15	8.00E-14	2.00E-14	9.26E-15	2.00E-12	5.00E-13	1.50E-14	4.00E-12	1.00E-12
11/13/1989	5.38E-14	5.00E-12	1.25E-12	8.01E-15	8.00E-14	2.00E-14	1.81E-14	2.00E-12	5.00E-13	4.09E-14	4.00E-12	1.00E-12
2/12/1990	4.48E-14	5.00E-12	1.25E-12	1.48E-14	8.00E-14	2.00E-14	1.28E-14	2.00E-12	5.00E-13	3.88E-14	4.00E-12	1.00E-12
5/14/1990	2.18E-14	5.00E-12	1.25E-12	1.70E-14	8.00E-14	2.00E-14	1.59E-14	2.00E-12	5.00E-13	3.49E-14	4.00E-12	1.00E-12
8/13/1990	9.53E-15	5.00E-12	1.25E-12	1.70E-14	8.00E-14	2.00E-14	3.27E-15	2.00E-12	5.00E-13	1.27E-14	4.00E-12	1.00E-12
11/12/1990	1.11E-14	5.00E-12	1.25E-12	5.27E-15	8.00E-14	2.00E-14	5.38E-15	2.00E-12	5.00E-13	1.56E-14	4.00E-12	1.00E-12
2/11/1991	6.35E-16	5.00E-12	1.25E-12	3.13E-16	8.00E-14	2.00E-14	2.31E-16	2.00E-12	5.00E-13	3.89E-14	4.00E-12	1.00E-12
5/13/1991	1.22E-15	5.00E-12	1.25E-12	6.14E-15	8.00E-14	2.00E-14	4.41E-15	2.00E-12	5.00E-13	2.50E-14	4.00E-12	1.00E-12
8/12/1991	7.84E-16	5.00E-12	1.25E-12	1.43E-15	8.00E-14	2.00E-14	4.47E-16	2.00E-12	5.00E-13	1.84E-14	4.00E-12	1.00E-12
11/11/1991	5.37E-16	5.00E-12	1.25E-12	4.20E-16	8.00E-14	2.00E-14	1.37E-16	2.00E-12	5.00E-13	1.27E-14	4.00E-12	1.00E-12
2/10/1992	3.54E-16	5.00E-12	1.25E-12	1.18E-16	8.00E-14	2.00E-14	4.08E-17	2.00E-12	5.00E-13	3.69E-14	4.00E-12	1.00E-12
5/11/1992	4.71E-16	5.00E-12	1.25E-12	9.58E-16	8.00E-14	2.00E-14	8.31E-17	2.00E-12	5.00E-13	1.43E-14	4.00E-12	1.00E-12
8/10/1992	5.32E-15	5.00E-12	1.25E-12	3.36E-16	8.00E-14	2.00E-14	1.65E-16	2.00E-12	5.00E-13	1.59E-14	4.00E-12	1.00E-12
11/9/1992	3.66E-16	5.00E-12	1.25E-12	2.25E-16	8.00E-14	2.00E-14	1.08E-16	2.00E-12	5.00E-13	2.24E-14	4.00E-12	1.00E-12
2/9/1993	2.05E-16	5.00E-12	1.25E-12	9.14E-17	8.00E-14	2.00E-14	6.31E-17	2.00E-12	5.00E-13	3.41E-14	4.00E-12	1.00E-12
5/10/1993	4.80E-16	5.00E-12	1.25E-12	8.25E-16	8.00E-14	2.00E-14	1.26E-15	2.00E-12	5.00E-13	1.83E-14	4.00E-12	1.00E-12
8/10/1993	8.30E-16	5.00E-12	1.25E-12	1.90E-16	8.00E-14	2.00E-14	2.10E-16	2.00E-12	5.00E-13	1.70E-14	4.00E-12	1.00E-12
11/8/1993	2.70E-16	5.00E-12	1.25E-12	8.00E-17	8.00E-14	2.00E-14	7.00E-17	2.00E-12	5.00E-13	2.34E-14	4.00E-12	1.00E-12
2/7/1994	3.18E-16	5.00E-12	1.25E-12	1.00E-16	8.00E-14	2.00E-14	5.18E-16	2.00E-12	5.00E-13	3.64E-14	4.00E-12	1.00E-12
5/9/1994	1.80E-15	5.00E-12	1.25E-12	9.78E-16	8.00E-14	2.00E-14	1.10E-15	2.00E-12	5.00E-13	8.30E-15	4.00E-12	1.00E-12
8/9/1994	2.67E-15	5.00E-12	1.25E-12	1.11E-15	8.00E-14	2.00E-14	4.95E-16	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12
11/7/1994	9.21E-17	5.00E-12	1.25E-12	1.59E-15	8.00E-14	2.00E-14	1.66E-15	2.00E-12	5.00E-13	1.00E-16	4.00E-12	1.00E-12

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
2/7/1995	1.51E-15	9.00E-14	2.25E-14	9.50E-16	2.00E-14	5.00E-15	9.70E-17	9.00E-13	2.25E-13	9.35E-15	6.00E-13	1.50E-13
5/9/1995	2.21E-16	9.00E-14	2.25E-14	8.56E-16	2.00E-14	5.00E-15	3.06E-15	9.00E-13	2.25E-13	4.34E-15	6.00E-13	1.50E-13
8/9/1995	1.66E-16	9.00E-14	2.25E-14	1.67E-15	2.00E-14	5.00E-15	3.90E-15	9.00E-13	2.25E-13	5.60E-15	6.00E-13	1.50E-13
11/11/1995	2.04E-14	9.00E-14	2.25E-14	6.70E-15	2.00E-14	5.00E-15	7.65E-15	9.00E-13	2.25E-13	4.47E-15	6.00E-13	1.50E-13
2/5/1996	4.50E-14	9.00E-14	2.25E-14	3.58E-14	2.00E-14	5.00E-15	2.39E-14	9.00E-13	2.25E-13	7.30E-15	6.00E-13	1.50E-13
5/6/1996	1.76E-15	9.00E-14	2.25E-14	3.57E-15	2.00E-14	5.00E-15	9.55E-16	9.00E-13	2.25E-13	7.54E-15	6.00E-13	1.50E-13
8/5/1996	2.37E-15	9.00E-14	2.25E-14	8.18E-15	2.00E-14	5.00E-15	7.46E-16	9.00E-13	2.25E-13	5.75E-15	6.00E-13	1.50E-13
11/6/1996	3.53E-15	9.00E-14	2.25E-14	5.31E-15	2.00E-14	5.00E-15	9.39E-16	9.00E-13	2.25E-13	1.21E-14	6.00E-13	1.50E-13
2/6/1997	1.84E-16	9.00E-14	2.25E-14	2.01E-16	2.00E-14	5.00E-15	1.87E-16	9.00E-13	2.25E-13	6.14E-15	6.00E-13	1.50E-13
5/5/1997	5.75E-16	9.00E-14	2.25E-14	7.24E-16	2.00E-14	5.00E-15	6.07E-16	9.00E-13	2.25E-13	4.75E-15	6.00E-13	1.50E-13
8/11/1997	1.21E-15	9.00E-14	2.25E-14	7.39E-16	2.00E-14	5.00E-15	5.05E-16	9.00E-13	2.25E-13	4.92E-15	6.00E-13	1.50E-13
1/5/1998	9.89E-16	9.00E-14	2.25E-14	1.92E-15	2.00E-14	5.00E-15	6.21E-16	9.00E-13	2.25E-13	4.68E-15	6.00E-13	1.50E-13
4/28/1998	2.84E-15	9.00E-14	2.25E-14	2.38E-15	2.00E-14	5.00E-15	1.72E-15	9.00E-13	2.25E-13	7.35E-15	6.00E-13	1.50E-13
7/31/1998	7.49E-16	9.00E-14	2.25E-14	1.49E-15	2.00E-14	5.00E-15	8.34E-16	9.00E-13	2.25E-13	7.01E-15	6.00E-13	1.50E-13
9/28/1998	1.07E-15	9.00E-14	2.25E-14	9.20E-16	2.00E-14	5.00E-15	6.32E-16	9.00E-13	2.25E-13	3.95E-15	6.00E-13	1.50E-13
12/28/1998	8.51E-15	9.00E-14	2.25E-14	4.58E-15	2.00E-14	5.00E-15	4.58E-15	9.00E-13	2.25E-13	1.43E-14	6.00E-13	1.50E-13
3/29/1999	3.75E-15	9.00E-14	2.25E-14	2.45E-15	2.00E-14	5.00E-15	2.39E-15	9.00E-13	2.25E-13	8.46E-15	6.00E-13	1.50E-13
7/3/1999	1.53E-15	9.00E-14	2.25E-14	8.65E-16	2.00E-14	5.00E-15	6.52E-16	9.00E-13	2.25E-13	7.20E-15	6.00E-13	1.50E-13
9/27/1999	5.83E-15	9.00E-14	2.25E-14	3.52E-15	2.00E-14	5.00E-15	2.55E-15	9.00E-13	2.25E-13	8.22E-15	6.00E-13	1.50E-13
12/28/1999	9.48E-15	9.00E-14	2.25E-14	6.20E-15	2.00E-14	5.00E-15	3.96E-15	9.00E-13	2.25E-13	7.56E-15	6.00E-13	1.50E-13
3/27/2000	2.06E-15	9.00E-14	2.25E-14	1.27E-15	2.00E-14	5.00E-15	1.09E-15	9.00E-13	2.25E-13	7.72E-15	6.00E-13	1.50E-13
6/26/2000	1.50E-15	9.00E-14	2.25E-14	1.24E-15	2.00E-14	5.00E-15	1.01E-15	9.00E-13	2.25E-13	4.36E-15	6.00E-13	1.50E-13
9/26/2000	1.04E-15	9.00E-14	2.25E-14	5.45E-16	2.00E-14	5.00E-15	6.01E-16	9.00E-13	2.25E-13	7.67E-15	6.00E-13	1.50E-13
12/26/2000	1.48E-15	9.00E-14	2.25E-14	7.56E-16	2.00E-14	5.00E-15	6.84E-16	9.00E-13	2.25E-13	7.00E-15	6.00E-13	1.50E-13
3/26/2001	4.27E-16	9.00E-14	2.25E-14	2.19E-16	2.00E-14	5.00E-15	1.89E-16	9.00E-13	2.25E-13	6.13E-15	6.00E-13	1.50E-13
7/2/2001	4.52E-16	9.00E-14	2.25E-14	4.02E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.48E-15	6.00E-13	1.50E-13
9/24/2001	4.65E-16	9.00E-14	2.25E-14	2.06E-16	2.00E-14	5.00E-15	2.02E-16	9.00E-13	2.25E-13	6.98E-15	6.00E-13	1.50E-13
12/31/2001	7.40E-16	9.00E-14	2.25E-14	3.51E-16	2.00E-14	5.00E-15	3.64E-16	9.00E-13	2.25E-13	4.72E-15	6.00E-13	1.50E-13
4/1/2002	1.26E-15	9.00E-14	2.25E-14	7.53E-16	2.00E-14	5.00E-15	7.19E-16	9.00E-13	2.25E-13	9.65E-15	6.00E-13	1.50E-13
7/1/2002	1.02E-15	9.00E-14	2.25E-14	1.03E-15	2.00E-14	5.00E-15	3.39E-16	9.00E-13	2.25E-13	7.20E-15	6.00E-13	1.50E-13
9/30/2002	5.82E-16	9.00E-14	2.25E-14	9.28E-16	2.00E-14	5.00E-15	3.14E-16	9.00E-13	2.25E-13	4.48E-15	6.00E-13	1.50E-13
12/30/2002	1.00E-16	9.00E-14	2.25E-14	7.67E-16	2.00E-14	5.00E-15	3.48E-16	9.00E-13	2.25E-13	9.56E-15	6.00E-13	1.50E-13
3/31/2003	1.13E-15	9.00E-14	2.25E-14	7.41E-16	2.00E-14	5.00E-15	4.41E-16	9.00E-13	2.25E-13	6.68E-15	6.00E-13	1.50E-13
6/30/2003	4.35E-16	9.00E-14	2.25E-14	5.08E-16	2.00E-14	5.00E-15	2.51E-16	9.00E-13	2.25E-13	1.34E-15	6.00E-13	1.50E-13
9/29/2003	1.51E-16	9.00E-14	2.25E-14	1.02E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.28E-15	6.00E-13	1.50E-13
12/29/2003	1.52E-16	9.00E-14	2.25E-14	1.54E-16	2.00E-14	5.00E-15	1.51E-16	9.00E-13	2.25E-13	7.02E-15	6.00E-13	1.50E-13
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.12E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.82E-15	6.00E-13	1.50E-13
6/27/2004	1.18E-16	9.00E-14	2.25E-14	3.11E-16	2.00E-14	5.00E-15	1.25E-16	9.00E-13	2.25E-13	2.47E-15	6.00E-13	1.50E-13
9/27/2004	1.16E-16	9.00E-14	2.25E-14	1.72E-16	2.00E-14	5.00E-15	1.18E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13
12/27/2004	1.14E-16	9.00E-14	2.25E-14	1.06E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.59E-14	6.00E-13	1.50E-13
3/28/2005	1.00E-16	9.00E-14	2.25E-14	2.04E-16	2.00E-14	5.00E-15	1.83E-16	9.00E-13	2.25E-13	8.57E-15	6.00E-13	1.50E-13
6/29/2005	1.83E-16	9.00E-14	2.25E-14	3.81E-16	2.00E-14	5.00E-15	3.09E-16	9.00E-13	2.25E-13	1.06E-14	6.00E-13	1.50E-13
9/26/2005	2.87E-16	9.00E-14	2.25E-14	8.21E-16	2.00E-14	5.00E-15	3.71E-14	9.00E-13	2.25E-13	6.28E-14	6.00E-13	1.50E-13
1/3/2006	8.74E-16	9.00E-14	2.25E-14	3.79E-16	2.00E-14	5.00E-15	1.31E-16	9.00E-13	2.25E-13	4.32E-14	6.00E-13	1.50E-13
4/3/2006	5.22E-16	9.00E-14	2.25E-14	6.66E-16	2.00E-14	5.00E-15	1.11E-16	9.00E-13	2.25E-13	9.34E-15	6.00E-13	1.50E-13
7/3/2006	3.08E-16	9.00E-14	2.25E-14	1.10E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.25E-14	6.00E-13	1.50E-13
10/2/2006	9.14E-16	9.00E-14	2.25E-14	4.95E-16	2.00E-14	5.00E-15	1.86E-16	9.00E-13	2.25E-13	1.67E-14	6.00E-13	1.50E-13
1/1/2007	9.49E-16	9.00E-14	2.25E-14	6.81E-16	2.00E-14	5.00E-15	2.02E-16	9.00E-13	2.25E-13	1.31E-14	6.00E-13	1.50E-13
4/2/2007	1.08E-15	9.00E-14	2.25E-14	8.22E-16	2.00E-14	5.00E-15	2.26E-16	9.00E-13	2.25E-13	1.64E-14	6.00E-13	1.50E-13
7/2/2007	1.54E-15	9.00E-14	2.25E-14	8.16E-16	2.00E-14	5.00E-15	4.76E-16	9.00E-13	2.25E-13	2.12E-14	6.00E-13	1.50E-13
9/30/2007	4.90E-16	9.00E-14	2.25E-14	2.37E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.65E-15	6.00E-13	1.50E-13
12/31/2007	1.46E-15	9.00E-14	2.25E-14	5.67E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.02E-14	6.00E-13	1.50E-13
3/31/2008	3.16E-16	9.00E-14	2.25E-14	6.17E-16	2.00E-14	5.00E-15	3.71E-16	9.00E-13	2.25E-13	4.82E-15	6.00E-13	1.50E-13
6/30/2008	3.13E-15	9.00E-14	2.25E-14	1.55E-15	2.00E-14	5.00E-15	9.27E-16	9.00E-13	2.25E-13	7.40E-15	6.00E-13	1.50E-13

Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-5U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-5T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-5R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-5PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/30/2008	7.08E-15	9.00E-14	2.25E-14	3.41E-15	2.00E-14	5.00E-15	2.52E-15	9.00E-13	2.25E-13	1.15E-14	6.00E-13	1.50E-13
12/31/2008	7.22E-15	9.00E-14	2.25E-14	2.82E-15	2.00E-14	5.00E-15	3.03E-15	9.00E-13	2.25E-13	1.59E-14	6.00E-13	1.50E-13
3/15/2009	4.13E-15	9.00E-14	2.25E-14	1.39E-15	2.00E-14	5.00E-15	1.41E-15	9.00E-13	2.25E-13	4.66E-15	6.00E-13	1.50E-13
6/15/2009	2.31E-16	9.00E-14	2.25E-14	7.79E-16	2.00E-14	5.00E-15	6.37E-16	9.00E-13	2.25E-13	4.18E-15	6.00E-13	1.50E-13
9/15/2009	3.10E-15	9.00E-14	2.25E-14	9.20E-16	2.00E-14	5.00E-15	6.36E-16	9.00E-13	2.25E-13	1.21E-14	6.00E-13	1.50E-13
12/15/2009	5.77E-15	9.00E-14	2.25E-14	3.13E-16	2.00E-14	5.00E-15	1.92E-16	9.00E-13	2.25E-13	2.48E-15	6.00E-13	1.50E-13
3/31/2010	4.78E-15	9.00E-14	2.25E-14	3.73E-16	2.00E-14	5.00E-15	4.19E-16	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13
6/30/2010	4.35E-15	9.00E-14	2.25E-14	7.84E-16	2.00E-14	5.00E-15	1.05E-15	9.00E-13	2.25E-13	4.40E-15	6.00E-13	1.50E-13
9/30/2010	3.57E-15	9.00E-14	2.25E-14	1.14E-15	2.00E-14	5.00E-15	7.97E-16	9.00E-13	2.25E-13	3.78E-15	6.00E-13	1.50E-13
12/31/2010	8.52E-15	9.00E-14	2.25E-14	1.45E-15	2.00E-14	5.00E-15	1.29E-15	9.00E-13	2.25E-13	1.33E-14	6.00E-13	1.50E-13
4/4/2011	3.20E-15	9.00E-14	2.25E-14	8.89E-16	2.00E-14	5.00E-15	1.10E-15	9.00E-13	2.25E-13	1.48E-14	6.00E-13	1.50E-13
7/4/2011	6.98E-15	9.00E-14	2.25E-14	2.03E-15	2.00E-14	5.00E-15	2.52E-15	9.00E-13	2.25E-13	1.08E-14	6.00E-13	1.50E-13
10/3/2011	3.11E-15	9.00E-14	2.25E-14	1.14E-15	2.00E-14	5.00E-15	5.75E-16	9.00E-13	2.25E-13	1.41E-14	6.00E-13	1.50E-13
1/3/2012	4.44E-15	9.00E-14	2.25E-14	2.14E-15	2.00E-14	5.00E-15	1.53E-15	9.00E-13	2.25E-13	2.05E-14	6.00E-13	1.50E-13
4/3/2012	5.52E-15	9.00E-14	2.25E-14	3.24E-15	2.00E-14	5.00E-15	1.79E-15	9.00E-13	2.25E-13	1.55E-14	6.00E-13	1.50E-13
7/2/2012	5.87E-15	9.00E-14	2.25E-14	3.06E-15	2.00E-14	5.00E-15	1.21E-15	9.00E-13	2.25E-13	1.11E-14	6.00E-13	1.50E-13
10/1/2012	6.73E-15	9.00E-14	2.25E-14	2.59E-15	2.00E-14	5.00E-15	2.43E-15	9.00E-13	2.25E-13	1.30E-14	6.00E-13	1.50E-13
12/31/2012	4.50E-15	9.00E-14	2.25E-14	1.62E-15	2.00E-14	5.00E-15	1.79E-15	9.00E-13	2.25E-13	1.74E-14	6.00E-13	1.50E-13
3/25/2013	6.66E-15	9.00E-14	2.25E-14	1.48E-15	2.00E-14	5.00E-15	1.12E-15	9.00E-13	2.25E-13	1.80E-14	6.00E-13	1.50E-13
7/2/2013	7.35E-15	9.00E-14	2.25E-14	1.72E-15	2.00E-14	5.00E-15	2.02E-15	9.00E-13	2.25E-13	6.67E-15	6.00E-13	1.50E-13
9/30/2013	2.78E-15	9.00E-14	2.25E-14	6.92E-16	2.00E-14	5.00E-15	3.29E-16	9.00E-13	2.25E-13	6.62E-15	6.00E-13	1.50E-13
12/30/2013	6.70E-15	9.00E-14	2.25E-14	3.93E-16	2.00E-14	5.00E-15	2.53E-16	9.00E-13	2.25E-13	2.78E-14	6.00E-13	1.50E-13
3/31/2014	4.74E-15	9.00E-14	2.25E-14	1.42E-15	2.00E-14	5.00E-15	3.48E-15	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13
6/30/2014	8.18E-15	9.00E-14	2.25E-14	1.34E-15	2.00E-14	5.00E-15	1.76E-15	9.00E-13	2.25E-13	1.42E-14	6.00E-13	1.50E-13


BHV-5 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
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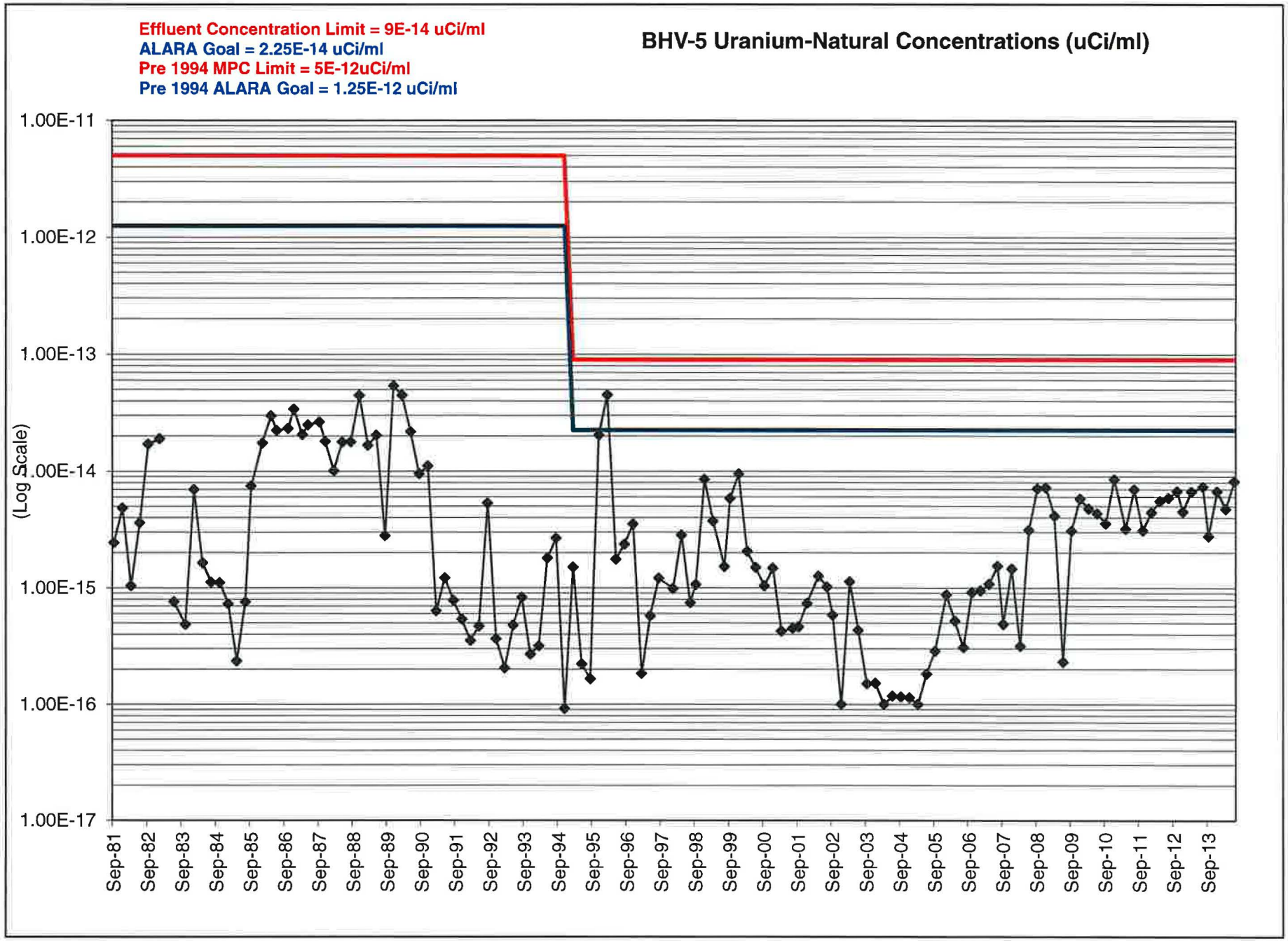
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-5 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
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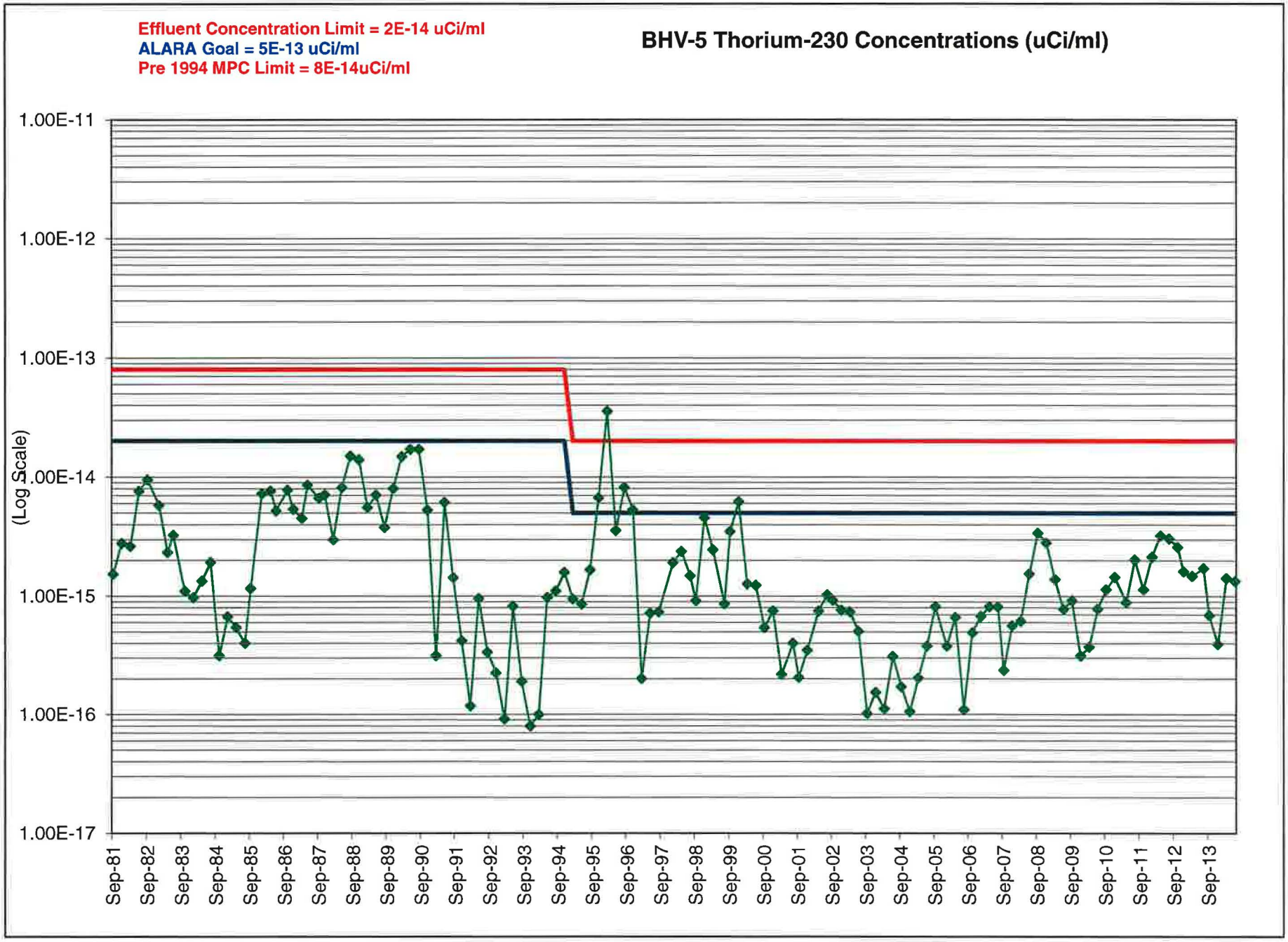
Sep-10
Sep-11
Sep-12
Sep-13


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-5 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
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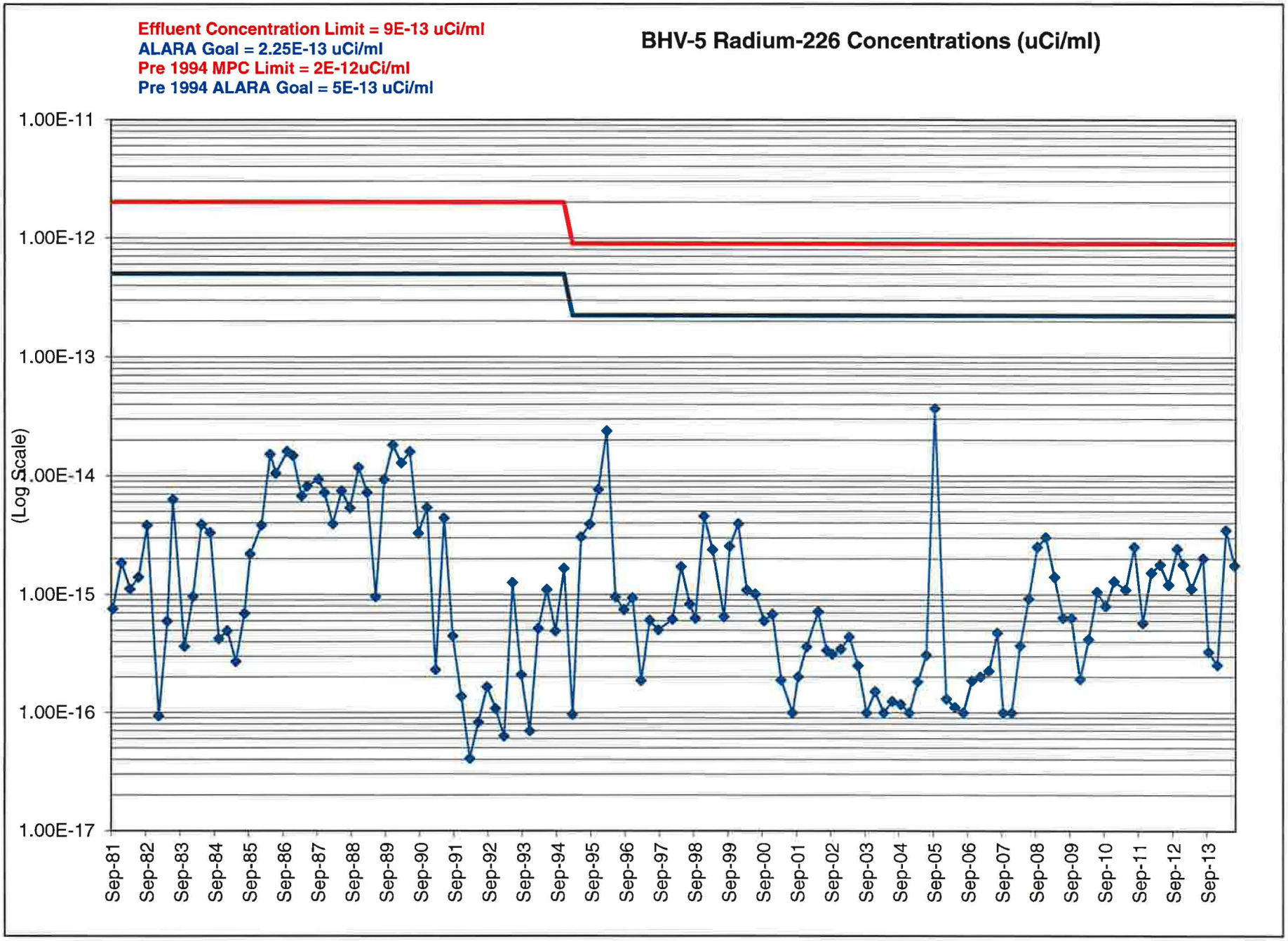
Sep-10
Sep-11
Sep-12
Sep-13


Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-5 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
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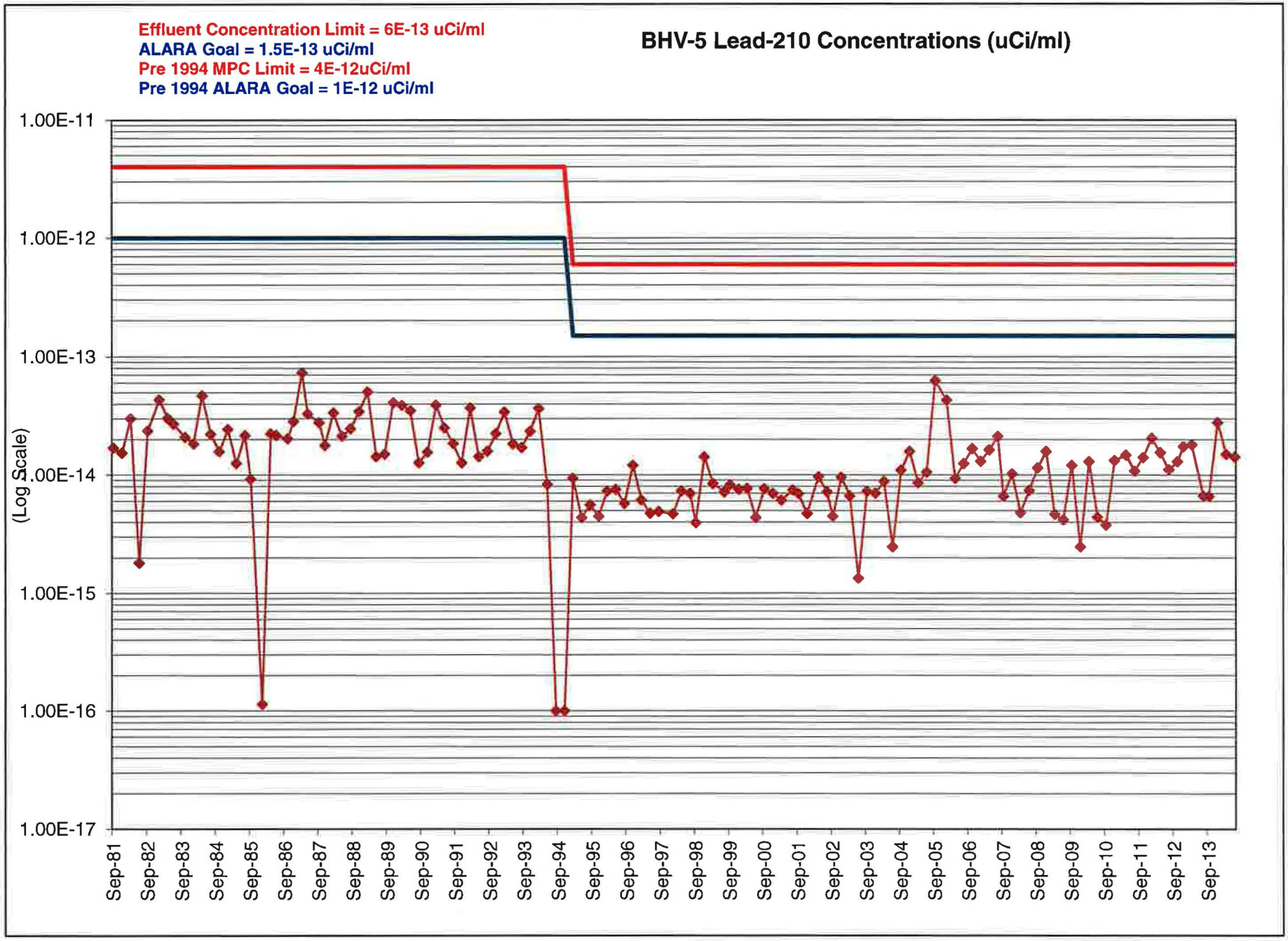
Sep-11
Sep-12
Sep-13


Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-5 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
Sep-99
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Sep-13

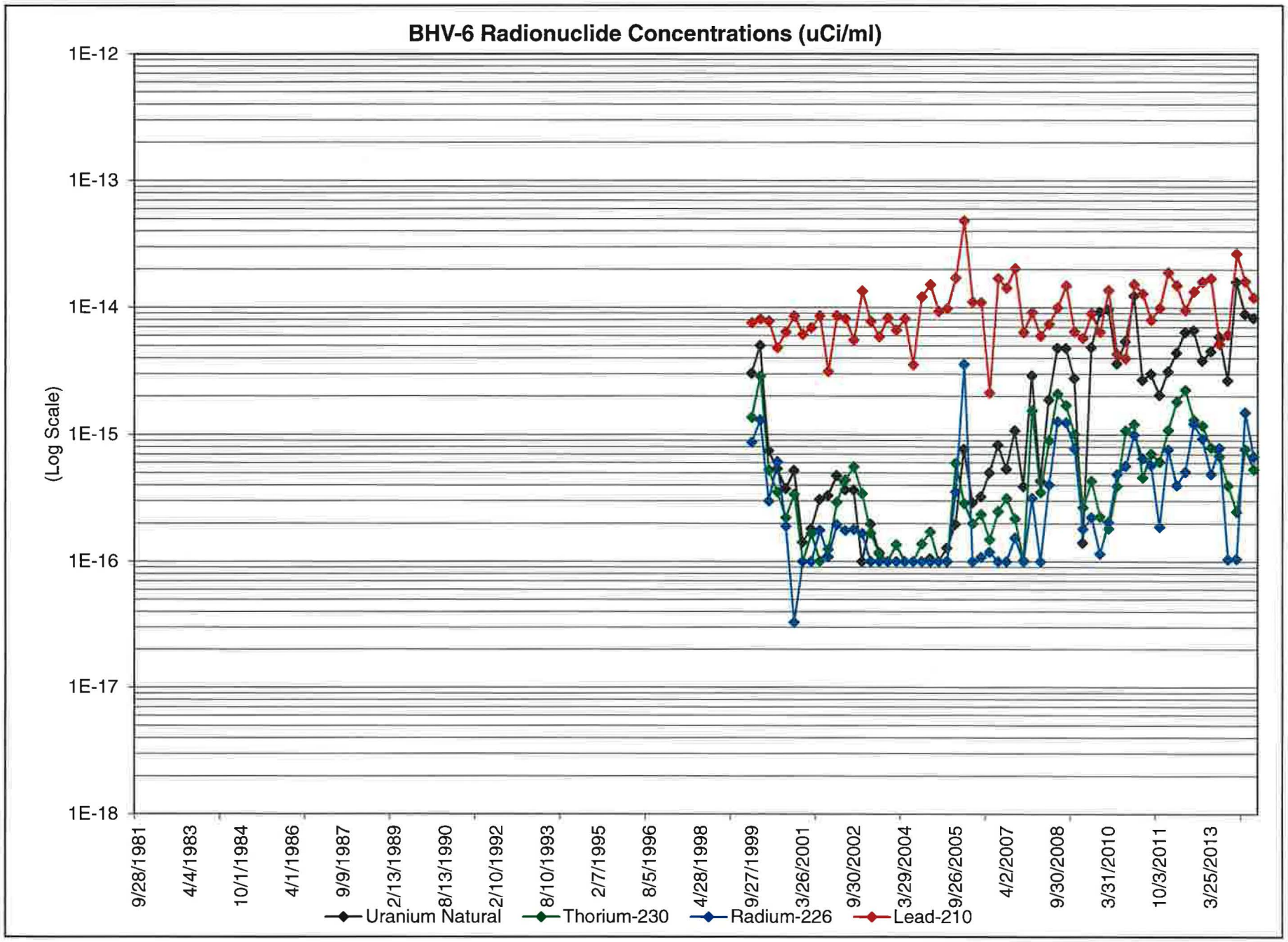
TAB 6

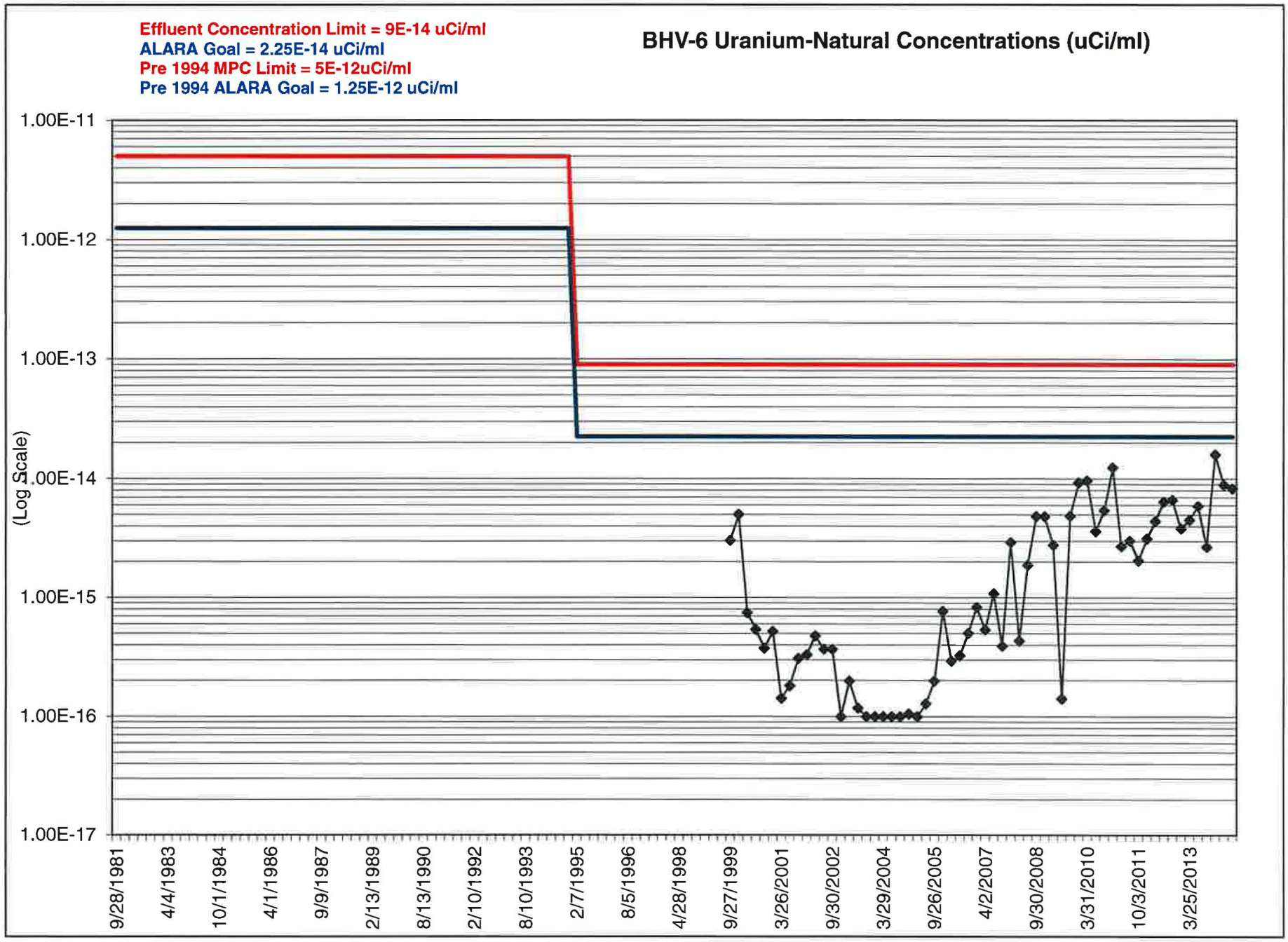
BHV-6 AIR SAMPLING GRAPHS AND DATA TABLE

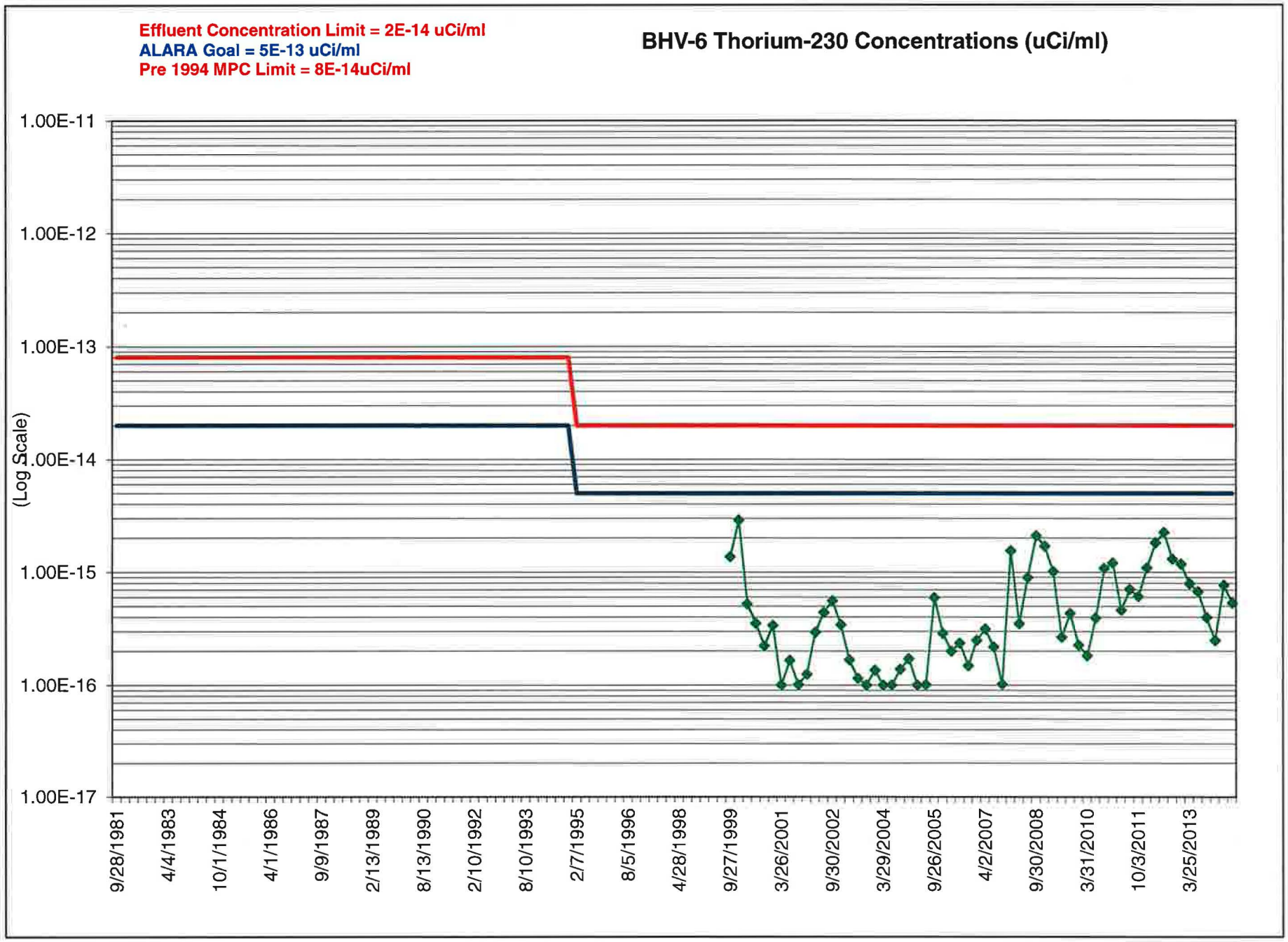
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/28/1981		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
12/14/1981		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
3/29/1982		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
6/30/1982		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
9/27/1982		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
1/3/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
4/4/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
6/30/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
10/3/1983		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
1/3/1984		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
4/2/1984		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
7/2/1984		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
10/1/1984		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
1/2/1985		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
4/1/1985		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
7/1/1985		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
9/30/1985		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
1/2/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
4/1/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
6/30/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
10/27/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
12/15/1986		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
3/16/1987		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
5/11/1987		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
9/9/1987		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
11/2/1987		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
2/16/1988		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
5/18/1988		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
8/15/1988		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
11/14/1988		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
2/13/1989		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
5/15/1989		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
8/14/1989		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
11/13/1989		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
2/12/1990		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
5/14/1990		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
8/13/1990		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
11/12/1990		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
2/11/1991		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
5/13/1991		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
8/12/1991		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
11/11/1991		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
2/10/1992		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
5/11/1992		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
8/10/1992		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
11/9/1992		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
2/9/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
5/10/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
8/10/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
11/8/1993		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
2/7/1994		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
5/9/1994		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
8/9/1994		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12
11/7/1994		5.00E-12	1.25E-12		8.00E-14	2.00E-14		2.00E-12	5.00E-13		4.00E-12	1.00E-12

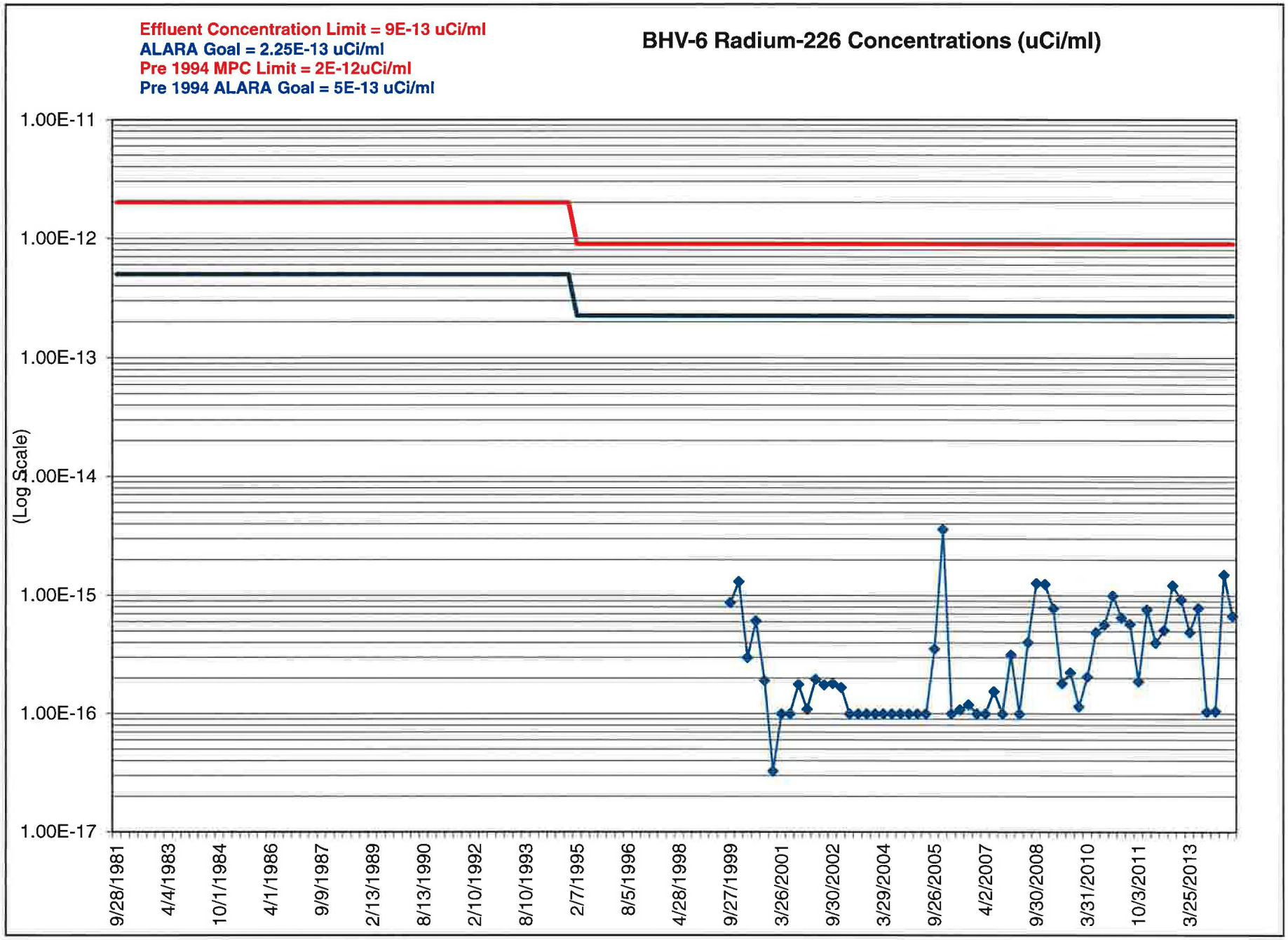
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
2/7/1995		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
5/9/1995		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
8/9/1995		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
11/11/1995		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
2/5/1996		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
5/6/1996		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
8/5/1996		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
11/6/1996		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
2/6/1997		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
5/5/1997		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
8/11/1997		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
1/5/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
4/28/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
7/31/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
9/28/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
12/28/1998		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
3/29/1999		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
7/3/1999		9.00E-14	2.25E-14		2.00E-14	5.00E-15		9.00E-13	2.25E-13		6.00E-13	1.50E-13
9/27/1999	3.03E-15	9.00E-14	2.25E-14	1.37E-15	2.00E-14	5.00E-15	8.72E-16	9.00E-13	2.25E-13	7.55E-15	6.00E-13	1.50E-13
12/28/1999	5.01E-15	9.00E-14	2.25E-14	2.89E-15	2.00E-14	5.00E-15	1.31E-15	9.00E-13	2.25E-13	8.10E-15	6.00E-13	1.50E-13
3/30/2000	7.46E-16	9.00E-14	2.25E-14	5.25E-16	2.00E-14	5.00E-15	3.00E-16	9.00E-13	2.25E-13	7.83E-15	6.00E-13	1.50E-13
6/26/2000	5.40E-16	9.00E-14	2.25E-14	3.53E-16	2.00E-14	5.00E-15	6.11E-16	9.00E-13	2.25E-13	4.83E-15	6.00E-13	1.50E-13
9/25/2000	3.75E-16	9.00E-14	2.25E-14	2.23E-16	2.00E-14	5.00E-15	1.91E-16	9.00E-13	2.25E-13	6.41E-15	6.00E-13	1.50E-13
12/26/2000	5.21E-16	9.00E-14	2.25E-14	3.39E-16	2.00E-14	5.00E-15	3.28E-17	9.00E-13	2.25E-13	8.57E-15	6.00E-13	1.50E-13
3/26/2001	1.42E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.15E-15	6.00E-13	1.50E-13
7/2/2001	1.81E-16	9.00E-14	2.25E-14	1.66E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.95E-15	6.00E-13	1.50E-13
9/24/2001	3.08E-16	9.00E-14	2.25E-14	1.01E-16	2.00E-14	5.00E-15	1.77E-16	9.00E-13	2.25E-13	8.59E-15	6.00E-13	1.50E-13
12/31/2001	3.31E-16	9.00E-14	2.25E-14	1.25E-16	2.00E-14	5.00E-15	1.09E-16	9.00E-13	2.25E-13	3.14E-15	6.00E-13	1.50E-13
4/1/2002	4.77E-16	9.00E-14	2.25E-14	2.94E-16	2.00E-14	5.00E-15	1.96E-16	9.00E-13	2.25E-13	8.61E-15	6.00E-13	1.50E-13
7/1/2002	3.68E-16	9.00E-14	2.25E-14	4.41E-16	2.00E-14	5.00E-15	1.76E-16	9.00E-13	2.25E-13	8.20E-15	6.00E-13	1.50E-13
9/30/2002	3.67E-16	9.00E-14	2.25E-14	5.60E-16	2.00E-14	5.00E-15	1.80E-16	9.00E-13	2.25E-13	5.55E-15	6.00E-13	1.50E-13
12/30/2002	1.00E-16	9.00E-14	2.25E-14	3.43E-16	2.00E-14	5.00E-15	1.67E-16	9.00E-13	2.25E-13	1.35E-14	6.00E-13	1.50E-13
3/31/2003	1.98E-16	9.00E-14	2.25E-14	1.68E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	7.77E-15	6.00E-13	1.50E-13
6/30/2003	1.18E-16	9.00E-14	2.25E-14	1.15E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.92E-15	6.00E-13	1.50E-13
9/29/2003	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.30E-15	6.00E-13	1.50E-13
12/29/2003	1.00E-16	9.00E-14	2.25E-14	1.36E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.66E-15	6.00E-13	1.50E-13
3/29/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	8.17E-15	6.00E-13	1.50E-13
6/27/2004	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	3.55E-15	6.00E-13	1.50E-13
9/27/2004	1.00E-16	9.00E-14	2.25E-14	1.38E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.22E-14	6.00E-13	1.50E-13
12/27/2004	1.05E-16	9.00E-14	2.25E-14	1.72E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.52E-14	6.00E-13	1.50E-13
3/28/2005	1.00E-16	9.00E-14	2.25E-14	1.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.34E-15	6.00E-13	1.50E-13
6/29/2005	1.28E-16	9.00E-14	2.25E-14	1.01E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	9.85E-15	6.00E-13	1.50E-13
9/26/2005	1.98E-16	9.00E-14	2.25E-14	5.98E-16	2.00E-14	5.00E-15	3.55E-16	9.00E-13	2.25E-13	1.71E-14	6.00E-13	1.50E-13
1/3/2006	7.67E-16	9.00E-14	2.25E-14	2.88E-16	2.00E-14	5.00E-15	3.60E-15	9.00E-13	2.25E-13	4.85E-14	6.00E-13	1.50E-13
4/3/2006	2.92E-16	9.00E-14	2.25E-14	2.00E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.11E-14	6.00E-13	1.50E-13
7/3/2006	3.25E-16	9.00E-14	2.25E-14	2.36E-16	2.00E-14	5.00E-15	1.08E-16	9.00E-13	2.25E-13	1.10E-14	6.00E-13	1.50E-13
10/2/2006	5.03E-16	9.00E-14	2.25E-14	1.49E-16	2.00E-14	5.00E-15	1.19E-16	9.00E-13	2.25E-13	2.13E-15	6.00E-13	1.50E-13
1/1/2007	8.31E-16	9.00E-14	2.25E-14	2.49E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13
4/2/2007	5.36E-16	9.00E-14	2.25E-14	3.15E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	1.43E-14	6.00E-13	1.50E-13
7/2/2007	1.08E-15	9.00E-14	2.25E-14	2.18E-16	2.00E-14	5.00E-15	1.54E-16	9.00E-13	2.25E-13	2.04E-14	6.00E-13	1.50E-13
9/30/2007	3.92E-16	9.00E-14	2.25E-14	1.02E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	6.38E-15	6.00E-13	1.50E-13
12/31/2007	2.92E-15	9.00E-14	2.25E-14	1.55E-15	2.00E-14	5.00E-15	3.16E-16	9.00E-13	2.25E-13	9.19E-15	6.00E-13	1.50E-13
3/31/2008	4.34E-16	9.00E-14	2.25E-14	3.51E-16	2.00E-14	5.00E-15	1.00E-16	9.00E-13	2.25E-13	5.99E-15	6.00E-13	1.50E-13
6/3102008	1.88E-15	9.00E-14	2.25E-14	9.00E-16	2.00E-14	5.00E-15	4.04E-16	9.00E-13	2.25E-13	7.41E-15	6.00E-13	1.50E-13

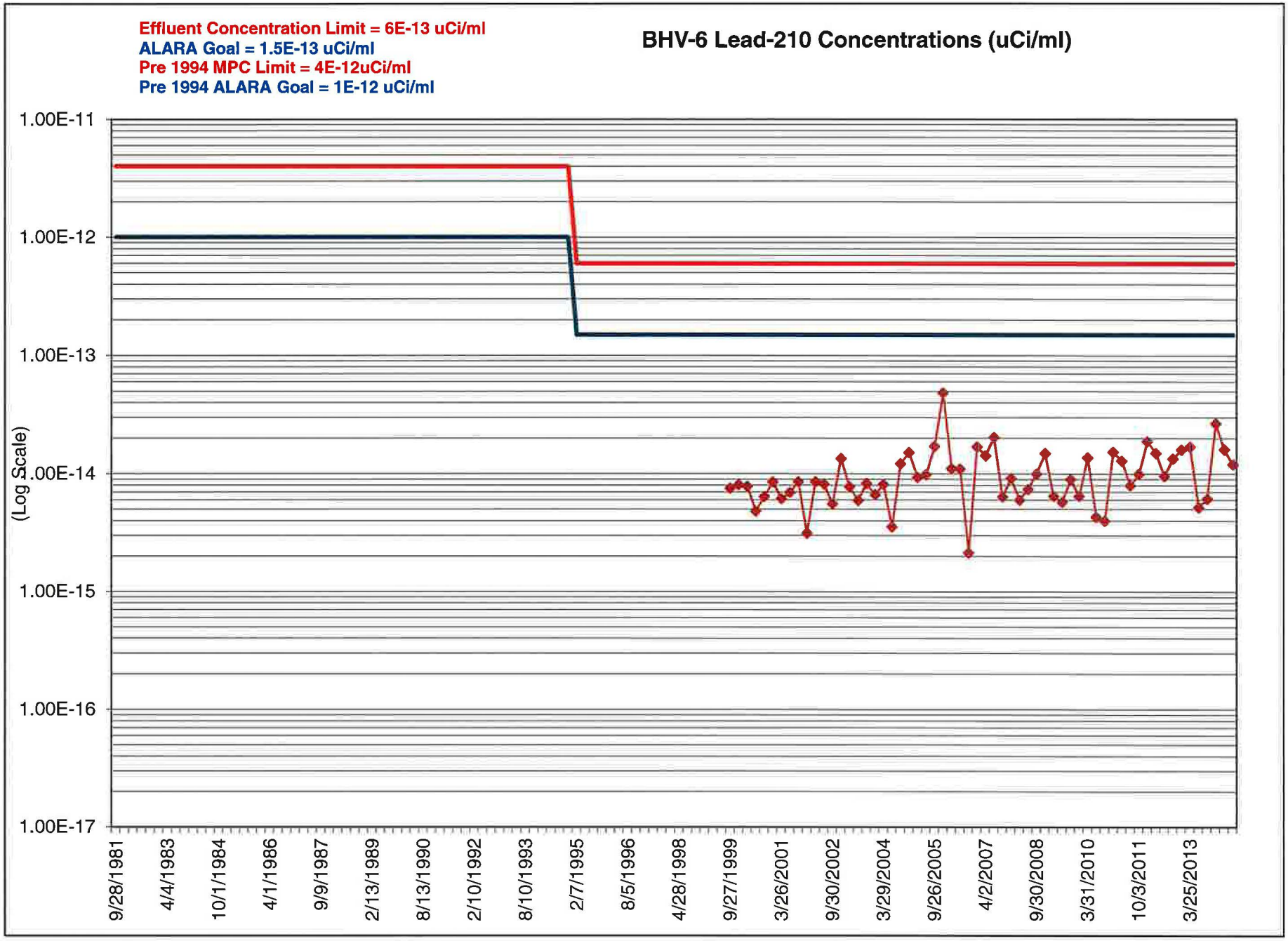
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA Goal =	1.5E-13 uCi/ml	
	Pre 1994 MPC Limit =	5E-12 uCi/ml		Pre 1994 MPC Limit =	8E-14 uCi/ml		Pre 1994 MPC Limit =	2E-12 uCi/ml		Pre 1994 MPC Limit =	4E-12 uCi/ml	
	Pre 1994 ALARA GOAL =	1.25E-12 uCi/ml					Pre 1994 ALARA GOAL =	5E-13 uCi/ml		Pre 1994 ALARA GOAL =	1E-12 uCi/ml	
	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A	Conc	EFC	EFC A
9/30/2008	4.82E-15	9.00E-14	2.25E-14	2.10E-15	2.00E-14	5.00E-15	1.27E-15	9.00E-13	2.25E-13	1.00E-14	6.00E-13	1.50E-13
12/31/2008	4.80E-15	9.00E-14	2.25E-14	1.70E-15	2.00E-14	5.00E-15	1.25E-15	9.00E-13	2.25E-13	1.49E-14	6.00E-13	1.50E-13
3/15/2009	2.77E-15	9.00E-14	2.25E-14	1.01E-15	2.00E-14	5.00E-15	7.82E-16	9.00E-13	2.25E-13	6.46E-15	6.00E-13	1.50E-13
6/15/2009	1.41E-16	9.00E-14	2.25E-14	2.67E-16	2.00E-14	5.00E-15	1.81E-16	9.00E-13	2.25E-13	5.76E-15	6.00E-13	1.50E-13
9/15/2009	4.87E-15	9.00E-14	2.25E-14	4.32E-16	2.00E-14	5.00E-15	2.23E-16	9.00E-13	2.25E-13	8.98E-15	6.00E-13	1.50E-13
12/15/2009	9.24E-15	9.00E-14	2.25E-14	2.26E-16	2.00E-14	5.00E-15	1.15E-16	9.00E-13	2.25E-13	6.44E-15	6.00E-13	1.50E-13
3/31/2010	9.63E-15	9.00E-14	2.25E-14	1.82E-16	2.00E-14	5.00E-15	2.06E-16	9.00E-13	2.25E-13	1.37E-14	6.00E-13	1.50E-13
6/30/2010	3.62E-15	9.00E-14	2.25E-14	3.94E-16	2.00E-14	5.00E-15	4.89E-16	9.00E-13	2.25E-13	4.30E-15	6.00E-13	1.50E-13
9/30/2010	5.42E-15	9.00E-14	2.25E-14	1.08E-15	2.00E-14	5.00E-15	5.68E-16	9.00E-13	2.25E-13	3.98E-15	6.00E-13	1.50E-13
12/31/2010	1.24E-14	9.00E-14	2.25E-14	1.21E-15	2.00E-14	5.00E-15	1.00E-15	9.00E-13	2.25E-13	1.53E-14	6.00E-13	1.50E-13
4/4/2011	2.70E-15	9.00E-14	2.25E-14	4.62E-16	2.00E-14	5.00E-15	6.51E-16	9.00E-13	2.25E-13	1.29E-14	6.00E-13	1.50E-13
7/4/2011	3.01E-15	9.00E-14	2.25E-14	7.07E-16	2.00E-14	5.00E-15	5.75E-16	9.00E-13	2.25E-13	7.97E-15	6.00E-13	1.50E-13
10/3/2011	2.05E-15	9.00E-14	2.25E-14	6.12E-16	2.00E-14	5.00E-15	1.88E-16	9.00E-13	2.25E-13	9.93E-15	6.00E-13	1.50E-13
1/3/2012	3.14E-15	9.00E-14	2.25E-14	1.09E-15	2.00E-14	5.00E-15	7.65E-16	9.00E-13	2.25E-13	1.89E-14	6.00E-13	1.50E-13
4/3/2012	4.41E-15	9.00E-14	2.25E-14	1.82E-15	2.00E-14	5.00E-15	4.00E-16	9.00E-13	2.25E-13	1.50E-14	6.00E-13	1.50E-13
7/2/2012	6.42E-15	9.00E-14	2.25E-14	2.25E-15	2.00E-14	5.00E-15	5.11E-16	9.00E-13	2.25E-13	9.54E-15	6.00E-13	1.50E-13
10/1/2012	6.63E-15	9.00E-14	2.25E-14	1.31E-15	2.00E-14	5.00E-15	1.22E-15	9.00E-13	2.25E-13	1.34E-14	6.00E-13	1.50E-13
12/31/2012	3.83E-15	9.00E-14	2.25E-14	1.18E-15	2.00E-14	5.00E-15	9.30E-16	9.00E-13	2.25E-13	1.60E-14	6.00E-13	1.50E-13
3/25/2013	4.52E-15	9.00E-14	2.25E-14	7.93E-16	2.00E-14	5.00E-15	4.91E-16	9.00E-13	2.25E-13	1.70E-14	6.00E-13	1.50E-13
7/2/2013	5.91E-15	9.00E-14	2.25E-14	6.74E-16	2.00E-14	5.00E-15	7.85E-16	9.00E-13	2.25E-13	5.18E-15	6.00E-13	1.50E-13
9/30/2013	2.68E-15	9.00E-14	2.25E-14	3.97E-16	2.00E-14	5.00E-15	1.04E-16	9.00E-13	2.25E-13	6.13E-15	6.00E-13	1.50E-13
12/30/2013	1.60E-14	9.00E-14	2.25E-14	2.48E-16	2.00E-14	5.00E-15	1.05E-16	9.00E-13	2.25E-13	2.67E-14	6.00E-13	1.50E-13
3/31/2014	8.92E-15	9.00E-14	2.25E-14	7.68E-16	2.00E-14	5.00E-15	1.50E-15	9.00E-13	2.25E-13	1.61E-14	6.00E-13	1.50E-13
6/30/2014	8.29E-15	9.00E-14	2.25E-14	5.35E-16	2.00E-14	5.00E-15	6.72E-16	9.00E-13	2.25E-13	1.20E-14	6.00E-13	1.50E-13


BHV-6 Radionuclide Concentrations (uCi/ml)
(Log Scale)
1E-12
1E-13
1E-14
1E-15
1E-16
1E-17
1E-18
9/28/1981
4/4/1983
10/1/1984
4/1/1986
9/9/1987
2/13/1989
8/13/1990
2/10/1992
8/10/1993
2/7/1995
8/5/1996
4/28/1998
9/27/1999
3/26/2001
9/30/2002
3/29/2004
9/26/2005
4/2/2007
9/30/2008
3/31/2010
10/3/2011
3/25/2013
Uranium Natural
Thorium-230
Radium-226
Lead-210


Effluent Concentration Limit = 9E-14 uCi/ml
ALARA Goal = 2.25E-14 uCi/ml
Pre 1994 MPC Limit = 5E-12uCi/ml
Pre 1994 ALARA Goal = 1.25E-12 uCi/ml
BHV-6 Uranium-Natural Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
4/4/1983
10/1/1984
4/1/1986
9/9/1987
2/13/1989
8/13/1990
2/10/1992
8/10/1993
2/7/1995
8/5/1996
4/28/1998
9/27/1999
3/26/2001
9/30/2002
3/29/2004
9/26/2005
4/2/2007
9/30/2008
3/31/2010
10/3/2011
3/25/2013


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-6 Thorium-230 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
4/4/1983
10/1/1984
4/1/1986
9/9/1987
2/13/1989
8/13/1990
2/10/1992
8/10/1993
2/7/1995
8/5/1996
4/28/1998
9/27/1999
3/26/2001
9/30/2002
3/29/2004
9/26/2005
4/2/2007
9/30/2008
3/31/2010
10/3/2011
3/25/2013


Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-6 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
4/4/1983
10/1/1984
4/1/1986
9/9/1987
2/13/1989
8/13/1990
2/10/1992
8/10/1993
2/7/1995
8/5/1996
4/28/1998
9/27/1999
3/26/2001
9/30/2002
3/29/2004
9/26/2005
4/2/2007
9/30/2008
3/31/2010
10/3/2011
3/25/2013


Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-6 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
9/28/1981
4/4/1983
10/1/1984
4/1/1986
9/9/1987
2/13/1989
8/13/1990
2/10/1992
8/10/1993
2/7/1995
8/5/1996
4/28/1998
9/27/1999
3/26/2001
9/30/2002
3/29/2004
9/26/2005
4/2/2007
9/30/2008
3/31/2010
10/3/2011
3/25/2013

ATTACHMENT C

BHV AIR SAMPLING LABORATORY RESULTS AND QA/QC

ANALYTICAL SUMMARY REPORT

May 20, 2014

Energy Fuels Resources (USA) Inc
225 Union Blvd Ste 600
Lakewood, CO 80228-1826

Work Order: C14040336

Project Name: 1st Quarter Air 2014

Energy Laboratories, Inc. Casper WY received the following 6 samples for Energy Fuels Resources (USA) Inc on 4/9/2014 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C14040336-001	BHV-1	03/31/14 00:00	04/09/14	Filter	Composite of two or more samples Field Parameters Metals, Total Digestion, Total Metals RAD Alternate Unit Reporting Air Filters Lead 210 Radium 226 Thorium, Isotopic
C14040336-002	BHV-2	03/31/14 00:00	04/09/14	Filter	Same As Above
C14040336-003	BHV-4	03/31/14 00:00	04/09/14	Filter	Same As Above
C14040336-004	BHV-5	03/31/14 00:00	04/09/14	Filter	Same As Above
C14040336-005	BHV-6	03/31/14 00:00	04/09/14	Filter	Same As Above
C14040336-006	Blank	03/31/14 00:00	04/09/14	Filter	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Radiochemistry analyses were performed at Energy Laboratories, Inc., 2325 Kerzell Lane, Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Acting Branch Manager

Digitally signed by
Steve Carlston
Date: 2014.05.20 11:51:25 -06:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Air 2014
Sample Delivery Group: C14040336

Report Date: 05/20/14

CASE NARRATIVE

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

GROSS ALPHA ANALYSIS
Method 900.0 for gross alpha and gross beta is intended as a drinking water method for low TDS waters. Data provided by this method for non potable waters should be viewed as inconsistent.

RADON IN AIR ANALYSIS
The desired exposure time is 48 hours (2 days). The time delay in returning the canister to the laboratory for processing should be as short as possible to avoid excessive decay. Maximum recommended delay between end of exposure to beginning of counting should not exceed 8 days.

SOIL/SOLID SAMPLES
All samples reported on an as received basis unless otherwise indicated.

ATRAZINE, SIMAZINE AND PCB ANALYSIS
Data for PCBs, Atrazine and Simazine are reported from EPA 525.2. PCB data reported by ELI reflects the results for seven individual Aroclors. When the results for all seven are ND (not detected), the sample meets EPA compliance criteria for PCB monitoring.

SUBCONTRACTING ANALYSIS
Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT
eli-r - Energy Laboratories, Inc. - Rapid City, SD
eli-cs - Energy Laboratories, Inc. - College Station, TX

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001, Radiochemical WY200002; Utah: WY00002; Washington: C836

ISO 17025 DISCLAIMER:
The results of this Analytical Report relate only to the items submitted for analysis.

ENERGY LABORATORIES, INC. - CASPER,WY certifies that certain method selections contained in this report meet requirements as set forth by the above accrediting authorities. Some results requested by the client may not be covered under these certifications. All analysis data to be submitted for regulatory enforcement should be certified in the sample state of origin. Please verify ELI's certification coverage by visiting www.energylab.com

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: May 20, 2014
PROJECT: 1st Quarter Air 2014

SAMPLE ID: BHV-1

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-001	^{nat}U	1.07E-15	N/A	N/A	1E-16	9E-14	1.19E+00
First Quarter 2014	^{230}Th	2.07E-16	3E-17	1E-17	1E-16	3E-14	6.91E-01
Air Volume in mLs	^{226}Ra	3.69E-16	3E-17	1E-17	1E-16	9E-13	4.11E-02
1.36E+11	^{210}Pb	1.24E-14	2E-16	9E-17	2E-15	6E-13	2.07E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Air 2014
Lab ID: C14040336-001
Client Sample ID: BHV-1

Report Date: 05/20/14
Collection Date: 03/31/14
DateReceived: 04/09/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	1.6E-09	mg/L		1.5E-10		SW6020	04/18/14 12:08 / clm
Uranium, Activity	1.1E-15	uCi/mL		1.0E-16		SW6020	04/18/14 12:08 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.2E-14	uCi/mL				E909.0	05/06/14 18:05 / eli-cs
Lead 210 precision (±)	2.3E-16	uCi/mL				E909.0	05/06/14 18:05 / eli-cs
Lead 210 MDC	9.4E-17	uCi/mL				E909.0	05/06/14 18:05 / eli-cs
Radium 226	3.7E-16	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 precision (±)	2.7E-17	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 MDC	1.0E-17	uCi/mL				E903.0	04/23/14 06:38 / lmc
Thorium 230	2.1E-16	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 precision (±)	3.3E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 MDC	1.2E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1700	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 precision (±)	31.1	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 MDC	12.8	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226	50.4	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 precision (±)	3.7	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 MDC	1.4	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230	28.3	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 precision (±)	4.5	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 MDC	1.6	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Uranium, Activity	146	pCi/Filter		0.20		RADCALC	05/15/14 17:58 / sec
FIELD PARAMETERS							
Air Filtering Volume	136421082	L				FIELD	03/31/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: May 20, 2014
PROJECT: 1st Quarter Air 2014

SAMPLE ID: BHV-2

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-002	^{nat}U	4.63E-16	N/A	N/A	1E-16	9E-14	5.15E-01
First Quarter 2014	^{230}Th	4.97E-17	1E-17	6E-18	1E-16	3E-14	1.66E-01
Air Volume in mLs	^{226}Ra	1.15E-16	9E-18	3E-18	1E-16	9E-13	1.28E-02
1.36E+11	^{210}Pb	1.49E-14	2E-16	9E-17	2E-15	6E-13	2.48E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Air 2014
Lab ID: C14040336-002
Client Sample ID: BHV-2

Report Date: 05/20/14
Collection Date: 03/31/14
DateReceived: 04/09/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	6.8E-10	mg/L		1.5E-10		SW6020	04/18/14 12:11 / clm
Uranium, Activity	4.6E-16	uCi/mL		1.0E-16		SW6020	04/18/14 12:11 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.5E-14	uCi/mL				E909.0	05/06/14 22:40 / eli-cs
Lead 210 precision (±)	2.4E-16	uCi/mL				E909.0	05/06/14 22:40 / eli-cs
Lead 210 MDC	9.1E-17	uCi/mL				E909.0	05/06/14 22:40 / eli-cs
Radium 226	1.2E-16	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 precision (±)	8.6E-18	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 MDC	3.2E-18	uCi/mL				E903.0	04/23/14 06:38 / lmc
Thorium 230	5.0E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 precision (±)	1.0E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 MDC	5.6E-18	uCi/mL				E908.0	04/23/14 13:37 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	2030	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 precision (±)	33.4	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 MDC	12.4	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226	15.7	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 precision (±)	1.2	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 MDC	0.44	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230	6.8	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 precision (±)	1.4	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 MDC	0.76	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Uranium, Activity	63.2	pCi/Filter		0.20		RADCALC	05/15/14 17:58 / sec
FIELD PARAMETERS							
Air Filtering Volume	136430085	L				FIELD	03/31/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: May 20, 2014
PROJECT: 1st Quarter Air 2014

SAMPLE ID: BHV-4

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-003	^{nat}U	4.69E-15	N/A	N/A	1E-16	9E-14	5.21E+00
First Quarter 2014	^{230}Th	1.37E-16	2E-17	1E-17	1E-16	3E-14	4.58E-01
Air Volume in mLs	^{226}Ra	3.53E-16	2E-17	5E-18	1E-16	9E-13	3.93E-02
1.35E+11	^{210}Pb	1.08E-14	2E-16	9E-17	2E-15	6E-13	1.81E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Air 2014
Lab ID: C14040336-003
Client Sample ID: BHV-4

Report Date: 05/20/14
Collection Date: 03/31/14
DateReceived: 04/09/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	6.9E-09	mg/L		1.5E-10		SW6020	04/18/14 12:14 / clm
Uranium, Activity	4.7E-15	uCi/mL		1.0E-16		SW6020	04/18/14 12:14 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.1E-14	uCi/mL				E909.0	05/07/14 00:12 / eli-cs
Lead 210 precision (±)	2.1E-16	uCi/mL				E909.0	05/07/14 00:12 / eli-cs
Lead 210 MDC	9.4E-17	uCi/mL				E909.0	05/07/14 00:12 / eli-cs
Radium 226	3.5E-16	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 precision (±)	1.9E-17	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 MDC	5.2E-18	uCi/mL				E903.0	04/23/14 06:38 / lmc
Thorium 230	1.4E-16	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 precision (±)	2.4E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 MDC	1.0E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1470	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 precision (±)	28.9	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 MDC	12.7	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226	47.8	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 precision (±)	2.6	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 MDC	0.71	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230	18.6	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 precision (±)	3.2	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 MDC	1.4	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Uranium, Activity	634	pCi/Filter		0.20		RADCALC	05/15/14 17:58 / sec
FIELD PARAMETERS							
Air Filtering Volume	135285983	L				FIELD	03/31/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: May 20, 2014
PROJECT: 1st Quarter Air 2014

SAMPLE ID: BHV-5

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-004	^{nat}U	4.74E-15	N/A	N/A	1E-16	9E-14	5.27E+00
First Quarter 2014	^{230}Th	1.42E-15	1E-16	2E-17	1E-16	3E-14	4.73E+00
Air Volume in mLs	^{226}Ra	3.48E-15	8E-17	1E-17	1E-16	9E-13	3.86E-01
1.35E+11	^{210}Pb	1.50E-14	2E-16	9E-17	2E-15	6E-13	2.51E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Air 2014
Lab ID: C14040336-004
Client Sample ID: BHV-5

Report Date: 05/20/14
Collection Date: 03/31/14
DateReceived: 04/09/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	7.0E-09	mg/L		1.5E-10		SW6020	04/18/14 12:17 / clm
Uranium, Activity	4.7E-15	uCi/mL		1.0E-16		SW6020	04/18/14 12:17 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.5E-14	uCi/mL				E909.0	05/07/14 01:43 / eli-cs
Lead 210 precision (±)	2.5E-16	uCi/mL				E909.0	05/07/14 01:43 / eli-cs
Lead 210 MDC	9.3E-17	uCi/mL				E909.0	05/07/14 01:43 / eli-cs
Radium 226	3.5E-15	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 precision (±)	8.2E-17	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 MDC	1.0E-17	uCi/mL				E903.0	04/23/14 06:38 / lmc
Thorium 230	1.4E-15	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 precision (±)	1.5E-16	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 MDC	2.4E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	2040	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 precision (±)	33.6	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 MDC	12.6	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226	470	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 precision (±)	11.1	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 MDC	1.4	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230	192	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 precision (±)	20.1	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 MDC	3.2	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Uranium, Activity	641	pCi/Filter		0.20		RADCALC	05/15/14 17:58 / sec
FIELD PARAMETERS							
Air Filtering Volume	135287479	L				FIELD	03/31/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: May 20, 2014
PROJECT: 1st Quarter Air 2014

SAMPLE ID: BHV-6

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-005	^{nat}U	8.92E-15	N/A	N/A	1E-16	9E-14	9.91E+00
First Quarter 2014	^{230}Th	7.68E-16	1E-16	2E-17	1E-16	3E-14	2.56E+00
Air Volume in mLs	^{226}Ra	1.50E-15	4E-17	6E-18	1E-16	9E-13	1.67E-01
1.35E+11	^{210}Pb	1.61E-14	3E-16	9E-17	2E-15	6E-13	2.69E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Air 2014
Lab ID: C14040336-005
Client Sample ID: BHV-6

Report Date: 05/20/14
Collection Date: 03/31/14
DateReceived: 04/09/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	1.3E-08	mg/L		1.5E-10		SW6020	04/18/14 12:23 / clm
Uranium, Activity	8.9E-15	uCi/mL		1.0E-16		SW6020	04/18/14 12:23 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.6E-14	uCi/mL				E909.0	05/07/14 03:15 / eli-cs
Lead 210 precision (±)	2.6E-16	uCi/mL				E909.0	05/07/14 03:15 / eli-cs
Lead 210 MDC	9.2E-17	uCi/mL				E909.0	05/07/14 03:15 / eli-cs
Radium 226	1.5E-15	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 precision (±)	4.0E-17	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 MDC	5.7E-18	uCi/mL				E903.0	04/23/14 06:38 / lmc
Thorium 230	7.7E-16	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 precision (±)	9.7E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 MDC	1.7E-17	uCi/mL				E908.0	04/23/14 13:37 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	2180	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 precision (±)	34.6	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 MDC	12.5	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226	203	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 precision (±)	5.5	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 MDC	0.77	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230	104	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 precision (±)	13.1	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 MDC	2.3	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Uranium, Activity	1210	pCi/Filter		0.20		RADCALC	05/15/14 17:58 / sec
FIELD PARAMETERS							
Air Filtering Volume	135283468	L				FIELD	03/31/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: May 20, 2014
PROJECT: 1st Quarter Air 2014

SAMPLE ID: Blank

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-006	^{nat}U	1.46E-17	N/A	N/A	1E-16	9E-14	1.62E-02
First Quarter 2014	^{230}Th	1.98E-18	1E-18	2E-18	1E-16	3E-14	6.60E-03
Air Volume in mLs	^{226}Ra	2.79E-18	2E-18	2E-18	1E-16	9E-13	3.10E-04
1.36E+11	^{210}Pb	-1.20E-17	4E-17	7E-17	2E-15	6E-13	-2.01E-03

Note: This sample uses 136,000,000 L of air volume for comparison purposes.

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Air 2014
Lab ID: C14040336-006
Client Sample ID: Blank

Report Date: 05/20/14
Collection Date: 03/31/14
DateReceived: 04/09/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	0.0029	mg/L	D	0.000043		SW6020	04/18/14 12:36 / clm
Uranium, Activity	2.0E-09	uCi/mL	D	2.9E-11		SW6020	04/18/14 12:36 / clm
RADIONUCLIDES - IN AIR							
Lead 210	-1.6E-09	uCi/mL	U			E909.0	05/07/14 04:46 / eli-cs
Lead 210 precision (±)	5.3E-09	uCi/mL				E909.0	05/07/14 04:46 / eli-cs
Lead 210 MDC	9.0E-09	uCi/mL				E909.0	05/07/14 04:46 / eli-cs
Radium 226	3.8E-10	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 precision (±)	2.2E-10	uCi/mL				E903.0	04/23/14 06:38 / lmc
Radium 226 MDC	2.8E-10	uCi/mL				E903.0	04/23/14 06:38 / lmc
Thorium 230	2.7E-10	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 precision (±)	1.6E-10	uCi/mL				E908.0	04/23/14 13:37 / dmf
Thorium 230 MDC	2.1E-10	uCi/mL				E908.0	04/23/14 13:37 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	-1.6	pCi/Filter	U			RADCALC	05/15/14 17:58 / sec
Lead 210 precision (±)	5.3	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Lead 210 MDC	9.0	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226	0.38	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 precision (±)	0.22	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Radium 226 MDC	0.28	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230	0.27	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 precision (±)	0.16	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Thorium 230 MDC	0.21	pCi/Filter				RADCALC	05/15/14 17:58 / sec
Uranium, Activity	2.0	pCi/Filter		0.20		RADCALC	05/15/14 17:58 / sec
FIELD PARAMETERS							
Air Filtering Volume	1	L				FIELD	03/31/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Report Date:** 05/20/14

Project: 1st Quarter Air 2014 **Work Order:** C14040336

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 41112
Lab ID: C14040336-004ADUP	3	Sample Duplicate				Run: BERTHOLD 770-2_140417A				04/23/14 06:38
Radium 226		3.50E-06	pCi/L					0.5	14.7	
Radium 226 precision (±)		8.30E-08	pCi/L							
Radium 226 MDC		1.03E-08	pCi/L							
Lab ID: C14040336-005AMS		Sample Matrix Spike				Run: BERTHOLD 770-2_140417A				04/23/14 06:38
Radium 226		2.82E-06	pCi/L		116	70	130			
Lab ID: LCS-41112		Laboratory Control Sample				Run: BERTHOLD 770-2_140417A				04/23/14 06:38
Radium 226		23.6	pCi/L		110	80	120			
Lab ID: MB-41112	3	Method Blank				Run: BERTHOLD 770-2_140417A				04/23/14 09:43
Radium 226		-0.05	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Air 2014

Report Date: 05/20/14
Work Order: C14040336

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 41112
Lab ID: C14040336-002AMS		Sample Matrix Spike				Run: ALPHANALYST_140421A				04/23/14 13:37
Thorium 230		1.18E-06	pCi/L		98	70	130			
Lab ID: C14040336-002AMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_140421A				04/23/14 13:37
Thorium 230		1.21E-06	pCi/L		101	70	130	3.1	29.5	
Lab ID: LCS-41112		Laboratory Control Sample				Run: ALPHANALYST_140421A				04/23/14 13:37
Thorium 230		27.6	pCi/L		104	80	120			
Lab ID: MB-41112	3	Method Blank				Run: ALPHANALYST_140421A				04/23/14 13:37
Thorium 230		0.4	pCi/L							
Thorium 230 precision (±)		0.2	pCi/L							
Thorium 230 MDC		0.3	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Report Date: 05/20/14
Project: 1st Quarter Air 2014
Work Order: C14040336

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: T_21048
Lab ID: LCS-21048		Laboratory Control Sample				Run: SUB-T56720				05/06/14 15:02
Lead 210		103	pCi/L		81	80	120			
Lab ID: MB-21048	3	Method Blank				Run: SUB-T56720				05/06/14 16:34
Lead 210		-3	pCi/L							U
Lead 210 precision (±)		5	pCi/L							
Lead 210 MDC		9	pCi/L							
Lab ID: C14040336-001AMS		Sample Matrix Spike				Run: SUB-T56720				05/06/14 19:37
Lead 210		1.78E-05	pCi/L		125	70	130			
Lab ID: C14040336-001AMSD		Sample Matrix Spike Duplicate				Run: SUB-T56720				05/06/14 21:08
Lead 210		1.74E-05	pCi/L		115	70	130	2.7	15.8	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc **Report Date:** 05/20/14

Project: 1st Quarter Air 2014 **Work Order:** C14040336

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**SW6020**									Analytical Run: ICPMS2-C_140417A	
Lab ID:	**ICV**		Initial Calibration Verification Standard							04/18/14 10:35	
Uranium			0.0499	mg/L	0.00030	100	90	110			
Lab ID:	**ICSA**		Interference Check Sample A							04/18/14 10:38	
Uranium			0.000634	mg/L	0.00030						
Lab ID:	**ICSAB**		Interference Check Sample AB							04/18/14 10:41	
Uranium			-0.000259	mg/L	0.00030						
Method:	**SW6020**										Batch: 41112
Lab ID:	**MB-41112**		Method Blank				Run: ICPMS2-C_140417A			04/18/14 11:58	
Uranium			ND	mg/L	4E-05						
Lab ID:	**LCS2-41112**		Laboratory Control Sample				Run: ICPMS2-C_140417A			04/18/14 12:01	
Uranium			0.0974	mg/L	4.3E-05	97	85	115			
Lab ID:	**C14040336-004ADIL**		Serial Dilution				Run: ICPMS2-C_140417A			04/18/14 12:20	
Uranium			6.38E-09	mg/L	1.5E-10				9.3	20	
Lab ID:	**C14040336-006AMS**		Sample Matrix Spike				Run: ICPMS2-C_140417A			04/18/14 12:39	
Uranium			0.256	mg/L	4.3E-05	101	75	125			
Lab ID:	**C14040336-006AMSD**		Sample Matrix Spike Duplicate				Run: ICPMS2-C_140417A			04/18/14 12:42	
Uranium			0.262	mg/L	4.3E-05	104	75	125	2.3	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

Energy Fuels Resources (USA) Inc C14040336

Login completed by: Corinne Wagner
Date Received: 4/9/2014
Reviewed by: BL2000\khelm
Received by: dcq
Reviewed Date: 4/11/2014
Carrier name: Next Day Air

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Applicable ☑
Container/Temp Blank temperature:	N/A °C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy
Casper WY, 82601

Contact: Garrin Palmer
Ph: 435 678 4115
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
1st Quarter Air 2014	Garrin Palmer	

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
BHV-1	12/30/14 - 3/31/14	NA	U-NAT, TH-230, Ra-226, Pb-210
BHV-2	12/30/14 - 3/31/14	NA	U-NAT, TH-230, Ra-226, Pb-210
BHV-4	12/30/14 - 3/31/14	NA	U-NAT, TH-230, Ra-226, Pb-210
BHV-5	12/30/14 - 3/31/14	NA	U-NAT, TH-230, Ra-226, Pb-210
BHV-6	12/30/14 - 3/31/14	NA	U-NAT, TH-230, Ra-226, Pb-210
Blank	12/30/14 - 3/31/14	NA	U-NAT, TH-230, Ra-226, Pb-210

Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer	4/7/2014 1230		
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer		Darian Price	4/9/14 930

C14040336

ANALYTICAL SUMMARY REPORT

July 29, 2014

Energy Fuels Resources (USA) Inc
225 Union Blvd Ste 600
Lakewood, CO 80228-1826

Work Order: C14070123

Project Name: 2nd Quarter Air 2014

Energy Laboratories, Inc. Casper WY received the following 6 samples for Energy Fuels Resources (USA) Inc on 7/2/2014 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C14070123-001	BHV-1	06/30/14 00:00	07/02/14	Filter	Composite of two or more samples Field Parameters Metals, Total Digestion, Total Metals RAD Alternate Unit Reporting Air Filters Lead 210 Radium 226 Thorium, Isotopic
C14070123-002	BHV-2	06/30/14 00:00	07/02/14	Filter	Same As Above
C14070123-003	BHV-4	06/30/14 00:00	07/02/14	Filter	Same As Above
C14070123-004	BHV-5	06/30/14 00:00	07/02/14	Filter	Same As Above
C14070123-005	BHV-6	06/30/14 00:00	07/02/14	Filter	Same As Above
C14070123-006	Blank	06/30/14 00:00	07/02/14	Filter	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Radiochemistry analyses were performed at Energy Laboratories, Inc., 2325 Kerzell Lane, Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By: Senior Project Specialist

Digitally signed by
Steve Carlston
Date: 2014.07.29 16:49:21 -06:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014
Sample Delivery Group: C14070123

Report Date: 07/29/14

CASE NARRATIVE

ANALYTICAL COMMENTS
Tests associated with analyst identified as ELI-CS were subcontracted to Energy Laboratories, 415 Graham Rd., College Station, TX, EPA Number TX01520.

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

GROSS ALPHA ANALYSIS
Method 900.0 for gross alpha and gross beta is intended as a drinking water method for low TDS waters. Data provided by this method for non potable waters should be viewed as inconsistent.

RADON IN AIR ANALYSIS
The desired exposure time is 48 hours (2 days). The time delay in returning the canister to the laboratory for processing should be as short as possible to avoid excessive decay. Maximum recommended delay between end of exposure to beginning of counting should not exceed 8 days.

SOIL/SOLID SAMPLES
All samples reported on an as received basis unless otherwise indicated.

ATRAZINE, SIMAZINE AND PCB ANALYSIS
Data for PCBs, Atrazine and Simazine are reported from EPA 525.2. PCB data reported by ELI reflects the results for seven individual Aroclors. When the results for all seven are ND (not detected), the sample meets EPA compliance criteria for PCB monitoring.

SUBCONTRACTING ANALYSIS
Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT
eli-r - Energy Laboratories, Inc. - Rapid City, SD
eli-cs - Energy Laboratories, Inc. - College Station, TX

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001, Radiochemical WY200002; Utah: WY00002; Washington: C836

ISO 17025 DISCLAIMER:
The results of this Analytical Report relate only to the items submitted for analysis.

ENERGY LABORATORIES, INC. - CASPER,WY certifies that certain method selections contained in this report meet requirements as set forth by the above accrediting authorities. Some results requested by the client may not be covered under these certifications. All analysis data to be submitted for regulatory enforcement should be certified in the sample state of origin. Please verify ELI's certification coverage by visiting www.energylab.com

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: July 29, 2014
PROJECT: 2nd Quarter Air 2014

SAMPLE ID: BHV-1

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-001	^{nat}U	1.07E-15	N/A	N/A	1E-16	9E-14	1.19E+00
First Quarter 2014	^{230}Th	2.07E-16	3E-17	1E-17	1E-16	3E-14	6.91E-01
Air Volume in mLs	^{226}Ra	3.69E-16	3E-17	1E-17	1E-16	9E-13	4.11E-02
1.36E+11	^{210}Pb	1.24E-14	2E-16	9E-17	2E-15	6E-13	2.07E+00

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14070123-001	^{nat}U	2.24E-15	N/A	N/A	1E-16	9E-14	2.49E+00
Second Quarter 2014	^{230}Th	5.14E-16	6E-17	1E-17	1E-16	3E-14	1.71E+00
Air Volume in mLs	^{226}Ra	1.09E-15	1E-17	2E-18	1E-16	9E-13	1.22E-01
1.36E+11	^{210}Pb	1.23E-14	2E-16	7E-17	2E-15	6E-13	2.06E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014
Lab ID: C14070123-001
Client Sample ID: BHV-1

Report Date: 07/29/14
Collection Date: 06/30/14
DateReceived: 07/02/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	3.3E-09	mg/L		1.5E-10		SW6020	07/10/14 23:44 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.2E-14	uCi/mL				E909.0	07/27/14 04:24 / eli-cs
Lead 210 precision (±)	2.0E-16	uCi/mL				E909.0	07/27/14 04:24 / eli-cs
Lead 210 MDC	7.0E-17	uCi/mL				E909.0	07/27/14 04:24 / eli-cs
Radium 226	1.1E-15	uCi/mL				E903.0	07/15/14 19:13 / dmf
Radium 226 precision (±)	1.3E-17	uCi/mL				E903.0	07/15/14 19:13 / dmf
Radium 226 MDC	1.9E-18	uCi/mL				E903.0	07/15/14 19:13 / dmf
Thorium 230	5.1E-16	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 precision (±)	6.0E-17	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 MDC	9.8E-18	uCi/mL				E908.0	07/15/14 09:06 / dmf
Uranium, Activity	2.2E-15	uCi/mL		1.0E-16		SW6020	07/10/14 23:44 / clm
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1680	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 precision (±)	27.3	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 MDC	9.5	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226	149	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 precision (±)	1.7	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 MDC	0.26	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230	69.8	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 precision (±)	8.2	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 MDC	1.3	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Uranium, Activity	305	pCi/Filter		0.20		RADCALC	07/29/14 14:26 / smm
FIELD PARAMETERS							
Air Filtering Volume	135988725	L				FIELD	06/30/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: July 29, 2014
PROJECT: 2nd Quarter Air 2014

SAMPLE ID: BHV-2

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-002	^{nat}U	4.63E-16	N/A	N/A	1E-16	9E-14	5.15E-01
First Quarter 2014	^{230}Th	4.97E-17	1E-17	6E-18	1E-16	3E-14	1.66E-01
Air Volume in mLs	^{226}Ra	1.15E-16	9E-18	3E-18	1E-16	9E-13	1.28E-02
1.36E+11	^{210}Pb	1.49E-14	2E-16	9E-17	2E-15	6E-13	2.48E+00

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14070123-002	^{nat}U	3.04E-16	N/A	N/A	1E-16	9E-14	3.38E-01
Second Quarter 2014	^{230}Th	7.92E-17	1E-17	6E-18	1E-16	3E-14	2.64E-01
Air Volume in mLs	^{226}Ra	1.82E-16	5E-18	2E-18	1E-16	9E-13	2.02E-02
1.38E+11	^{210}Pb	1.21E-14	2E-16	7E-17	2E-15	6E-13	2.01E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014
Lab ID: C14070123-002
Client Sample ID: BHV-2

Report Date: 07/29/14
Collection Date: 06/30/14
DateReceived: 07/02/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	4.5E-10	mg/L		1.5E-10		SW6020	07/10/14 23:47 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.2E-14	uCi/mL				E909.0	07/27/14 08:25 / eli-cs
Lead 210 precision (±)	2.0E-16	uCi/mL				E909.0	07/27/14 08:25 / eli-cs
Lead 210 MDC	6.9E-17	uCi/mL				E909.0	07/27/14 08:25 / eli-cs
Radium 226	1.8E-16	uCi/mL				E903.0	07/15/14 19:13 / dmf
Radium 226 precision (±)	5.1E-18	uCi/mL				E903.0	07/15/14 19:13 / dmf
Radium 226 MDC	1.8E-18	uCi/mL				E903.0	07/15/14 19:13 / dmf
Thorium 230	7.9E-17	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 precision (±)	1.4E-17	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 MDC	5.7E-18	uCi/mL				E908.0	07/15/14 09:06 / dmf
Uranium, Activity	3.0E-16	uCi/mL		1.0E-16		SW6020	07/10/14 23:47 / clm
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1660	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 precision (±)	27.1	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 MDC	9.5	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226	25.0	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 precision (±)	0.70	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 MDC	0.25	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230	10.9	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 precision (±)	1.9	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 MDC	0.79	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Uranium, Activity	41.8	pCi/Filter		0.20		RADCALC	07/29/14 14:26 / smm
FIELD PARAMETERS							
Air Filtering Volume	137536199	L				FIELD	06/30/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: July 29, 2014
PROJECT: 2nd Quarter Air 2014

SAMPLE ID: BHV-4

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-003	^{nat}U	4.69E-15	N/A	N/A	1E-16	9E-14	5.21E+00
First Quarter 2014	^{230}Th	1.37E-16	2E-17	1E-17	1E-16	3E-14	4.58E-01
Air Volume in mLs	^{226}Ra	3.53E-16	2E-17	5E-18	1E-16	9E-13	3.93E-02
1.35E+11	^{210}Pb	1.08E-14	2E-16	9E-17	2E-15	6E-13	1.81E+00

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14070123-003	^{nat}U	4.16E-15	N/A	N/A	1E-16	9E-14	4.63E+00
Second Quarter 2014	^{230}Th	6.96E-16	8E-17	8E-18	1E-16	3E-14	2.32E+00
Air Volume in mLs	^{226}Ra	1.77E-15	2E-17	2E-18	1E-16	9E-13	1.97E-01
1.37E+11	^{210}Pb	1.06E-14	2E-16	7E-17	2E-15	6E-13	1.77E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014
Lab ID: C14070123-003
Client Sample ID: BHV-4

Report Date: 07/29/14
Collection Date: 06/30/14
DateReceived: 07/02/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	6.2E-09	mg/L		1.5E-10		SW6020	07/10/14 23:50 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.1E-14	uCi/mL				E909.0	07/27/14 09:45 / eli-cs
Lead 210 precision (±)	1.9E-16	uCi/mL				E909.0	07/27/14 09:45 / eli-cs
Lead 210 MDC	6.9E-17	uCi/mL				E909.0	07/27/14 09:45 / eli-cs
Radium 226	1.8E-15	uCi/mL				E903.0	07/15/14 19:13 / dmf
Radium 226 precision (±)	1.6E-17	uCi/mL				E903.0	07/15/14 19:13 / dmf
Radium 226 MDC	1.8E-18	uCi/mL				E903.0	07/15/14 19:13 / dmf
Thorium 230	7.0E-16	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 precision (±)	7.5E-17	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 MDC	8.5E-18	uCi/mL				E908.0	07/15/14 09:06 / dmf
Uranium, Activity	4.2E-15	uCi/mL		1.0E-16		SW6020	07/10/14 23:50 / clm
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1460	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 precision (±)	25.5	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 MDC	9.5	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226	244	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 precision (±)	2.1	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 MDC	0.25	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230	95.7	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 precision (±)	10.3	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 MDC	1.2	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Uranium, Activity	572	pCi/Filter		0.20		RADCALC	07/29/14 14:26 / smm
FIELD PARAMETERS							
Air Filtering Volume	137449163	L				FIELD	06/30/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: July 29, 2014
PROJECT: 2nd Quarter Air 2014

SAMPLE ID: BHV-5

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-004	^{nat}U	4.74E-15	N/A	N/A	1E-16	9E-14	5.27E+00
First Quarter 2014	^{230}Th	1.42E-15	1E-16	2E-17	1E-16	3E-14	4.73E+00
Air Volume in mLs	^{226}Ra	3.48E-15	8E-17	1E-17	1E-16	9E-13	3.86E-01
1.35E+11	^{210}Pb	1.50E-14	2E-16	9E-17	2E-15	6E-13	2.51E+00

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14070123-004	^{nat}U	8.18E-15	N/A	N/A	1E-16	9E-14	9.09E+00
Second Quarter 2014	^{230}Th	1.34E-15	2E-16	2E-17	1E-16	3E-14	4.47E+00
Air Volume in mLs	^{226}Ra	1.76E-15	2E-17	2E-18	1E-16	9E-13	1.96E-01
1.30E+11	^{210}Pb	1.42E-14	2E-16	7E-17	2E-15	6E-13	2.37E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014
Lab ID: C14070123-004
Client Sample ID: BHV-5

Report Date: 07/29/14
Collection Date: 06/30/14
DateReceived: 07/02/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	1.2E-08	mg/L		1.5E-10		SW6020	07/10/14 23:53 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.4E-14	uCi/mL				E909.0	07/27/14 11:06 / eli-cs
Lead 210 precision (±)	2.1E-16	uCi/mL				E909.0	07/27/14 11:06 / eli-cs
Lead 210 MDC	6.9E-17	uCi/mL				E909.0	07/27/14 11:06 / eli-cs
Radium 226	1.8E-15	uCi/mL				E903.0	07/16/14 07:19 / dmf
Radium 226 precision (±)	1.5E-17	uCi/mL				E903.0	07/16/14 07:19 / dmf
Radium 226 MDC	1.7E-18	uCi/mL				E903.0	07/16/14 07:19 / dmf
Thorium 230	1.3E-15	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 precision (±)	1.5E-16	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 MDC	2.0E-17	uCi/mL				E908.0	07/15/14 09:06 / dmf
Uranium, Activity	8.2E-15	uCi/mL		1.0E-16		SW6020	07/10/14 23:53 / clm
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1840	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 precision (±)	27.8	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 MDC	9.0	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226	229	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 precision (±)	2.0	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 MDC	0.23	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230	174	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 precision (±)	19.6	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 MDC	2.7	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Uranium, Activity	1060	pCi/Filter		0.20		RADCALC	07/29/14 14:26 / smm
FIELD PARAMETERS							
Air Filtering Volume	129804469	L				FIELD	06/30/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: July 29, 2014
PROJECT: 2nd Quarter Air 2014

SAMPLE ID: BHV-6

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-005	^{nat}U	8.92E-15	N/A	N/A	1E-16	9E-14	9.91E+00
First Quarter 2014	^{230}Th	7.68E-16	1E-16	2E-17	1E-16	3E-14	2.56E+00
Air Volume in mLs	^{226}Ra	1.50E-15	4E-17	6E-18	1E-16	9E-13	1.67E-01
1.35E+11	^{210}Pb	1.61E-14	3E-16	9E-17	2E-15	6E-13	2.69E+00

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14070123-005	^{nat}U	8.29E-15	N/A	N/A	1E-16	9E-14	9.21E+00
Second Quarter 2014	^{230}Th	5.35E-16	8E-17	2E-17	1E-16	3E-14	1.78E+00
Air Volume in mLs	^{226}Ra	6.72E-16	1E-17	2E-18	1E-16	9E-13	7.47E-02
1.37E+11	^{210}Pb	1.20E-14	2E-16	7E-17	2E-15	6E-13	2.01E+00

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014
Lab ID: C14070123-005
Client Sample ID: BHV-6

Report Date: 07/29/14
Collection Date: 06/30/14
DateReceived: 07/02/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	1.2E-08	mg/L		1.5E-10		SW6020	07/10/14 23:56 / clm
RADIONUCLIDES - IN AIR							
Lead 210	1.2E-14	uCi/mL				E909.0	07/27/14 12:26 / eli-cs
Lead 210 precision (±)	2.0E-16	uCi/mL				E909.0	07/27/14 12:26 / eli-cs
Lead 210 MDC	6.9E-17	uCi/mL				E909.0	07/27/14 12:26 / eli-cs
Radium 226	6.7E-16	uCi/mL				E903.0	07/16/14 07:19 / dmf
Radium 226 precision (±)	9.5E-18	uCi/mL				E903.0	07/16/14 07:19 / dmf
Radium 226 MDC	1.8E-18	uCi/mL				E903.0	07/16/14 07:19 / dmf
Thorium 230	5.3E-16	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 precision (±)	7.6E-17	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 MDC	1.7E-17	uCi/mL				E908.0	07/15/14 09:06 / dmf
Uranium, Activity	8.3E-15	uCi/mL		1.0E-16		SW6020	07/10/14 23:56 / clm
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	1650	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 precision (±)	27.1	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 MDC	9.5	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226	92.4	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 precision (±)	1.3	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 MDC	0.25	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230	73.5	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 precision (±)	10.4	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 MDC	2.4	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Uranium, Activity	1140	pCi/Filter		0.20		RADCALC	07/29/14 14:26 / smm
FIELD PARAMETERS							
Air Filtering Volume	137419844	L				FIELD	06/30/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: July 29, 2014
PROJECT: 2nd Quarter Air 2014

SAMPLE ID: Blank

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14040336-006	^{nat}U	1.46E-17	N/A	N/A	1E-16	9E-14	1.62E-02
First Quarter 2014	^{230}Th	1.98E-18	1E-18	2E-18	1E-16	3E-14	6.60E-03
Air Volume in mLs	^{226}Ra	2.79E-18	2E-18	2E-18	1E-16	9E-13	3.10E-04
1.36E+11	^{210}Pb	-1.20E-17	4E-17	7E-17	2E-15	6E-13	-2.01E-03

Note: This sample uses 136,000,000 L of air volume for comparison purposes.

Quarter/Date Sampled Air Volume	Radionuclide	Concentration µCi/mL	Counting Precision µCi/mL	MDC µCi/mL	L.L.D.+ µCi/mL	Effluent Conc.* µCi/mL	% Effluent Concentration
C14070123-006	^{nat}U	1.90E-17	N/A	N/A	1E-16	9E-14	2.11E-02
Second Quarter 2014	^{230}Th	6.03E-18	2E-18	2E-18	1E-16	3E-14	2.01E-02
Air Volume in mLs	^{226}Ra	5.02E-18	1E-18	1E-18	1E-16	9E-13	5.58E-04
1.36E+11	^{210}Pb	6.18E-18	3E-17	5E-17	2E-15	6E-13	1.03E-03

Note: This sample uses 136,000,000 L of air volume for comparison purposes.

+LLD's are from NRC Reg. Guide 4.14
*Effluent Concentration from the NEW 10 CFR Part 20 - Appendix B - Table 2
Year for Natural Uranium
Year for Thorium-230
Week for Radium-226
Day for Lead-210

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014
Lab ID: C14070123-006
Client Sample ID: Blank

Report Date: 07/29/14
Collection Date: 06/30/14
DateReceived: 07/02/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	0.0038	mg/L	D	0.000043		SW6020	07/11/14 00:17 / clm
RADIONUCLIDES - IN AIR							
Lead 210	8.4E-10	uCi/mL	U			E909.0	07/27/14 13:46 / eli-cs
Lead 210 precision (±)	4.0E-09	uCi/mL				E909.0	07/27/14 13:46 / eli-cs
Lead 210 MDC	6.6E-09	uCi/mL				E909.0	07/27/14 13:46 / eli-cs
Radium 226	6.8E-10	uCi/mL				E903.0	07/16/14 07:19 / dmf
Radium 226 precision (±)	1.4E-10	uCi/mL				E903.0	07/16/14 07:19 / dmf
Radium 226 MDC	1.7E-10	uCi/mL				E903.0	07/16/14 07:19 / dmf
Thorium 230	8.2E-10	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 precision (±)	2.9E-10	uCi/mL				E908.0	07/15/14 09:06 / dmf
Thorium 230 MDC	2.4E-10	uCi/mL				E908.0	07/15/14 09:06 / dmf
Uranium, Activity	2.6E-09	uCi/mL	D	2.9E-11		SW6020	07/11/14 00:17 / clm
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	0.84	pCi/Filter	U			RADCALC	07/29/14 14:26 / smm
Lead 210 precision (±)	4.0	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Lead 210 MDC	6.6	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226	0.68	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 precision (±)	0.14	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Radium 226 MDC	0.17	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230	0.82	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 precision (±)	0.29	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Thorium 230 MDC	0.24	pCi/Filter				RADCALC	07/29/14 14:26 / smm
Uranium, Activity	2.6	pCi/Filter		0.20		RADCALC	07/29/14 14:26 / smm
FIELD PARAMETERS							
Air Filtering Volume	1.0	L				FIELD	06/30/14 00:00 / ***

*** Field data provided by client

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Report Date: 07/29/14
Project: 2nd Quarter Air 2014
Work Order: C14070123

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: R188757
Lab ID: C14070120-001AMS		Sample Matrix Spike				Run: G5000W_140709B				07/15/14 19:13
Radium 226		8.33E-07	pCi/L		90	70	130			
Lab ID: C14070120-001AMSD		Sample Matrix Spike Duplicate				Run: G5000W_140709B				07/15/14 19:13
Radium 226		9.18E-07	pCi/L		101	70	130	9.6	13.7	
Lab ID: LCS-41872		Laboratory Control Sample				Run: G5000W_140709B				07/15/14 19:13
Radium 226		21.2	pCi/L		97	80	120			
Lab ID: MB-41872	3	Method Blank				Run: G5000W_140709B				07/15/14 19:13
Radium 226		0.2	pCi/L							
Radium 226 precision (±)		0.08	pCi/L							
Radium 226 MDC		0.1	pCi/L							
Lab ID: MB-41884	3	Method Blank				Run: G5000W_140709B				07/16/14 07:19
Radium 226		0.05	pCi/L							U
Radium 226 precision (±)		0.07	pCi/L							
Radium 226 MDC		0.1	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014

Report Date: 07/29/14
Work Order: C14070123

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 41884
Lab ID: C14070191-003AMS		Sample Matrix Spike				Run: ALPHANALYST_140709B				07/15/14 09:06
Thorium 230		1.22E-05	pCi/L		100	70	130			
Lab ID: C14070191-003AMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_140709B				07/15/14 09:06
Thorium 230		1.20E-05	pCi/L		98	70	130	1.7	30.8	
Lab ID: LCS-41884		Laboratory Control Sample				Run: ALPHANALYST_140709B				07/15/14 09:06
Thorium 230		16.4	pCi/L		97	80	120			
Lab ID: MB-41884	3	Method Blank				Run: ALPHANALYST_140709B				07/15/14 09:06
Thorium 230		0.2	pCi/L							
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014

Report Date: 07/29/14
Work Order: C14070123

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: T_21598
Lab ID: MB-21598	3	Method Blank				Run: SUB-T58010				07/27/14 01:44
Lead 210		-1	pCi/L							U
Lead 210 precision (±)		4	pCi/L							
Lead 210 MDC		7	pCi/L							
Lab ID: LCS-21598		Laboratory Control Sample				Run: SUB-T58010				07/27/14 03:04
Lead 210		138	pCi/L		108	80	120			
Lab ID: C14070123-001AMS		Sample Matrix Spike				Run: SUB-T58010				07/27/14 05:45
Lead 210		1.78E-05	pCi/L		121	70	130			
Lab ID: C14070123-001AMSD		Sample Matrix Spike Duplicate				Run: SUB-T58010				07/27/14 07:05
Lead 210		1.78E-05	pCi/L		119	70	130	0.0	15.2	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Air 2014

Report Date: 07/29/14
Work Order: C14070123

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**SW6020**									Analytical Run: ICPMS2-C_140710A	
Lab ID:	**ICV**		Initial Calibration Verification Standard							07/10/14 13:24	
Uranium			0.0505	mg/L	0.00030	101	90	110			
Lab ID:	**ICSA**		Interference Check Sample A							07/10/14 13:27	
Uranium			2.79E-05	mg/L	0.00030						
Lab ID:	**ICSAB**		Interference Check Sample AB							07/10/14 13:30	
Uranium			7.10E-06	mg/L	0.00030						
Method:	**SW6020**										Batch: 41884
Lab ID:	**MB-41884**		Method Blank				Run: ICPMS2-C_140710A			07/10/14 23:34	
Uranium			6E-05	mg/L	4E-05						
Lab ID:	**LCS2-41884**		Laboratory Control Sample				Run: ICPMS2-C_140710A			07/10/14 23:38	
Uranium			0.105	mg/L	4.3E-05	105	85	115			
Lab ID:	**C14070123-005AMS**		Sample Matrix Spike				Run: ICPMS2-C_140710A			07/10/14 23:59	
Uranium			1.51E-08	mg/L	1.5E-10		75	125			A
Lab ID:	**C14070123-005AMSD**		Sample Matrix Spike Duplicate				Run: ICPMS2-C_140710A			07/11/14 00:11	
Uranium			1.55E-08	mg/L	1.5E-10		75	125	2.1	20	A
Lab ID:	**C14070171-001ADIL**		Serial Dilution				Run: ICPMS2-C_140710A			07/11/14 00:23	
Uranium			1.06E-10	mg/L	1.5E-10					20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

MDC - Minimum detectable concentration

Workorder Receipt Checklist

Energy Fuels Resources (USA) Inc C14070123

Login completed by: Corinne Wagner
Date Received: 7/2/2014
Reviewed by: BL2000\swaldrop
Received by: dw
Reviewed Date: 7/3/2014
Carrier name: Next Day Air

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Applicable ☑
Container/Temp Blank temperature:	N/A °C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy
Casper, WY 82601

Contact: Garrin Palmer
Ph: 435 678 4115
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
2nd Quarter Air 2014	Garrin Palmer	

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
BHV-1	3/31/14 - 6/30/14	NA	U-NAT, TH-230, Ra-226, Pb-210
BHV-2	3/31/14 - 6/30/14	NA	U-NAT, TH-230, Ra-226, Pb-210
BHV-4	3/31/14 - 6/30/14	NA	U-NAT, TH-230, Ra-226, Pb-210
BHV-5	3/31/14 - 6/30/14	NA	U-NAT, TH-230, Ra-226, Pb-210
BHV-6	3/31/14 - 6/30/14	NA	U-NAT, TH-230, Ra-226, Pb-210
Blank	3/31/14 - 6/30/14	NA	U-NAT, TH-230, Ra-226, Pb-210

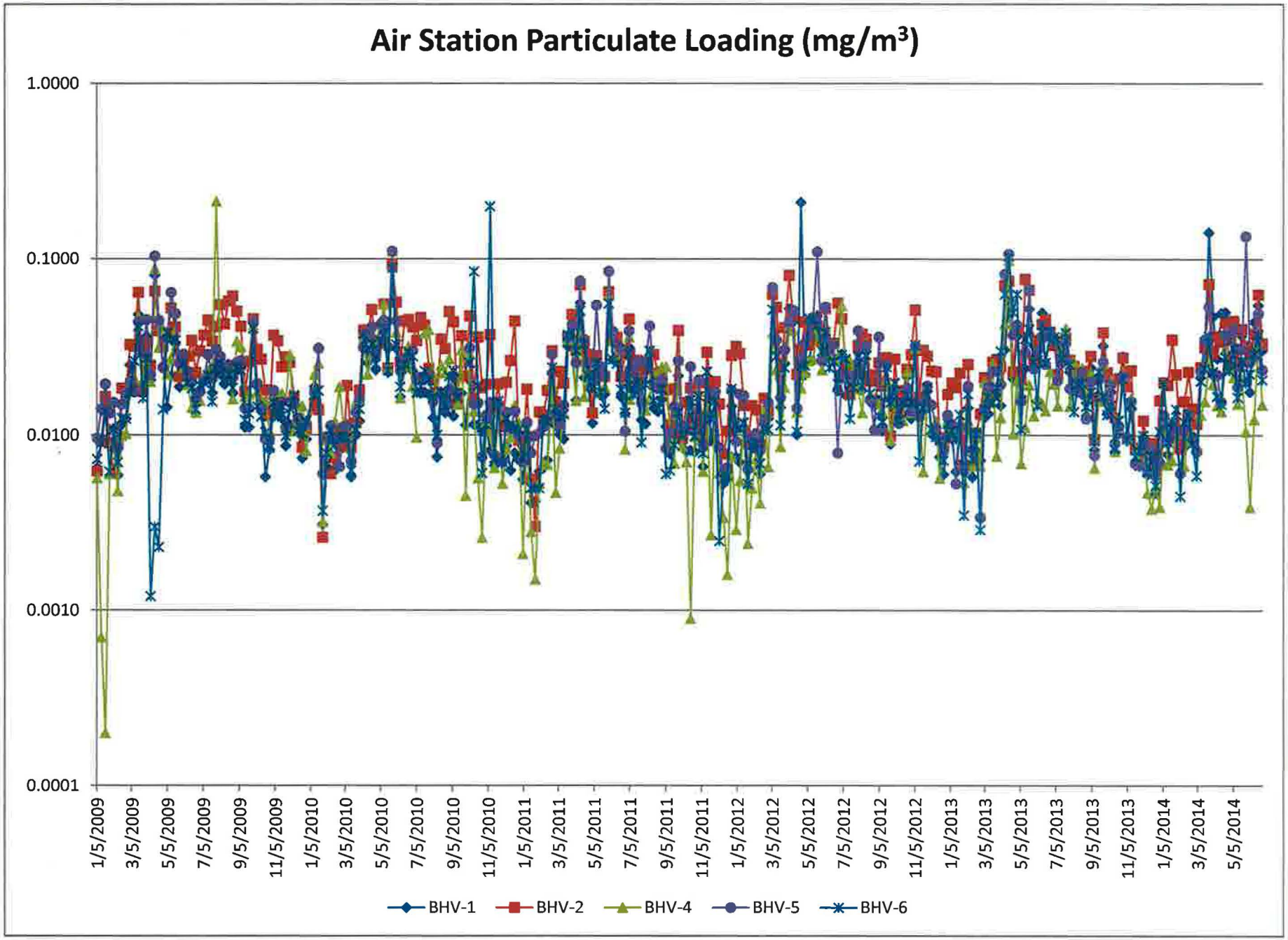
Comments: Send report to David Turk at PO Box 809 Blanding, UT 84511

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer	7/1/2014 1000		
Relinquished By:(Signature)	**Date/Time**	**Received By:(Signature)**	**Date/Time**
			930 7-2-14

C14070123

ATTACHMENT D

AIR PARTICULATE LOADING GRAPHS AND SUPPORTING DATA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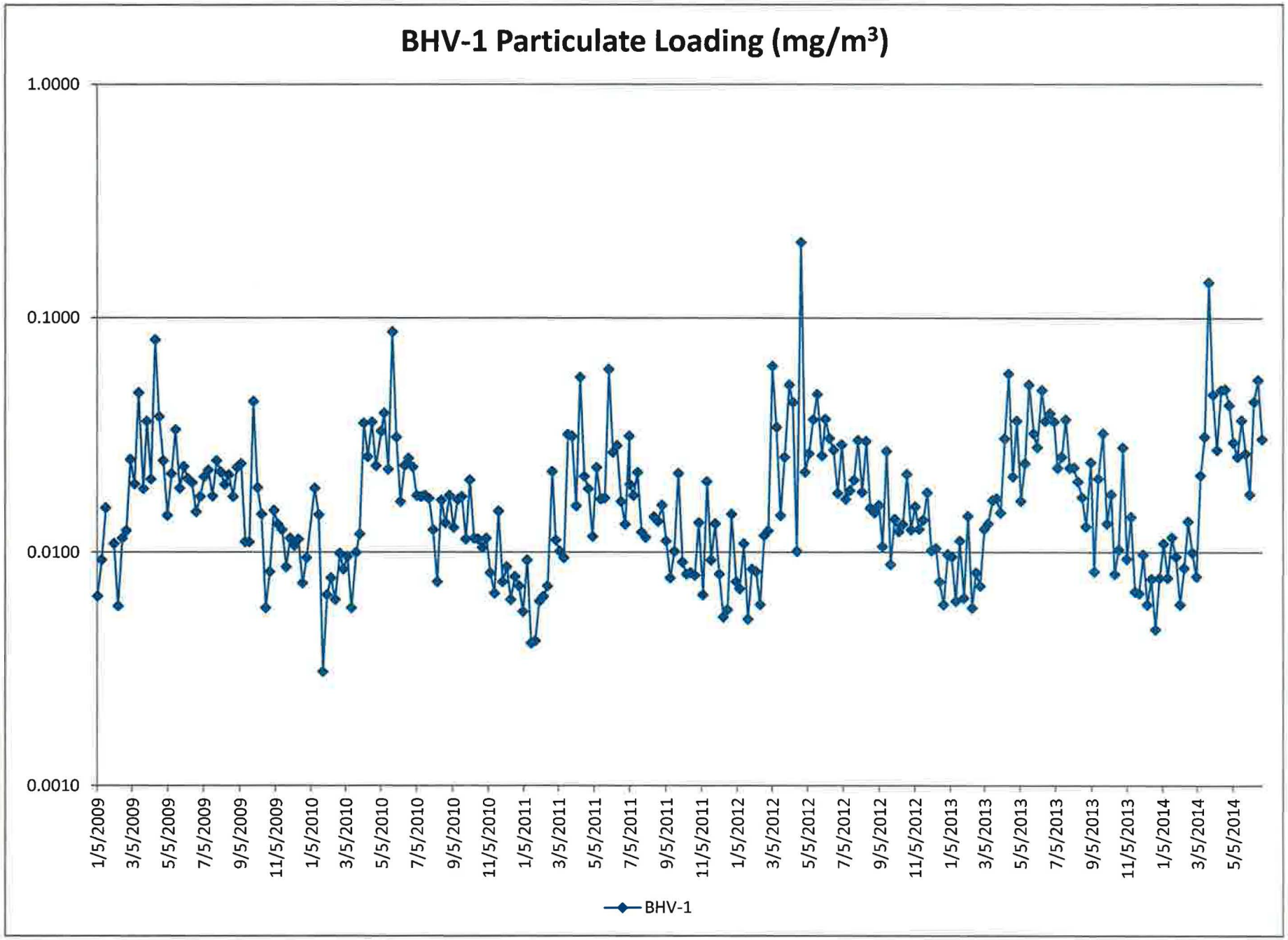
BHV-2
BHV-4
BHV-5
BHV-6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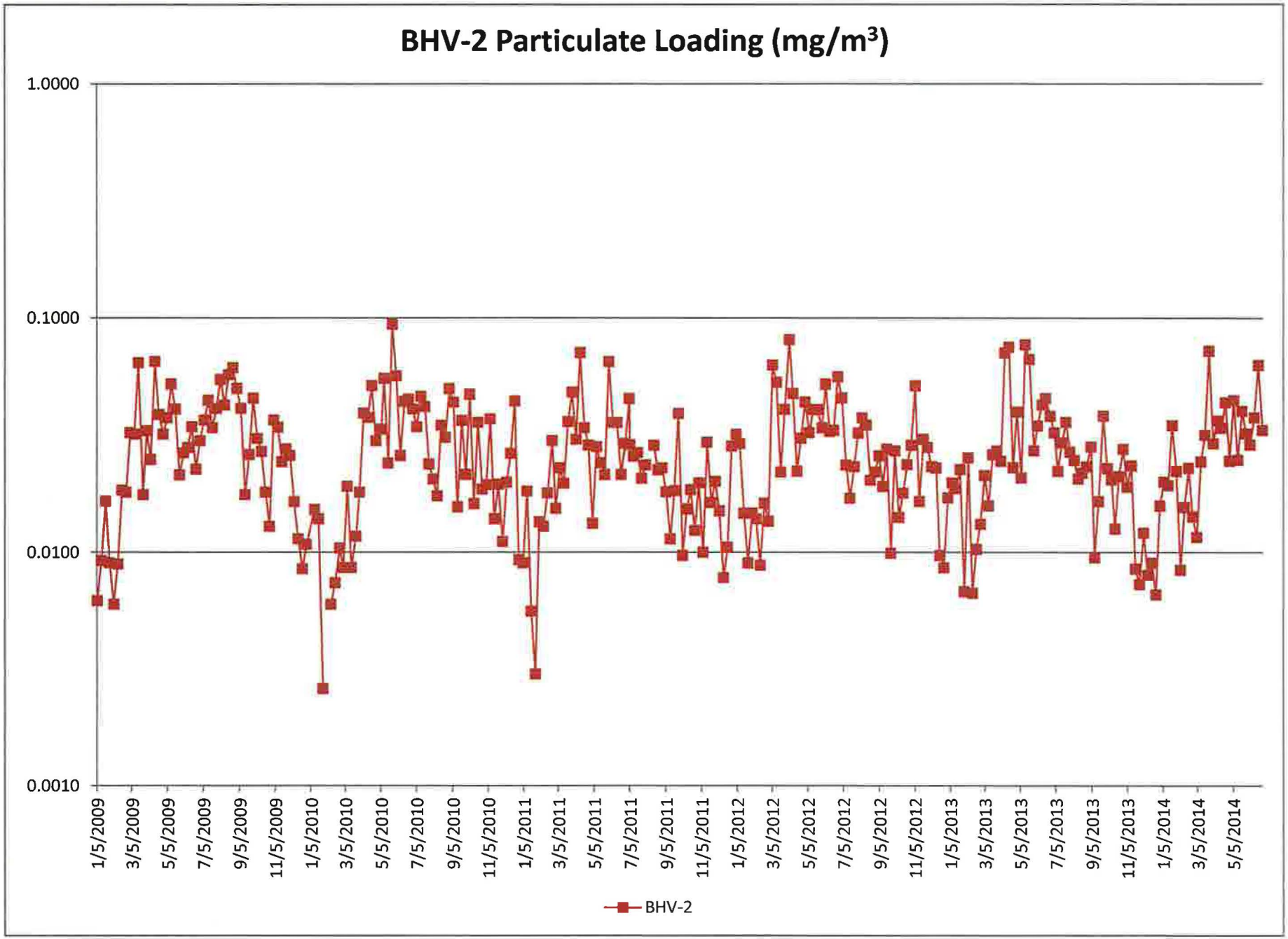
BHV-1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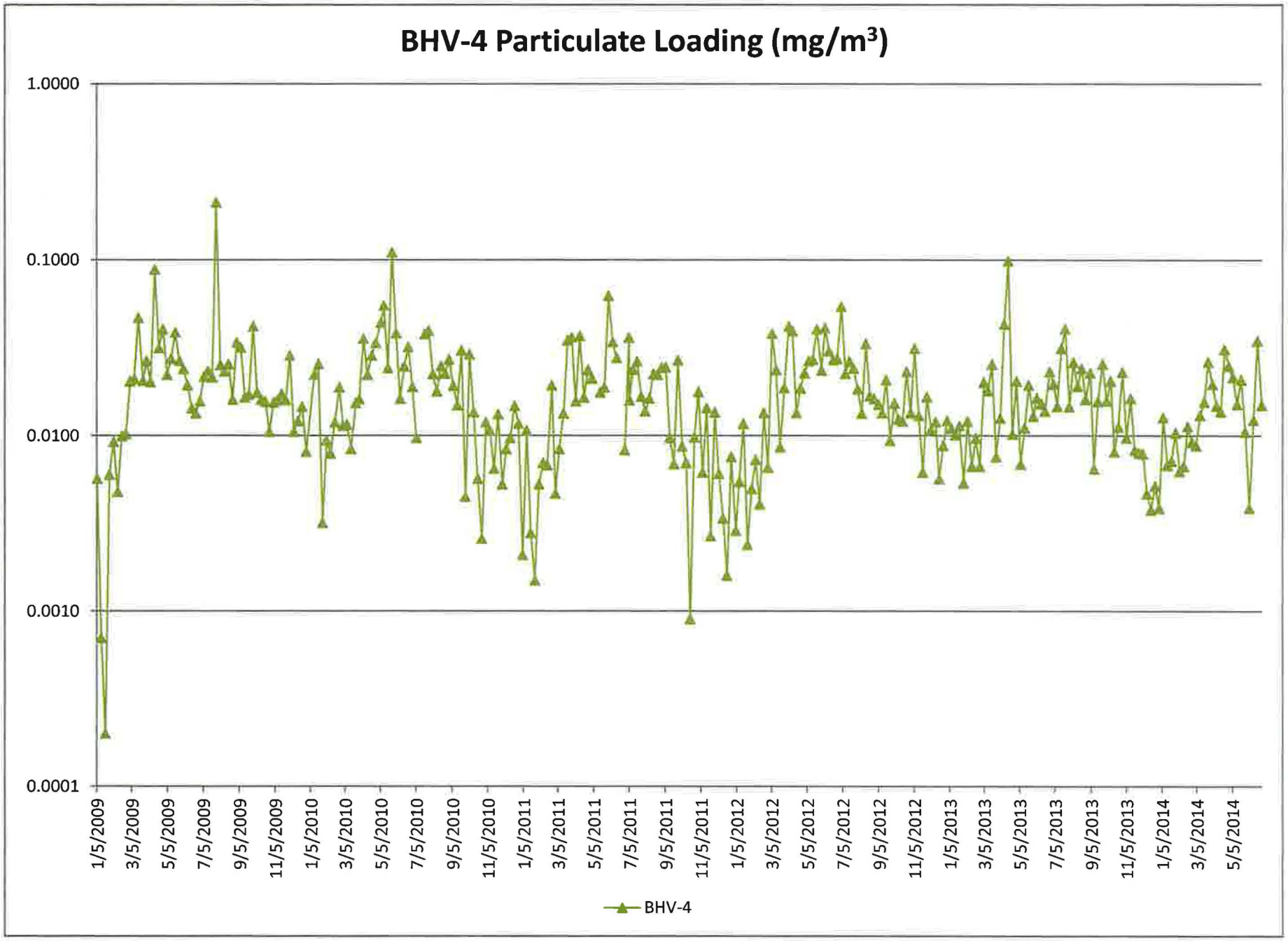
BHV-2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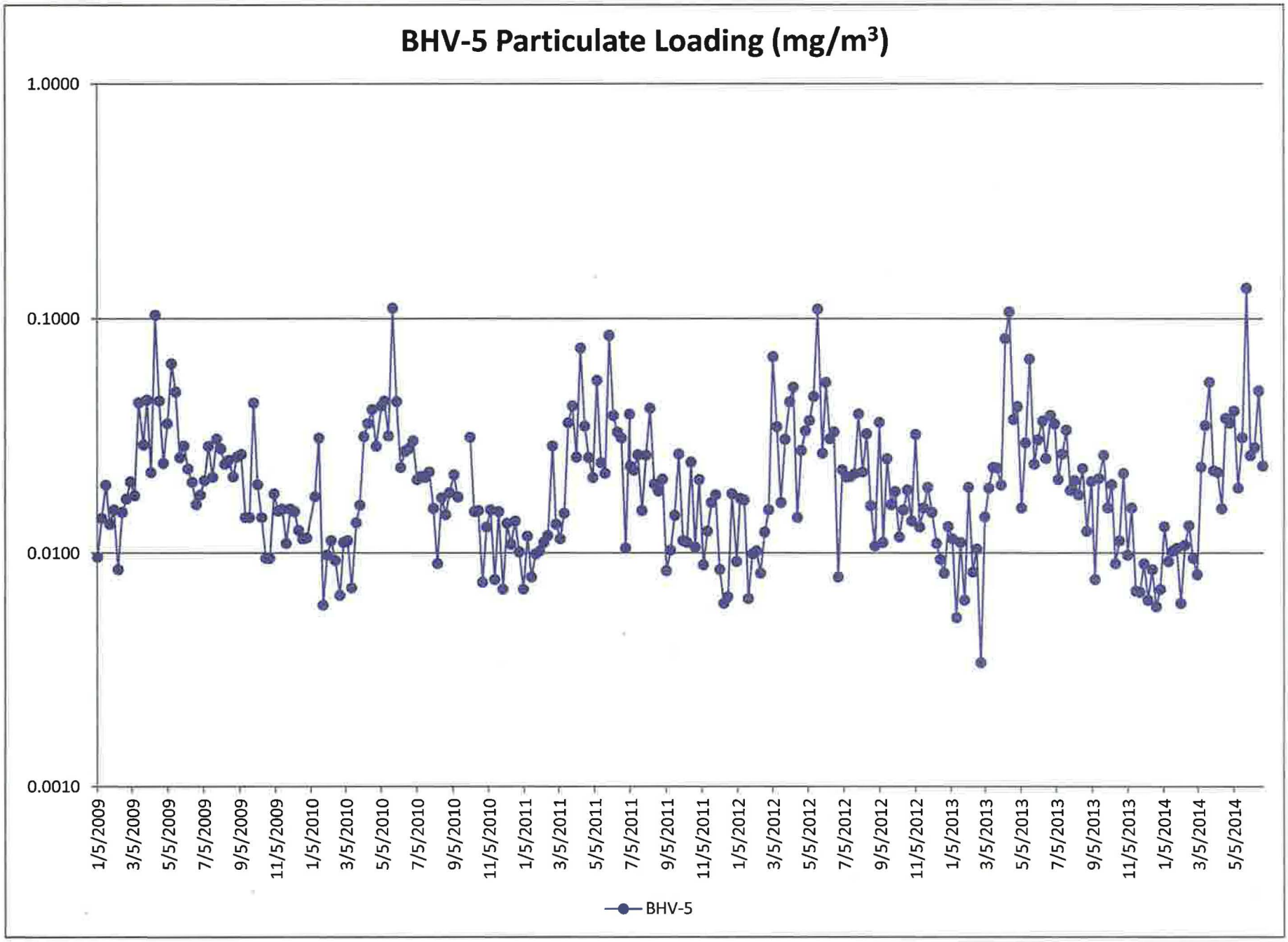
BHV-4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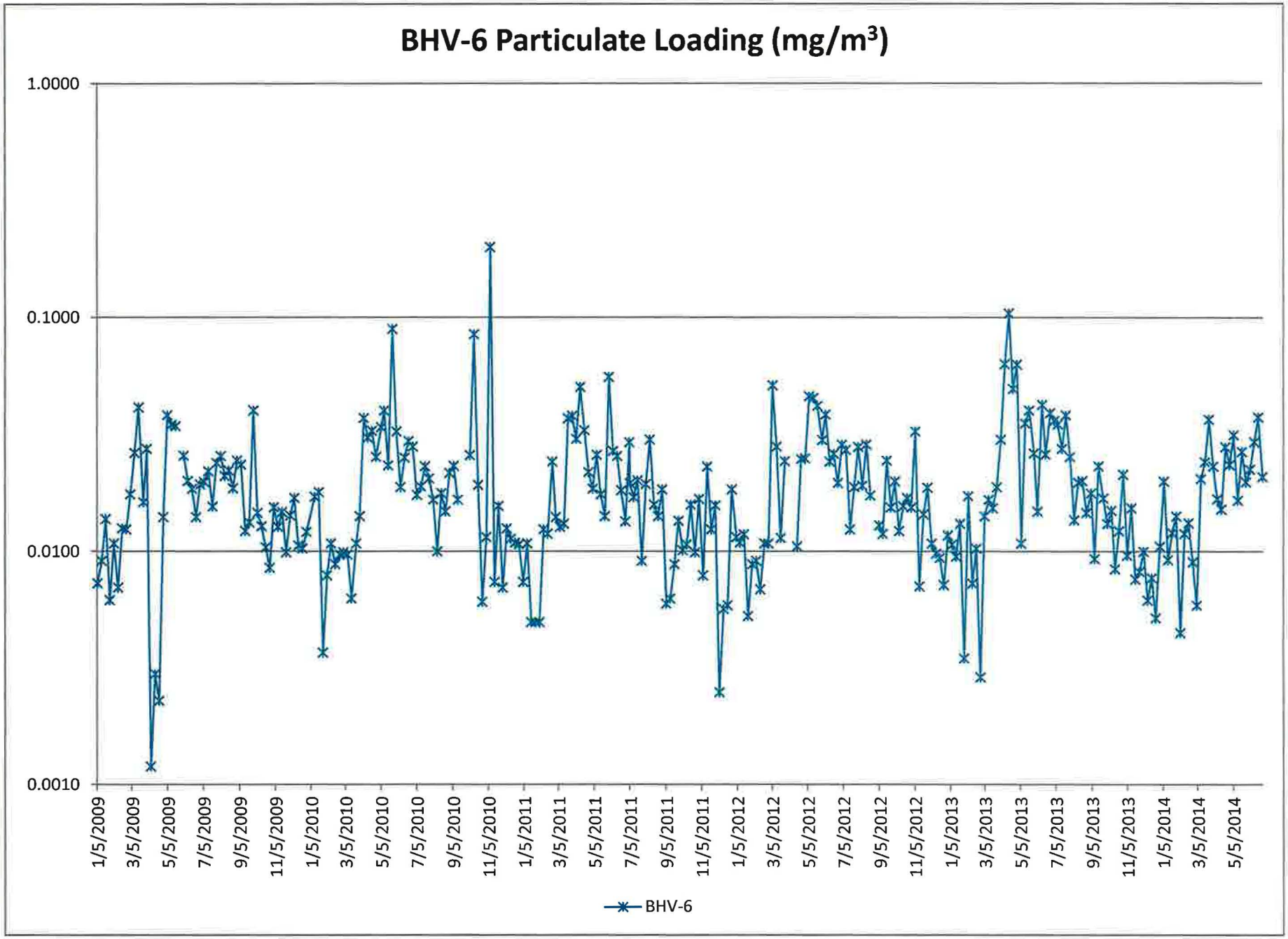
BHV-5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BHV-6

Period: December 30, 2014 through March 31, 2014 (1st Quarter 2014)

BHV-1 on stream % 100.0% **BHV-1** Total Volume: 4.82E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8398934	30-Dec-13	6-Jan-14	4.3800	4.2984	0.0816	52612.7	52444.1	10113.6	10,453,062	0.0078	100.3%	36.5
2	8398931	06-Jan-14	13-Jan-14	4.4401	4.3256	0.1145	52779.7	52612.7	10023.0	10,501,331	0.0109	99.4%	37.0
3	8398926	13-Jan-14	20-Jan-14	4.4066	4.3245	0.0821	52946.3	52779.7	9995.4	10,472,414	0.0078	99.2%	37.0
4	8398915	20-Jan-14	27-Jan-14	4.4512	4.3263	0.1249	53117.2	52946.3	10255.2	10,744,612	0.0116	101.7%	37.0
5	8398913	27-Jan-14	3-Feb-14	4.4228	4.3208	0.1020	53286.2	53117.2	10138.8	10,622,657	0.0096	100.6%	37.0
6	8398908	03-Feb-14	10-Feb-14	4.3824	4.3206	0.0618	53450.6	53286.2	9862.2	10,332,857	0.0060	97.8%	37.0
7	8400197	10-Feb-14	17-Feb-14	4.4290	4.3376	0.0914	53619.3	53450.6	10125.0	10,579,528	0.0086	100.4%	36.9
8	8400195	17-Feb-14	24-Feb-14	4.4799	4.3329	0.1470	53791.6	53619.3	10336.8	10,800,836	0.0136	102.5%	36.9
9	8400185	24-Feb-14	3-Mar-14	4.4103	4.3091	0.1012	53953.8	53791.6	9729.0	10,165,751	0.0100	96.5%	36.9
10	8400183	03-Mar-14	10-Mar-14	4.4300	4.3473	0.0827	54121.9	53953.8	10089.6	10,456,827	0.0079	100.1%	36.6
11	8400174	10-Mar-14	17-Mar-14	4.5076	4.2810	0.2266	54293.4	54121.9	10287.6	10,603,771	0.0214	102.1%	36.4
12	8400171	17-Mar-14	24-Mar-14	4.5842	4.2655	0.3187	54458.2	54293.4	9886.8	10,190,653	0.0313	98.1%	36.4
13	8400162	24-Mar-14	31-Mar-14	5.7970	4.3069	1.4901	54627.9	54458.2	10183.8	10,496,781	0.1420	101.0%	36.4
	Totals	91	2184.0	4.547777	4.315115	0.2327			131026.8	136,421,082	0.0222	100.0%	36.8

BHV-2 on stream % 100.0% **BHV-2** Total Volume: 4.82E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8398935	30-Dec-13	06-Jan-14	4.5162	4.3505	0.1657	62879.3	62710.0	10154.4	10,495,232	0.0158	100.7%	36.5
2	8398930	06-Jan-14	13-Jan-14	4.5136	4.3039	0.2097	63046.0	62879.3	10002.0	10,479,329	0.0200	99.2%	37.0
3	8398925	13-Jan-14	20-Jan-14	4.5243	4.3209	0.2034	63213.8	63046.0	10073.4	10,554,136	0.0193	99.9%	37.0
4	8398916	20-Jan-14	27-Jan-14	4.6978	4.3268	0.3710	63382.9	63213.8	10144.8	10,628,944	0.0349	100.6%	37.0
5	8398912	27-Jan-14	03-Feb-14	4.5747	4.3372	0.2375	63552.9	63382.9	10196.4	10,683,006	0.0222	101.2%	37.0
6	8398907	03-Feb-14	10-Feb-14	4.3564	4.2699	0.0865	63717.2	63552.9	9859.8	10,330,343	0.0084	97.8%	37.0
7	8400198	10-Feb-14	17-Feb-14	4.4820	4.3175	0.1645	63885.6	63717.2	10104.0	10,557,585	0.0156	100.2%	36.9
8	8400194	17-Feb-14	24-Feb-14	4.5704	4.3233	0.2471	64057.6	63885.6	10319.4	10,782,655	0.0229	102.4%	36.9
9	8400186	24-Feb-14	03-Mar-14	4.4709	4.3266	0.1443	64219.7	64057.6	9729.6	10,166,378	0.0142	96.5%	36.9
10	8400182	03-Mar-14	10-Mar-14	4.4507	4.3294	0.1213	64388.2	64219.7	10110.0	10,477,970	0.0116	100.3%	36.6
11	8400175	10-Mar-14	17-Mar-14	4.5353	4.2767	0.2586	64559.4	64388.2	10269.6	10,585,218	0.0244	101.9%	36.4
12	8400170	17-Mar-14	24-Mar-14	4.6345	4.3048	0.3297	64727.5	64559.4	10085.4	10,395,357	0.0317	100.1%	36.4
13	8400163	24-Mar-14	31-Mar-14	5.0604	4.3138	0.7466	64893.9	64727.5	9987.0	10,293,933	0.0725	99.1%	36.4
	Totals	91	2184.0	4.568246	4.31548	0.2528			131035.8	136,430,085	0.0241	100.0%	36.8

BHV-4 on stream % 99.2% **BHV-4** Total Volume: 4.78E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8398936	30-Dec-13	06-Jan-14	4.4091	4.3691	0.0400	38114.1	37950.7	9806.4	10,135,551	0.0039	97.3%	36.5
2	8398929	06-Jan-14	13-Jan-14	4.4670	4.3356	0.1314	38279.3	38114.1	9911.4	10,384,405	0.0127	98.3%	37.0
3	8398924	13-Jan-14	20-Jan-14	4.3786	4.3071	0.0715	38445.8	38279.3	9991.2	10,468,013	0.0068	99.1%	37.0
4	8398917	20-Jan-14	27-Jan-14	4.3474	4.2688	0.0786	38618.4	38445.8	10355.4	10,849,594	0.0072	102.7%	37.0
5	8398911	27-Jan-14	03-Feb-14	4.3973	4.2886	0.1087	38784.1	38618.4	9939.6	10,413,951	0.0104	98.6%	37.0
6	8398906	03-Feb-14	10-Feb-14	4.4070	4.3416	0.0654	38950.2	38784.1	9968.4	10,444,125	0.0063	98.9%	37.0
7	8400199	10-Feb-14	17-Feb-14	4.4187	4.3478	0.0709	39118.8	38950.2	10115.4	10,569,497	0.0067	100.4%	36.9
8	8400193	17-Feb-14	24-Feb-14	4.4759	4.3539	0.1220	39290.9	39118.8	10329.0	10,792,686	0.0113	102.5%	36.9
9	8400187	24-Feb-14	03-Mar-14	4.4052	4.3112	0.0940	39453.8	39290.9	9774.0	10,212,771	0.0092	97.0%	36.9
10	8400181	03-Mar-14	10-Mar-14	4.3661	4.2742	0.0919	39622.6	39453.8	10126.2	10,494,759	0.0088	100.5%	36.6
11	8400176	10-Mar-14	17-Mar-14	4.4616	4.3242	0.1374	39792.8	39622.6	10210.2	10,523,992	0.0131	101.3%	36.4
12	8400169	17-Mar-14	24-Mar-14	4.4627	4.3161	0.1466	39945.1	39792.8	9140.4	9,421,314	0.0156	90.7%	36.4
13	8400164	24-Mar-14	31-Mar-14	4.5536	4.2763	0.2773	40116.1	39945.1	10260.0	10,575,323	0.0262	101.8%	36.4
	Totals	91	2184.0	4.426938	4.3165	0.1104			129927.6	135,285,983	0.0106	99.2%	36.8

BHV-5 on stream % 99.2% **BHV-5** Total Volume: 4.78E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8398937	30-Dec-13	06-Jan-14	4.3713	4.3000	0.0713	61920.7	61757.2	9808.2	10,137,411	0.0070	97.3%	36.5
2	8398928	06-Jan-14	13-Jan-14	4.4677	4.3326	0.1351	62085.9	61920.7	9912.0	10,385,034	0.0130	98.3%	37.0
3	8398923	13-Jan-14	20-Jan-14	4.4095	4.3131	0.0964	62252.4	62085.9	9991.8	10,468,642	0.0092	99.1%	37.0
4	8398918	20-Jan-14	27-Jan-14	4.4233	4.3122	0.1111	62425.0	62252.4	10354.2	10,848,337	0.0102	102.7%	37.0
5	8398910	27-Jan-14	03-Feb-14	4.4146	4.3053	0.1093	62591.0	62425.0	9960.6	10,435,953	0.0105	98.8%	37.0
6	8398905	03-Feb-14	10-Feb-14	4.4102	4.3462	0.0640	62756.7	62591.0	9946.2	10,420,866	0.0061	98.7%	37.0
7	8400200	10-Feb-14	17-Feb-14	4.4522	4.3381	0.1141	62925.7	62756.7	10138.2	10,593,321	0.0108	100.6%	36.9
8	8400192	17-Feb-14	24-Feb-14	4.4739	4.3328	0.1411	63097.9	62925.7	10329.0	10,792,686	0.0131	102.5%	36.9
9	8400188	24-Feb-14	03-Mar-14	4.4296	4.3329	0.0967	63260.9	63097.9	9782.4	10,221,548	0.0095	97.0%	36.9
10	8400180	03-Mar-14	10-Mar-14	4.4220	4.3368	0.0852	63429.2	63260.9	10096.8	10,464,289	0.0081	100.2%	36.6
11	8400177	10-Mar-14	17-Mar-14	4.5670	4.3213	0.2457	63599.6	63429.2	10227.6	10,541,927	0.0233	101.5%	36.4
12	8400168	17-Mar-14	24-Mar-14	4.5933	4.2636	0.3297	63752.0	63599.6	9144.0	9,425,025	0.0350	90.7%	36.4
13	8400165	24-Mar-14	31-Mar-14	4.8406	4.2750	0.5656	63922.7	63752.0	10237.8	10,552,441	0.0536	101.6%	36.4
	Totals	91	2184.0	4.482708	4.31615	0.1666			129928.8	135,287,479	0.0161	99.2%	36.8

Period: December 30, 2014 through March 31, 2014 (1st Quarter 2014)

BHV-6 on stream % 99.1%

BHV-6 Total Volume: 4.78E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8398938	30-Dec-13	06-Jan-14	4.4394	4.3331	0.1063	10316.0	10152.6	9802.8	10,131,830	0.0105	97.3%	36.5
2	8398927	06-Jan-14	13-Jan-14	4.4810	4.2748	0.2062	10481.2	10316.0	9910.2	10,383,148	0.0199	98.3%	37.0
3	8398922	13-Jan-14	20-Jan-14	4.4235	4.3271	0.0964	10647.7	10481.2	9991.2	10,468,013	0.0092	99.1%	37.0
4	8398919	20-Jan-14	27-Jan-14	4.4576	4.3269	0.1307	10820.3	10647.7	10354.2	10,848,337	0.0120	102.7%	37.0
5	8398908	27-Jan-14	03-Feb-14	4.4825	4.3352	0.1473	10986.0	10820.3	9941.4	10,415,837	0.0141	98.6%	37.0
6	8398904	03-Feb-14	10-Feb-14	4.3672	4.3198	0.0474	11151.7	10986.0	9945.6	10,420,237	0.0045	98.7%	37.0
7	8398901	10-Feb-14	17-Feb-14	4.4581	4.3317	0.1264	11320.7	11151.7	10138.8	10,593,948	0.0119	100.6%	36.9
8	8400191	17-Feb-14	24-Feb-14	4.4266	4.2843	0.1423	11492.9	11320.7	10329.0	10,792,686	0.0132	102.5%	36.9
9	8400189	24-Feb-14	03-Mar-14	4.4495	4.3580	0.0915	11655.8	11492.9	9778.2	10,217,160	0.0090	97.0%	36.9
10	8400179	03-Mar-14	10-Mar-14	4.4052	4.3430	0.0622	11824.5	11655.8	10122.0	10,490,406	0.0059	100.4%	36.6
11	8400178	10-Mar-14	17-Mar-14	4.5073	4.2933	0.2140	11994.4	11824.5	10194.0	10,507,295	0.0204	101.1%	36.4
12	8400167	17-Mar-14	24-Mar-14	4.5210	4.2938	0.2272	12147.1	11994.4	9157.2	9,438,630	0.0241	90.8%	36.4
13	8400166	24-Mar-14	31-Mar-14	4.6986	4.3105	0.3881	12318.1	12147.1	10260.6	10,575,941	0.0367	101.8%	36.4
	Totals	91	2184.0	4.470577	4.31781	0.1528			129925.2	135,283,468	0.0147	99.1%	36.8

ALL BHV on stream % 99.5%

Week #	Blanks	Start Date	Stop Date	Net
1	8398932	30-Dec-13	06-Jan-14	4.3495
2	8398921	06-Jan-14	13-Jan-14	4.3245
3	8398920	13-Jan-14	20-Jan-14	4.2957
4	8398914	20-Jan-14	27-Jan-14	4.2864
5	8398903	27-Jan-14	03-Feb-14	4.3409
6	8398902	03-Feb-14	10-Feb-14	4.3619
7	8400196	10-Feb-14	17-Feb-14	4.3532
8	8400190	17-Feb-14	24-Feb-14	4.3618
9	8400184	24-Feb-14	03-Mar-14	4.3147
10	8400173	03-Mar-14	10-Mar-14	4.3199
11	8400172	10-Mar-14	17-Mar-14	4.3180
12	8400161	17-Mar-14	24-Mar-14	4.2386
13	8400160	24-Mar-14	31-Mar-14	4.3099
	Totals	91	2184.0	4.3212

Period: March 31, 2014 through , July 2, 2014 (2nd Quarter 2014)

BHV-1 on stream % 98.8% **BHV-1** Total Volume: 4.80E+06

#	Number	Date	Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading mg/m3	Percent On Stream	SCFM
1	8400159	31-Mar-14	7-Apr-14	4.8063	4.2971	0.5092	54795.5	54627.9	10054.8	10,738,617	0.0474	99.8%	37.7
2	8400150	07-Apr-14	14-Apr-14	4.6346	4.3412	0.2934	54961.7	54795.5	9972.0	10,650,186	0.0275	98.9%	37.7
3	8400147	14-Apr-14	21-Apr-14	4.8566	4.3218	0.5348	55130.8	54961.7	10144.8	10,834,738	0.0494	100.6%	37.7
4	8400141	21-Apr-14	28-Apr-14	4.7298	4.1975	0.5323	55297.0	55130.8	9972.0	10,650,186	0.0500	98.9%	37.7
5	8400132	28-Apr-14	5-May-14	4.7308	4.2644	0.4664	55467.1	55297.0	10206.0	10,900,100	0.0428	101.2%	37.7
6	8400128	05-May-14	12-May-14	4.5391	4.2729	0.2662	55609.4	55467.1	8537.4	8,985,958	0.0296	84.7%	37.2
7	8400120	12-May-14	19-May-14	4.5319	4.2590	0.2729	55777.7	55609.4	10096.2	10,626,658	0.0257	100.2%	37.2
8	8400117	19-May-14	26-May-14	4.6629	4.2162	0.4467	55969.6	55777.7	11518.8	12,124,002	0.0368	114.3%	37.2
9	8400111	26-May-14	2-Jun-14	4.4344	4.1909	0.2435	56115.1	55969.6	8727.6	9,186,151	0.0265	86.6%	37.2
10	8400102	02-Jun-14	9-Jun-14	4.4623	4.2810	0.1813	56280.9	56115.1	9945.6	10,219,152	0.0177	98.7%	36.3
11	8951299	09-Jun-14	16-Jun-14	4.9799	4.5222	0.4577	56448.8	56280.9	10076.4	10,353,550	0.0442	100.0%	36.3
12	8951290	16-Jun-14	23-Jun-14	5.1655	4.5152	0.6503	56641.4	56448.8	11557.8	11,875,695	0.0548	114.7%	36.3
13	8951286	23-Jun-14	30-Jun-14	4.7708	4.5006	0.2702	56784.9	56641.4	8607.0	8,843,734	0.0306	85.4%	36.3
	Totals	91	2184.0	4.715762	4.321538	0.3942			129416.4	135,988,725	0.0372	98.8%	37.1

BHV-2 on stream % 99.9% **BHV-2** Total Volume: 4.86E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400158	31-Mar-14	07-Apr-14	4.5918	4.2783	0.3135	65061.7	64893.9	10065.6	10,750,151	0.0292	99.9%	37.7
2	8400151	07-Apr-14	14-Apr-14	4.6736	4.2849	0.3887	65228.1	65061.7	9981.0	10,659,798	0.0365	99.0%	37.7
3	8400146	14-Apr-14	21-Apr-14	4.7082	4.3398	0.3684	65397.1	65228.1	10142.4	10,832,174	0.0340	100.6%	37.7
4	8400140	21-Apr-14	28-Apr-14	4.8015	4.3331	0.4684	65564.4	65397.1	10036.2	10,718,752	0.0437	99.6%	37.7
5	8400133	28-Apr-14	05-May-14	4.5305	4.2645	0.2660	65733.1	65564.4	10121.4	10,809,746	0.0246	100.4%	37.7
6	8400129	05-May-14	12-May-14	4.7203	4.2497	0.4706	65899.6	65733.1	9995.4	10,520,562	0.0447	99.2%	37.2
7	8400121	12-May-14	19-May-14	4.4577	4.1937	0.2640	66068.2	65899.6	10113.6	10,644,972	0.0248	100.3%	37.2
8	8400116	19-May-14	26-May-14	4.7318	4.2443	0.4875	66260.2	66068.2	11519.4	12,124,633	0.0402	114.3%	37.2
9	8400110	26-May-14	02-Jun-14	4.5476	4.2523	0.2953	66405.4	66260.2	8711.4	9,169,100	0.0322	86.4%	37.2
10	8400103	02-Jun-14	09-Jun-14	4.5685	4.2733	0.2952	66571.4	66405.4	9961.2	10,235,181	0.0288	98.8%	36.3
11	8951298	09-Jun-14	16-Jun-14	4.9192	4.5293	0.3899	66739.4	66571.4	10077.6	10,354,783	0.0377	100.0%	36.3
12	8951291	16-Jun-14	23-Jun-14	5.2519	4.5034	0.7485	66932.0	66739.4	11556.6	11,874,462	0.0630	114.6%	36.3
13	8951285	23-Jun-14	30-Jun-14	4.7890	4.4948	0.2942	67075.4	66932.0	8605.2	8,841,885	0.0333	85.4%	36.3
	Totals	91	2184.0	4.714738	4.32626	0.3885			130887	137,536,199	0.0364	99.9%	37.1

BHV-4 on stream % 99.8% **BHV-4** Total Volume: 4.85E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400157	31-Mar-14	07-Apr-14	4.5233	4.3132	0.2101	40283.2	40116.1	10025.4	10,707,217	0.0196	99.5%	37.7
2	8400152	07-Apr-14	14-Apr-14	4.4959	4.3393	0.1566	40448.5	40283.2	9920.4	10,595,076	0.0148	98.4%	37.7
3	8400145	14-Apr-14	21-Apr-14	4.4564	4.3082	0.1482	40616.8	40448.5	10097.4	10,784,114	0.0137	100.2%	37.7
4	8400139	21-Apr-14	28-Apr-14	4.6815	4.3499	0.3316	40784.0	40616.8	10032.6	10,714,907	0.0309	99.5%	37.7
5	8400134	28-Apr-14	05-May-14	4.4871	4.2187	0.2684	40952.7	40784.0	10121.4	10,809,746	0.0248	100.4%	37.7
6	8400127	05-May-14	12-May-14	4.4879	4.2615	0.2264	41119.5	40952.7	10005.6	10,531,298	0.0215	99.3%	37.2
7	8400122	12-May-14	19-May-14	4.4076	4.2468	0.1608	41287.9	41119.5	10103.4	10,634,236	0.0151	100.2%	37.2
8	8400115	19-May-14	26-May-14	4.4733	4.2211	0.2522	41480.0	41287.9	11525.4	12,130,949	0.0208	114.3%	37.2
9	8400109	26-May-14	02-Jun-14	4.3529	4.2575	0.0954	41623.7	41480.0	8622.6	9,075,634	0.0105	85.5%	37.2
10	8400104	02-Jun-14	09-Jun-14	4.2784	4.2379	0.0405	41790.7	41623.7	10018.2	10,293,749	0.0039	99.4%	36.3
11	8951297	09-Jun-14	16-Jun-14	4.6324	4.5053	0.1271	41958.5	41790.7	10072.2	10,349,234	0.0123	99.9%	36.3
12	8951292	16-Jun-14	23-Jun-14	4.9105	4.4993	0.4112	42151.3	41958.5	11567.4	11,885,559	0.0346	114.8%	36.3
13	8951284	23-Jun-14	30-Jun-14	4.6131	4.4796	0.1335	42296.3	42151.3	8698.2	8,937,443	0.0149	86.3%	36.3
	Totals	91	2184.0	4.5231	4.32602	0.1971			130810.2	137,449,163	0.0183	99.8%	37.1

BHV-5 on stream % 94.3% **BHV-5** Total Volume: 4.58E+06

Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400156	31-Mar-14	07-Apr-14	4.5511	4.3099	0.2412	64090.2	63922.7	10050.6	10,734,131	0.0225	99.7%	37.7
2	8400153	07-Apr-14	14-Apr-14	4.5757	4.3419	0.2338	64255.4	64090.2	9912.0	10,586,105	0.0221	98.3%	37.7
3	8400144	14-Apr-14	21-Apr-14	4.4912	4.3236	0.1676	64423.8	64255.4	10102.2	10,789,240	0.0155	100.2%	37.7
4	8400138	21-Apr-14	28-Apr-14	4.7322	4.3297	0.4025	64591.0	64423.8	10033.8	10,716,189	0.0376	99.5%	37.7
5	8400135	28-Apr-14	05-May-14	4.6506	4.2623	0.3883	64759.8	64591.0	10128.6	10,817,436	0.0359	100.5%	37.7
6	8400126	05-May-14	12-May-14	4.7119	4.2860	0.4259	64926.4	64759.8	9997.8	10,523,088	0.0405	99.2%	37.2
7	8400123	12-May-14	19-May-14	4.4569	4.2558	0.2011	65094.8	64926.4	10105.2	10,636,131	0.0189	100.2%	37.2
8	8400114	19-May-14	26-May-14	4.5856	4.2085	0.3771	65286.5	65094.8	11502.0	12,106,319	0.0311	114.1%	37.2
9	8400108	26-May-14	02-Jun-14	4.4289	4.2320	0.1969	65309.6	65286.5	1386.0	1,458,821	0.1350	13.7%	37.2
10	8400105	02-Jun-14	09-Jun-14	4.5284	4.2599	0.2685	65476.5	65309.6	10012.8	10,288,200	0.0261	99.3%	36.3
11	8951296	09-Jun-14	16-Jun-14	4.8025	4.5117	0.2908	65644.0	65476.5	10050.0	10,326,424	0.0282	99.7%	36.3
12	8951293	16-Jun-14	23-Jun-14	5.0595	4.4744	0.5851	65836.8	65644.0	11567.4	11,885,559	0.0492	114.8%	36.3
13	8951283	23-Jun-14	30-Jun-14	4.7259	4.5147	0.2112	65981.8	65836.8	8697.6	8,936,826	0.0236	86.3%	36.3
	Totals	91	2184.0	4.638492	4.33157	0.3069			123546	129,804,469	0.0374	94.3%	37.1

Period: March 31, 2014 through , July 2, 2014 (2nd Quarter 2014)

BHV-6 on stream % 99.8%

BHV-6 Total Volume: 4.85E+06

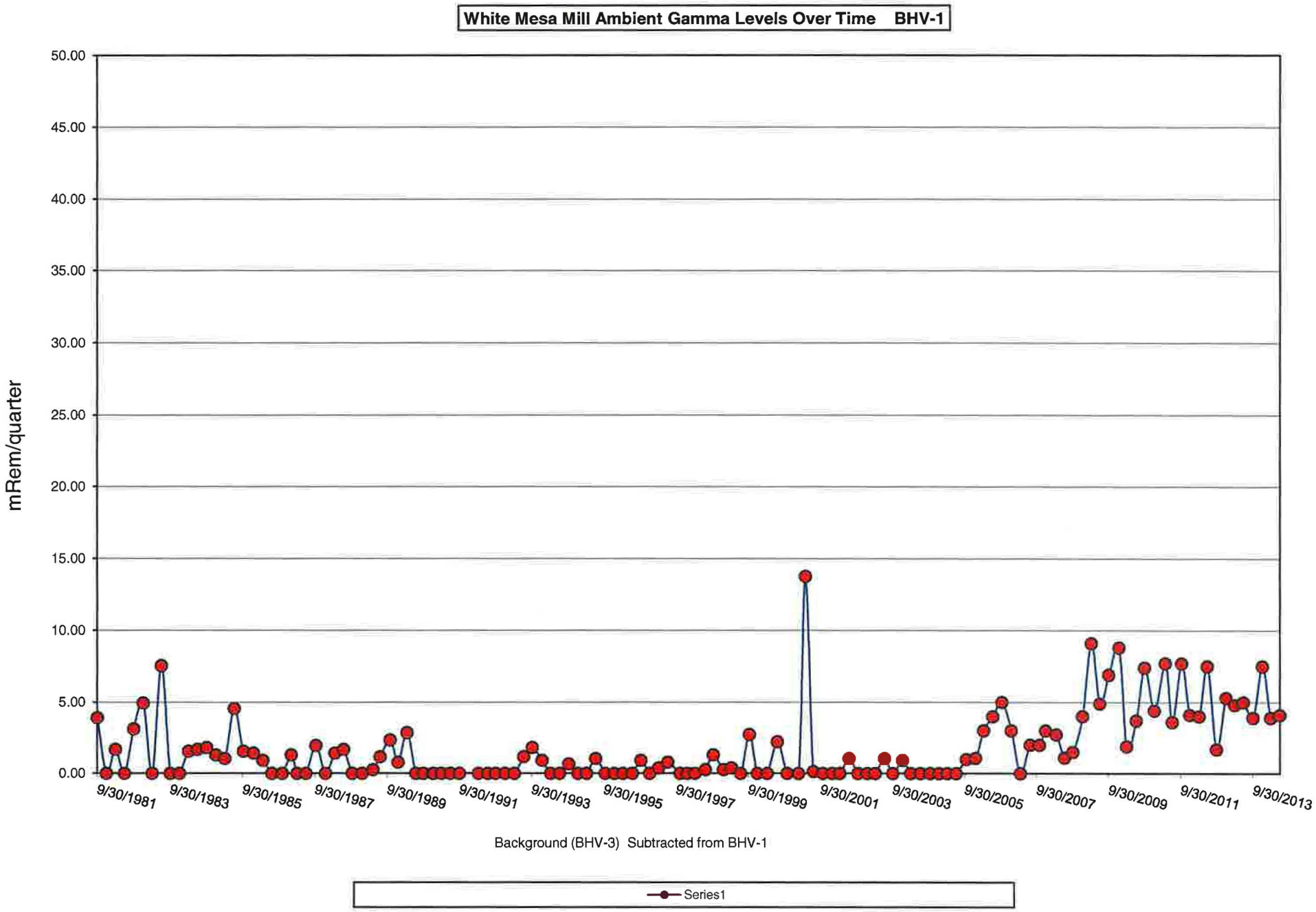
Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400155	31-Mar-14	07-Apr-14	4.5391	4.2920	0.2471	12485.2	12318.1	10026.6	10,708,499	0.0231	99.5%	37.7
2	8400154	07-Apr-14	14-Apr-14	4.4706	4.2914	0.1792	12652.2	12485.2	10020.0	10,701,450	0.0167	99.4%	37.7
3	8400143	14-Apr-14	21-Apr-14	4.5014	4.3430	0.1584	164.1	0.0	9844.8	10,514,335	0.0151	97.7%	37.7
4	8400137	21-Apr-14	28-Apr-14	4.5892	4.2897	0.2995	331.3	164.1	10032.6	10,714,907	0.0280	99.5%	37.7
5	8400136	28-Apr-14	05-May-14	4.5218	4.2683	0.2535	500.0	331.3	10124.4	10,812,950	0.0234	100.4%	37.7
6	8400125	05-May-14	12-May-14	4.5757	4.2441	0.3316	666.7	500.0	10002.0	10,527,509	0.0315	99.2%	37.2
7	8400124	12-May-14	19-May-14	4.3878	4.2126	0.1752	835.2	666.7	10105.8	10,636,762	0.0165	100.3%	37.2
8	8400113	19-May-14	26-May-14	4.5858	4.2617	0.3241	1027.2	835.2	11524.2	12,129,685	0.0267	114.3%	37.2
9	8400107	26-May-14	02-Jun-14	4.4341	4.2544	0.1797	1171.1	1027.2	8630.4	9,083,844	0.0198	85.6%	37.2
10	8400106	02-Jun-14	09-Jun-14	4.4956	4.2648	0.2308	1338.0	1171.1	10014.0	10,289,433	0.0224	99.3%	36.3
11	8951295	09-Jun-14	16-Jun-14	4.8099	4.5055	0.3044	1505.8	1338.0	10071.0	10,348,001	0.0294	99.9%	36.3
12	8951288	16-Jun-14	23-Jun-14	4.9500	4.5046	0.4454	1698.4	1505.8	11557.2	11,875,079	0.0375	114.7%	36.3
13	8951282	23-Jun-14	30-Jun-14	4.6910	4.5023	0.1887	1845.7	1698.4	8834.4	9,077,389	0.0208	87.6%	36.3
	Totals	91	2184.0	4.580923	4.32572	0.2552			130787.4	137,419,844	0.0239	99.8%	37.1

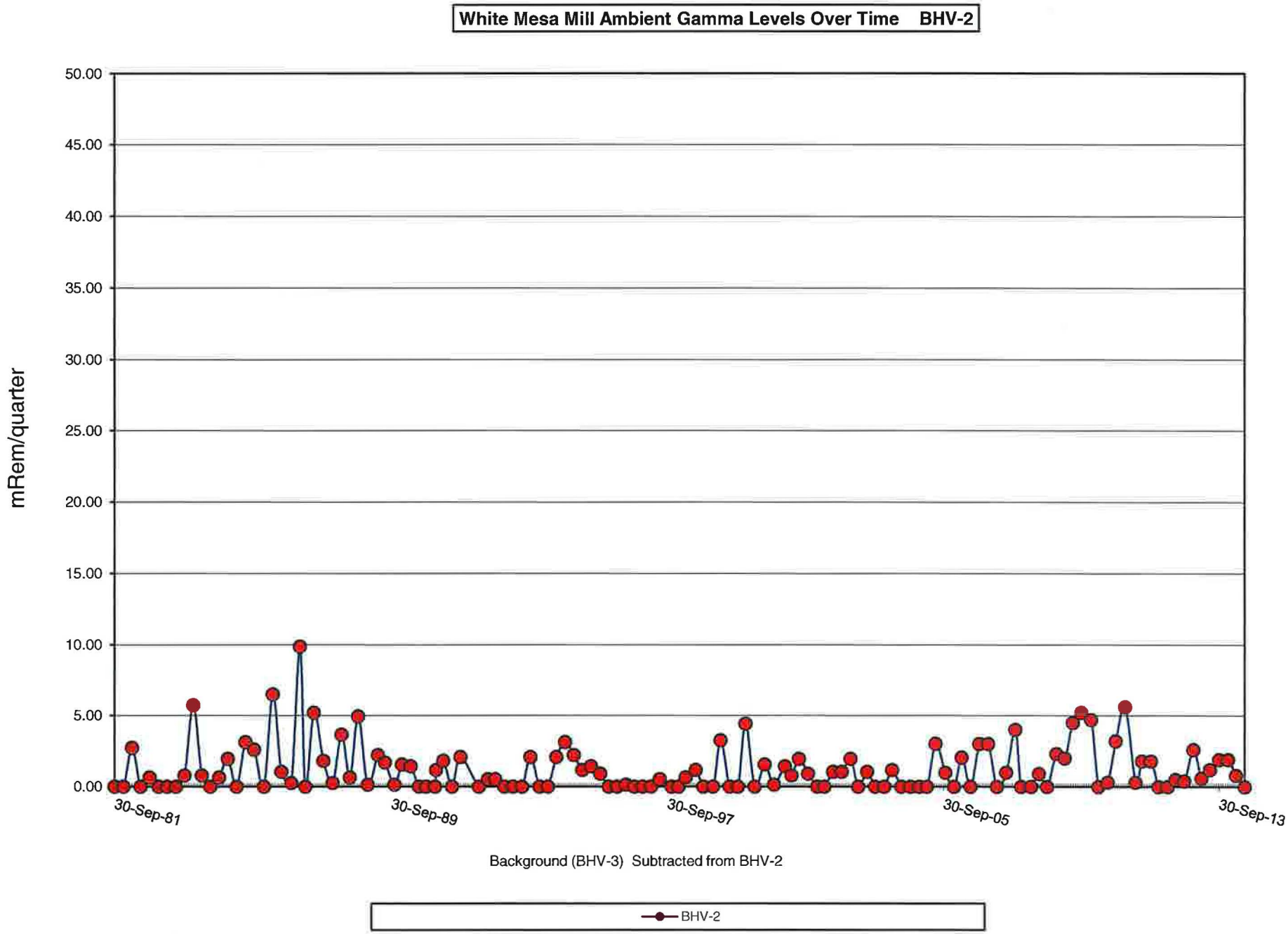
ALL BHV on stream % 98.5%

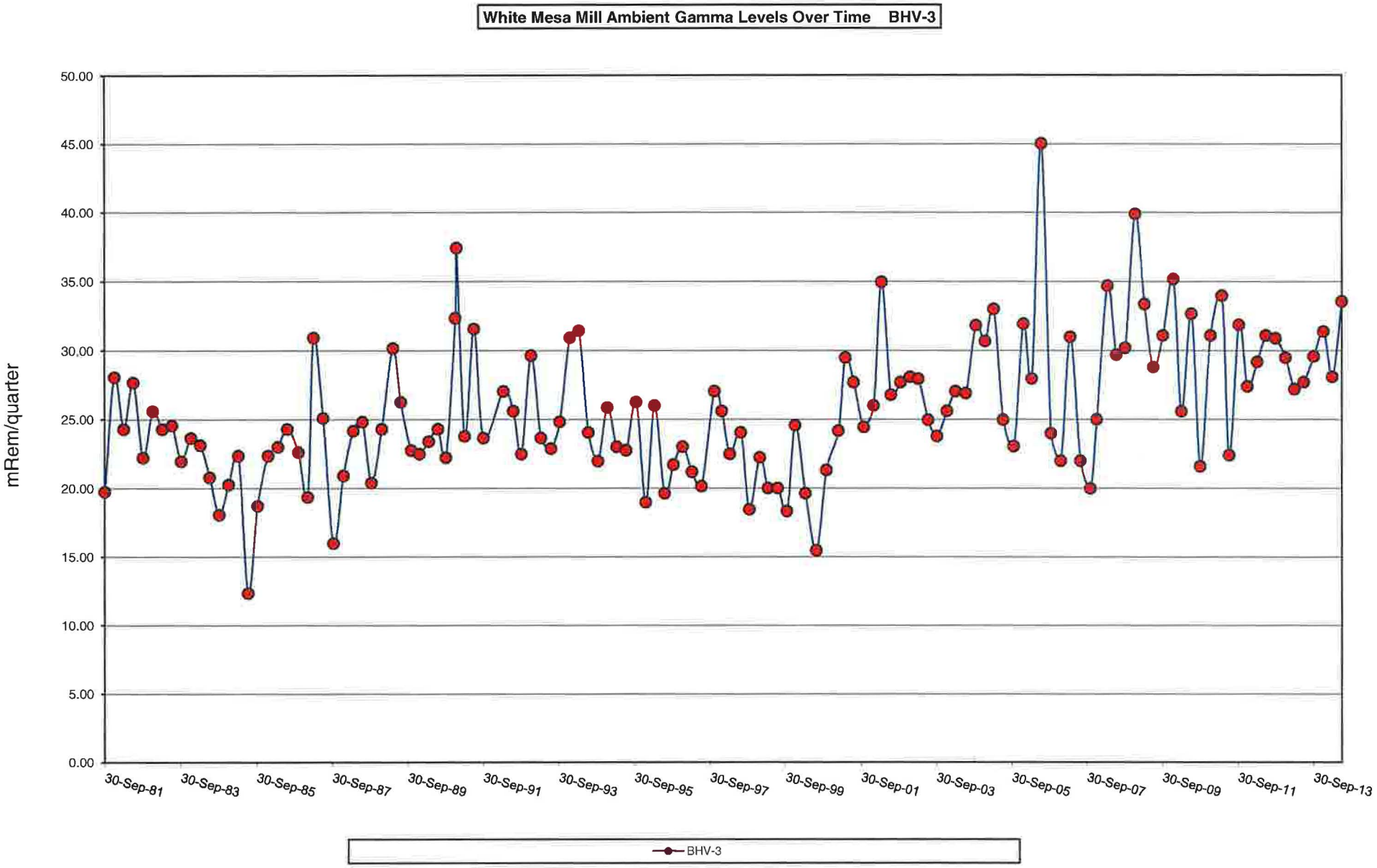
Week #	Blanks	Start Date	Stop Date	Net
1	8400149	31-Mar-14	07-Apr-14	4.3292
2	8400148	07-Apr-14	14-Apr-14	4.3029
3	8400142	14-Apr-14	21-Apr-14	4.3273
4	8400131	21-Apr-14	28-Apr-14	4.2278
5	8400130	28-Apr-14	05-May-14	4.2608
6	8400119	05-May-14	12-May-14	4.2455
7	8400118	12-May-14	19-May-14	4.1979
8	8400112	19-May-14	26-May-14	4.2549
9	8400101	26-May-14	02-Jun-14	4.2409
10	8951300	02-Jun-14	09-Jun-14	4.5127
11	8951289	09-Jun-14	16-Jun-14	4.5030
12	8951287	16-Jun-14	23-Jun-14	4.4919
13	8951276	23-Jun-14	30-Jun-14	4.5445
	Totals	91	2184.0	4.3415

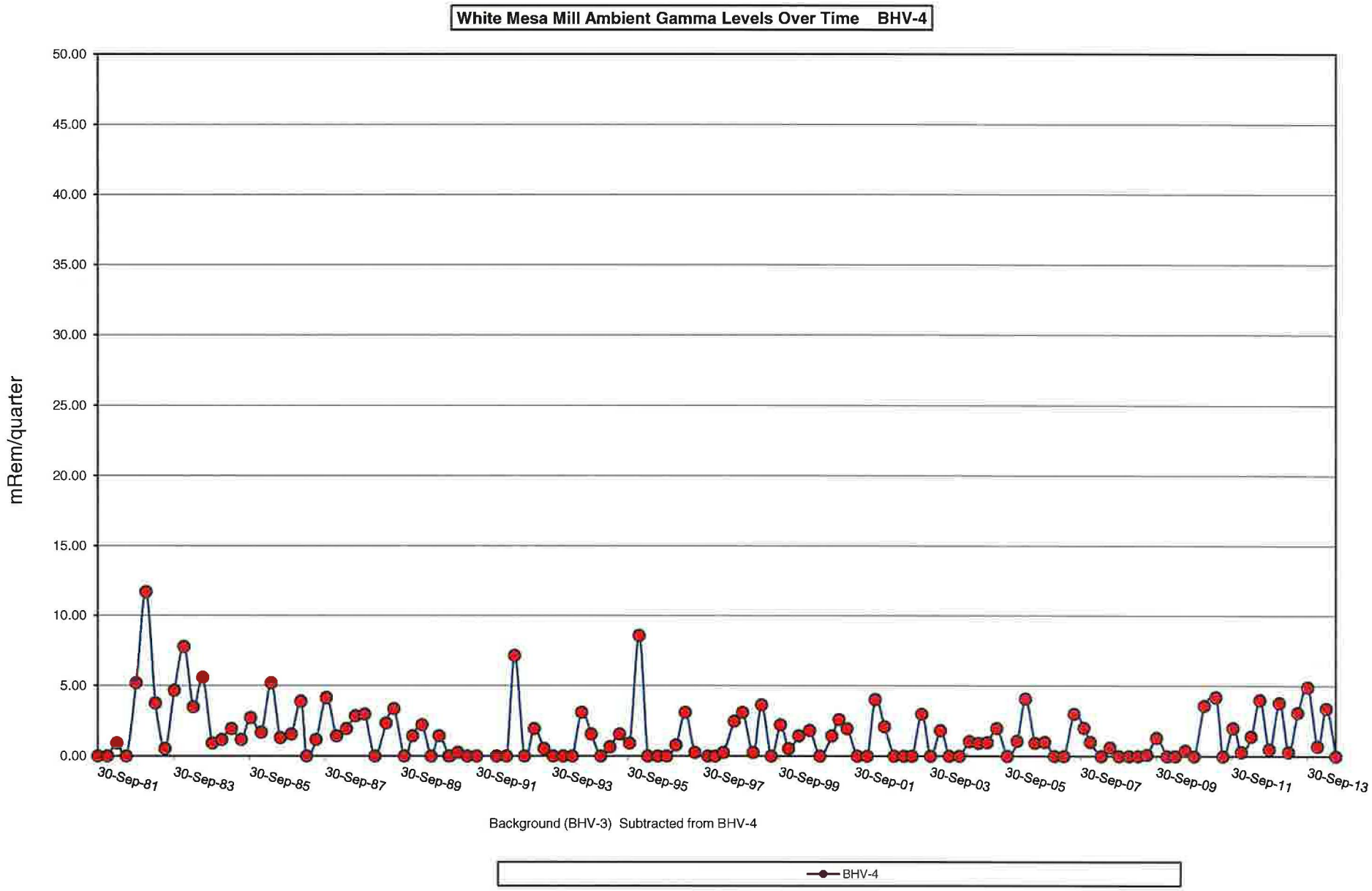
ATTACHMENT E

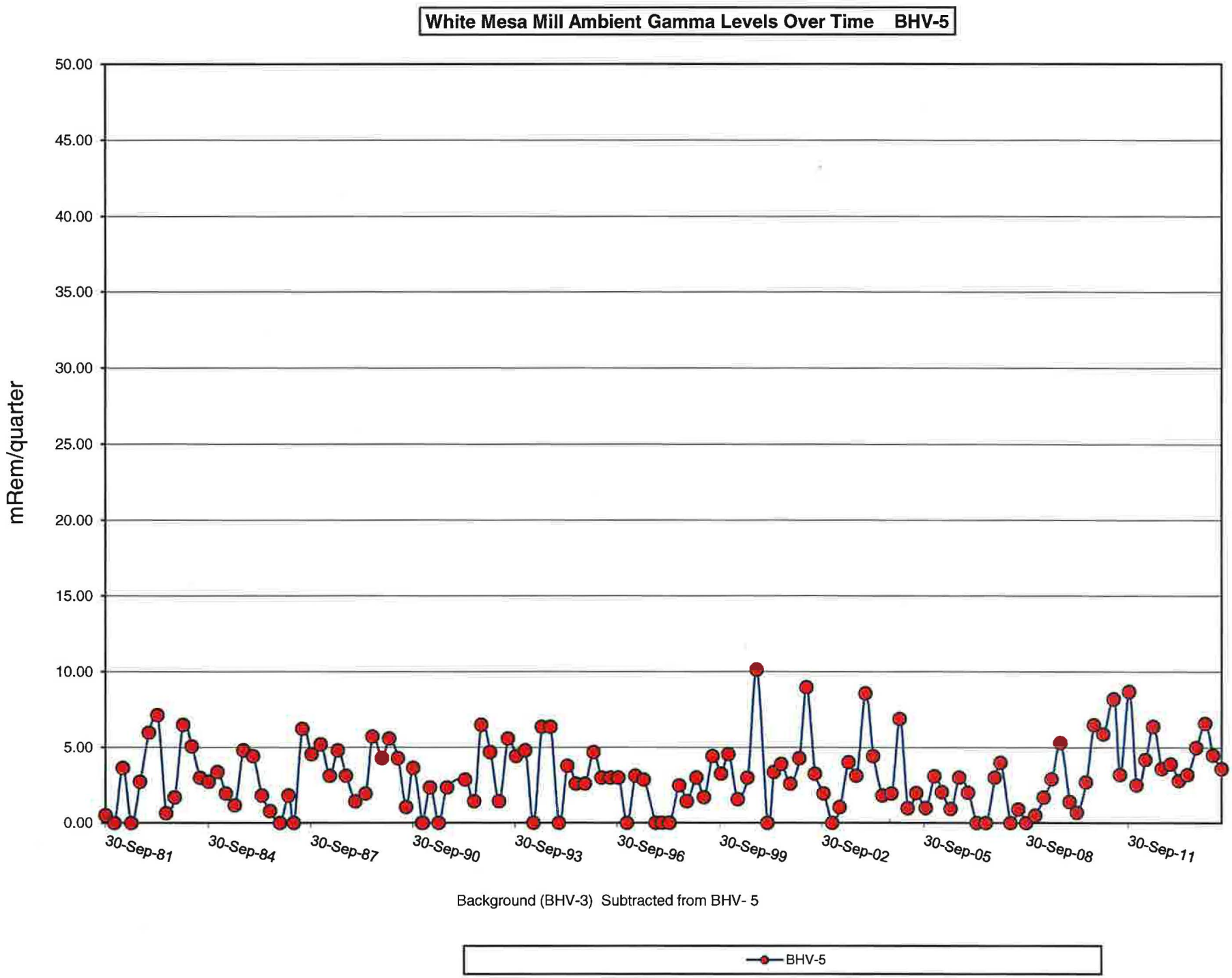
ENVIRONMENTAL GAMMA GRAPHS AND SUPPORTING DATA

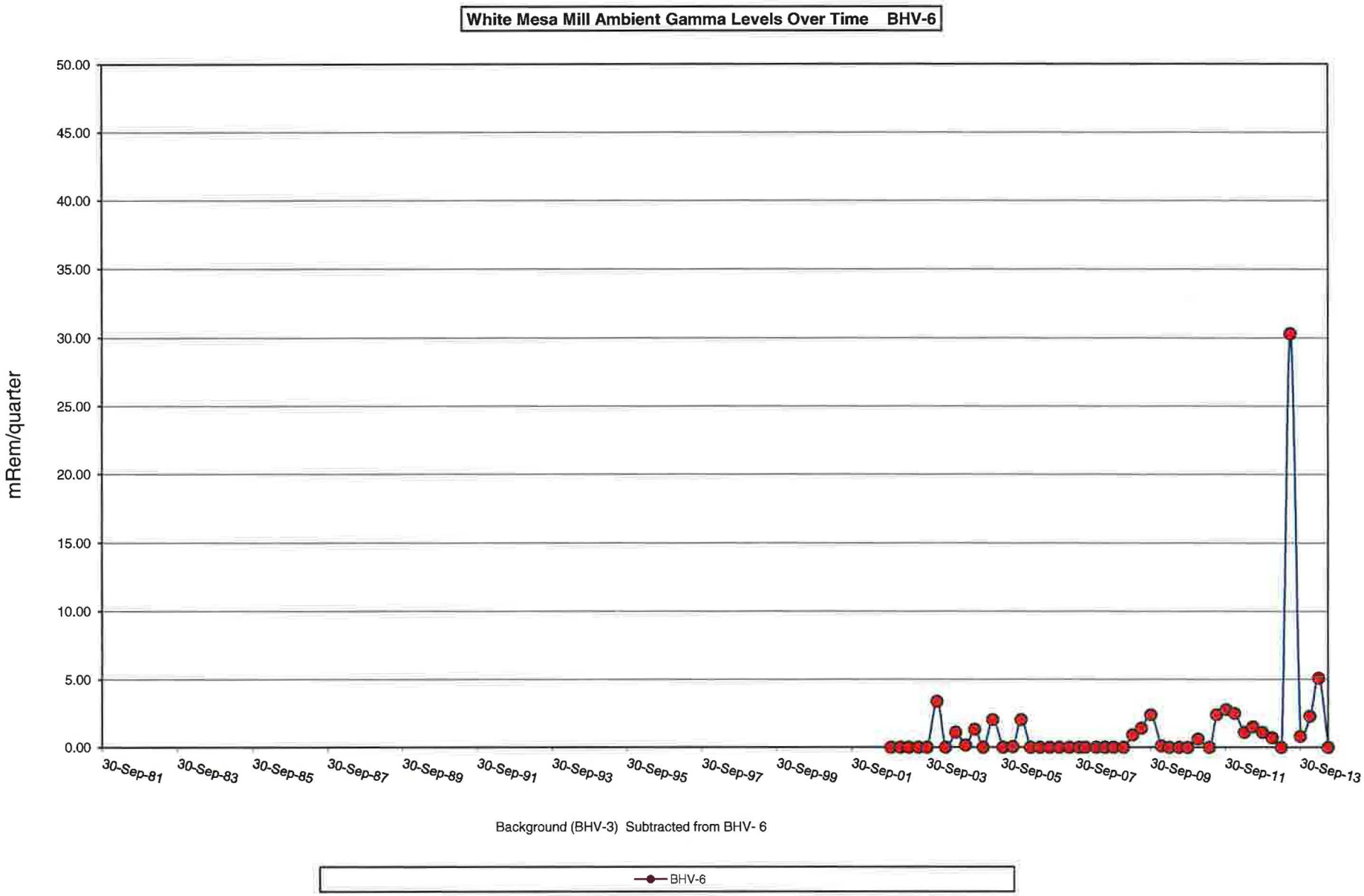

White Mesa Mill Ambient Gamma Levels Over Time BHV-1
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
9/30/1981
9/30/1983
9/30/1985
9/30/1987
9/30/1989
9/30/1991
9/30/1993
9/30/1995
9/30/1997
9/30/1999
9/30/2001
9/30/2003
9/30/2005
9/30/2007
9/30/2009
9/30/2011
9/30/2013
Background (BHV-3) Subtracted from BHV-1
Series1


White Mesa Mill Ambient Gamma Levels Over Time BHV-2
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
30-Sep-81
30-Sep-89
30-Sep-97
30-Sep-05
30-Sep-13
Background (BHV-3) Subtracted from BHV-2
BHV-2


White Mesa Mill Ambient Gamma Levels Over Time BHV-3
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
30-Sep-81
30-Sep-83
30-Sep-85
30-Sep-87
30-Sep-89
30-Sep-91
30-Sep-93
30-Sep-95
30-Sep-97
30-Sep-99
30-Sep-01
30-Sep-03
30-Sep-05
30-Sep-07
30-Sep-09
30-Sep-11
30-Sep-13
BHV-3


White Mesa Mill Ambient Gamma Levels Over Time BHV-4
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
30-Sep-81
30-Sep-83
30-Sep-85
30-Sep-87
30-Sep-89
30-Sep-91
30-Sep-93
30-Sep-95
30-Sep-97
30-Sep-99
30-Sep-01
30-Sep-03
30-Sep-05
30-Sep-07
30-Sep-09
30-Sep-11
30-Sep-13
Background (BHV-3) Subtracted from BHV-4
BHV-4


White Mesa Mill Ambient Gamma Levels Over Time BHV-5
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
30-Sep-81
30-Sep-84
30-Sep-87
30-Sep-90
30-Sep-93
30-Sep-96
30-Sep-99
30-Sep-02
30-Sep-05
30-Sep-08
30-Sep-11
Background (BHV-3) Subtracted from BHV- 5
BHV-5


White Mesa Mill Ambient Gamma Levels Over Time BHV-6
mRem/quarter
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
30-Sep-81
30-Sep-83
30-Sep-85
30-Sep-87
30-Sep-89
30-Sep-91
30-Sep-93
30-Sep-95
30-Sep-97
30-Sep-99
30-Sep-01
30-Sep-03
30-Sep-05
30-Sep-07
30-Sep-09
30-Sep-11
30-Sep-13
Background (BHV-3) Subtracted from BHV- 6
BHV-6

White Mesa Mill First Quarter 2014 Environmental Spherical Gamma Monitor Results

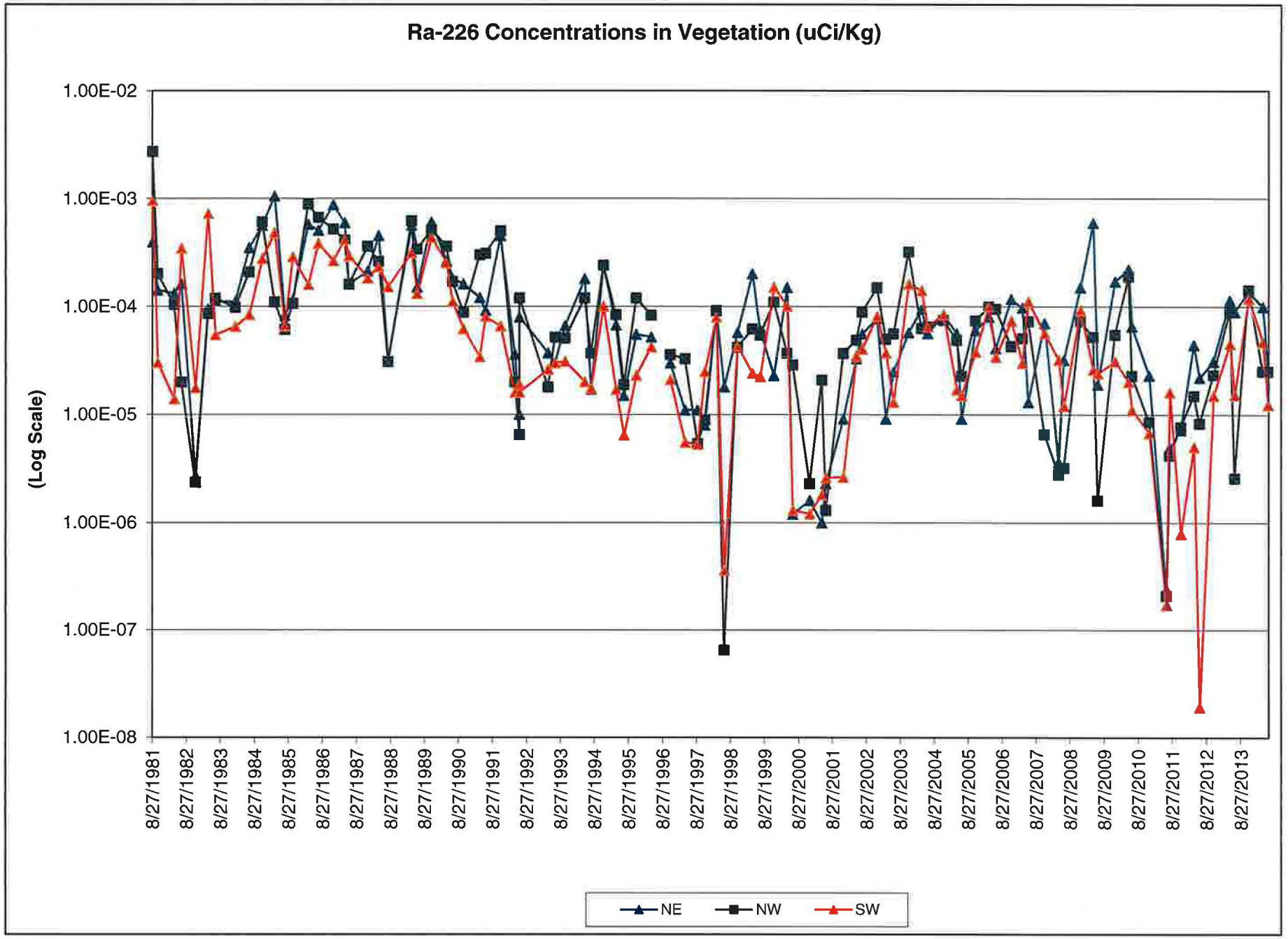
Badge Number	Location	Date Issued	Date Returned	Total Days Badge at WMM	Mean Ambient Dose Equivalent	mRem / hour	mRem / Day	mRem / Week
Control	Administration Vault	1/2/2014	3/27/2014	84	36.5	0.02	0.435	3.04
1	V2O5 Control Room	1/2/2014	3/27/2014	84	44.1	0.02	0.525	3.68
2	BHV-6	1/2/2014	3/27/2014	84	33.2	0.02	0.395	2.77
3	Ore Stor. - Barrel Area	1/2/2014	3/27/2014	84	461.5	0.23	5.494	38.46
4	Vanadium Precip.Area	1/2/2014	3/27/2014	84		0.00	0.000	0.00
5	Yellowcake Drying Area	1/2/2014	3/27/2014	84	283.1	0.14	3.370	23.59
6	Leach	1/2/2014	3/27/2014	84	125.3	0.06	1.492	10.44
7	SAG Mill Control Room	1/2/2014	3/27/2014	84	322.6	0.16	3.840	26.88
8	Yellowcake Precip.	1/2/2014	3/27/2014	84	0	0.00	0.000	0.00
9	Central Control Room	1/2/2014	3/27/2014	84	70.6	0.04	0.840	5.88
10	Trommel Screen (ore pad)	1/2/2014	3/27/2014	84	113	0.06	1.345	9.42
11	North East Corner Ore Pad	1/2/2014	3/27/2014	84	295.3	0.15	3.515	24.61
12	Met. Lab	1/2/2014	3/27/2014	84	87.3	0.04	1.039	7.28
13	Filter Press Room	1/2/2014	3/27/2014	84	152.7	0.08	1.818	12.73
14	BHV-1	1/2/2014	3/27/2014	84	32	0.02	0.381	2.67
15	BHV-2	1/2/2014	3/27/2014	84	28.9	0.01	0.344	2.41
16	BHV-3	1/2/2014	3/27/2014	84	28.1	0.01	0.335	2.34
17	BHV-4	1/2/2014	3/27/2014	84	31.5	0.02	0.375	2.63
18	BHV-5	1/2/2014	3/27/2014	84	32.6	0.02	0.388	2.72
19	SAG Mill	1/2/2014	3/27/2014	84	314.9	0.16	3.749	26.24
20	Tails	1/2/2014	3/27/2014	84	56.8	0.03	0.676	4.73
21	CCD	1/2/2014	3/27/2014	84	70.1	0.03	0.835	5.84
22	North SX	1/2/2014	3/27/2014	84	50.8	0.03	0.605	4.23
23	Administration Building	1/2/2014	3/27/2014	84	37.8	0.02	0.450	3.15
24	Admin Parking Lot	1/2/2014	3/27/2014	84	77.2	0.04	0.919	6.43
25	Yellowcake Packaging	1/2/2014	3/27/2014	84	0	0.00	0.000	0.00
26	Yellowcake Storage	1/2/2014	3/27/2014	84	0	0.00	0.000	0.00
27	Bucking Room	1/2/2014	3/27/2014	84	160.1	0.08	1.906	13.34
28	Mill Lunch Room	1/2/2014	3/27/2014	84	55.5	0.03	0.661	4.63
29	South SX	1/2/2014	3/27/2014	84	97.8	0.05	1.164	8.15
30	Mtce. Super.'s Office	1/2/2014	3/27/2014	84	46.9	0.02	0.558	3.91
31	Ore Feed Grizzly	1/2/2014	3/27/2014	84	342.8	0.17	4.081	28.57
32	Scalehouse	1/2/2014	3/27/2014	84	183.7	0.09	2.187	15.31
33	Sample Plant (OBS)	1/2/2014	3/27/2014	84	180.5	0.09	2.149	15.04
34	Front Gate	1/2/2014	3/27/2014	84	179	0.09	2.131	14.92
45	AF - Barrel Dump Station	1/2/2014	3/27/2014	84	0	0.00	0.000	0.00
46	AF Circuit - South	1/2/2014	3/27/2014	84	86.8	0.04	1.033	7.23
47	AF Circuit - North	1/2/2014	3/27/2014	84	114.5	0.06	1.363	9.54
51	North Control # 1	1/2/2014	3/27/2014	84		0.00	0.000	0.00
52	North Control # 2	1/2/2014	3/27/2014	84	32.3	0.02	0.385	2.69
53	CaF2 Barrel Dump Station - Operator Station	1/2/2014	3/27/2014	84	0	0.00	0.000	0.00
64	KF Barrel Dump Station	1/2/2014	3/27/2014	84	107.3	0.05	1.277	8.94

White Mesa Mill Second Quarter 2014 Environmental Spherical Gamma Monitor Results

Badge Number	Location	Date Issued	Date Returned	Total Days Badge at WMM	Ambient Dose Equivalent	mRem / hour	mRem / Day	mRem / Week
Control	Administration Vault	3/27/2014	6/27/2014	92	35.3	0.02	0.384	2.69
1	V2O5 Control Room	3/27/2014	6/27/2014	92	51.4	0.02	0.559	3.91
2	BHV-6	3/27/2014	6/27/2014	92	31.1	0.01	0.338	2.37
3	Ore Stor. - Barrel Area	3/27/2014	6/27/2014	92	508.1	0.23	5.523	38.66
4	Vanadium Precip.Area	3/27/2014	6/27/2014	92	116.7	0.05	1.268	8.88
5	Yellowcake Drying Area	3/27/2014	6/27/2014	92	0	0.00	0.000	0.00
6	Leach	3/27/2014	6/27/2014	92	165.2	0.07	1.796	12.57
7	SAG Mill Control Room	3/27/2014	6/27/2014	92	359.9	0.16	3.912	27.38
8	Yellowcake Precip.	3/27/2014	6/27/2014	92	0	0.00	0.000	0.00
9	Central Control Room	3/27/2014	6/27/2014	92	86.9	0.04	0.945	6.61
10	Ore pad - decontamination pad	3/27/2014	6/27/2014	92	117.4	0.05	1.276	8.93
11	North East Corner Ore Pad	3/27/2014	6/27/2014	92	379.9	0.17	4.129	28.91
12	Met. Lab	3/27/2014	6/27/2014	92	93.9	0.04	1.021	7.14
13	Filter Press Room	3/27/2014	6/27/2014	92	179.6	0.08	1.952	13.67
14	BHV-1	3/27/2014	6/27/2014	92	37.7	0.02	0.410	2.87
15	BHV-2	3/27/2014	6/27/2014	92	30.8	0.01	0.335	2.34
16	BHV-3	3/27/2014	6/27/2014	92	33.6	0.02	0.365	2.56
17	BHV-4	3/27/2014	6/27/2014	92	32	0.01	0.348	2.43
18	BHV-5	3/27/2014	6/27/2014	92	37.2	0.02	0.404	2.83
19	SAG Mill	3/27/2014	6/27/2014	92	354.4	0.16	3.852	26.97
20	Tails	3/27/2014	6/27/2014	92	63.1	0.03	0.686	4.80
21	CCD	3/27/2014	6/27/2014	92	82.5	0.04	0.897	6.28
22	North SX	3/27/2014	6/27/2014	92	49.7	0.02	0.540	3.78
23	Administration Building	3/27/2014	6/27/2014	92	40.9	0.02	0.445	3.11
24	Admin Parking Lot	3/27/2014	6/27/2014	92	92.8	0.04	1.009	7.06
25	Yellowcake Packaging	3/27/2014	6/27/2014	92	0	0.00	0.000	0.00
26	Yellowcake Storage	3/27/2014	6/27/2014	92	0	0.00	0.000	0.00
27	Bucking Room	3/27/2014	6/27/2014	92	138.7	0.06	1.508	10.55
28	Mill Lunch Room	3/27/2014	6/27/2014	92	66.1	0.03	0.718	5.03
29	South SX	3/27/2014	6/27/2014	92	110.1	0.05	1.197	8.38
30	Mtce. Super.'s Office	3/27/2014	6/27/2014	92	48.7	0.02	0.529	3.71
31	Ore Feed Grizzly	3/27/2014	6/27/2014	92	389.1	0.18	4.229	29.61
32	Scalehouse	3/27/2014	6/27/2014	92	217	0.10	2.359	16.51
33	Sample Plant (OBS)	3/27/2014	6/27/2014	92	260.7	0.12	2.834	19.84
34	Front Gate	3/27/2014	6/27/2014	92	218.7	0.10	2.377	16.64
45	AF - Barrel Dump Station	3/27/2014	6/27/2014	92	0	0.00	0.000	0.00
46	AF Circuit - South	3/27/2014	6/27/2014	92	0	0.00	0.000	0.00
47	AF Circuit - North	3/27/2014	6/27/2014	92	0	0.00	0.000	0.00
51	North Control # 1	3/27/2014	6/27/2014	92	38.7	0.02	0.421	2.94
52	North Control # 2	3/27/2014	6/27/2014	92	31.2	0.01	0.339	2.37
53	CaF_2 Barrel Dump Station - Operator Station	3/27/2014	6/27/2014	92	0	0.00	0.000	0.00
64	KF Barrel Dump Station	3/27/2014	6/27/2014	92	271.6	0.12	2.952	20.67

ATTACHMENT F

VEGETATION GRAPHS, DATA TABLE, LABORATORY RESULTS AND QA/QC


Ra-226 Concentrations in Vegetation (uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
8/27/1981
8/27/1982
8/27/1983
8/27/1984
8/27/1985
8/27/1986
8/27/1987
8/27/1988
8/27/1989
8/27/1990
8/27/1991
8/27/1992
8/27/1993
8/27/1994
8/27/1995
8/27/1996
8/27/1997
8/27/1998
8/27/1999
8/27/2000
8/27/2001
8/27/2002
8/27/2003
8/27/2004
8/27/2005
8/27/2006
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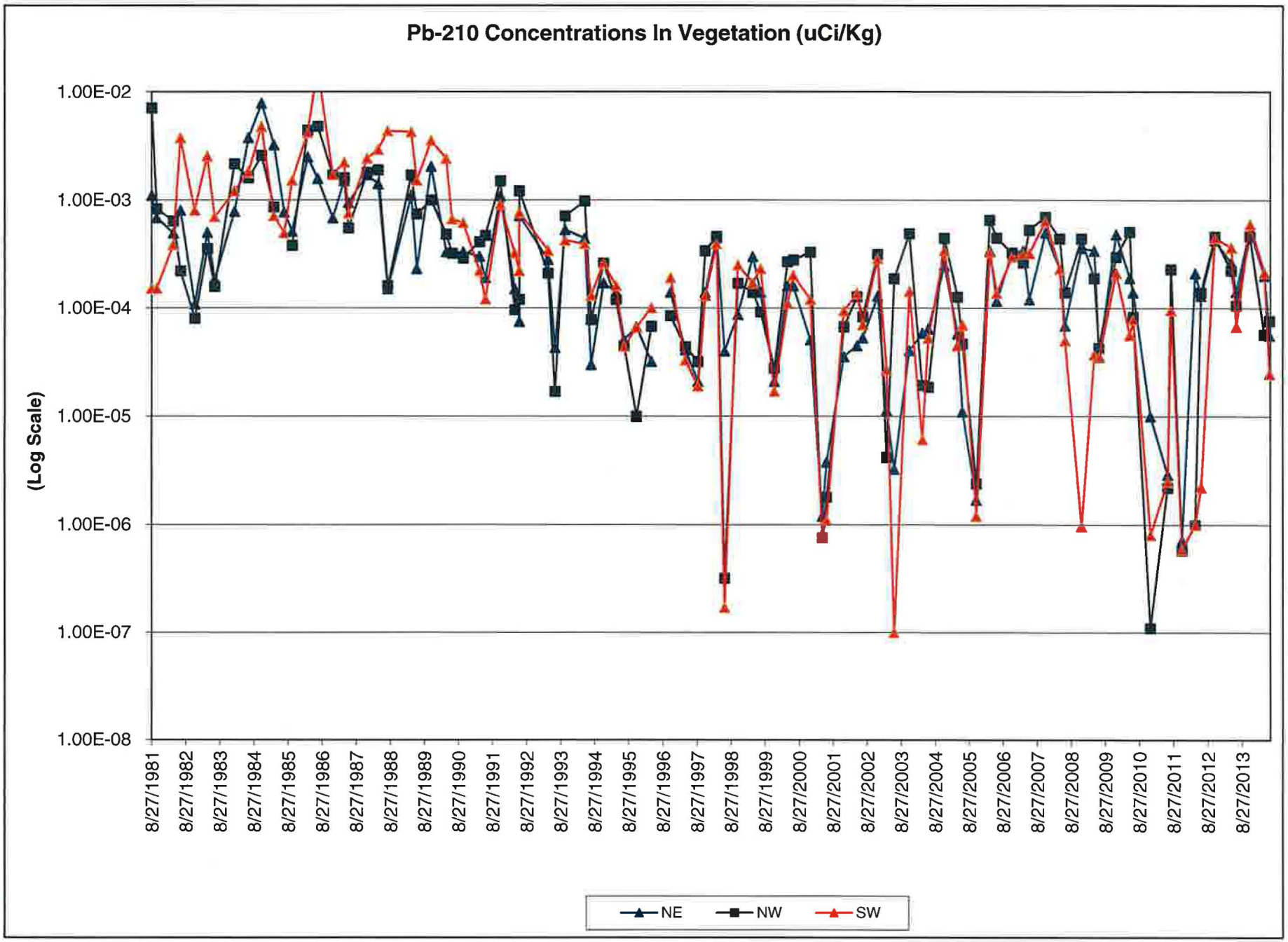
8/27/2010
8/27/2011
8/27/2012
8/27/2013
NE
NW
SW


Pb-210 Concentrations In Vegetation (uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
8/27/1981
8/27/1982
8/27/1983
8/27/1984
8/27/1985
8/27/1986
8/27/1987
8/27/1988
8/27/1989
8/27/1990
8/27/1991
8/27/1992
8/27/1993
8/27/1994
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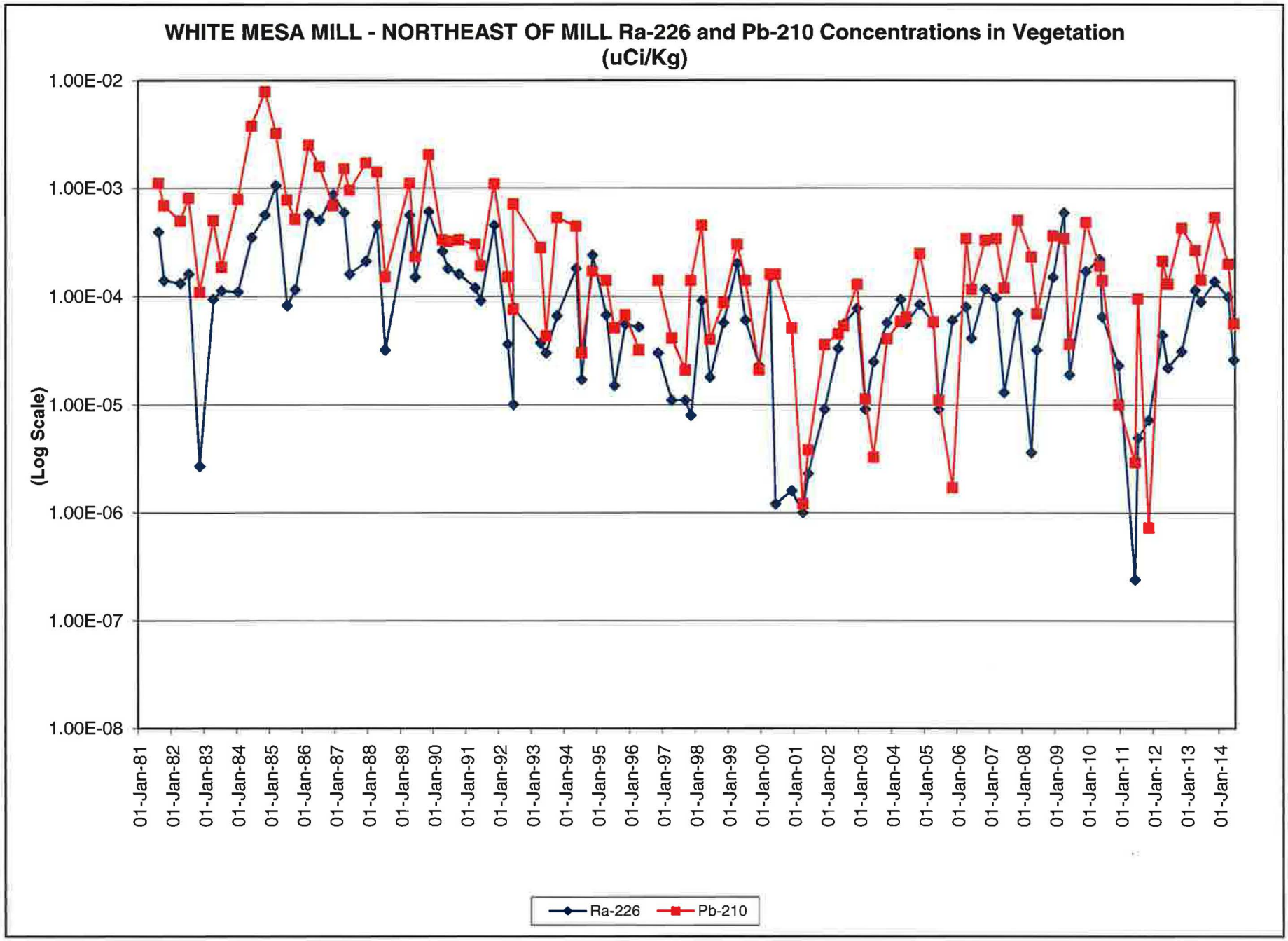
8/27/1998
8/27/1999
8/27/2000
8/27/2001
8/27/2002
8/27/2003
8/27/2004
8/27/2005
8/27/2006
8/27/2007
8/27/2008
8/27/2009
8/27/2010
8/27/2011
8/27/2012
8/27/2013
NE
NW
SW

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHEAST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	LLD	Pb-210	Pb-210	LLD
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (1.0E-06)
3rd '81	27-Aug-81	3.90E-04	1.00E-05	5.00E-08	1.10E-03	1.00E-04	1.00E-06
4th '81	20-Oct-81	1.40E-04	1.00E-05	5.00E-08	6.80E-04	8.00E-05	1.00E-06
2nd '82	15-Apr-82	1.31E-04	1.30E-05	1.00E-06	4.90E-04	7.00E-05	8.00E-05
3rd '82	01-Jul-82	1.60E-04	1.00E-05	5.00E-08	8.00E-04	1.70E-04	1.00E-07
4th '82	30-Nov-82	2.67E-06	1.07E-06	1.00E-06	1.08E-04	9.00E-06	1.00E-05
2nd '83	13-Apr-83	9.36E-05	6.20E-06	8.00E-09	4.97E-04	9.30E-05	1.00E-04
3rd '83	01-Jul-83	1.12E-04	1.20E-05	6.00E-06	1.84E-04	1.20E-05	1.00E-06
4th '83	30-Jan-84	1.09E-04	8.00E-06	4.00E-06	7.80E-04	6.20E-05	6.00E-05
2nd '84	28-Jun-84	3.47E-04	1.20E-05	2.00E-09	3.75E-03	1.60E-04	4.00E-08
4th '84	14-Nov-84	5.61E-04	1.99E-04	2.00E-07	7.82E-03	3.30E-04	7.00E-08
2nd '85	27-Mar-85	1.05E-03	3.00E-05	2.00E-06	3.22E-03	1.40E-04	2.00E-05
3rd '85	15-Jul-85	8.20E-05	7.00E-06	3.00E-06	7.70E-04	1.30E-04	2.00E-04
4th '85	09-Oct-85	1.15E-04	1.00E-05	3.00E-06	5.10E-04	3.00E-05	2.00E-05
2nd '86	24-Mar-86	5.72E-04	2.10E-05	4.00E-06	2.49E-03	1.00E-04	1.00E-05
3rd '86	10-Jul-86	5.01E-04	1.30E-05	3.00E-06	1.57E-03	1.70E-03	2.00E-04
4th '86	18-Dec-86	8.70E-04	5.00E-05	3.00E-06	6.80E-04	3.00E-05	3.00E-06
2nd '87	20-Apr-87	5.90E-04	7.00E-05	5.00E-08	1.50E-03	1.00E-04	1.00E-06
3rd '87	05-Jun-87	1.60E-04	3.00E-05	5.00E-08	9.50E-04	4.00E-05	1.00E-06
4th '87	22-Dec-87	2.10E-04	4.00E-05	5.00E-08	1.70E-03	1.00E-04	1.00E-06
2nd '88	19-Apr-88	4.50E-04	7.00E-05	5.00E-08	1.40E-03	1.00E-04	1.00E-06
3rd '88	28-Jul-88	3.20E-05	2.20E-05	5.00E-08	1.50E-04	4.40E-04	1.00E-06
2nd '89	07-Apr-89	5.60E-04	4.00E-05	***	1.10E-03	1.00E-01	***
3rd '89	06-Jun-89	1.50E-04	2.00E-05	***	2.30E-04	2.00E-05	***
4th '89	07-Nov-89	6.00E-04	5.00E-05	7.00E-06	2.04E-03	7.00E-05	1.40E-05
1st '90	17-Apr-90	2.60E-04	3.00E-05	4.00E-06	3.30E-04	2.00E-05	2.20E-05
2nd '90	20-Jun-90	1.80E-04	2.00E-05	5.00E-08	3.20E-04	2.00E-05	1.00E-06
3rd '90	17-Oct-90	1.60E-04	2.00E-05	5.00E-08	3.30E-04	2.00E-05	1.00E-06
1st '91	10-Apr-91	1.20E-04	2.00E-05	5.00E-06	3.00E-04	2.00E-05	1.00E-06
2nd '91	11-Jun-91	9.10E-05	1.60E-05	2.00E-07	1.90E-04	2.00E-05	2.00E-07
3rd '91	20-Nov-91	4.50E-04	4.00E-05	5.00E-08	1.09E-03	5.00E-05	1.00E-06
1st '92	22-Apr-92	3.60E-05	1.00E-05	2.00E-06	1.50E-04	2.00E-05	1.00E-05
2nd '92	10-Jun-92	1.00E-05	7.00E-06	2.00E-07	7.50E-05	2.00E-05	1.00E-06
3rd '92	10-Jun-92	7.90E-05	3.50E-05	3.00E-06	7.10E-04	7.00E-05	2.00E-05
1st '93	13-Apr-93	3.70E-05	2.20E-05	3.00E-06	2.80E-04	3.00E-05	2.00E-05
2nd '93	26-Jun-93	3.00E-05	1.50E-05	3.00E-06	4.30E-05	3.50E-05	2.00E-05
3rd '93	12-Oct-93	6.60E-05	2.70E-05	3.00E-06	5.30E-04	6.00E-05	2.00E-05
1st '94	11-May-94	1.80E-04	4.00E-05	3.00E-05	4.40E-04	6.00E-05	2.00E-04
2nd '94	19-Jul-94	1.71E-05	1.20E-06	9.00E-08	3.00E-05	6.10E-06	4.45E-06
3rd '94	28-Nov-94	2.40E-04	1.50E-05	1.70E-07	1.70E-04	1.10E-05	8.30E-07
1st '95	11-Apr-95	6.70E-05	5.40E-06	1.60E-07	1.40E-04	1.30E-05	7.90E-07
2nd '95	06-Jul-95	1.50E-05	1.50E-06	1.50E-07	5.10E-05	4.50E-06	7.60E-07
3rd '95	15-Nov-95	5.50E-05	5.00E-06	1.80E-07	6.70E-05	1.00E-05	8.80E-07
1st '96	23-Apr-96	5.20E-05	2.50E-06	1.50E-07	3.20E-05	4.50E-06	1.80E-07
2nd '96 *	31-Jul-96						
3rd '96	14-Nov-96	3.00E-05	2.50E-06	1.80E-07	1.40E-04	7.10E-06	9.30E-07
1st '97	21-Apr-97	1.10E-05	4.70E-07	1.21E-07	4.10E-05	3.60E-06	6.10E-07
3rd '97	05-Sep-97	1.10E-05	4.30E-07	1.33E-07	2.10E-05	7.30E-07	6.66E-07
4th '97	20-Nov-97	8.00E-06	1.20E-06	5.60E-07	1.40E-04	4.60E-06	1.10E-07
1st '98	23-Mar-98	<9.10E-05	9.10E-05	9.10E-05	<4.50E-04	4.50E-04	4.50E-04
2nd '98	16-Jun-98	1.80E-05	1.20E-06	6.30E-08	4.00E-05	1.80E-06	3.20E-07
4th '98	05-Nov-98	5.70E-05	1.00E-06	8.20E-08	8.70E-05	5.00E-06	4.10E-07
2nd '99	15-Apr-99	2.00E-04	3.00E-06	1.20E-07	3.00E-04	1.00E-05	6.00E-05
3rd '99	07-Jul-99	6.03E-05	1.40E-06	8.30E-08	1.40E-04	4.70E-06	4.20E-07
4th '99	02-Dec-99	2.30E-05	1.00E-06	2.30E-07	2.10E-05	1.00E-06	1.10E-06
2nd '00	21-Apr-00	1.50E-04	3.00E-06	1.20E-07	1.60E-04	8.00E-06	5.90E-07
2nd '00	22-Jun-00	1.20E-06	1.00E-07	2.80E-07	1.60E-04	1.00E-05	1.40E-06

4th '00	21-Dec-00	1.60E-06	1.10E-06	3.70E-07	5.10E-05	5.00E-06	1.90E-06
1st '01	30-Apr-01	1.00E-06	1.00E-07	2.40E-07	<1.2E-06	1.00E-07	2.40E-07
2nd '01	14-Jun-01	2.30E-06	2.00E-07	9.90E-08	3.80E-06	2.00E-07	5.00E-07
4th '01	17-Dec-01	9.10E-06	2.40E-06	1.20E-07	3.57E-05	2.97E-06	6.00E-07
1st '02	07-May-02	3.30E-05	1.80E-06	7.60E-07	4.50E-05	2.61E-06	1.00E-05
2nd '02	07-Jul-02	5.55E-05	2.81E-06	7.60E-07	5.31E-05	3.90E-06	1.00E-05
4th '02	15-Dec-02	7.75E-05	3.60E-06	7.60E-07	1.29E-04	6.15E-06	1.00E-05
1st '03	21-Mar-03	9.10E-06	1.30E-06	3.60E-07	1.13E-05	1.61E-06	3.36E-06
2nd '03	10-Jun-03	2.50E-05	1.30E-06	3.60E-07	3.26E-06	2.00E-06	7.38E-08
4th '03	20-Nov-03	5.70E-05	3.50E-06	1.50E-07	4.05E-05	5.82E-06	8.30E-07
1st '04	08-Apr-04	9.38E-05	3.70E-06	1.10E-07	5.88E-05	3.00E-06	5.50E-07
2nd '04	12-Jun-04	5.63E-05	3.40E-06	1.80E-07	6.42E-05	5.90E-06	9.00E-07
4th '04	30-Nov-04	8.41E-05	5.50E-06	2.00E-08	2.48E-04	1.40E-05	3.00E-07
1st '05	21-Apr-05	5.60E-05	3.00E-06	1.40E-07	5.80E-05	4.00E-06	6.90E-07
2nd '05	13-Jun-05	9.10E-06	1.50E-06	1.80E-07	1.10E-05	1.20E-05	9.00E-07
4th '05	10-Nov-05	6.00E-05	3.00E-06	1.10E-10	1.70E-06	6.40E-07	5.50E-10
1st '06	03-Apr-06	8.00E-05	5.00E-06	5.00E-08	3.40E-04	1.20E-05	1.00E-06
2nd '06	16-Jun-06	4.10E-05	3.10E-06	5.00E-08	1.16E-04	6.10E-06	1.00E-06
4th '06	28-Nov-06	1.17E-04	4.60E-06	1.90E-07	3.28E-04	9.50E-06	9.50E-07
1st '07	30-Mar-07	9.70E-05	4.40E-06	1.90E-07	3.40E-04	8.70E-06	8.4-07
2nd '07	1-Jun-07	1.30E-05	1.60E-06	1.90E-07	1.20E-04	6.60E-06	9.70E-07
4th '07	23-Nov-07	7.00E-05	8.20E-06	2.00E-07	5.00E-04	2.00E-05	1.20E-06
1st '08	22-Apr-08	3.60E-06	3.00E-06	5.20E-07	2.30E-04	1.40E-05	1.00E-06
2nd '08	18-Jun-08	3.20E-05	3.20E-06	1.80E-06	6.90E-05	3.50E-05	5.50E-05
4th '08	12-Dec-08	1.50E-04	5.20E-06	9.90E-07	3.60E-04	2.90E-05	3.90E-05
1st '09	28-Apr-09	5.90E-04	1.35E-05	1.50E-06	3.40E-04	1.30E-05	1.50E-06
2nd '09	17-Jun-09	1.90E-05	1.45E-06	4.90E-07	3.60E-05	1.10E-05	1.80E-05
4th '09	18-Dec-09	1.70E-04	5.90E-06		4.80E-04	1.20E-05	
1st '10	13-May-10	2.20E-04	7.20E-06	1.10E-06	1.90E-04	1.90E-05	2.90E-05
2nd '10	18-Jun-10	6.50E-05	3.40E-06	7.60E-07	1.40E-04	1.90E-05	2.90E-05
4th '10	20-Dec-10	2.30E-05	1.70E-06	5.20E-07	1.00E-05	1.50E-06	2.30E-06
2nd '11	23-Jun-11	2.40E-07	1.40E-07	1.80E-07	<2.9E-06	1.70E-06	2.90E-06
3rd '11	27-Jul-11	4.90E-06	6.30E-07	3.20E-07	9.50E-05	2.10E-06	2.50E-06
4th '11	23-Nov-11	7.20E-06	7.50E-07	2.90E-07	8.80E-08	4.30E-07	7.20E-07
2nd '12	11-Apr-12	4.40E-05	1.90E-06	3.60E-07	2.10E-04	2.00E-06	1.00E-06
3rd '12	11-Jun-12	2.20E-05	8.40E-07	1.10E-07	1.30E-04	7.60E-06	5.90E-06
4th '12	06-Nov-12	3.10E-05	4.82E-07	4.63E-08	4.26E-04	3.72E-06	6.52E-07
2nd '13	30-Apr-13	1.14E-04	1.74E-06	5.34E-07	2.65E-04	4.41E-06	5.37E-06
3rd '13	20-Jun-13	8.91E-05	2.16E-06	1.42E-06	1.42E-04	3.68E-06	6.17E-06
4th '13	14-Nov-13	1.37E-04	3.87E-06	4.71E-06	5.33E-04	1.45E-05	2.27E-05
2nd '14	16-Apr-14	9.90E-05	1.01E-06	3.91E-07	1.99E-04	3.14E-06	3.38E-06
3rd '14	10-Jun-14	2.60E-05	8.46E-07	9.19E-07	5.60E-05	3.08E-06	7.12E-06

*2nd quarter of 1996 San Juan County, Utah, was declared a disaster area due to drought, no samples were collected during this period

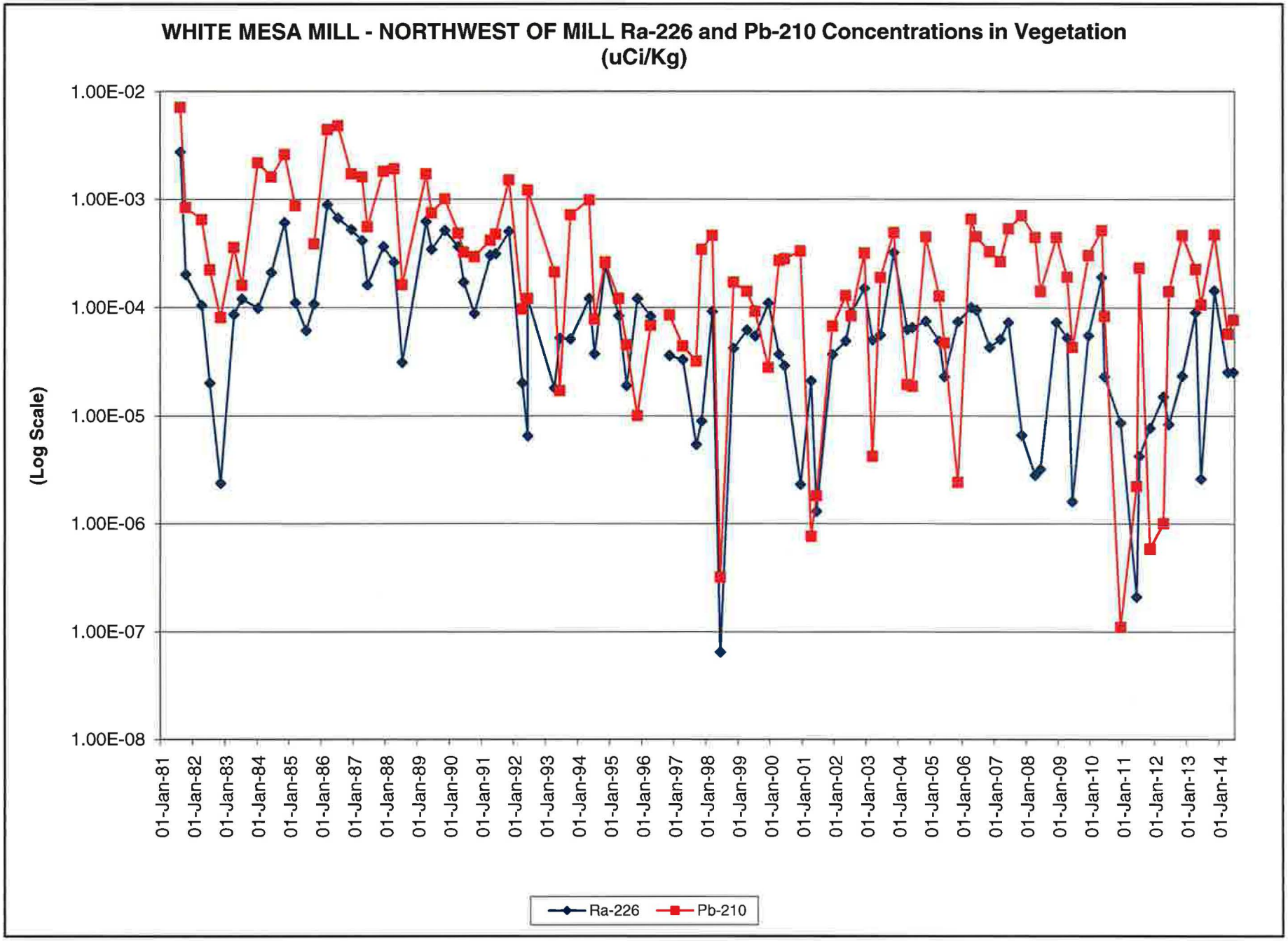

WHITE MESA MILL - NORTHEAST OF MILL Ra-226 and Pb-210 Concentrations in Vegetation
(uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
01-Jan-81
01-Jan-82
01-Jan-83
01-Jan-84
01-Jan-85
01-Jan-86
01-Jan-87
01-Jan-88
01-Jan-89
01-Jan-90
01-Jan-91
01-Jan-92
01-Jan-93
01-Jan-94
01-Jan-95
01-Jan-96
01-Jan-97
01-Jan-98
01-Jan-99
01-Jan-00
01-Jan-01
01-Jan-02
01-Jan-03
01-Jan-04
01-Jan-05
01-Jan-06
01-Jan-07
01-Jan-08
01-Jan-09
01-Jan-10
01-Jan-11
01-Jan-12
01-Jan-13
01-Jan-14
Ra-226
Pb-210

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
NORTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	LLD	Pb-210	Pb-210	LLD
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (1.0E-06)
3rd '81	27-Aug-81	2.73E-03	5.00E-05	5.00E-08	7.10E-03	3.00E-04	1.00E-06
4th '81	20-Oct-81	2.00E-04	1.00E-05	5.00E-08	8.30E-04	5.00E-05	1.00E-06
2nd '82	15-Apr-82	1.04E-04	9.00E-06	7.00E-06	6.40E-04	5.00E-05	4.00E-05
3rd '82	01-Jul-82	2.00E-05	1.00E-05	5.00E-08	2.20E-04	9.00E-05	1.00E-07
4th '82	30-Nov-82	2.36E-06	9.50E-07	1.00E-06	8.00E-05	1.00E-05	1.00E-05
2nd '83	13-Apr-83	8.58E-05	1.36E-05	2.00E-08	3.53E-04	1.90E-05	1.00E-05
3rd '83	01-Jul-83	1.19E-04	1.10E-05	5.00E-06	1.58E-04	1.30E-05	1.00E-05
4th '83	30-Jan-84	9.78E-05	7.00E-06	2.00E-06	2.16E-03	3.40E-04	3.00E-04
2nd '84	28-Jun-84	2.08E-04	1.00E-05	3.00E-09	1.60E-03	7.00E-05	3.00E-08
4th '84	14-Nov-84	6.05E-04	1.64E-04	2.00E-07	2.58E-03	1.10E-04	3.00E-08
2nd '85	27-Mar-85	1.10E-04	8.00E-06	3.00E-06	8.63E-04	4.20E-05	3.00E-05
3rd '85	15-Jul-85	6.10E-05	6.00E-06	2.00E-06	5.40E-04	5.00E-05	5.00E-05
4th '85	09-Oct-85	1.07E-04	6.00E-06	2.00E-06	3.80E-04	3.00E-05	2.00E-05
2nd '86	24-Mar-86	8.86E-04	1.80E-05	2.00E-06	4.40E-03	1.90E-04	3.00E-05
3rd '86	10-Jul-86	6.66E-04	1.80E-05	3.00E-06	4.78E-03	2.10E-04	6.00E-05
4th '86	18-Dec-86	5.20E-04	1.00E-04	3.00E-06	1.70E-03	1.00E-04	6.00E-05
2nd '87	20-Apr-87	4.10E-04	1.00E-04	5.00E-08	1.60E-03	1.00E-04	1.00E-06
3rd '87	05-Jun-87	1.60E-04	3.00E-05	5.00E-08	5.50E-04	4.00E-05	1.00E-06
4th '87	22-Dec-87	3.60E-04	5.00E-05	5.00E-08	1.80E-03	1.00E-04	1.00E-06
2nd '88	19-Apr-88	2.60E-04	5.00E-05	5.00E-08	1.90E-03	1.00E-04	1.00E-06
3rd '88	28-Jul-88	3.10E-05	1.90E-05	5.00E-08	1.60E-04	4.00E-05	1.00E-06
2nd '89	07-Apr-89	6.20E-04	5.00E-05	***	1.70E-03	1.00E-04	***
3rd '89	06-Jun-89	3.40E-04	3.00E-05	***	7.40E-04	3.00E-05	***
4th '89	07-Nov-89	5.10E-04	6.00E-05	7.00E-06	1.00E-03	7.00E-05	1.40E-05
1st '90	17-Apr-90	3.60E-04	3.00E-05	4.00E-06	4.80E-04	2.00E-05	2.20E-05
2nd '90	20-Jun-90	1.70E-04	2.00E-05	5.00E-08	3.20E-04	2.00E-05	1.00E-06
3rd '90	17-Oct-90	8.80E-05	1.60E-05	5.00E-08	2.90E-04	2.00E-05	1.00E-06
1st '91	10-Apr-91	3.00E-04	3.00E-05	5.00E-06	4.10E-04	2.00E-05	1.00E-06
2nd '91	11-Jun-91	3.10E-04	3.00E-05	2.00E-07	4.70E-04	2.00E-05	2.00E-07
3rd '91	20-Nov-91	5.00E-04	4.00E-05	5.00E-08	1.50E-03	1.00E-04	1.00E-06
1st '92	22-Apr-92	2.00E-05	8.00E-06	2.00E-06	9.60E-05	1.40E-05	1.00E-05
2nd '92	10-Jun-92	6.50E-06	6.00E-06	2.00E-06	1.20E-04	2.00E-05	1.00E-06
3rd '92	10-Jun-92	1.20E-04	4.00E-05	3.00E-06	1.21E-03	8.00E-05	2.00E-05
1st '93	13-Apr-93	1.80E-05	1.70E-05	3.00E-06	2.10E-04	3.00E-05	2.00E-05
2nd '93	26-Jun-93	5.20E-05	1.90E-05	3.00E-06	1.70E-05	3.60E-05	2.00E-05
3rd '93	12-Oct-93	5.10E-05	2.30E-05	3.00E-06	7.10E-04	6.00E-05	2.00E-05
1st '94	11-May-94	1.20E-04	1.00E-05	3.00E-05	9.80E-04	1.60E-04	2.00E-04
2nd '94	19-Jul-94	3.73E-05	1.60E-06	8.40E-08	7.80E-05	7.10E-06	4.20E-07
3rd '94	28-Nov-94	2.40E-04	1.50E-05	1.70E-07	2.60E-04	1.30E-05	8.30E-07
1st '95	11-Apr-95	8.40E-05	6.10E-06	1.50E-07	1.20E-04	1.10E-05	7.50E-05
2nd '95	06-Jul-95	1.90E-05	1.50E-06	1.40E-07	4.50E-05	4.30E-06	7.20E-07
3rd '95	15-Nov-95	1.20E-04	6.80E-06	1.40E-07	1.00E-05	5.80E-06	7.10E-07
1st '96	23-Apr-96	8.30E-05	3.30E-06	1.90E-07	6.80E-05	6.30E-06	1.80E-07
2nd '96 *	31-Jul-96						
3rd '96	14-Nov-96	3.60E-05	2.50E-06	1.60E-07	8.50E-05	5.60E-06	8.40E-07
1st '97	21-Apr-97	3.30E-05	2.30E-06	1.70E-07	4.40E-05	4.80E-06	8.40E-07
3rd '97	05-Sep-97	5.40E-06	3.50E-07	1.56E-07	3.20E-05	9.00E-07	7.83E-07
4th '97	20-Nov-97	8.90E-06	7.20E-07	5.40E-07	3.40E-04	6.70E-06	1.10E-07
1st '98	23-Mar-98	<9.20E-05	9.20E-05	9.20E-05	<4.60E-04	4.60E-04	4.60E-04
2nd '98	16-Jun-98	< 6.50E-08	6.50E-08	6.50E-08	<3.20E-07	3.20E-07	3.20E-07
4th '98	05-Nov-98	4.20E-05	1.00E-06	1.10E-07	1.70E-04	1.00E-05	5.50E-07
2nd '99	15-Apr-99	6.20E-05	1.00E-06	1.00E-07	1.40E-04	7.00E-06	1.00E-07
3rd '99	07-Jul-99	5.45E-05	1.40E-06	8.30E-08	9.20E-05	4.00E-06	4.20E-07
4th '99	02-Dec-99	1.10E-04	3.00E-06	2.20E-07	2.80E-05	1.00E-06	1.10E-06
2nd '00	21-Apr-00	3.70E-05	1.00E-06	2.40E-07	2.70E-04	1.00E-05	1.20E-06

2nd '00	22-Jun-00	2.90E-05	1.00E-06	3.30E-07	2.80E-04	2.00E-05	1.70E-06
4th '00	21-Dec-00	2.30E-06	1.40E-06	3.70E-07	3.30E-04	5.00E-05	1.90E-06
1st '01	30-Apr-01	2.10E-05	1.00E-06	1.50E-07	<7.6E-07	N/A	7.60E-07
2nd '01	14-Jun-01	1.30E-06	4.00E-08	1.20E-07	1.80E-06	3.00E-08	5.90E-07
4th '01	17-Dec-01	3.70E-05	7.67E-07	8.30E-08	6.72E-05	2.62E-06	6.00E-07
1st '02	07-May-02	4.90E-05	2.40E-06	7.60E-07	1.28E-04	5.61E-06	1.00E-05
2nd '02	07-Jul-02	8.88E-05	4.32E-06	7.60E-07	8.33E-05	4.32E-06	1.00E-05
4th '02	15-Dec-02	1.50E-04	6.20E-06	7.60E-07	3.16E-04	1.07E-05	1.00E-05
1st '03	21-Mar-03	5.00E-05	3.40E-06	2.71E-06	<4.2e-6		4.20E-06
2nd '03	10-Jun-03	5.60E-05	2.00E-06	4.10E-07	1.88E-04	5.14E-06	8.20E-08
4th '03	20-Nov-03	3.20E-04	8.20E-06	1.70E-07	4.89E-04	1.25E-05	8.30E-07
1st '04	08-Apr-04	6.29E-05	4.10E-06	2.00E-07	1.94E-05	4.00E-06	1.00E-06
2nd '04	12-Jun-04	6.51E-05	3.40E-06	1.30E-07	1.87E-05	3.90E-06	6.50E-07
4th '04	30-Nov-04	7.50E-05	4.60E-06	2.00E-08	4.45E-04	1.40E-05	3.00E-07
1st '05	21-Apr-05	4.90E-05	2.70E-06	1.30E-07	1.27E-04	4.80E-06	6.50E-07
2nd '05	13-Jun-05	2.30E-05	2.10E-06	1.50E-07	4.70E-05	5.10E-06	7.60E-07
4th '05	10-Nov-05	7.40E-05	3.50E-06	1.20E-10	2.40E-06	8.10E-08	5.80E-10
1st '06	03-Apr-06	1.00E-04	6.00E-06	5.00E-08	6.54E-04	1.50E-05	1.00E-06
2nd '06	16-Jun-06	9.50E-05	5.90E-06	5.00E-08	4.48E-04	1.40E-05	1.00E-06
4th '06	28-Nov-06	8.13E-05	4.10E-06	2.20E-07	3.25E-04	1.12E-06	1.00E-05
1st '07	30-Mar-07	4.30E-05	2.60E-06	1.70E-07	2.64E-04	7.20E-06	8.60E-07
2nd '07	1-Jun-07	5.10E-05	3.20E-06	2.30E-07	5.30E-04	1.40E-06	1.20E-06
4th '07	23-Nov-07	7.30E-05	6.60E-06	5.00E-08	7.00E-04	2.20E-05	1.10E-06
1st '08	22-Apr-08	2.80E-06	2.80E-06	7.20E-07	4.40E-04	2.00E-05	1.00E-06
2nd '08	18-Jun-08	3.20E-06	3.30E-06	1.80E-06	1.40E-04	3.30E-05	5.50E-05
4th '08	12-Dec-08	7.30E-05	3.20E-06	7.40E-07	4.40E-04	2.50E-05	3.20E-05
1st '09	28-Apr-09	5.25E-05	3.60E-06	1.10E-06	1.90E-04	1.50E-05	2.20E-05
2nd '09	17-Jun-09	2.30E-05	1.60E-05	5.20E-07	4.30E-05	1.00E-05	1.70E-05
4th '09	18-Dec-09	5.50E-05	3.50E-06		3.00E-04	1.10E-05	
1st '10	13-May-10	1.90E-04	6.10E-06	9.40E-07	5.10E-04	2.40E-05	3.10E-05
2nd '10	18-Jun-10	2.30E-05	2.00E-06	7.70E-07	8.30E-05	1.80E-05	2.90E-05
4th '10	20-Dec-10	8.60E-06	9.10E-07	3.90E-07	1.10E-07	6.80E-07	1.10E-06
2nd '11	23-Jun-11	2.10E-07	1.20E-07	1.40E-07	<2.2E-06	1.30E-06	2.20E-06
3rd '11	28-Jul-11	4.20E-06	5.40E-07	2.70E-07	2.30E-04	2.50E-06	2.30E-06
4th '11	23-Nov-11	7.70E-06	6.80E-07	2.30E-07	<5.8E-08	3.40E-07	5.80E-07
2nd '12	11-Apr-12	1.50E-05	9.50E-07	2.60E-07	<7.0E-07	6.00E-07	1.00E-06
3rd '12	11-Jun-12	8.30E-06	5.40E-07	1.20E-07	1.40E-04	8.30E-06	6.50E-06
4th '12	06-Nov-12	2.34E-05	4.10E-07	7.71E-08	4.59E-04	3.83E-06	6.18E-07
2nd'13	30-Apr-13	9.04E-05	1.68E-06	8.58E-07	2.24E-04	4.46E-06	4.68E-06
3rd '13	20-Jun-13	2.58E-06	9.59E-07	8.06E-07	1.06E-04	2.30E-06	3.28E-06
4th '13	14-Nov-13	1.43E-04	3.70E-06	2.17E-06	4.65E-04	1.17E-05	1.80E-05
2nd '14	16-Apr-14	2.53E-05	6.29E-07	5.51E-07	5.70E-05	2.21E-06	4.52E-06
3rd '14	10-Jun-14	2.53E-05	5.55E-07	5.77E-07	7.68E-05	2.08E-06	3.66E-06

*2nd quarter of 1996 San Juan County, Utah, was declared a disaster area due to drought, no samples were collected during this period

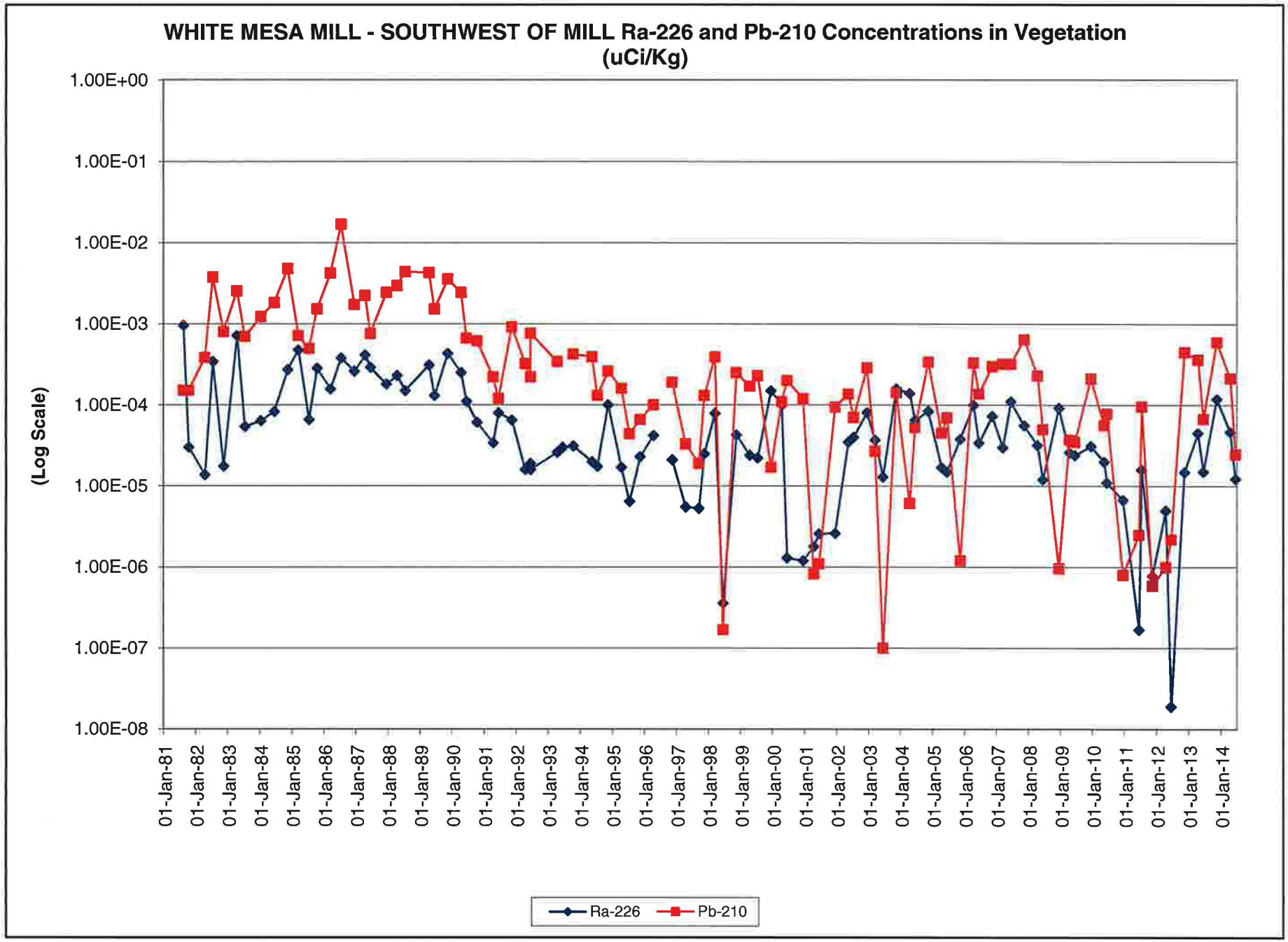

WHITE MESA MILL - NORTHWEST OF MILL Ra-226 and Pb-210 Concentrations in Vegetation
(uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
01-Jan-81
01-Jan-82
01-Jan-83
01-Jan-84
01-Jan-85
01-Jan-86
01-Jan-87
01-Jan-88
01-Jan-89
01-Jan-90
01-Jan-91
01-Jan-92
01-Jan-93
01-Jan-94
01-Jan-95
01-Jan-96
01-Jan-97
01-Jan-98
01-Jan-99
01-Jan-00
01-Jan-01
01-Jan-02
01-Jan-03
01-Jan-04
01-Jan-05
01-Jan-06
01-Jan-07
01-Jan-08
01-Jan-09
01-Jan-10
01-Jan-11
01-Jan-12
01-Jan-13
01-Jan-14
Ra-226
Pb-210

WHITE MESA MILL
FORAGE RADIONUCLIDE DATA
SOUTHWEST OF MILL

SAMPLED QTR.	SAMPLED DATE	Ra-226	Ra-226	LLD	Pb-210	Pb-210	LLD
		VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (5.0E-08)	VALUE (uCi/Kg)	ERROR (uCi/Kg)	uCi/Kg (1.0E-06)
3rd '81	27-Aug-81	9.50E-04	2.00E-05	5.00E-08	1.50E-04	1.00E-05	1.00E-06
4th '81	20-Oct-81	3.00E-05	3.00E-06	5.00E-08	1.50E-04	2.00E-05	1.00E-06
2nd '82	15-Apr-82	1.37E-05	3.00E-06	3.00E-06	3.80E-04	4.00E-05	4.00E-05
3rd '82	01-Jul-82	3.40E-04	2.00E-05	5.00E-08	3.68E-03	2.70E-04	1.00E-07
4th '82	30-Nov-82	1.75E-05	3.00E-06	2.00E-06	7.92E-04	4.00E-06	2.00E-05
2nd '83	13-Apr-83	7.13E-04	7.30E-05	9.00E-08	2.51E-03	3.00E-04	3.00E-04
3rd '83	01-Jul-83	5.39E-05	4.50E-06	2.00E-06	6.88E-04	4.30E-05	4.00E-05
4th '83	30-Jan-84	6.40E-05	7.00E-06	4.00E-06	1.20E-03	1.00E-04	4.00E-05
2nd '84	28-Jun-84	8.27E-05	6.30E-06	3.00E-09	1.80E-03	1.00E-04	9.00E-08
4th '84	14-Nov-84	2.72E-04	1.48E-04	2.00E-07	4.70E-03	7.20E-04	3.00E-07
2nd '85	27-Mar-85	4.73E-04	1.60E-07	3.00E-06	7.07E-04	3.60E-05	3.00E-05
3rd '85	15-Jul-85	6.60E-05	7.00E-06	4.00E-06	4.90E-04	3.00E-05	3.00E-05
4th '85	09-Oct-85	2.83E-04	2.00E-05	7.00E-06	1.50E-03	1.00E-04	7.00E-05
2nd '86	24-Mar-86	1.57E-04	1.00E-05	4.00E-06	4.14E-03	1.80E-04	3.00E-05
3rd '86	10-Jul-86	3.78E-04	1.00E-05	2.00E-06	1.65E-02	7.00E-04	1.00E-04
4th '86	18-Dec-86	2.60E-04	2.00E-05	2.00E-06	1.70E-03	1.00E-04	1.00E-04
2nd '87	20-Apr-87	4.10E-04	7.00E-05	5.00E-08	2.20E-03	1.00E-04	1.00E-06
3rd '87	05-Jun-87	2.90E-04	4.00E-05	5.00E-08	7.50E-04	5.00E-05	1.00E-06
4th '87	22-Dec-87	1.80E-04	3.00E-05	5.00E-08	2.40E-03	1.00E-04	1.00E-06
2nd '88	19-Apr-88	2.30E-04	5.00E-05	5.00E-08	2.90E-03	1.00E-04	1.00E-06
3rd '88	28-Jul-88	1.50E-04	3.00E-05	5.00E-08	4.30E-03	2.00E-04	1.00E-06
2nd '89	07-Apr-89	3.10E-04	4.00E-05	***	4.20E-03	1.00E-04	***
3rd '89	06-Jun-89	1.30E-04	2.00E-05	***	1.50E-03	1.00E-04	***
4th '89	07-Nov-89	4.30E-04	5.00E-05	1.40E-05	3.50E-03	1.40E-04	2.70E-05
1st '90	17-Apr-90	2.50E-04	3.00E-05	5.00E-06	2.39E-03	5.00E-05	2.50E-05
2nd '90	20-Jun-90	1.10E-04	2.00E-05	5.00E-08	6.60E-04	3.00E-05	1.00E-06
3rd '90	17-Oct-90	6.10E-05	1.40E-05	5.00E-08	6.10E-04	3.00E-05	1.00E-06
1st '91	10-Apr-91	3.40E-05	1.10E-05	5.00E-06	2.20E-04	1.00E-05	1.00E-06
2nd '91	11-Jun-91	8.00E-05	6.00E-06	2.00E-07	1.20E-04	1.00E-05	2.00E-07
3rd '91	20-Nov-91	6.50E-05	1.40E-05	5.00E-08	9.10E-04	5.00E-05	1.00E-06
1st '92	22-Apr-92	1.60E-05	7.00E-06	2.00E-06	3.20E-04	2.00E-05	1.00E-05
2nd '92	10-Jun-92	1.90E-05	1.00E-05	2.00E-07	2.20E-04	2.00E-05	1.00E-06
3rd '92	10-Jun-92	1.60E-05	1.80E-05	3.00E-06	7.60E-04	6.00E-05	2.00E-05
1st '93	13-Apr-93	2.60E-05	2.00E-05	3.00E-06	3.40E-04	3.00E-05	2.00E-05
2nd '93	26-Jun-93	3.00E-05	1.40E-05	3.00E-06	0.00E+00	3.00E-05	2.00E-05
3rd '93	12-Oct-93	3.10E-05	1.60E-05	3.00E-06	4.20E-04	6.00E-05	2.00E-05
1st '94	11-May-94	2.00E-05	5.00E-06	3.00E-05	3.90E-04	8.00E-05	2.00E-04
2nd '94	19-Jul-94	1.75E-05	1.70E-06	7.60E-08	1.30E-04	7.80E-06	3.80E-07
3rd '94	28-Nov-94	1.00E-04	9.00E-06	1.50E-07	2.60E-04	1.20E-05	7.40E-07
1st '95	11-Apr-95	1.70E-05	1.50E-06	1.60E-07	1.60E-04	1.50E-05	8.10E-07
2nd '95	06-Jul-95	6.40E-06	6.00E-07	1.40E-07	4.40E-05	4.20E-06	7.00E-07
3rd '95	15-Nov-95	2.30E-05	2.20E-06	1.70E-07	6.60E-05	9.60E-06	8.30E-07
1st '96	23-Apr-96	4.20E-05	2.20E-06	1.70E-07	1.00E-04	6.70E-06	1.80E-07
2nd '96 *	31-Jul-96						
3rd '96	14-Nov-96	2.10E-05	2.00E-06	1.60E-07	1.90E-04	7.30E-06	8.20E-07
1st '97	21-Apr-97	5.50E-06	4.20E-07	1.40E-07	3.30E-05	3.90E-06	7.00E-07
3rd '97	05-Sep-97	5.30E-06	3.20E-07	1.26E-07	1.90E-05	6.90E-07	6.34E-07
4th '97	20-Nov-97	2.50E-05	9.50E-07	5.90E-07	1.30E-04	4.70E-06	1.20E-07
1st '98	23-Mar-98	<7.90E-05	7.90E-05	7.90E-05	<3.90E-04	3.90E-04	3.90E-04
2nd '98	16-Jun-98	3.60E-07	1.40E-07	3.30E-08	<1.7E-07	1.70E-07	1.70E-07
4th '98	05-Nov-98	4.30E-05	1.00E-06	7.60E-08	2.50E-04	1.00E-05	3.80E-07
2nd '99	15-Apr-99	2.40E-05	1.00E-06	1.20E-07	1.70E-04	8.00E-06	6.20E-07
3rd '99	07-Jul-99	2.23E-05	8.60E-07	1.20E-07	2.30E-04	7.00E-06	5.90E-07
4th '99	02-Dec-99	1.50E-04	3.00E-06	2.00E-07	1.70E-05	1.00E-06	1.00E-06
2nd '00	21-Apr-00	1.00E-04	2.00E-06	1.20E-07	1.10E-04	7.00E-06	6.10E-07

2nd '00	22-Jun-00	1.30E-06	1.00E-07	2.40E-07	2.00E-04	1.00E-05	1.20E-06
4th '00	21-Dec-00	1.20E-06	9.00E-07	2.40E-07	1.20E-04	3.00E-05	1.20E-06
1st '01	30-Apr-01	1.80E-06	1.00E-07	1.70E-07	<8.3E-07	N/A	8.30E-07
2nd '01	14-Jun-01	2.60E-06	2.00E-07	9.90E-08	1.10E-06	2.00E-08	5.00E-07
4th '01	17-Dec-01	2.63E-06	4.60E-05	1.20E-07	9.40E-05	3.72E-06	6.00E-07
1st '02	07-May-02	3.50E-05	2.20E-06	7.60E-07	1.36E-04	5.61E-06	1.00E-05
2nd '02	07-Jul-02	4.02E-05	2.34E-06	7.60E-07	7.04E-05	4.11E-06	1.00E-05
4th '02	15-Dec-02	8.10E-05	3.90E-06	7.60E-07	2.87E-04	8.54E-06	1.00E-05
1st '03	21-Mar-03	3.70E-05	2.60E-06	2.41E-06	2.69E-05	2.01E-06	3.73E-06
2nd '03	10-Jun-03	1.30E-05	1.00E-06	5.20E-07	<1.00E-07		1.00E-07
4th '03	20-Nov-03	1.60E-04	1.30E-05	1.20E-07	1.42E-04	6.42E-06	5.90E-07
1st '04	08-Apr-04	1.40E-04	7.70E-06	1.10E-07	6.10E-06	2.70E-06	5.50E-07
2nd '04	12-Jun-04	6.51E-05	3.20E-06	1.50E-07	5.27E-05	4.90E-06	7.60E-07
4th '04	30-Nov-04	8.40E-05	5.70E-06	3.00E-08	3.39E-04	1.60E-05	3.00E-07
1st '05	21-Apr-05	1.70E-05	1.60E-06	1.30E-07	4.50E-05	3.50E-06	6.50E-07
2nd '05	13-Jun-05	1.50E-05	1.60E-06	1.40E-07	7.00E-05	5.10E-06	6.90E-07
4th '05	10-Nov-05	3.80E-05	2.10E-06	8.60E-10	1.20E-06	4.80E-08	4.30E-10
1st '06	03-Apr-06	1.00E-04	6.00E-06	5.00E-08	3.30E-04	1.10E-05	1.00E-06
2nd '06	16-Jun-06	3.40E-05	2.50E-06	5.00E-08	1.37E-04	6.00E-06	1.00E-06
4th '06	28-Nov-06	7.31E-05	3.20E-06	1.60E-07	2.98E-04	8.50E-06	8.20E-07
1st '07	30-Mar-07	3.00E-05	2.20E-06	1.70E-07	3.20E-04	7.90E-06	8.40E-07
2nd '07	1-Jun-07	1.10E-04	4.60E-06	2.3-07	3.20E-04	1.10E-05	1.10E-06
4th '07	23-Nov-07	5.60E-05	5.20E-06	5.00E-08	6.40E-04	1.90E-05	1.00E-06
1st '08	22-Apr-08	3.20E-05	2.30E-06	7.20E-07	2.30E-04	1.50E-05	1.00E-06
2nd '08	18-Jun-08	1.25E-05	2.20E-06	1.80E-06	5.00E-05	3.00E-05	4.80E-03
4th '08	12-Dec-08	9.20E-05	4.10E-06	9.60E-07	4.10E-04	3.00E-05	4.00E-05
1st '09	28-Apr-09	2.60E-05	2.90E-06	1.40E-06	3.70E-05	1.50E-06	2.50E-05
2nd '09	17-Jun-09	2.40E-05	1.40E-06	3.90E-07	3.50E-05	7.90E-06	1.30E-05
4th '09	18-Dec-09	3.10E-05	2.30E-06		2.10E-04	8.40E-06	
1st '10	13-May-10	2.00E-05	2.10E-06	9.40E-07	5.60E-05	1.50E-05	2.40E-05
2nd '10	18-Jun-10	1.10E-05	1.30E-06	6.60E-07	7.80E-05	1.60E-05	2.50E-05
4th '10	20-Dec-10	6.70E-06	9.10E-07	4.80E-07	8.00E-07	7.90E-07	1.30E-06
2nd '11	23-Jun-11	<1.7E-07	6.90E-08	1.70E-07	<2.5E-06	1.50E-06	2.50E-06
3rd '11	27-Jul-11	1.60E-05	1.00E-06	2.60E-07	9.50E-05	1.60E-06	1.70E-06
4th '11	23-Nov-11	7.80E-07	2.50E-07	2.30E-07	<5.9E-07	3.50E-07	5.90E-07
2nd '12	11-Apr-12	5.00E-06	6.00E-07	3.00E-07	<7.0E-07	7.00E-07	1.00E-06
3rd '12	11-Jun-12	1.90E-08	6.20E-08	1.10E-07	<2.5E-07	1.30E-06	2.20E-06
4th '12	06-Nov-12	1.49E-05	3.41E-07	4.25E-08	4.45E-04	4.01E-06	8.57E-07
2nd '13	30-Apr-13	4.50E-05	1.19E-06	5.39E-07	3.62E-04	6.30E-06	9.90E-06
3rd '13	20-Jun-13	1.51E-05	1.06E-06	1.96E-06	6.71E-05	2.93E-06	6.24E-06
4th '13	14-Nov-13	1.18E-04	3.39E-06	2.97E-06	5.92E-04	1.27E-05	1.62E-05
2nd '14	16-Apr-14	4.65E-05	1.08E-06	7.35E-07	2.13E-04	5.93E-06	1.31E-05
3rd '14	10-Jun-14	1.23E-05	4.97E-07	6.97E-07	2.46E-05	1.84E-06	4.63E-06

*2nd quarter of 1996 San Juan County, Utah, was declared a disaster area due to drought, no samples were collected during this period


WHITE MESA MILL - SOUTHWEST OF MILL Ra-226 and Pb-210 Concentrations in Vegetation
(uCi/Kg)
(Log Scale)
1.00E+00
1.00E-01
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
01-Jan-81
01-Jan-82
01-Jan-83
01-Jan-84
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01-Jan-12
01-Jan-13
01-Jan-14
Ra-226
Pb-210

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 28, 2014

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Vegetation Analysis

Client Sample ID:	North East	Project:	DNMI00101
Sample ID:	347128001	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	16-APR-14 12:45		
Receive Date:	21-APR-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid "As Received"												
Lead-210		0.000199	+/-3.14E-06	3.38E-06	1.00E-06	uCi/kg		KSD1	05/27/14	1658	1385433	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		9.90E-05	+/-1.01E-06	3.91E-07	5.00E-08	uCi/kg		KSD1	05/27/14	1553	1385421	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/22/14	1410	1382146

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			87.3	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			86.5	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 18, 2014

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Vegetation Analysis

Client Sample ID:	North East	Project:	DNMI00101
Sample ID:	350589001	Client ID:	DNMI001
Matrix:	Vegetation		
Collect Date:	10-JUN-14 08:45		
Receive Date:	13-JUN-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid "As Received"												
Lead-210		5.60E-05	+/-3.08E-06	7.12E-06	1.00E-06	uCi/kg		TC1	07/16/14	0633	1396265	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		2.60E-05	+/-8.46E-07	9.19E-07	5.00E-08	uCi/kg		TC1	07/15/14	1636	1396264	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	KYW2	06/16/14	1756	1396221

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			113	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			93.1	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 28, 2014

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Vegetation Analysis

Client Sample ID:	North West	Project:	DNMI00101
Sample ID:	347128002	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	16-APR-14 13:15		
Receive Date:	21-APR-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid "As Received"												
Lead-210		5.70E-05	+/-2.21E-06	4.52E-06	1.00E-06	uCi/kg		KSD1	05/27/14	1658	1385433	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		2.53E-05	+/-6.29E-07	5.51E-07	5.00E-08	uCi/kg		KSD1	05/27/14	1553	1385421	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/22/14	1410	1382146

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			91.5	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			88.3	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

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Certificate of Analysis

Report Date: July 18, 2014

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Vegetation Analysis

Client Sample ID:	North West	Project:	DNMI00101
Sample ID:	350589002	Client ID:	DNMI001
Matrix:	Vegetation		
Collect Date:	10-JUN-14 08:15		
Receive Date:	13-JUN-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid "As Received"												
Lead-210		7.68E-05	+/-2.08E-06	3.66E-06	1.00E-06	uCi/kg		TC1	07/16/14	0634	1396265	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		2.53E-05	+/-5.55E-07	5.77E-07	5.00E-08	uCi/kg		TC1	07/15/14	1636	1396264	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	KYW2	06/16/14	1756	1396221

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			114	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			96.7	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: May 28, 2014

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Vegetation Analysis

Client Sample ID:	South West	Project:	DNMI00101
Sample ID:	347128003	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	16-APR-14 14:00		
Receive Date:	21-APR-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid "As Received"												
Lead-210		0.000213	+/-5.93E-06	1.31E-05	1.00E-06	uCi/kg		KSD1	05/27/14	1658	1385433	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		4.65E-05	+/-1.08E-06	7.35E-07	5.00E-08	uCi/kg		KSD1	05/27/14	1553	1385421	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/22/14	1410	1382146

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			88.0	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			78.5	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 18, 2014

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Vegetation Analysis

Client Sample ID:	South West	Project:	DNMI00101
Sample ID:	350589003	Client ID:	DNMI001
Matrix:	Vegetation		
Collect Date:	10-JUN-14 07:45		
Receive Date:	13-JUN-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid "As Received"												
Lead-210		2.46E-05	+/-1.84E-06	4.63E-06	1.00E-06	uCi/kg		TC1	07/16/14	0634	1396265	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		1.23E-05	+/-4.97E-07	6.97E-07	5.00E-08	uCi/kg		TC1	07/15/14	1636	1396264	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	KYW2	06/16/14	1756	1396221

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			115	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			96.7	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178

www.gel.com

May 22, 2014

Ms. Kathy Weinel
Energy Fuels Resources (USA), Inc.
225 Union Boulevard
Suite 600
Lakewood, Colorado 80228

Re: Vegetation Analysis
Work Order: 347128

Dear Ms. Weinel:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on April 21, 2014. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

Heather Shaffer

Heather Shaffer
Project Manager

Purchase Order: DW16138
Enclosures

Energy Fuels Resources (USA), Inc.
Vegetation Analysis
SDG: 347128

Case Narrative

Receipt Narrative
for
Energy Fuels Resources (USA), Inc.
SDG: 347128

May 22, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 21, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
347128001	North East
347128002	North West
347128003	South West

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.

Heather Shaffer

Heather Shaffer
Project Manager

Chain of Custody and Supporting Documentation

347128

Sheet 1 of 1

CHAIN OF CUSTODY

Samples Shipped to: Gel Laboratories
2040 Savage Road
Charleston, SC 29407

Contact: Garrin Palmer
Ph: 435 678 4115
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
Early Spring Vegetation 2014	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
North East	4/16/2014	1245	Ra 226, PB 210
North West	4/16/2014	1315	Ra 226, PB 210
South West	4/16/2014	1400	Ra 226, PB 210

* Please use caution when handling South West samples. Some cactus included in the samples.

Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer	4/16/2014 1200	[illegible]	4/21/14 0920
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer			

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DNMI	**SDG/AR/COC/Work Order:** 347128
Received By: H. Taylor	**Date Received:** 042114

Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓	✓		Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	#	✓	✓	Preservation Method: Ice bags Blue ice Dry ice (None) Other (describe) *all temperatures are recorded in Celsius 20
2a	Daily check performed and passed on IR temperature gun?	✓	✓		Temperature Device Serial #: 130416291606 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?		✓	✓	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓	✓	Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			~~Sample ID's and containers affected:~~
10	Date & time on COC match date & time on bottles?	✓	✓		Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 1Z 187 Y44 02 9606 3295 9739 3909 9678 5514

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HT Date 04/21/14 Page 1 of 1

GEL Laboratories LLC – Login Review Report

GEL Work Order/SDG: 347128 Early Spring Vegetation 2014
Client SDG: 347128
Project Manager: Heather Shaffer
Project Name: DNMI00101 Vegetation Analysis
Purchase Order: DW16138
Package Level: LEVEL3
EDD Format: EIM_DNMI

Work Order Due Date: 21-MAY-14
Package Due Date: 18-MAY-14
EDD Due Date: 20-MAY-14
Due Date: 21-MAY-14
HXS1

Collector: C
Prelogin #: 20140415619
Project Workdef ID: 1310529
SDG Status: Closed
Logged by:

GEL ID	Client Sample ID	Client Sample Desc.	Collect Date & Time	Receive Date & Time	Time Zone	# of Cont.	Lab Matrix	Fax Due Date	Days to Process	CofC #	Prelog Group	Lab QC	Field QC
347128001	North East		16-APR-14 12:45	21-APR-14 09:20	-2	1	VEGETATION		30		1		
347128002	North West		16-APR-14 13:15	21-APR-14 09:20	-2	1	VEGETATION		30		1		
347128003	South West		16-APR-14 14:00	21-APR-14 09:20	-2	1	VEGETATION		30		1		

Client Sample ID	Status	Tests/Methods	Product Reference	Fax Date	PM Comments	Aux Data		Receive Codes
-001 North East	REVW	GFPC, Total Alpha Radium, solid				Client Matrix	SOLID	
	REVW	GFPC, Pb210, Solid						
	REVW	Laboratory Composite – Dry prep instructions						
-002 North West	REVW	GFPC, Total Alpha Radium, solid				Client Matrix	SOLID	
	REVW	GFPC, Pb210, Solid						
	REVW	Laboratory Composite – Dry prep instructions						
-003 South West	REVW	GFPC, Total Alpha Radium, solid			use caution when handling; some cactus included in the sample.	Client Matrix	SOLID	
	REVW	GFPC, Pb210, Solid						
	REVW	Laboratory Composite – Dry prep instructions						

Product: LABCOMP_S **Workdef ID:** 1310628 **In Product Group?** No **Group Name:** **Group Reference:**

Method:
Product Description: Laboratory Composite – Dry prep instructions
Samples: 001, 002, 003
Parmname Check: All parmnames scheduled properly

Path: Rad Prep SPRP
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
							No

GEL Laboratories LLC - Login Review Report

Product: GFC__PBS **Workdef ID:** 1310600 **In Product Group?** No **Group Name:** **Group Reference:**

Method: DOE RP280 Modified
Product Description: GFPC, Pb210, Solid
Samples: 001, 002, 003
Parmname Check: All parmnames scheduled properly

Path: Standard
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
14255-04-0	Lead-210	.000001	uCi/kg	REG	Y	Y	Yes

Product: GFCTORAS **Workdef ID:** 1310679 **In Product Group?** No **Group Name:** **Group Reference:**

Method: EPA 900.1 Modified
Product Description: GFPC, Total Alpha Radium, solid
Samples: 001, 002, 003
Parmname Check: All parmnames scheduled properly

Path: Standard
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
	Total Radium	.00000005	uCi/kg	REG	Y	Y	Yes

Contingent Tests

Action	Product Name	Description	Samples

Login Requirements:

Requirement	Include?	Comments
Are these vegetation sample?	Y	FOR VEGETATION: After logging in, change from DRY to WET in sample inquiry.
Login Reminder?	Y	FOR VEGETATION: After logging in, change from DRY to WET in sample inquiry. Log with lab comp.

Peer Review by:_____ Work Order (SDG#), PO# Checked?_____ C of C signed in receiver location? _____

Laboratory Certifications

List of current GEL Certifications as of 22 May 2014

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-12-00283, P330-12-00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122014-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
Plant Material Permit	PDEP-12-00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-14-9
Utah NELAP	SC000122013-11
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790

Radiochemistry Case Narrative
Energy Fuels Resources (DNMI)
SDG 347128

Method/Analysis Information

Product:	**GFPC, Total Alpha Radium, solid**
Analytical Method:	EPA 900.1 Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1385421
Prep Batch Number:	1382146

Sample ID	Client ID
347128001	North East
347128002	North West
347128003	South West
1203081581	Method Blank (MB)
1203081582	347128002(North West) Sample Duplicate (DUP)
1203081583	347128002(North West) Matrix Spike (MS)
1203081584	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-010 REV# 15.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 347128002 (North West).

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: The blank, 1203081581 (MB), did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots. All other samples met the detection limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Recounts
None of the samples in this batch were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GFPC, Pb210, Solid**
Analytical Method:	DOE RP280 Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1385433
Prep Batch Number:	1382146

Sample ID	Client ID

347128001	North East
347128002	North West
347128003	South West
1203081601	Method Blank (MB)
1203081602	347128002(North West) Sample Duplicate (DUP)
1203081603	347128002(North West) Matrix Spike (MS)
1203081604	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-018 REV# 13.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 347128002 (North West).

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: The blank, 1203081601 (MB), did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots. All other samples met the detection limits. The sample and the duplicate, 1203081602 (North West) and 347128002 (North West), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with value of 1.71.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Recounts
Samples 1203081603 (North West) and 1203081604 (LCS) were recounted due to high recovery. The recounts

are reported.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DNMI001 Energy Fuels Resources (USA), Inc.

Client SDG: 347128 GEL Work Order: 347128

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the CRDL.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Theresa L. Austin **Name: Theresa Austin**

Date: 28 MAY 2014 **Title: Group Leader**

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: May 28, 2014

Energy Fuels Resources (USA), Inc.
225 Union Boulevard
Suite 600
Lakewood, Colorado

Contact: Ms. Kathy Weinel

Workorder: 347128

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 1385421										
QC1203081582 347128002 DUP										
Total Radium		2.53E-05		2.83E-05	uCi/kg	11.3		(0%-20%)	KSD1	05/27/14 15:5
	Uncertainty	+/-6.29E-07		+/-6.38E-07						
QC1203081584 LCS										
Total Radium	0.000886			0.000797	uCi/kg		89.9	(75%-125%)		05/27/14 16:2
	Uncertainty			+/-9.28E-06						
QC1203081581 MB										
Total Radium			U	-1.36E-07	uCi/kg					05/27/14 15:5
	Uncertainty			+/-2.99E-07						
QC1203081583 347128002 MS										
Total Radium	0.0011	2.53E-05		0.00092	uCi/kg		81.3	(75%-125%)		05/27/14 15:5
	Uncertainty	+/-6.29E-07		+/-1.00E-05						
Batch 1385433										
QC1203081602 347128002 DUP										
Lead-210		5.70E-05		8.08E-05	uCi/kg	34.5*		(0%-20%)	KSD1	05/27/14 16:5
	Uncertainty	+/-2.21E-06		+/-2.55E-06						
QC1203081604 LCS										
Lead-210	0.00173			0.00202	uCi/kg		116	(75%-125%)		05/28/14 11:0
	Uncertainty			+/-2.61E-05						
QC1203081601 MB										
Lead-210			U	2.78E-06	uCi/kg					05/27/14 16:5
	Uncertainty			+/-2.98E-06						
QC1203081603 347128002 MS										
Lead-210	0.00212	5.70E-05		0.00258	uCi/kg		119	(75%-125%)		05/28/14 11:0
	Uncertainty	+/-2.21E-06		+/-3.27E-05						

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

QC Summary

Workorder: **347128**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	Matrix Related Failure
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the CRDL.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178

www.gel.com

July 18, 2014

Ms. Kathy Weinel
Energy Fuels Resources (USA), Inc.
225 Union Boulevard
Suite 600
Lakewood, Colorado 80228

Re: Vegetation Analysis
Work Order: 350589

Dear Ms. Weinel:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 13, 2014. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

Heather Shaffer

Heather Shaffer
Project Manager

Purchase Order: DW16138
Enclosures

Energy Fuels Resources (USA), Inc.
Vegetation Analysis
SDG: 350589

Case Narrative

Receipt Narrative
for
Energy Fuels Resources (USA), Inc.
SDG: 350589

July 18, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on June 13, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
350589001	North East
350589002	North West
350589003	South West

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.

Heather Shaffer

Heather Shaffer
Project Manager

Chain of Custody and Supporting Documentation

350589

CHAIN OF CUSTODY

Samples Shipped to: Gel Laboratories
2040 Savage Road
Charleston, SC 29407

Contact: Garrin Palmer
Ph: 435 678 4115
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
Late Spring Vegetation 2014	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
North East	6/10/2014	5571	Ra 226, PB 210
North West	6/10/2014	5220	Ra 226, PB 210
South West	6/10/2014	4950	Ra 226, PB 210

* Please use caution when handling South West samples. Some cactus included in the samples.

Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer Garrin Palmer	6/10/2014 1000	JP	6-13-14 0920
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DNMI	**SDG/AR/COC/Work Order:** 350589
Received By: JP	**Date Received:** 6-13-14

Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*			✓	Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 19
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 13046294 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?			✓	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?			✓	Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?			✓	Sample ID's affected: time on containers SW-0745, NW-0815, NE-0845
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: one per ID
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other JP 12 187 444 12 9013 9937 " 9049 2742 " 9426 2153

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JP Date 6-13-14 Page 1 of 1

GEL Laboratories LLC − Login Review Report

GEL Work Order/SDG: 350589
Client SDG: 350589
Project Manager: Heather Shaffer
Project Name: DNMI00101 Vegetation Analysis
Purchase Order: DW16138
Package Level: LEVEL3
EDD Format: EIM_DNMI

Work Order Due Date: 21−JUL−14
Package Due Date: 18−JUL−14
EDD Due Date: 20−JUL−14
Due Date: 21−JUL−14
HXT1

Collector: C
Prelogin #: 20140617731
Project Workdef ID: 1310529
SDG Status: Closed
Logged by:

GEL ID	Client Sample ID	Client Sample Desc.	Collect Date & Time	Receive Date & Time	Time Zone	# of Cont.	Lab Matrix	Fax Due Date	Days to Process	CofC #	Prelog Group	Lab QC	Field QC
350589001	North East		10−JUN−14 08:45	13−JUN−14 09:20	−2	1	VEGETATION		30		1		
350589002	North West		10−JUN−14 08:15	13−JUN−14 09:20	−2	1	VEGETATION		30		1		
350589003	South West		10−JUN−14 07:45	13−JUN−14 09:20	−2	1	VEGETATION		30		1		

Client Sample ID	Status	Tests/Methods	Product Reference	Fax Date	PM Comments	Aux Data		Receive Codes
−001 North East	REVW	GFPC, Total Alpha Radium, solid				Cooler Seal Undisturbed	y	
	REVW	GFPC, Pb210, Solid				Temperature (C)	19	
	REVW	Laboratory Composite − Dry prep instructions						
−002 North West	REVW	GFPC, Total Alpha Radium, solid				Cooler Seal Undisturbed	y	
	REVW	GFPC, Pb210, Solid				Temperature (C)	19	
	REVW	Laboratory Composite − Dry prep instructions						
−003 South West	REVW	GFPC, Total Alpha Radium, solid				Cooler Seal Undisturbed	y	
	REVW	GFPC, Pb210, Solid				Temperature (C)	19	
	REVW	Laboratory Composite − Dry prep instructions						

Product: LABCOMP_S **Workdef ID:** 1310628 **In Product Group?** No **Group Name:** **Group Reference:**

Method:
Product Description: Laboratory Composite − Dry prep instructions
Samples: 001, 002, 003
Parmname Check: All parmnames scheduled properly

Path: Rad Prep SPRP
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
							No

GEL Laboratories LLC - Login Review Report

Product: GFC__PBS **Workdef ID:** 1310600 **In Product Group?** No **Group Name:** **Group Reference:**

Method: DOE RP280 Modified
Product Description: GFPC, Pb210, Solid
Samples: 001, 002, 003
Parmname Check: All parmnames scheduled properly

Path: Standard
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
14255-04-0	Lead-210	.000001	uCi/kg	REG	Y	Y	Yes

Product: GFCTORAS **Workdef ID:** 1310679 **In Product Group?** No **Group Name:** **Group Reference:**

Method: EPA 900.1 Modified
Product Description: GFPC, Total Alpha Radium, solid
Samples: 001, 002, 003
Parmname Check: All parmnames scheduled properly

Path: Standard
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
	Total Radium	.00000005	uCi/kg	REG	Y	Y	Yes

Contingent Tests

Action	Product Name	Description	Samples

Login Requirements:

Requirement	Include?	Comments
Are these vegetation sample?	Y	FOR VEGETATION: After logging in, change from DRY to WET in sample inquiry.
Login Reminder?	Y	FOR VEGETATION: After logging in, change from DRY to WET in sample inquiry. Log with lab comp.

Peer Review by:_____ Work Order (SDG#), PO# Checked?_____ C of C signed in receiver location? _____

Laboratory Certifications

List of current GEL Certifications as of 18 July 2014

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-12-00283, P330-12-00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122014-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
Plant Material Permit	PDEP-12-00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-14-9
Utah NELAP	SC000122014-13
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790

Radiochemistry Case Narrative
Energy Fuels Resources (DNMI)
SDG 350589

Method/Analysis Information

Product:	**GFPC, Total Alpha Radium, solid**
Analytical Method:	EPA 900.1 Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1396264
Prep Batch Number:	1396221

Sample ID	Client ID
350589001	North East
350589002	North West
350589003	South West
1203110048	Method Blank (MB)
1203110049	350589001(North East) Sample Duplicate (DUP)
1203110050	350589001(North East) Matrix Spike (MS)
1203110051	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-010 REV# 15.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 350589001 (North East).

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: The blank, 1203110048 (MB), did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots. All other samples met the detection limits. The blank, 1203110048 (MB), result is greater than the required detection limit but less than the MDC.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Recounts
None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GFPC, Pb210, Solid**
Analytical Method:	DOE RP280 Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1396265
Prep Batch Number:	1396221

Sample ID	Client ID
350589001	North East
350589002	North West
350589003	South West
1203110052	Method Blank (MB)
1203110053	350589001(North East) Sample Duplicate (DUP)
1203110054	350589001(North East) Matrix Spike (MS)
1203110055	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-018 REV# 13.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 350589001 (North East).

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: The blank, 1203110052 (MB), did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots. All other samples met the detection limits. The blank 1203110052 (MB) result is greater than the required detection limit but less than the MDC.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Recounts
None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DNMI001 Energy Fuels Resources (USA), Inc.

Client SDG: 350589 GEL Work Order: 350589

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the CRDL.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: **Name: Kate Gellatly**

Date: 18 JUL 2014 **Title: Analyst I**

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: July 18, 2014

Energy Fuels Resources (USA), Inc.
225 Union Boulevard
Suite 600
Lakewood, Colorado

Contact: **Ms. Kathy Weinel**

Workorder: **350589**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 1396264										
QC1203110049 350589001 DUP										
Total Radium		2.60E-05		2.35E-05	uCi/kg	10.0		(0%-20%)	TC1	07/15/14 16:3
	Uncertainty	+/-8.46E-07		+/-8.07E-07						
QC1203110051 LCS										
Total Radium	0.00104			0.000855	uCi/kg		82.4	(75%-125%)		07/15/14 16:3
	Uncertainty			+/-1.06E-05						
QC1203110048 MB										
Total Radium			U	3.62E-07	uCi/kg					07/15/14 16:3
	Uncertainty			+/-1.53E-07						
QC1203110050 350589001 MS										
Total Radium	0.0023	2.60E-05		0.00182	uCi/kg		77.9	(75%-125%)		07/15/14 16:3
	Uncertainty	+/-8.46E-07		+/-1.96E-05						
Batch 1396265										
QC1203110053 350589001 DUP										
Lead-210		5.60E-05		4.87E-05	uCi/kg	13.9		(0%-20%)	TC1	07/16/14 06:3
	Uncertainty	+/-3.08E-06		+/-2.75E-06						
QC1203110055 LCS										
Lead-210	0.00202			0.00222	uCi/kg		110	(75%-125%)		07/16/14 06:3
	Uncertainty			+/-3.08E-05						
QC1203110052 MB										
Lead-210			U	2.41E-06	uCi/kg					07/16/14 06:3
	Uncertainty			+/-1.56E-06						
QC1203110054 350589001 MS										
Lead-210	0.00442	5.60E-05		0.00486	uCi/kg		109	(75%-125%)		07/16/14 06:3
	Uncertainty	+/-3.08E-06		+/-6.11E-05						

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

QC Summary

Workorder: **350589**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	Matrix Related Failure
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the CRDL.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

ATTACHMENT G

STACK SAMPLE LABORATORY RESULTS

FIRST QUARTER
RADIONUCLIDE EMISSIONS TEST
CONDUCTED AT
ENERGY FUELS RESOURCES
SOUTH YELLOW CAKE SCRUBBER
YELLOW CAKE DRYER BAGHOUSE

BLANDING, UTAH

January 14-15, 2014

by:

TETCO
391 East 620 South
American Fork, UT 84003
Phone (801) 492-9106
Fax (801) 492-9107 fax

Prepared for:

Energy Fuels Resources
6425 S Hwy 91
Blanding, Utah 84511

Date of Report:

January 30, 2014

CERTIFICATION OF REPORT INTEGRITY

Technical Emissions Testing Company (TETCO) certifies that this report represents the truth as well as can be derived by the methods employed. Every effort was made to obtain accurate and representative data and to comply with procedures set forth in the Federal Register.

Dean Kitchen

Reviewer: _____

Date: 1-29-14

Doug Olsen

Reviewer: _____

Date: 1/30/14

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INTRODUCTION

Test Purpose

This test project was conducted to determine the total radionuclide emissions from the South Yellow Cake Scrubber and the Yellow Cake Dryer Baghouse exhausts in terms of Curies per dry standard cubic foot (Ci/dscf).

These tests were for U-Nat only.

Test Location and Type of Process

Energy Fuels Resources is located about 5 miles south of Blanding, Utah. Uranium ore is processed into yellow cake, which is shipped to other facilities for additional processing. There are two yellow cake dryers with individual scrubbers. Both dryer enclosures discharge into the Yellow Cake Dryer Baghouse. The packaging enclosure also discharges into the Yellow Cake Dryer Baghouse. The South Yellow Cake (SYC) dryer was the only operating dryer at the time of the test. The North Yellow Cake dryer is currently not operational. The Grizzly Baghouse serves as the main dust control device for the raw ore unloading and conveying to the processing building.

Stack schematics are shown as Figures 1 and 2 in Appendix D.

Test Dates

The first test run on the SYC Scrubber was completed January 14, 2014 and the second run on January 15, 2014.

One run was completed on the Yellow Cake Dryer Baghouse January 15, 2014.

Pollutants Tested and Methods Applied

The tests were a determination of radionuclide emissions in accordance with EPA Method 5/114.

Test run filters and front wash residues were sent to Test America located in Richland, Washington for radionuclide analysis.

Test Participants

Test Facility	Garrin Palmer	
State Agency	None	
TETCO	Doug Olsen Jeff Graton	Mike McNamara

Deviations From EPA Methods

None.

Quality Assurance

Testing procedures and sample recovery techniques were according to those outlined in the Federal Register and the *Quality Assurance Handbook for Air Pollution Measurement Systems*.

SUMMARY OF RESULTS

Emission Results

Table I presents the findings of the test in Curies per dry standard cubic foot. Tables IV-VI in Appendix A have more detailed information.

Table I. Measured Radionuclide Emissions

Run #	South Yellow Cake Scrubber		Yellow Cake Dryer Baghouse	
	pCi/dscf	pCi/hr	pCi/dscf	pCi/hr
1	7.17	5.921E +05	27.92	6.596E+06
2	7.80	6.748E+05		
AVE	**7.49**	**6.334E+05**	**27.92**	**6.596E+06**

Process Data

The process was operated according to standard procedures. All pertinent process data was available for recording by agency personnel. Scrubber water flow, pressure drop readings (Δp) were recorded and are found in Appendix D. The Dryer Baghouse pressure drop readings (Δp) were recorded and are found on the test run sheets. Production data will be submitted by Energy Fuels Resources.

Description of Collected Samples

The test filters for the South Yellow Cake Scrubber were heavily covered with a white colored particulate. The front washes were cloudy in appearance.

The test filters for the Yellow Cake Dryer Baghouse were lightly colored with a tan colored particulate. The front wash was clear in appearance.

Discussion of Errors or Irregularities

None

Percent Isokinetic Sampling

Each test run was isokinetic within the ±10% of 100% criterion specified in the Federal Register. Isokinetic values for each test run are presented in Table II.

Table II. Percent Isokinetic Sampling

Run #	South Yellow Cake Scrubber	Yellow Cake Dryer Baghouse
1	99	97
2	99	

SOURCE OPERATION

Process Control Devices Operation

All process control devices were operated normally. Recorded scrubber water flow, pressure and baghouse Δp readings were recorded and are found on the test run sheets or in Appendix D.

Process Representativeness

The facility was operated normally. Production data was retained by Energy Fuels Resources.

SAMPLING AND ANALYSIS PROCEDURES

Sampling Port Location

The inside diameter of the South Yellow Cake Scrubber stack is 12.75 inches. The two, four-inch diameter sample port are located 28.24 diameters (30 feet) downstream from the last disturbance and 6.59 diameters (7 feet) upstream from the next disturbance. Figure 1 in Appendix D is a schematic of the stack.

The inside diameter of the Yellow Cake Dryer Baghouse stack is 16.0 inches. The two, four-inch diameter sample ports are located 28.38 diameters (454 inches) downstream from the last disturbance and 3.56 diameters (57 inches) upstream from the next disturbance. The sample port locations are depicted in Figure 2 in Appendix D.

Sampling Point Location

Table III shows the distance of each sampling point from the inside wall according to EPA Method 1. Each point is marked and identified with a wrapping of glass tape and numbered. These points are determined by measuring the distance from the inside wall.

Table III. Sampling Point Location

Sample Point	Distance (inches) from Inside Wall	
	SYC Scrubber	Dryer Baghouse
1	0.85	0.70
2	3.19	2.34
3	9.56	4.74
4	11.90	11.26
5		13.66
6		15.30

Sampling Train Description

To determine the actual emission rates for this stack, 40 CFR 60, Appendix A, Methods 1-5/114 were followed.

All sampling trains were made of inert materials, (Teflon, stainless steel and glass) to prevent interference of the sampled gas and particulate. The stack analyzers used to conduct Methods 1-

5/114 are constructed to meet the specifications outlined in the CFR. The temperature sensors are K-type thermocouples. Heater, vacuum and pitot line connections have been designed to be interchangeable with all units used by the tester. A 316 stainless steel probe liner was used for the tests. Figure 4 in Appendix E is a sketch of the Methods 5/114 sampling train.

Sample boxes were prepared for testing by following the prescribed procedures outlined in Methods 5/114.

Sampling and Analytical Procedures

All sampling and analytical test procedures were as specified in 40 CFR 60, Appendix A, Methods 5/114.

Quality Assurance

All equipment setup, sampling procedures, sample recovery and equipment calibrations were carried out according to the procedures specified in 40 CFR 60 and the *Quality Assurance Handbook for Air Pollution Measurement Systems.*

APPENDIX

A: Complete Results and Sample Calculations
B: Raw Field Data
C: Laboratory Data and Chain of Custody
D: Raw Production Data
E: Calibration Procedures and Results
F: Related Correspondence

APPENDIX A

Table IV Complete Results, South Yellow Cake Scrubber
Table V Complete Results, Yellow Cake Dryer Baghouse

Nomenclature
Sample Equations

TABLE IV
COMPLETE RESULTS
ENERGY FUELS CORPORATION, BLANDING, UTAH
SOUTH YELLOWCAKE SCRUBBER EXHAUST

Symbol	Description	Dimensions	Run #1	Run #2	
Date			1/14/2014	1/15/2015	
Filter #			6108	6112	
Begin	Time Test Began		9:55	7:49	
End	Time Test Ended		18:17	16:11	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.75	24.75	
ΔH	Orifice Pressure Drop	In. H_2O	1.518	1.707	
Y	Meter Calibration Y Factor	dimensionless	1.002	1.002	
Vm	Volume Gas Sampled--Meter Conditions	cf	377.457	395.092	
T_m	Avg Meter Temperature	°F	84.9	85.4	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.5517	0.5842	
Wt_{wc}	Weight Water Collected	Grams	421.6	498.8	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.2755	0.2755	
CO_2	Volume % Carbon Dioxide	Percent	1.10	2.00	
O_2	Volume % Oxygen	Percent	18.90	18.00	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	80.00	80.00	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	304.524	318.637	
Vw	Volume Water Vapor	scf	19.878	23.518	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.061	0.069	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.084	0.090	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.061	0.069	
X_d	Fraction of Dry Gas	Fraction	0.939	0.931	
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.93	29.04	
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.26	28.28	
%I	Percent Isokinetic	Percent	98.8	98.6	**AVG**
T_s	Avg Stack Temperature	°F	102.5	104.5	**103.5**
A_s	Stack Cross Sectional Area	Sq. Ft.	0.887	0.887	
P_G	Stack Static Pressure	In. H_2O	-0.310	-0.310	
Pb_p	Sample Port Barometric Pressure	In. Hg Abs	24.68	24.68	
P_s	Stack Pressure	In. Hg. Abs	24.657	24.657	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	1.38E+03	1.44E+03	**1.41E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	1.89E+03	2.01E+03	**1.95E+03**
V_s	Velocity of Stack Gas	fpm	2.14E+03	2.26E+03	**2.20E+03**
Curies	Radionuclides per sample	pCi	2184.5	2485.2	
Crad	Concentration of Radionuclides	pCi/dscf	7.173	7.799	**7.486**
ERrad	Emission Rate of Radionuclides	pCi/hr	5.921E+05	6.748E+05	**6.334E+05**

* If the measured moisture content is greater than the saturated moisture level (supersaturated), the saturated moisture value will be used in all calculations (40 CFR 60, Method 4, Section 12.1.7).

TABLE V
COMPLETE RESULTS, PM
ENERGY FUELS CORPORATION, BLANDING, UTAH
YELLOW CAKE DRYER BAGHOUSE

Symbol	Description	Dimensions	Run #1
Date	Date		1/15/2014
Filter #			6107
Begin	Time Test Began		10:57
End	Time Test Ended		13:01
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.75
ΔH	Orifice Pressure Drop	In. H_2O	2.033
Y	Meter Calibration Y Factor	dimensionless	1.002
Vm	Volume Gas Sampled--Meter Conditions	cf	108.674
T_m	Avg Meter Temperature	°F	77.6
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.9327
Wt_{wc}	Weight Water Collected	Grams	6.9
T_t	Duration of Test	Minutes	120
C_p	Pitot Tube Coefficient	Dimensionless	0.84
D_n	Nozzle Diameter	Inches	0.2230
CO_2	Volume % Carbon Dioxide	Percent	0.00
O_2	Volume % Oxygen	Percent	20.90
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.10
Vm_{std}	Volume Gas Sampled (Standard)	dscf	89.002
Vw	Volume Water Vapor	scf	0.325
Bw_s	Fraction H_2O in Stack Gas	Fraction	0.004
X_d	Fraction of Dry Gas	Fraction	0.996
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.80
%I	Percent Isokinetic	Percent	97.0
T_s	Avg Stack Temperature	°F	75.9
A_s	Stack Cross Sectional Area	Sq. Ft.	1.396
P_G	Stack Static Pressure	In. H_2O	-1.30
Pb_p	Sample Port Barometric Pressure	In. Hg Abs	24.68
P_s	Stack Pressure	In. Hg. Abs	24.584
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	3.94E+03
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	4.88E+03
V_s	Velocity of Stack Gas	fpm	3.50E+03
Curies	Radionuclides per sample	pCi	2485.2
Crad	Concentration of Radionuclides	pCi/dscf	27.9231
ERrad	Emission Rate of Radionuclides	pCi/hr	6.596E+06

General Nomenclature

%I = percent isokinetic, percent

$A_s = (D_s^2 / 4) \cdot \pi$

$AS\Delta P$ = see $\sqrt{\Delta P}$

Btu = unit heat value (British thermal unit)

B_{ws} = fraction of water in stack gas (may have designation of "measured" or "saturated")
"measured" represents measured moisture based upon sample volume and water collected
"saturated" is a calculated value based upon stack pressure and temperature

C_0 = average of initial and final system zero gas calibration bias checks (ppm, percent)

C_{avg} = average gas concentration (as measured)

C_B = concentration of particulate matter, back half (gr/dscf,lb/dscf, etc.)

C_{cond} = concentration of condensibles (grain/dscf)

C_{cors} = concentration of coarse particulate (gr/dscf)

C_{Dir} = measured concentration of a calibration gas when introduced in direct calibration mode

C_{fa} = concentration of particulate matter, front half, actual stack flow (gr /acf)

C_F = concentration of particulate matter, front half (gr/dscf,lb/dscf, etc.)

C_{gas} = C_{avg} corrected for initial and final system bias checks (Equation 7E-5)

C_m = average of initial and final system upscale gas calibration bias checks (ppm, percent)

C_{ma} = actual concentration of upscale calibration gas

C_{metal} = concentration of metals (ppm, $\mu g/ft^3$, etc.) atomic symbol replaces "metal"

CO_2 = percent carbon dioxide in the stack gas

C_p = pitot tube coefficient (0.84)

C_{PM10} = concentration of PM_{10} particulate (gr/dscf)

C_{rad} = concentration of radionuclides (pCi/dscf)

CS = measured concentration of a calibration gas when introduced in system calibration mode

C_X = Any species symbol may replace X. Units may be expressed as ppm, lb/dscf, etc.

$C_{X\ (corr)}$ = actual gas concentration corrected to required percent O_2

Curies = Measured radionuclides per sample. Units may be pCi or uCi.

D_c = jet diameter (cm)

D/F = Dioxins and Furans (See laboratory report for D/F descriptions and nomenclacture)

ΔH = orifice pressure drop (inches H_2O)

$\Delta H_@$ = orifice pressure (inches H_2O)

ΔH_d = orifice pressure head (inches H_2O) needed for impactor flow rate

D_n = nozzle diameter (inches)

ΔP = stack flow pressure differential (inches H_2O)

Dp_{50} = 50% effective cutoff diameter of particle (cm)

D_s = diameter of the stack (feet)

EA = percent excess air

ER_B = emission rate of back half particulate (lb/hr)

ER_{cond} = emission rate of condensibles (lb/hr)

ER_{cors} = emission rate of coarse particulate (lb/hr)

ER_F = emission rate of front half particulate (lb/hr)

ER_{gas} = emission rate of a gas (lb/hr)

ER_{mmBtu} = emission rate per mmBtu of fuel

ER_{PM10} = emission rate of PM_{10} particulate (lb/hr)

ER_{rad} = emission rate of radionuclides (pCi/hr)

ER_X = emission rate of compound which replaces X. Units are usually in lb/hr.

F_D = Dry based fuel factor. Ratio of the gas volume of the products of combustion to the heat content
See 40 CFR 60, Appendix A, Method 19, Table 19-2 for fuel factor values.

K_c = Cunningham slip correction factor

λ = mean free path of molecules in gas phase (cm)

mmBtu = million Btu

General Nomenclature

M_{cond} = mass of condensibles (milligrams)
M_{cors} = mass of coarse particulate (milligrams)
M_d = molecular weight of stack gas, dry basis (lb/lb-mol)
M_F = mass of particulate on filter (mg)
M_{FP} = mass of particulate matter on filter and probe (mg)
mmBtu = million Btu
M_P = mass of particulate matter in probe and front wash (mg)
M_{PM10} = mass of PM_{10} particulate (milligrams)
M_s = molecular weight of stack gas, wet basis (lb/lbmol)
M_X = mass of species "X". Units may vary and other descriptive subscripts may apply.
μ_s = gas viscosity (poise)
M_{wx} = molecular weight of gas species (g/gmol)
N = number of jets per plate
N_2 = percent nitrogen in the stack gas
O_2 = percent oxygen in the stack gas
$\sqrt{\Delta P}$ = average of the square roots of ΔP (may also be referred to as $AS\Delta P$)
$\sqrt{\Delta P_1}$ = square root of ΔP at point 1 of the current test, Method 201A
$\sqrt{\Delta P_1'}$ = square root of ΔP at point 1 of the previous traverse, Method 201A
$\sqrt{\Delta P'_{ave}}$ = average of the square roots of ΔP from the previous traverse, Method 201A
Pb_m = absolute barometric pressure at the dry gas meter (inches Hg)
Pb_p = absolute barometric pressure at the sample location (inches Hg)
P_G = stack static pressure (inches H_2O)
P_s = absolute stack pressure (inches Hg)
P_{std} = absolute pressure at standard conditions (29.92 inches Hg.)
θ = time of test (minutes)
θ_1 = sample time (duration in minutes) at first sample point for Method 201A
θ_n = sample time (duration in minutes) at sample point "n" for Method 201A
θ_{test} = target test time for Method 201A (minutes)
Q_a = stack gas volumetric flow rate (acfm)
Q_s = stack gas volumetric flow rate (dscfm)
Q_{sc} = actual gas flow rate through the cyclone (acfm)
Q_{sce} = actual gas flow rate through the impactor (acfm)
Q_W = wet stack gas std. volumetric flow (ft^3/min, wscfm)
R = gas constant (21.85 inches Hg*ft^3/(lbmol*R))
ρ_p = particle density (1 g/cm^3)
ρ_s = stack gas density (g/cm^3)
T_m = stack temperature (°F)
T_s = stack temperature (°F)
T_{std} = absolute temperature at standard conditions (528°R)
Tt = Duration of test run in minutes. Also see θ
u_m = mean molecular speed (cm/s)
Vm = sample volume (ft^3) at meter conditions
Vm_{std} = volume standard (dscf), sample volume adjusted to 68°F and 29.92 inches Hg.
V_s = velocity of stack gas (fpm)
V_w = volume water vapor (scf) at 68°F and 29.92 inches Hg.
Wt_{wc} = weight of the condensed water collected (grams)
X_d = fraction of dry gas
Y = meter calibration Y-factor (dimensionless)
ψ = dimensionless inertial impaction parameter, 0.14

General Sample Equations

$$\%I = Vm_{std} \cdot (T_s + 460) \cdot 1039 / (\theta \cdot V_s \cdot P_s \cdot X_d \cdot D_n^2)$$

$$A_s = (D_s^2 / 4) \cdot \pi$$

$$B_{ws} = V_w / (Vm_{std} + V_w)$$

$$C_B = M_B \cdot 0.01543 / Vm_{std}$$

$$C_{cond} = M_{cond} \cdot 0.01543 / Vm_{std}$$

$$C_{cors} = M_{cors} \cdot 0.01543 / Vm_{std}$$

$$C_{fa} = T_{std} \cdot C_{fp} \cdot P_s \cdot X_d / [P_{std} \cdot (T_m + 460)]$$

$$C_f = M_{fp} \cdot 0.01543 / Vm_{std}$$

$$C_{PM10} = M_{PM10} \cdot 0.01543 / Vm_{std}$$

$$C_{rad} = Curies/Vm_{std}$$

$$C_{gas\ (corr)} = C_{gas} \cdot (20.9 - \text{desired } \%O_2) / (20.9 - \text{actual } \%O_2)$$

$$_{casc}\ Dp_{50} = \sqrt{[\mu s \cdot \psi \cdot N \cdot \pi \cdot D_c^3 \cdot 18 / (K_c \cdot \rho_p \cdot Q_{sce} \cdot 4)]}$$

$$_{PM_{10}}\ Dp_{50} = 0.15625 \cdot [(T_s + 460) / (M_s \cdot P_s)]^{0.2091} \cdot (\mu_s / Q_{sc})^{0.7091}$$

$$ER_{cond} = C_{cond} \cdot Q_s \cdot 0.00857$$

$$ER_{cors} = C_{cors} \cdot Q_s \cdot 0.00857$$

$$ER_F = C_f \cdot Q_s \cdot 0.00857$$

$$ER_{gas} = P_{std} \cdot Q_s \cdot M_{wgas} \cdot C_{gas} \cdot 60 / (R \cdot T_{std} \cdot 10^6)$$

$$ER_{gas} = C_{gas(lb/dscf)} \cdot Qs \cdot 60$$

(Either ER_{gas} equation gives equivalent lb/hr values to 3 sig. figures)

$$ER_{mmBtu} = C_{gas(lb/dscf)} \cdot F_d \cdot (20.9/(20.9 - \%O_2)$$, Method 19 Equation 19-1

$$ER_{PM10} = C_{PM10} \cdot Q_s \cdot 0.00857$$

$$ER_{rad} = C_{rad} \cdot Qs \cdot 60$$

$$K_c = 1 + 2 \cdot \lambda \cdot 1.257 / Dp_{50}$$

$$\lambda = \mu_s / (0.499 \cdot \rho_s \cdot u_m)$$

$$M_d = CO_2 \cdot 0.44 + O_2 \cdot 0.32 + N_2 \cdot 0.28$$

$$M_s = (M_d \cdot X_d) + (18 \cdot B_{ws})$$

$$\mu_s = [51.05 + 0.207 \cdot (T_s + 460) + 3.24 \cdot 10^{-5} \cdot (T_s + 460)_2 + 0.53147 \cdot \%O_2 - 74.143 \cdot B_{ws}] \cdot 10^{-6}$$

$$P_s = Pb_p + (P_G / 13.6)$$

$$\theta_1 = (\sqrt{\Delta P_1'} / \sqrt{\Delta P'_{ave}}) \cdot (\theta_{test} / pts)$$

$$\theta_n = \theta_1 \cdot \sqrt{\Delta P_n} / \sqrt{\Delta P_1}$$

$$Q_a = V_s \cdot A_s$$

$$Q_s = Qa \cdot Xd \cdot Ps \cdot T_{std} / [(Ts + 460) \cdot P_{std}]$$

$$Q_{sc} = [(T_s + 460) \cdot P_{std} / (T_{std} \cdot P_s)] \cdot [(Vm_{std} + V_w) / \theta]$$

$$Q_{sce} = [(T_s + 460) \cdot P_{std} / (T_{std} \cdot P_s)] \cdot [(Vm_{std} + V_w) / \theta]$$

$$Q_W = Q_s / X_d$$

$$\rho_s = P_s \cdot M_s \cdot 3386.39 \cdot 10^{-6} / [R \cdot (T_s + 460) / 1.8]$$

$$u_m = 100 \cdot \sqrt{\{[R \cdot (T_s + 460) / 1.8 \cdot 8 \cdot 10^3] / [\pi \cdot M_s]\}}$$

$$Vm_{std} = Vm \cdot Y \cdot T_{std} \cdot (Pb_m + \Delta H / 13.6) / [P_{std} \cdot (T_m + 460)]$$

$$V_s = 85.49 \cdot 60 \cdot Cp \cdot \sqrt{\Delta P} \cdot \sqrt{[(T_s + 460) / (P_s \cdot M_s)]}$$

$$V_w = Wt_{wc} \cdot 0.04715$$

$$X_d = 1 - B_{ws}$$

APPENDIX B

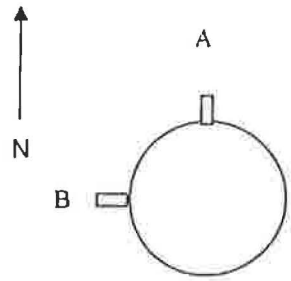
South Yellow Cake Scrubber

- Preliminary Velocity Traverse and Sampling Point Location Data
- Particulate Field Data

Yellow Cake Dryer Baghouse

- Preliminary Velocity Traverse and Sampling Point Location Data
- Particulate Field Data

South Yellow Cake Dryer Scrubber



Stack Dia 12.75 Reference 0

Ports are 7' Upstream from next disturbance

Ports are 30' Downstream from last disturbance

Facility Energy Fuels

Stack Identification South Yellow Cake Dryer Scrubber

Date _____

Barometric Pressure

Pb_{m} _____ in Hg Pb_{p} _____ in Hg

Static Pressure (P_G) _____ in H_2O

Estimated Moisture (Bw_s) 4-6% %

Sample Height from Ground 70 feet

Comments: _____

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	6.7	0.85	0.85						
2	25.0	3.19	3.19						
3	75.0	9.56	9.56						
4	93.3	11.90	11.90						

Averages:

T_s _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_s ∠ Flow ΔP

m5 Field Data Sheet

TETCO

Filter C105 / 6109 Sample Box B

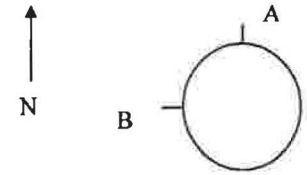
Page 1 of 1 Run # 1

Plant: Energy Fuels

Date: 1/14/21

Location: South Yellow Cake Dryer Scrubber

Operator: [illegible]



Stack Diameter 12.75" Port Reference 0"

Ports are 7' Upstream from next disturbance

Ports are 30' Downstream from last disturbance

Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H₂O)	ΔH (in H₂O) Desired	ΔH (in H₂O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe out	Oven	Effluent	DGM Temp (T_m) Out	In
1	9:55	0	357.300	.33	1.58	1.58	3	97	261	264	262	45	53	54
1		20	373.020	.34	1.63	1.63	4	100	262	240	240	46	66	80
1		40	388.737	.31	1.53	1.53	6	100	268	248	241	49	72	78
2		60	404.478	.30	1.48	1.48	8	99	270	248	241	53	79	83
2		80	420.219	.30	1.48	1.48	9	101	242	253	249	55	83	85
2		100	435.355	.29	1.42	1.42	10	101	252	257	252	57	85	87
3	11:05 / 2:04	120	450.685	.34	1.71	1.71	3	99	260	246	242	56	89	88
3		140	467.838	.33	1.64	1.64	3	103	264	258	257	52	86	86
3		160	484.239	.32	1.59	1.59	6	103	245	268	260	51	87	89
4		180	500.546	.31	1.54	1.54	8	103	245	262	261	51	90	93
4		200	516.665	.31	1.54	1.54	9	103	261	260	272	52	93	95
4		220	533.003	.32	1.61	1.61	11	103	263	260	269	54	90	92
1	14:12	240	549.389	.30	1.51	1.51	3	105	260	237	235	55	85	84
1		260	565.971	.29	1.46	1.46	5	105	270	260	260	45	85	86
1		280	581.449	.30	1.51	1.51	6	105	263	261	270	45	89	90
2		300	597.159	.28	1.41	1.41	8	105	246	251	249	45	90	93
2		320	612.463	.29	1.46	1.46	9	102	234	250	240	45	91	93
2		340	627.930	.29	1.46	1.46	11	103	231	236	234	46	91	95
3	16:14 / 16:17	360	643.485	.30	1.51	1.51	3	104	235	235	233	49	87	84
3		380	659.212	.29	1.46	1.46	3	104	261	240	239	47	83	83
3		400	674.243	.30	1.51	1.51	10	103	262	254	252	46	84	85
4		420	689.901	.28	1.41	1.41	7	105	274	259	256	47	84	86
4		440	705.386	.30	1.51	1.51	9	104	265	262	260	46	84	86
4		460	721.053	.29	1.46	1.46	11	103	260	261	260	46	85	87
	18:17	480	736.709											
			379.409											
Total			1.952	13.2403		36.42		2460					4075	
			377.457											
Average				.5517		1.518		102.5					84.9	

Assumed Moisture 4-6 %

Probe 275 Cp 0.84

Nozzle Calibration .276 .276 .275 .275

Avg D_n .2755 inches

Gas Bag 6-07

Console 3

Y-Factor 1.002

$\Delta H_@$ 1.655 in H_2O

Barometric Pressures

Pb_m 24.75 in Hg

Pb_p 24.68 in Hg

P_G -.30 in H_2O

Leak Check:	Pre	Post
ft³/min	0.009	0.004
vac in Hg	23	15
Pitot Rate	0.0	0.0
In H_2O	9.5	9.5

Water Collected 421.6 g

Time Sampled 480 min

Review [illegible]

K = @T_m

K = @T_m

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)	
2 hours	450.685	15	0.005	451.104	21	0.007	.419
4	549.389	21	0.008	550.303	21	0.005	.914
4	643.485	18	0.008	644.104	21	0.006	.619

1.952

m5 Field Data Sheet

Filter 6112 TETCO Sample Box B

Page 1 of 1 Run # 2

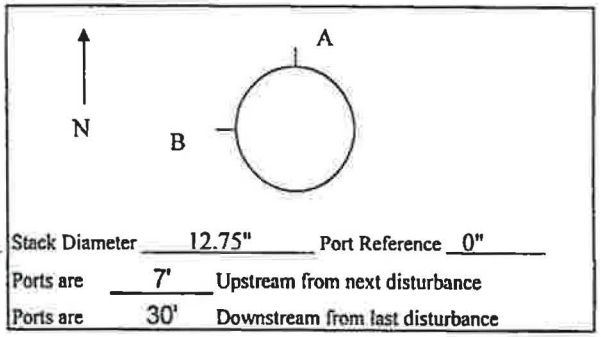
Plant: Energy Fuels

Date: 1/15/14

Location: South Yellow Cake Dryer Scrubber

Operator: [illegible]

Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H₂O)	ΔH (in H₂O) Desired	ΔH (in H₂O) Actual	Vacuum (in Hg)	Stack (Ts)	Probe	Probe out	Oven	Effluent	DGM Temp (Tm) Out	DGM Temp (Tm) In
1	7:49	0	737.602	.34	1.68	1.68	3	95	233	232	230	44	61	61
1		20	753.648	.33	1.63	1.63	4	102	260	256	253	47	65	68
1		40	769.356	.32	1.58	1.58	6	108	262	257	265	51	70	75
2		60	785.338	.31	1.53	1.53	7	102	262	248	245	53	75	80
2		80	800.975	.30	1.48	1.48	9	106	269	248	245	54	81	85
2		100	816.611	.30	1.48	1.48	11	106	255	255	252	54	85	90
3	9:49/9:54	120	832.283	.35	1.73	1.73	3	103	265	246	245	52	83	84
3		140	849.563	.34	1.69	1.69	4	105	260	250	246	47	84	88
3		160	865.840	.34	1.69	1.69	6	104	235	237	235	47	87	91
4		180	882.405	.35	1.74	1.74	7	105	238	236	234	47	89	90
4		200	899.035	.36	1.81	1.81	9	105	234	240	236	48	89	91
4		220	916.185	.36	1.81	1.81	11	106	234	245	241	51	89	90
1	12:05	240	933.185	.32	1.61	1.61	3	103	230	235	236	52	89	89
1		260	949.671	.34	1.70	1.70	4	106	235	255	251	46	88	91
1		280	966.067	.37	1.86	1.86	6	105	235	265	269	49	87	89
2		300	983.272	.36	1.81	1.81	9	105	233	264	268	48	87	89
2		320	1000.389	.36	1.81	1.81	11	104	263	262	269	49	88	91
2		340	1017.450	.35	1.76	1.76	13	105	242	270	269	49	89	91
3	4:05/14:11	360	1034.592	.29	1.46	1.46	3	106	246	238	235	47	87	87
3		380	1050.525	.35	1.76	1.76	4	106	244	268	268	46	89	91
3		400	1066.799	.38	1.91	1.91	6	104	246	265	269	45	91	94
4		420	1083.618	.38	1.91	1.91	6	108	247	266	265	47	91	93
4		440	1100.925	.35	1.76	1.76	9	103	251	267	268	47	90	93
4		460	1117.731	.35	1.76	1.76	12	105	241	269	269	48	91	93
	16:11	480	1134.739											
			397.137											
Total			2.045 395.092	14.0198	4.096			2508					4098	
Average				.5842	1.707			104.5					85.4	



Stack Diameter 12.75" Port Reference 0"

Ports are 7' Upstream from next disturbance

Ports are 30' Downstream from last disturbance

Assumed Moisture 4-6 %

Probe 276 Cp 0.84

Nozzle Calibration 276 276 .275 .275

Avg D_n .2755 inches

Gas Bag C-67

Console 3

Y-Factor 1.002

$\Delta H_@$ 1.656 in H_2O

Barometric Pressures

Pb_m 24.75 in Hg

Pb_p 24.68 in Hg

P_G (0.31) in H_2O

Leak Check:	Pre	Post
ft³/min	0.009	0.005
vac in Hg	22	20
Pitot Rate	0.0	0.0
In H_2O	9.5	9.5

Water Collected 498.8 g

Time Sampled 480 min

Review [illegible]

K = @T_m

K = @T_m

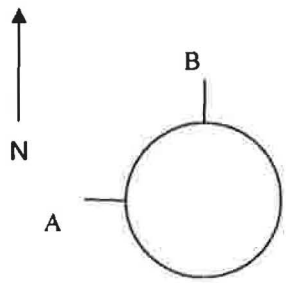
Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)
2nd Post check	832.283	16	0.007	832.900	18	0.008
3rd	933.165	21	0.005	934.002	20	0.008
4th	1034.592	18	0.007	1035.203	18	0.005

.617
.817
.611
2.045

Yellow Cake Dryer Baghouse

Prelim 6 pts



Stack Dia 16" Reference: 0

Ports are 57" ✓ Upstream from next disturbance

Ports are 454" Downstream from last disturbance

Facility Energy Fuels

Stack Identification South Yellow Cake Dryer Baghouse

Date _____

Barometric Pressure

Pb_m _____ in Hg Pb_p _____ in Hg

Static Pressure (P_G) _____ in H_2O

Estimated Moisture (Bw_s) 1 %

Sample Height from Ground _____ feet

Comments: _____

Time: _____

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	4.4	0.70	0.70						
2	14.6	2.34	2.34						
3	29.6	4.74	4.74						
4	70.4	11.26	11.26						
5	85.4	13.66	13.66						
6	95.6	15.30	15.30						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

114 Field Data Sheet

Filter 6107 TETCO Sample Box A

Page 1 of 1 Run # 1

Plant: Denison Mines

Date: 1/15/14

Location: Yellowcake Dryer Baghouse

Operator: M. McNamara

N

B

A

Stack Diameter 16" Port Reference 0.0"

Ports are 57" Upstream from next disturbance

Ports are 45" ~~468"~~ Downstream from last disturbance

Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H₂O)	ΔH (in H₂O) Desired	ΔH (in H₂O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe Out	Filter	Effluent	DGM Temp (T_m) Out	In
A 1	10:57	0	137.609	.79	1.87	1.87	4	75	225	255	255	53	70	68
2		10	146.230	.86	2.04	2.04	4	75	270	251	251	45	72	69
3		20	155.235	.88	2.08	2.08	4	75	270	255	255	47	78	70
4		30	164.370	.88	2.08	2.08	4	75	269	258	258	49	80	71
5		40	173.580	.87	2.06	2.06	5	75	250	248	248	51	82	72
6		50	182.640	.85	2.01	2.01	5	75	230	245	245	52	84	72
1	12:01	60	191.616	.93	2.20	2.20	5	76	270	260	260	49	80	73
2		70	201.050	.95	2.25	2.25	5	76	270	258	258	49	85	74
3		80	210.650	.94	2.22	2.22	5	77	260	244	244	48	89	75
4		90	220.720	.80	1.90	1.90	5	77	265	251	251	48	89	77
5		100	228.880	.81	1.91	1.91	4	77	255	254	254	47	89	77
6		110	237.580	.79	1.87	1.87	4	78	245	253	253	47	89	78
	13:01	120	246.283											
Total			108.674	11.1928		24.400		911					1863	
Average				.9327		2.033		75.92					77.6	

Assumed Moisture 1 %

Probe 18-6 Cp 0.84

Nozzle Calibration

.1223 .1223 .1223 .1223

Avg D_n .223 inches

Gas Bag Ambient Air

Console 9

Y-Factor 1.002

$\Delta H_@$ 1.652 in H_2O

Barometric Pressures

Pb_m 24.75 in Hg

Pb_p 24.68 in Hg

P_g −1.3 in H_2O

Leak Check:	Pre	Post
ft³/min	0.002	0.002
vac in Hg	20.0	17.0
Pitot Rate	0.0	0.0
In H_2O	7.0	7.0

Water Collected 6.9 g

Time Sampled 120 min

Review

K = @T_m

K = @T_m

Comments:

Time	Baghouse ΔP	Time	Baghouse ΔP
11:00	5.2	12:02	5.2
11:20	5.2	12:20	5.2
11:40	5.2	12:39	5.2

Loaded 7 Barrels

APPENDIX C

South Yellow Cake Scrubber
- Sample Recovery
- Gas Analysis Data (ORSAT)

Yellow Cake Dryer Baghouse
- Sample Recovery
- Gas Analysis Data (Ambient)

Chain of Custody

Lab Analysis

South Yellow Cake Dryer Scrubber

METHOD 5

Facility: Energy Fuels

Date: 1/14/14

Stack Identification: SYC Scrubber

IMPINGERS

~~X224~~ ~~7441~~

6108
6109
6110
6111

Run: 1

Sample Box: B

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	drop out	100	drop out	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)	665.3	749.3	585.7	697.8	524.3	946.3
Initial (g)	473.3	618.2	561.2	688.0	518.3	887.1
Net (g)	192.0	131.1	24.5	9.8	6.0	58.2

Total (g) 421.6

IMPINGERS

6112

Run: 2

Sample Box: B

~~HT~~ 1/15/14

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	drop out	100	drop out	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)	670.5	813.2	601.5	693.2	530.4	946.3
Initial (g)	477.3	635.8	564.0	676.8	521.5	880.9
Net (g)	193.2	177.4	37.5	16.4	8.9	65.9

Total (g) 498.8

IMPINGERS

Run: _____

Sample Box: _____

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	drop out	100	drop out	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g) _____

IMPINGERS

Run: _____

Sample Box: _____

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	drop out	100	drop out	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g) _____

Plant Energy Fuels Location SYC

Analytical Method ORSAT

Date 1/14/14
Test No. 1
Gas Bag No. C-07
Ambient Temp 65
Operator [illegible]

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	20.0	18.9	20.0	18.9	20.0	18.9	18.9
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date 1/15/14
Test No. 2
Gas Bag No. C-07
Ambient Temp 68
Operator [illegible]

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2	2.0	2.0	2.0	2.0	2.0	2.0	2.0
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	20.0	18.0	20.0	18.0	20.0	18.0	18.0
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date
Test No.
Gas Bag No.
Ambient Temp
Operator

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2							
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).							
N_2 (Net is 100 Minus Actual O_2 Reading).							

CO is not measured, as it has the same molecular weight as N_2

Yellow Cake Dryer Baghouse

Method 5

Facility: Energy Fuels

Date: 4/15/14

Stack Identification: Yellow Cake Dryer Baghouse

IMPINGERS

Run: 1

Sample Box: A

Filter Number

~~X223~~ 7771

6107

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	-	Silica Gel		
	1	2	3	4	5	6
Final (g)	592.0	619.6	615.8	930.4		
Initial (g)	619.6	611.8	610.9	908.6		
Net (g)	-27.6	7.8	4.9	21.8		

Total (g) 6.9

IMPINGERS

Run: _____

Sample Box: _____

Filter Number

_____

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	-	Silica Gel		
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g) _____

IMPINGERS

Run: _____

Sample Box: _____

Filter Number

_____

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	-	Silica Gel		
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g) _____

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Tetco	Project Manager: Dean Kitchen	Date: 1/17/2014	Chain of Custody Number
Address: 391 East 620 South	Telephone Number (Area Code)/Fax Number: 801-492-9106	Lab Number	Page ____ of ____
City: American Fork; State: Ut; Zip Code: 84003	Site Contact: Scott Christensen, Garren Palmer	Lab Contact	
Project Name and Location (State): Energy Fuels 2014 1st Quarter	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Analysis: U-Nat	TH-230	Ra-226	Lead-210	Special Instructions/ Conditions of Receipt
R1 Baghouse filter (6107) and beaker	01/15/14	11:00	X												X				
R1 SYC filters (6108, 09, 10, 11) and beaker	01/14/14	8:00	X												X				
R2 SYC filters (6112, 13, 14, 15) and beaker	01/15/14	8:00	X												X				

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other as per method

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	1/17/14	12	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

When Complete Email to: Dean or Paul tetco@tetco-ut.com

DISTRIBUTION: *WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy*

Analytical Data Package Prepared For

Denison Mines (USA) Corp.

Energy Fuels 2014 1st Quarter

Radiochemical Analysis By

TestAmerica Inc

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code:

Data Package Contains 14 *Pages*

Report No.: 58580

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
47741		R1 Baghouse filter(6107)and be	J4A210418-1	M2WD61AA	9M2WD610	4023018
		R1 SYC filters(6108,09,10,11)a	J4A210418-2	M2WEQ1AA	9M2WEQ10	4023018
		R2 SYC filters(6112,13,14,15)a	J4A210418-3	M2WET1AA	9M2WET10	4023018

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rptS1LRchTitle v3.73

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Certificate of Analysis

January 29, 2014

Denison Mines (USA) Corp
1050 17th Street, Suite 950
Denver, CO 80265

Attention: Dean Kitchen

Date Received at Lab	:	January 21, 2014
Project Name	:	Energy Fuels 2014 1st Quarter
Sample Type	:	Three (3) Stack Filter Samples
SDG Number	:	47741

CASE NARRATIVE

I. Introduction

On January 21, 2014, three stack filter samples were received at TestAmerica's Richland laboratory for radiochemical analysis. Upon receipt, the samples were assigned the TestAmerica identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Numbers J4A210418.

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical uncertainties.

The analysis requested was:

Alpha Spectroscopy
Uranium-234, -235, -238 by method RL-ALP-004

IV. Quality Control

The analytical result for each analysis performed includes a minimum of one laboratory control sample (LCS), and one reagent blank sample analysis. Any exceptions have been noted in the "Comments" section.

V. Comments

Alpha Spectroscopy
Uranium-234, 235, 238
The achieved MDA of the batch exceeds the detection limit due to the reduced aliquot sizes taken due to historical process knowledge. Data is accepted. Except as noted; the LCS, batch blank and sample results are within acceptance limits.

I certify that this Certificate of Analysis is in compliance with the SOW and/or NELAC, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Erika Jordan
Manager of Project Management

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**TestAmerica Richland's SOP No.**
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, ***u_c the combined uncertainty.*** The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

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rptGeneralInfo v3.72

Sample Results Summary

Date: 29-Jan-14

TestAmerica Inc

Ordered by Method, Batch No., Client Sample ID.

Report No. : 58580

SDG No: 47741

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RER2
4023018 FFSR									
R1 Baghouse filter(6107)and be									
	M2WD61AA	U-234	1.17E-03 +- 2.6E-04		uCi/Sample	69%	4.04E-05	9.00E-15	
		U-235	4.52E-05 +- 3.5E-05		uCi/Sample	69%	2.63E-05	9.00E-15	
		U-238	1.27E-03 +- 2.7E-04		uCi/Sample	69%	3.26E-05	9.00E-15	
R1 SYC filters(6108,09,10,11)a									
	M2WEQ1AA	U-234	1.08E-03 +- 2.4E-04		uCi/Sample	77%	5.96E-05	9.00E-15	
		U-235	3.45E-05 +- 3.1E-05	U	uCi/Sample	77%	3.48E-05	9.00E-15	
		U-238	1.07E-03 +- 2.4E-04		uCi/Sample	77%	5.30E-05	9.00E-15	
R2 SYC filters(6112,13,14,15)a									
	M2WET1AA	U-234	1.22E-03 +- 2.6E-04		uCi/Sample	81%	4.82E-05	9.00E-15	
		U-235	1.85E-05 +- 2.4E-05	U	uCi/Sample	81%	4.19E-05	9.00E-15	
		U-238	9.73E-04 +- 2.2E-04		uCi/Sample	81%	4.07E-05	9.00E-15	

No. of Results: 9

TestAmerica Inc

rptTALRchSaSummary2 V6.2.26 A2002

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

QC Results Summary

Date: 29-Jan-14

TestAmerica Inc

Ordered by Method, Batch No, QC Type,.

Report No. : 58580 **SDG No.:** 47741

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
FFSR								
4023018 BLANK QC,								
M2WRQ1AA	U-234	1.09E-07 +- 2.2E-07	U	uCi/Sample	75%			4.69E-07
	U-235	-2.43E-08 +- 1.5E-07	U	uCi/Sample	75%			4.05E-07
	U-238	-6.98E-08 +- 1.6E-07	U	uCi/Sample	75%			6.94E-07
4023018 LCS,								
M2WRQ1AC	U-234	7.37E-06 +- 1.8E-06		uCi/Sample	71%	98%	0.0	3.32E-07
	U-238	7.41E-06 +- 1.8E-06		uCi/Sample	71%	95%	-0.1	3.91E-07

No. of Results: 5

TestAmerica Inc

rptSTLRchQcSummary V5.2.26 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jan-14

Lab Name:	TestAmerica Inc	**SDG:**	47741	**Collection Date:**	1/15/2014 11:00:00 AM
Lot-Sample No.:	J4A210418-1	**Report No. :**	58580	**Received Date:**	1/21/2014 11:55:00 AM
Client Sample ID:	R1 Baghouse filter(6107)and be	**COC No. :**		**Matrix:**	FILTER

Energy Fuels 2014 1st Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4023018	FFSR			**Work Order:**	M2WD61AA		**Report DB ID:**	9M2WD610				
U-234	1.17E-03		1.8E-04	2.6E-04	4.04E-05	uCi/Sample	69%	*(29.)*	1/28/14 06:48 p	1.0	0.00129	ALP2
						1.10E-05	9.00E-15	*(9.1)*		Sample	Sample	
U-235	4.52E-05		3.5E-05	3.5E-05	2.63E-05	uCi/Sample	69%	*(1.7)*	1/28/14 06:48 p	1.0	0.00129	ALP2
						6.11E-06	9.00E-15	*(2.6)*		Sample	Sample	
U-238	1.27E-03		1.8E-04	2.7E-04	3.26E-05	uCi/Sample	69%	*(38.8)*	1/28/14 06:48 p	1.0	0.00129	ALP2
						8.19E-06	9.00E-15	*(9.3)*		Sample	Sample	

Ratio U-234/238 = 0.9

No. of Results: 3 **Comments:**

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jan-14

Lab Name:	**TestAmerica Inc**	**SDG:**	47741	**Collection Date:**	1/14/2014 8:00:00 AM
Lot-Sample No.:	**J4A210418-2**	**Report No. :**	58580	**Received Date:**	1/21/2014 11:55:00 AM
Client Sample ID:	**R1 SYC filters(6108,09,10,11)a**	**COC No. :**		**Matrix:**	FILTER

Energy Fuels 2014 1st Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4023018	FFSR			**Work Order:**	M2WEQ1AA	·	**Report DB ID:**	9M2WEQ10				
U-234	1.08E-03		1.6E-04	2.4E-04	5.96E-05	uCi/Sample	77%	*(18.1)*	1/28/14 06:48 p	1.0	0.00124	ALP3
						1.81E-05	9.00E-15	*(9.1)*		Sample	Sample	
U-235	3.45E-05	U	3.0E-05	3.1E-05	3.48E-05	uCi/Sample	77%	*0.99*	1/28/14 06:48 p	1.0	0.00124	ALP3
						9.16E-06	9.00E-15	*(2.2)*		Sample	Sample	
U-238	1.07E-03		1.6E-04	2.4E-04	5.30E-05	uCi/Sample	77%	*(20.2)*	1/28/14 06:48 p	1.0	0.00124	ALP3
						1.57E-05	9.00E-15	*(9.1)*		Sample	Sample	

Ratio U-234/238 = 1.0

No. of Results: 3 **Comments:**

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rptSTLRchSample
V5.2.26 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jan-14

Lab Name:	TestAmerica Inc	**SDG:**	47741	**Collection Date:**	1/15/2014 8:00:00 AM
Lot-Sample No.:	J4A210418-3	**Report No. :**	58580	**Received Date:**	1/21/2014 11:55:00 AM
Client Sample ID:	R2 SYC filters(6112,13,14,15)a	**COC No. :**		**Matrix:**	FILTER

Energy Fuels 2014 1st Quarter

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4023018	FFSR			**Work Order:** M2WET1AA		**Report DB ID:** 9M2WET10						
U-234	1.22E-03		1.7E-04	2.6E-04	4.82E-05	uCi/Sample	81%	*(25.3)*	1/28/14 06:49 p	1.0	0.00128	ALP4
						1.41E-05	9.00E-15	*(9.4)*		Sample	Sample	
U-235	1.85E-05	U	2.4E-05	2.4E-05	4.19E-05	uCi/Sample	81%	*0.44*	1/28/14 06:49 p	1.0	0.00128	ALP4
						1.18E-05	9.00E-15	*(1.5)*		Sample	Sample	
U-238	9.73E-04		1.5E-04	2.2E-04	4.07E-05	uCi/Sample	81%	*(23.9)*	1/28/14 06:49 p	1.0	0.00128	ALP4
						1.14E-05	9.00E-15	*(9.)*		Sample	Sample	

Ratio U-234/238 = 1.3

No. of Results: 3 **Comments:**

FORM II

BLANK RESULTS

Date: 29-Jan-14

Lab Name: TestAmerica Inc

Matrix: FILTER

SDG: 47741

Report No. : 58580

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4023018	FFSR			**Work Order:**	M2WRQ1AA		**Report DB ID:**	M2WRQ1AB				
U-234	1.09E-07	U	2.2E-07	2.2E-07	4.69E-07	uCi/Sample	75%	0.23	1/28/14 06:49 p	1.0	0.1	ALP5
					1.27E-07	9.00E-15		(1.)		Sample	Sample	
U-235	-2.43E-08	U	1.5E-07	1.5E-07	4.05E-07	uCi/Sample	75%	-0.06	1/28/14 06:49 p	1.0	0.1	ALP5
					1.04E-07	9.00E-15		-0.32		Sample	Sample	
U-238	-6.98E-08	U	1.6E-07	1.6E-07	6.94E-07	uCi/Sample	75%	-0.1	1/28/14 06:49 p	1.0	0.1	ALP5
					2.09E-07	9.00E-15		-0.86		Sample	Sample	
								Ratio U-234/238 = -1.6				

No. of Results: 3 **Comments:**

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 29-Jan-14

Lab Name: TestAmerica Inc

SDG: 47741

Matrix: FILTER

Report No. : 58580

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 4023018	FFSR			**Work Order:**	M2WRQ1AC		**Report DB ID:**	M2WRQ1CS					
U-234	7.37E-06		1.3E-06	1.8E-06	3.32E-07	uCi/Sample	71%	7.49E-06	2.31E-07	98%	1/28/14 06:49 p	0.13	ALP6
							Rec Limits:	70	130	0.0		Sample	
U-238	7.41E-06		1.3E-06	1.8E-06	3.91E-07	uCi/Sample	71%	7.84E-06	2.42E-07	95%	1/28/14 06:49 p	0.13	ALP6
							Rec Limits:	70	130	-0.1		Sample	

No. of Results: 2 **Comments:**

TestAmerica Inc **Bias** - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V5.2.26 A2002

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

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TAL-4124 (1007)

Client	Tetco
Address	391 East 620 South
City	American Fork
State	Ut
Zip Code	84003
Project Name and Location (State)	Energy Fuels 2014 1st Quarter
Contract/Purchase Order/Quote No.	
Project Manager	Dean Kitchen
Telephone Number (Area Code)/Fax Number	801-492-9106
Site Contact	Scott Christensen, Garren Palmer
Lab Contact	
Carrier/Waybill Number	
Date	1/17/2014
Lab Number	
Chain of Custody Number	
Page _____ of _____	

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): U-Nat	Th-230	Ra-226	Lead-210	Special Instructions/ Conditions of Receipt
R1 Baghouse filter (6107) and beaker	01/15/14	11:00	X										X				MAW06
R1 SYC filters (6108, 09, 10, 11) and beaker	01/14/14	8:00	X										X				MAW07
R2 SYC filters (6112, 13, 14, 15) and beaker	01/15/14	8:00	X										X				MAW08

J4A210418

J4A210418
SDG-47741
Due 2-18-14

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other as per method

QC Requirements (Specify)

1. Relinquished By: Dean Kitchen	Date: 1/17/14	Time: 12	1. Received By: J. Bolt TALL	Date: 1-21-14	Time: 1155
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

When Complete Email to: Dean or Paul tetco@tetco-ut.com

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

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Sample Check-in List

Date/Time Received: 1-21-14 / 1155 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 1,000 cpm Initials [B]

Client: DEN SDG #: 47741 SAF #: _____ NA [B]

Lot Number: J4A210418

Chain of Custody # _____

Shipping Container ID or Air Bill Number: _____ NA [B]

Samples received inside shipping container/cooler/box Yes [B] Continue with 1 through 4. Initial appropriate response.
No [ ] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal [B]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [B]
3. Cooler temperature: _____ °C NA [B]
4. Vermiculite/packing materials is NA [B] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [B] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 3
7. Containers received: 3x filter; 3x beaker
8. Sample holding times exceeded? NA [ ] Yes [ ] No [B]
9. Samples have: _____ tape _____ hazard labels _____ custody seals [B] appropriate sample labels
10. Matrix: _____ A (FLT, Wipe, Solid, Soil) _____ I (Water) _____ S (Air, Niosh 7400) [B] T (Biological, Ni-63)
11. Samples:
    [B] are in good condition _____ are leaking _____ are broken
    _____ have air bubbles (Only for samples requiring no head space) _____ Other _____
12. Sample pH appropriate for analysis requested Yes [ ] No [ ] NA [B]
    (If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO_3 added and pH after addition on table)
13. Were any anomalies identified in sample receipt? Yes [ ] No [B]
14. Description of anomalies (include sample numbers): NA [B]
15. Sample Location, Sample Collector Listed on COC? * Yes [ ] No [B]
    *For documentation only. No corrective action needed.
16. Additional Information: N/A

[ ] Client/Courier denied temperature check. [ ] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:
Signature: [signature] Date: 1-21-14

Client Notification needed? Yes [ ] No [ ] Date: _____
By: _____
Person contacted: _____

[X] No action necessary; process as is

Project Manager [signature] Date 1-23-14

LS-023 Rev. 17, 05/13

APPENDIX D

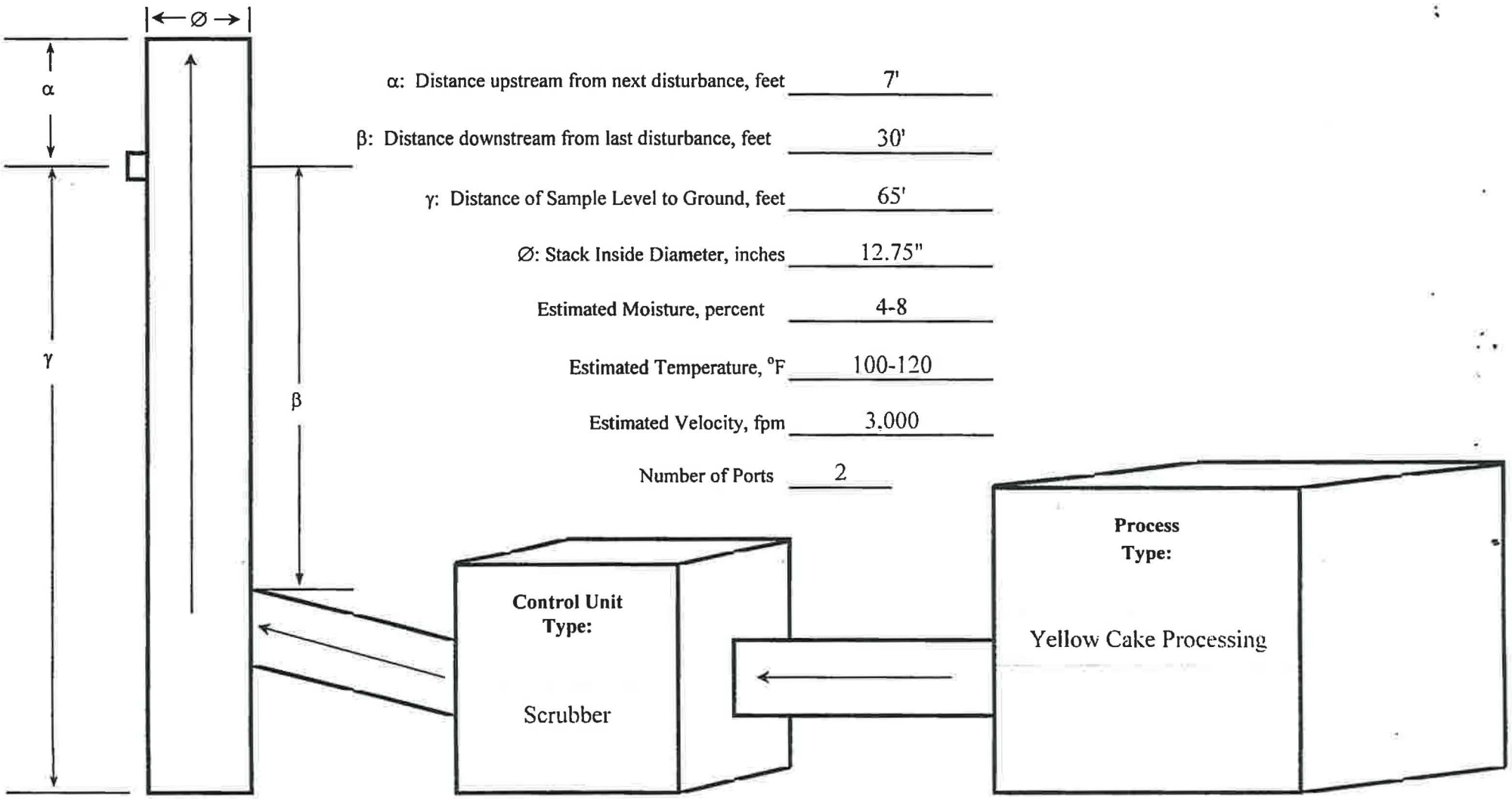
South Yellow Cake Scrubber
Figure 1. Facility Schematic Representation

Yellow Cake Dryer Baghouse
Figure 2. Facility Schematic Representation

Process Data
(Retained by Energy Fuels Resources)

Facility: Energy Fuels Resources

Stack Identification: South Yellow Cake Scrubber

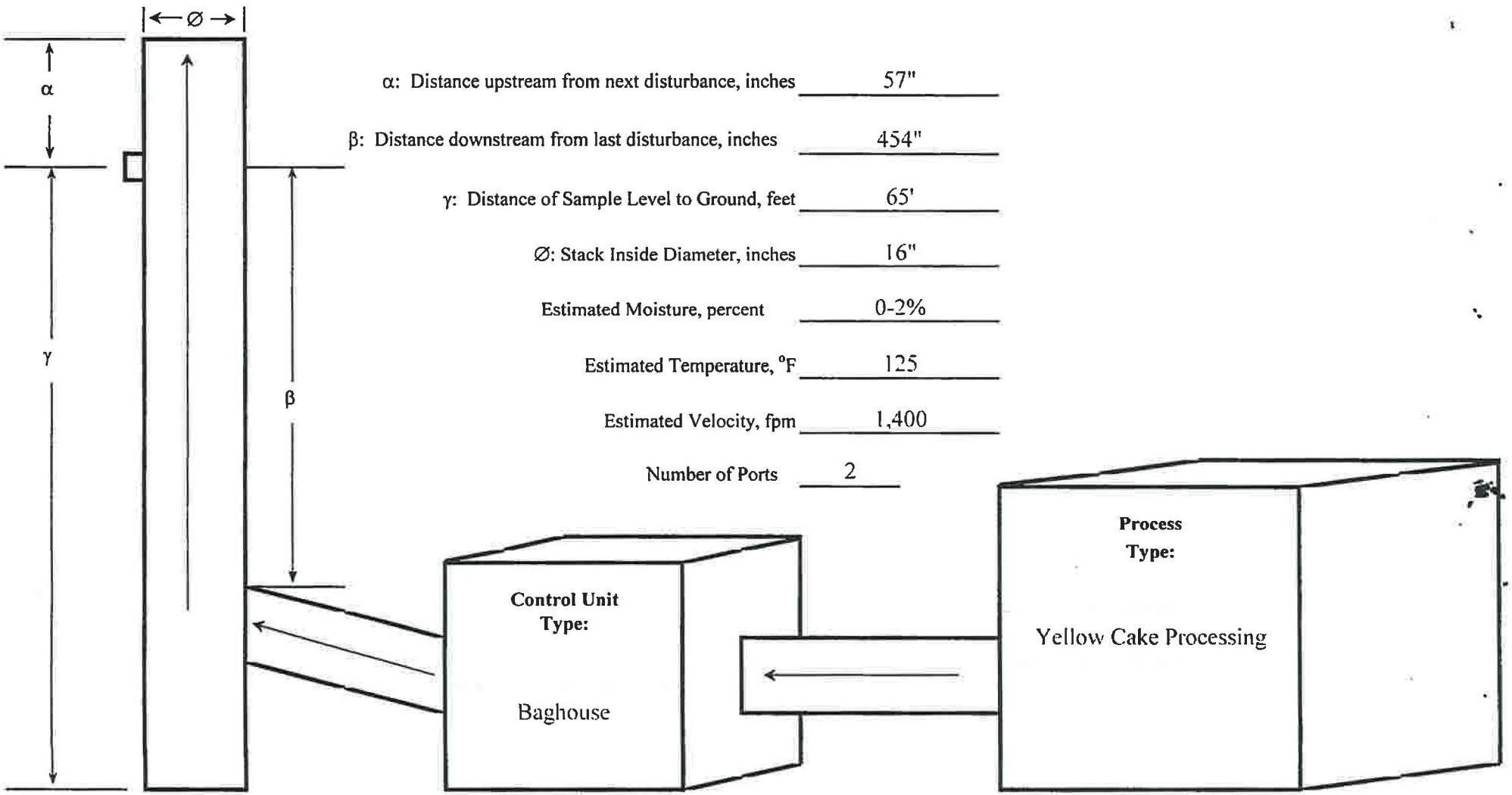


α: Distance upstream from next disturbance, feet	7'
β: Distance downstream from last disturbance, feet	30'
γ: Distance of Sample Level to Ground, feet	65'
Ø: Stack Inside Diameter, inches	12.75"
Estimated Moisture, percent	4-8
Estimated Temperature, °F	100-120
Estimated Velocity, fpm	3,000
Number of Ports	2

Figure 1. Facility Schematic Representation

Facility: Energy Fuels Resources

Stack Identification: Yellow Cake Dryer Baghouse



α: Distance upstream from next disturbance, inches	57"
β: Distance downstream from last disturbance, inches	454"
γ: Distance of Sample Level to Ground, feet	65'
Ø: Stack Inside Diameter, inches	16"
Estimated Moisture, percent	0-2%
Estimated Temperature, °F	125
Estimated Velocity, fpm	1,400
Number of Ports	2

Figure 2. Facility Schematic Representation

Energy Fuels Resources, Blanding, UT Process Data

Source: South Yellow Cake		Date: 1/14/11	
	Scrubber Flow GPM		
Time	#1	computer #2	ΔP
9:30	15.0	24.9	10.7
10:00	15.0	24.9	10.7
10:30	15.1	24.9	10.7
11:00	15.0	24.8	10.7
11:30	15.1	24.9	10.7
12:00	15.1	24.9	10.7
12:30	15.1	24.9	10.7
13:00	15.1	24.9	10.7
13:30	15.2	24.9	10.7
14:00	15.3	24.9	10.7
14:30	15.5	24.9	10.7
15:00	15.4	24.9	10.7
15:30	15.5	24.8	10.7
16:00	15.5	24.8	10.7
16:30	15.7	24.7	10.7
17:00	16.2	24.7	10.7
17:30	16.2	24.7	10.7
18:00	16.2	24.7	10.7
18:30	16.2	24.7	10.7

Energy Fuels Resources, Blanding, UT Process Data

Source: South Yellow Cake		Date: 1/15/14	
	Scrubber Flow GPM		
Time	#1	computer room #2	ΔP
8:00	14.8	24.9	10.7
8:30	14.9	24.8	10.7
9:00	14.8	24.9	10.7
9:30	14.8	24.8	10.7
10:00	14.9	24.8	10.7
10:30	15.1	24.9	10.7
11:00	15.3	25.0	10.7
11:30	15.4	24.9	10.7
12:00	15.5	25.0	10.7
12:30	15.6	25.0	10.7
13:00 13:00	15.5	25.0	10.7
13:30	16.0	24.9	10.7
14:00	16.2	25.0	10.7
14:30	16.4	25.0	10.7
15:00	16.3	24.9	10.7
15:30	16.4	24.9	10.7
16:00	16.5	25.0	10.7
16:30	16.4	25.0	10.7

APPENDIX E

Calibration of the console dry gas meter(s), pitot tubes, nozzles diameters, and temperature sensors were carried out in accordance with the procedures outlined in the Quality Assurance Handbook. The appropriate calibration data are presented in the following pages. The nozzle calibrations are recorded on the first page of the field data sheets.

Figure 3 Schematic of Method 5/114 Sampling Train
Meter Box Calibration Data and Calculations Forms
Post-test Dry Gas Meter Calibration Data Forms
Type S Pitot Tube Inspection Data
Sample Box Temperature Sensor Calibration

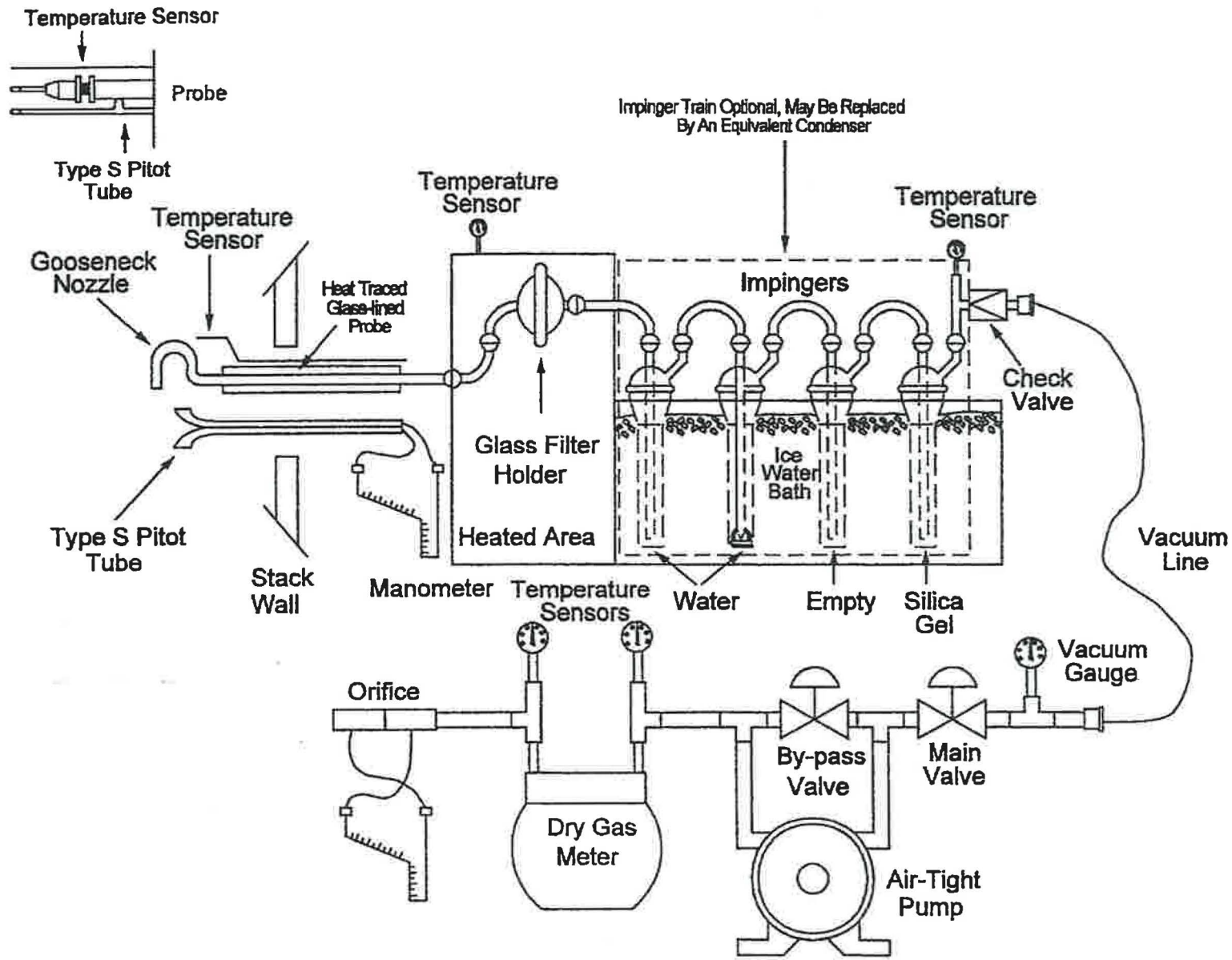


Figure 3 Schematic of Method 5/114 Sampling Train

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

ENVIRONMENTAL SUPPLY COMPANY

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the GREEN cells, YELLOW cells are calculated.

Facility: New Calibration 2013

DATE: 12/6/2012
METER PART #: Console 3
METER SERIAL #: 1522588
CRITICAL ORIFICE SET SERIAL #: 1453S
BAROMETRIC PRESSURE (In Hg): INITIAL 25.40 | FINAL 25.40 | AVG (P_{bar}) 25.4
EQUIPMENT ID #: Console #3

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (In Hg)	DGM READINGS (FT^3) INITIAL	FINAL	NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (In H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	13	958.175	963.468	5.293	75	71	74	77	80	75.5	5.00	2.90	4.4685	4.4691	1.000		1.724
	2	0.8137	13	963.468	968.784	5.316	75	74	76	80	81	77.5	5.00	2.90	4.4712	4.4691	1.000		1.717
	3	0.8137	13	968.784	974.125	5.341	75	75	78	83	83	79.75	5.00	2.90	4.4734	4.4691	0.999		1.710
																AVG =	1.000	-0.42	
19	1	0.5317	12	941.204	946.360	5.156	65	66	67	73	71	69.25	7.50	1.20	4.3827	4.4219	1.009		1.651
	2	0.5317	12	946.360	951.536	5.176	65	67	68	71	70	69.00	7.50	1.20	4.4018	4.4219	1.005		1.651
	3	0.5317	12	951.536	957.031	5.495	65	68	70	70	75	70.75	8.00	1.20	4.6577	4.7167	1.013		1.646
																AVG =	1.009	0.49	
12	1	0.3307	13	975.015	980.845	5.830	75	76	74	78	74	75.50	13.50	0.45	4.8872	4.9040	1.003		1.608
	2	0.3307	13	980.845	986.447	5.602	75	74	73	74	74	73.75	13.00	0.45	4.7115	4.7224	1.002		1.613
	3	0.3307	13	986.447	992.040	5.593	75	73	73	74	74	73.50	13.00	0.45	4.7061	4.7224	1.003		1.614
																AVG =	1.003	-0.07	

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = **1.004**

AVERAGE $\Delta H_@$ = **1.659**

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

Temperature Sensors

Reference °F	In °F	Out °F
33	34	34
67	68	68
202	203	203

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the [illegible] cells. YELLOW cells are calculated.

ENVIRONMENTAL SUPPLY COMPANY

2014 Pre-Calibration Console 9

DATE: 1/8/2014
METER PART #: Console 9
METER SERIAL #: 1297-3245
CRITICAL ORIFICE SET SERIAL #: 1453S
EQUIPMENT ID #: Console 9

BAROMETRIC PRESSURE (in Hg):	INITIAL	FINAL	AVG (P_{bar})
	25.45	25.45	25.45

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	12	88.612	94.007	5.395	65	78	79	75	75	76.75	5.00	3.00	4.5541	4.5203	0.993		1.743
	2	0.8137	12	94.007	99.387	5.380	65	79	79	75	75	77.00	5.00	3.00	4.5393	4.5203	0.996		1.742
	3	0.8137	12	99.387	104.803	5.416	65	79	80	75	75	77.25	5.00	3.00	4.5676	4.5203	0.990		1.741
																AVG =	0.993	-0.96	
19	1	0.5317	12	105.106	110.310	5.204	70	75	76	69	71	72.75	7.50	1.20	4.4031	4.4097	1.001		1.652
	2	0.5317	12	110.310	115.878	5.568	70	76	78	71	71	74.00	8.00	1.20	4.70	4.7036	1.001		1.648
	3	0.5317	12	115.878	121.084	5.206	70	78	80	71	71	75.00	7.50	1.20	4.3862	4.4097	1.005		1.645
																AVG =	1.003	0.02	
12	1	0.3307	12	121.205	126.327	5.122	72	76	76	71	72	73.75	12.00	0.44	4.3161	4.380	1.015		1.565
	2	0.3307	12	126.327	131.458	5.131	72	76	76	72	72	74.00	12.00	0.44	4.3217	4.380	1.013		1.565
	3	0.3307	12	131.458	137.053	5.595	72	76	76	72	72	74.00	13.00	0.44	4.7125	4.7450	1.007		1.565
																AVG =	1.012	0.94	

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = **1.002**

AVERAGE $\Delta H_@$ = **1.652**

(1) $$Vm_{std} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English) 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{std} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{std}}{Vm_{std}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

Temperature Sensors

Reference °F	In °F	Out °F
32	33	33
72	73	73
201	202	203

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

ENVIRONMENTAL SUPPLY COMPANY

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range
2) Record barometric pressure before and after calibration procedure
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet
4) Record data and information in the cells, YELLOW cells are calculated

Facility: Energy Fuels

DATE: 1/16/2014
METER PART #: Console 3
METER SERIAL #: 1522588
CRITICAL ORIFICE SET SERIAL #: 1453S
BAROMETRIC PRESSURE (in Hg): INITIAL 25.80 | FINAL 25.80 | AVG (P_{bar}) 25.80
EQUIPMENT ID #: Console #3

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT³) INITIAL	DGM READINGS (FT³) FINAL	NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) 0	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	13			.0						0							
	2	0.8137	13			.0						0							
	3	0.8137	13			.0						0.00							
19	1	0.5317	12	141.101	148.155	7.054	75	57	65	63	72	64.25	10.50	1.20	6.1483	6.2291	1.013		1.672
	2	0.5317	12	148.155	154.241	6.086	75	65	70	72	77	71.00	9.00	1.20	5.2371	5.3392	1.019		1.650
	3	0.5317	12	154.241	159.683	5.442	76	70	77	77	78	75.50	8.00	1.20	4.6436	4.7460	1.022		1.637
																AVG =	1.018	0.00	
12	1	0.3307	13			.0						0.00							
	2	0.3307	13			.0						0.00							
	3	0.3307	13			.0						0.00							
																AVG =			

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor Y These equations are automatically calculated in the spreadsheet above

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 1.018

AVERAGE $\Delta H_@$ = 1.653

(1) $$Vm_{std} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg temperature (°R - English, °K - Metric)

(2) $$Vcr_{std} = K' * \frac{Pbar * (-)}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{std}}{Vm_{std}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,0}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

Temperature Sensors

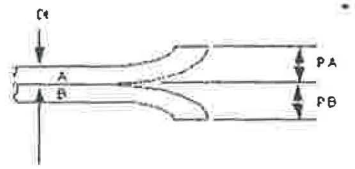
Reference °F	In °F	Out °F
33	34	34
67	68	68
202	203	203

Type S Pitot Tube Inspection Data

Date 12/12/13

Pitot Tube Identification 18-G

Technician M. McNamara



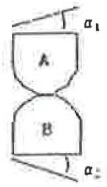
Dt= .375 in

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

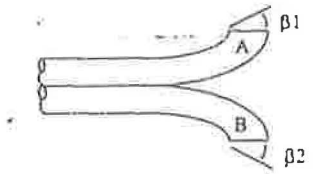
P_A = .496 in

P_B = .496 in



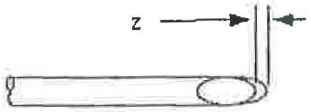
$\alpha_1 < 10°$ α_1 = 1 °

$\alpha_2 < 10°$ α_2 = 1 °

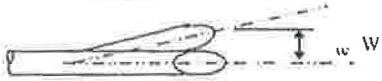


$\beta_1 < 5°$ β_1 = 2 °

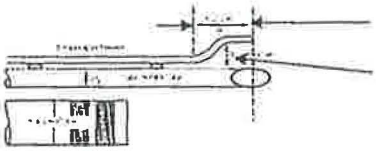
$\beta_2 < 5°$ β_2 = 2 °



Z ≤ 0.125 in Z = .001 in.

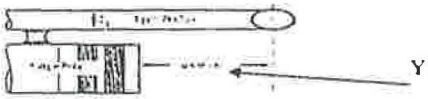


W ≤ 0.03125 in W = .008 in



W > 3 inches W = 6.5 in

Z > 3/4 inch Z = 1 in



Y ≥ 3 inches Y = 3.5 in

The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration

Reference

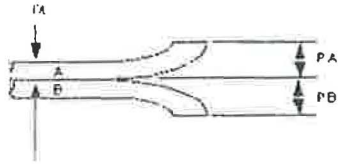
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	72	72	0
	Continuity			Yes
	Heat Check 248		Yes	250
Stack	AIR	72	72	0
	ICE WATER	33	34	1
	BOIL WATER	202	202	0
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date. 12-13-13

Pitot Tube Identification: 27-G

Technician M. McNamara



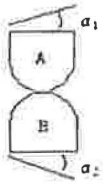
Dt= .375 in

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

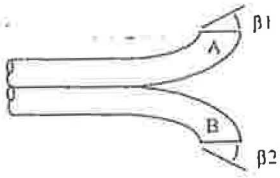
P_A = .452 in

P_B = .452 in



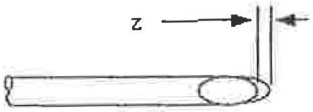
$\alpha_1 < 10°$ α_1 = 0 °

$\alpha_2 < 10°$ α_2 = 0 °



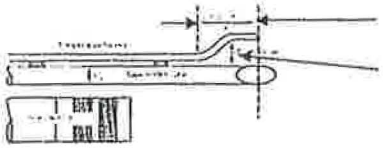
$\beta_1 < 5°$ β_1 = 1 °

$\beta_2 < 5°$ β_2 = 1 °



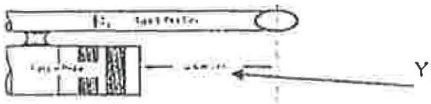
Z ≤ 0.125 in Z = .016 in

W ≤ 0.03125 in. W = .008 in



W > 3 inches W = 7 in

Z > 3/4 inch Z = 1 in



Y ≥ 3 inches Y = 3.5 in

The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration				
Reference				
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	68	66	2
	Continuity			Yes
	Heat Check 248	250	Yes	
Stack	AIR	68	66	2
	ICE WATER	33	32	1
	BOIL WATER	204	203	1
	SILICONE OIL			

TETCO

Sample Box Temperature Sensor Calibration

Date: 12/13/13 Calibrator. Dean Kitchen Reference: Omega CL3512A

Unit ID	Thermocouple Location	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
A	Oven	Water	32	34	2
		Water	204	203	-1
	Oven (4)	Water	33	34	1
		Water	204	202	-2
	Impinger Out	Water	33	34	1
		Water	204	203	-1
B	Oven	Water	33	33	0
		Water	204	202	-2
	Oven (4)	Water	33	34	1
		Water	203	203	0
	Impinger Out	Water	32	33	1
		Water	204	202	-2
C	Oven	Water	32	33	1
		Water	204	203	-1
	Oven (4)	Water	33	34	1
		Water	204	204	0
	Impinger Out	Water	33	33	0
		Water	203	202	-1
D	Oven	Water	33	34	1
		Water	203	203	0
	Oven (4)	Water	33	34	1
		Water	204	204	0
	Impinger Out	Water	33	33	0
		Water	204	202	-2
E	Oven	Water	33	34	1
		Water	203	202	-1
	Oven (4)	Water	33	33	0
		Water	204	203	-1
	Impinger Out	Water	33	34	1
		Water	204	203	-1
F	Oven	Water	33	34	1
		Water	204	202	-2
	Oven (4)	Water	33	34	1
		Water	204	202	-2
	Impinger Out	Water	33	33	0
		Water	203	202	-1
	Impinger Out G	Water	33	34	1
		Water	204	203	-1
	Impinger Out H	Water	33	34	1
		Water	204	202	-2
	Impinger Out I	Water	33	33	0
		Water	204	202	-2
	Impinger Out J	Water	33	34	1
		Water	203	202	-1

APPENDIX F

The testing followed the same procedures as outlined in previous protocols and tests at this facility.

SECOND QUARTER
RADIONUCLIDE EMISSIONS TEST
CONDUCTED AT
ENERGY FUELS RESOURCES
SOUTH YELLOW CAKE SCRUBBER
YELLOW CAKE DRYER BAGHOUSE
GRIZZLY BAGHOUSE

BLANDING, UTAH

June 16-18, 2014

by:

TETCO
391 East 620 South
American Fork, UT 84003
Phone (801) 492-9106
Fax (801) 492-9107 fax

Prepared for:

Energy Fuels Resources
6425 S Hwy 91
Blanding, Utah 84511

Date of Report:

August 27, 2014

CERTIFICATION OF REPORT INTEGRITY

Technical Emissions Testing Company (TETCO) certifies that this report represents the truth as well as can be derived by the methods employed. Every effort was made to obtain accurate and representative data and to comply with procedures set forth in the Federal Register.

Dean Kitchen

Reviewer: _____

Date: 8-26-14

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INTRODUCTION

Test Purpose

This test project was conducted to determine the total radionuclide emissions from the South Yellow Cake Scrubber, Yellow Cake Dryer Baghouse, and Grizzly Baghouse exhausts in terms of Curies per dry standard cubic foot (Ci/dscf).

These tests were for U-Nat and Th-230 on the Grizzly Baghouse and U-Nat, Th-230, Ra-226, and Pb-210 on the South Yellow Cake Scrubber and Yellow Cake Dryer Baghouse.

Test Location and Type of Process

Energy Fuels Resources is located about 5 miles south of Blanding, Utah. Uranium ore is processed into yellow cake, which is shipped to other facilities for additional processing. There are two yellow cake dryers with individual scrubbers. Both dryer enclosures discharge into the Dryer Baghouse. The Packaging enclosure also discharges into the Dryer Baghouse. The South Yellow Cake (NYC) dryer was the only operating dryer at the time of the test. The North Yellow Cake Dryer was not operating at the time of the test. The Grizzly Baghouse serve as the main dust control device for the raw ore unloading and conveying to the processing building.

Stack schematics are shown as Figures 1 though 3 in Appendix D.

Test Dates

The first test run on the SYC Scrubber commenced the afternoon of June 16, 2014 and was completed the following morning. The second run started June 17t, 2014 and was completed the morning of June 18, 2014.

One test run was completed on the Yellow Cake Dryer Baghouse June 17, 2014.

One run was completed on the Grizzly Baghouse June 18, 2014.

Pollutants Tested and Methods Applied

The tests were a determination of radionuclide emissions in accordance with EPA Method 5/114.

Test run filters and front wash residues were sent to Test America located in Richland, Washington for radionuclide analysis.

Test Participants

Test Facility	Garrin Palmer	
State Agency	None	
TETCO	Doug Olsen Jeff Graton	Mike McNamara

Deviations From EPA Methods

None

Quality Assurance

Testing procedures and sample recovery techniques were according to those outlined in the Federal Register and the *Quality Assurance Handbook for Air Pollution Measurement Systems.*

SUMMARY OF RESULTS

Emission Results

Table I presents the findings of the test in pico Curies per dry standard cubic foot and pounds per hour. Tables IV-VI in Appendix A have more detailed information.

Table I. Measured Radionuclide Emissions

Run #	South Yellow Cake Scrubber		Yellow Cake Dryer Baghouse		Grizzly Baghouse	
	pCi/dscf	pCi/hr	pCi/dscf	pCi/hr	pCi/dscf	pCi/hr
1	50.7	3.734E+06	24.0	4.508E+06	0.314	2.804E+04
2	0.06	4.646E+03				
AVE	**25.4**	**4.646E+06**	**24.0**	**4.508E+06**	**0.314**	**2.804E+04**

Process Data

The process was operated according to standard procedures. All pertinent process data was available for recording by agency personnel. Scrubber water flow, pressure drop readings (Δp) were recorded and are found in Appendix D. The Dryer Baghouse pressure drop readings (Δp) were recorded and are found on the test run sheets. Production data is retrained by Energy Fuels Resources.

Description of Collected Samples

The test filters for the South Yellow Cake Scrubber were heavily covered with an off- white colored particulate. The front washes were clear in appearance.

The test filters for the Yellow Cake Dryer Baghouse were lightly colored with a tan colored particulate. The front wash was clear in appearance.

The test filters for the Grizzly Baghouse were had no visible particulate. The front wash was clear in appearance.

Discussion of Errors or Irregularities

None.

Percent Isokinetic Sampling

Each of the tests were isokinetic within the ±10% of 100% criterion specified in the Federal Register. They also meet the Utah State Department of Environmental Quality, Division of Air Quality specification of isokinetic sampling point by point. Isokinetic values for each test run are presented in Table II.

Table II. Percent Isokinetic Sampling

Run #	South Yellow Cake Scrubber	Yellow Cake Dryer Baghouse	Grizzly Baghouse
1	101	98	97
2	100		

SOURCE OPERATION

Process Control Devices Operation

All process control devices were operated normally. Recorded scrubber water flow, pressure and baghouse Δp readings were recorded and are found on the test run sheets or in Appendix D.

Process Representativeness

The facility was operated normally. Production data was retained by Energy Fuels Resources.

SAMPLING AND ANALYSIS PROCEDURES

Sampling Port Location

The inside diameter of the South Yellow Cake Scrubber stack is 12.75 inches. The two, four-inch diameter sample port are located 28.24 diameters (30 feet) downstream from the last disturbance and 6.59 diameters (7 feet) upstream from the next disturbance. Figure 1 in Appendix D is a schematic of the stack.

The inside diameter of the Yellow Cake Dryer Baghouse stack is 16.0 inches. The two, four-inch diameter sample ports are located 28.38 diameters (454 inches) downstream from the last disturbance and 3.56 diameters (57 inches) upstream from the next disturbance. The sample port locations are depicted in Figure 2 in Appendix D.

The inside diameter of the Grizzly Baghouse stack is 18.75 inches. There are two, three-inch diameter sample ports located 2.56 diameters (48 inches) downstream from the last disturbance and 1.31 diameters (24.5 inches) upstream from the next disturbance. The sample port locations are depicted in Figure 3 in Appendix D.

Sampling Point Location

Table III shows the distance of each sampling point from the inside wall according to EPA Method 1. Each point is marked and identified with a wrapping of glass tape and numbered. These points are determined by measuring the distance from the inside wall.

Table III. Sampling Point Location

Sample Point	Distance (inches) from Inside Wall		
	NYC Scrubber	Dryer Baghouse	Grizzly Baghouse
1	0.85	0.70	0.50
2	3.19	2.34	1.26
3	9.56	4.74	2.21
4	11.90	11.26	3.32
5		13.66	4.69
6		15.30	6.68
7			12.08
8			14.06
9			15.43
10			16.54
11			17.48
12			18.25

Sampling Train Description

To determine the actual emission rates for this stack, 40 CFR 60, Appendix A, Methods 1-5/114 were followed.

All sampling trains were made of inert materials, (Teflon, stainless steel and glass) to prevent interference of the sampled gas and particulate.

The stack analyzers used to conduct Methods 1-5/114 are constructed to meet the specifications outlined in the CFR. The temperature sensors are K-type thermocouples. Heater, vacuum and pitot line connections have been designed to be interchangeable with all units used by the tester. A 316 stainless steel probe liner was used for the tests. Figure 4 in Appendix E is a sketch of the Methods 5/114 sampling train.

Sample boxes were prepared for testing by following the prescribed procedures outlined in Methods 5/114.

Sampling and Analytical Procedures

All sampling and analytical test procedures were as specified in 40 CFR 60, Appendix A, Methods 5/114.

Quality Assurance

All equipment set-up, sampling procedures, sample recovery and equipment calibrations were carried out according to the procedures specified in 40 CFR 60 and the *Quality Assurance Handbook for Air Pollution Measurement Systems.*

APPENDIX

A: Complete Results and Sample Calculations
B: Raw Field Data
C: Laboratory Data and Chain of Custody
D: Raw Production Data
E: Calibration Procedures and Results
F: Related Correspondence

APPENDIX A

Table IV Complete Results, South Yellow Cake Scrubber
Table V Complete Results, Yellow Cake Dryer Baghouse
Table VI Complete Results, Grizzly Baghouse

Nomenclature
Sample Equations

TABLE IV
COMPLETE RESULTS
Energy Fuels CORPORATION, BLANDING, UTAH
SOUTH YELLOWCAKE SCRUBBER EXHAUST

Symbol	Description	Dimensions	Run #1	Run #2	
Date			6/16,17/2014	6/17,18/2014	
Filter #			6206	6208	
Begin	Time Test Began		13:53	13:14	
End	Time Test Ended		12:09	12:22	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.30	24.30	
ΔH	Orifice Pressure Drop	In. H_2O	1.103	1.066	
Y	Meter Calibration Y Factor	dimensionless	1.000	1.000	
Vm	Volume Gas Sampled--Meter Conditions	cf	343.714	337.542	
T_m	Avg Meter Temperature	°F	76.9	76.2	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.5060	0.4998	
Wt_{wc}	Weight Water Collected	Grams	434.1	433.1	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.2745	0.2745	
CO_2	Volume % Carbon Dioxide	Percent	2.00	1.20	
O_2	Volume % Oxygen	Percent	17.50	18.70	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	80.50	80.10	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	275.442	270.819	
Vw	Volume Water Vapor	scf	20.468	20.421	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.069	0.070	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.118	0.114	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.069	0.070	
X_d	Fraction of Dry Gas	Fraction	0.931	0.930	
M_d	Molecular Wt. Dry Gas	lb/lbmol	29.02	28.94	
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.26	28.17	
%I	Percent Isokinetic	Percent	100.9	100.2	**AVG**
T_s	Avg Stack Temperature	°F	113.2	112.0	**112.6**
A_s	Stack Cross Sectional Area	Sq. Ft.	0.887	0.887	
P_G	Stack Static Pressure	In. H_2O	-0.280	-0.280	
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.23	24.23	
P_s	Stack Pressure	In. Hg. Abs	24.209	24.209	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	1.23E+03	1.21E+03	**1.22E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	1.77E+03	1.75E+03	**1.76E+03**
V_s	Velocity of Stack Gas	fpm	2.00E+03	1.97E+03	**1.98E+03**
Curies	Radionuclides per sample	pCi	13957.4	17.3	
Crad	Concentration of Radionuclides	pCi/dscf	50.673	0.064	**25.368**
ERrad	Emission Rate of Radionuclides	pCi/hr	3.734E+06	4.646E+03	**1.869E+06**

* If the measured moisture content is greater than the saturated moisture level (supersaturated), the saturated moisture value will be used in all calculations (40 CFR 60, Method 4, Section 12.1.7).

TABLE V
COMPLETE RESULTS, PM
Energy Fuels CORPORATION, BLANDING, UTAH
YELLOW CAKE DRYER BAGHOUSE

Symbol	Description	Dimensions	Run #1
Date	Date		6/17/2014
Filter #			6207
Begin	Time Test Began		14:00
End	Time Test Ended		16:04
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.30
ΔH	Orifice Pressure Drop	In. H_2O	1.344
Y	Meter Calibration Y Factor	dimensionless	1.002
Vm	Volume Gas Sampled--Meter Conditions	cf	89.030
T_m	Avg Meter Temperature	°F	84.3
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.7690
Wt_{wc}	Weight Water Collected	Grams	6.1
T_t	Duration of Test	Minutes	120
C_p	Pitot Tube Coefficient	Dimensionless	0.84
D_n	Nozzle Diameter	Inches	0.2220
CO_2	Volume % Carbon Dioxide	Percent	0.00
O_2	Volume % Oxygen	Percent	20.90
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.10
Vm_{std}	Volume Gas Sampled (Standard)	dscf	70.568
Vw	Volume Water Vapor	scf	0.288
Bw_s	Fraction H_2O in Stack Gas	Fraction	0.004
X_d	Fraction of Dry Gas	Fraction	0.996
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.79
%I	Percent Isokinetic	Percent	97.6
T_s	Avg Stack Temperature	°F	107.1
A_s	Stack Cross Sectional Area	Sq. Ft.	1.396
P_G	Stack Static Pressure	In. H_2O	-0.24
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.23
P_s	Stack Pressure	In. Hg. Abs	24.212
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	3.13E+03
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	4.17E+03
V_s	Velocity of Stack Gas	fpm	2.99E+03
Curies	Radionuclides per sample	pCi	1693.8
Crad	Concentration of Radionuclides	pCi/dscf	24.0021
ERrad	Emission Rate of Radionuclides	pCi/hr	4.508E+06

TABLE VI
COMPLETE RESULTS, PM
DENISON MINES CORPORATION
GRIZZLY BAGHOUSE

Symbol	Description	Dimensions	Run #1
Date	Date		6/18/2014
Filter #			6210
Begin	Time Test Began		8:13
End	Time Test Ended		16:21
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.30
ΔH	Orifice Pressure Drop	In. H_2O	1.837
Y	Meter Calibration Y Factor	dimensionless	1.002
Vm	Volume Gas Sampled--Meter Conditions	cf	416.247
T_m	Avg Meter Temperature	°F	84.9
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.2595
Wt_{wc}	Weight Water Collected	Grams	12.9
T_t	Duration of Test	Minutes	480
C_p	Pitot Tube Coefficient	Dimensionless	0.84
D_n	Nozzle Diameter	Inches	0.4088
CO_2	Volume % Carbon Dioxide	Percent	0.00
O_2	Volume % Oxygen	Percent	20.90
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	79.10
Vm_{std}	Volume Gas Sampled (Standard)	dscf	330.057
Vw	Volume Water Vapor	scf	0.608
Bw_s	Fraction H_2O in Stack Gas	Fraction	0.002
X_d	Fraction of Dry Gas	Fraction	0.998
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.82
%I	Percent Isokinetic	Percent	97.2
T_s	Avg Stack Temperature	°F	82.7
A_s	Stack Cross Sectional Area	Sq. Ft.	1.917
P_G	Stack Static Pressure	In. H_2O	-0.056
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.27
P_s	Stack Pressure	In. Hg. Abs	24.266
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	1.49E+03
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	1.89E+03
V_s	Velocity of Stack Gas	fpm	9.85E+02
Curies	Radionuclides per sample	pCi	103.7
Crad	Concentration of Radionuclides	pCi/dscf	0.3142
ERrad	Emission Rate of Radionuclides	pCi/hr	2.804E+04

APPENDIX B

South Yellow Cake Scrubber
- Preliminary Velocity Traverse and Sampling Point Location Data
- Field Data Sheet

Yellow Cake Dryer Baghouse
- Preliminary Velocity Traverse and Sampling Point Location Data
- Field Field Data

Grizzly Baghouse
- Preliminary Velocity Traverse and Sampling Point Location Data
- Field Field Data

$_s$ = fraction of water in stack gas (may have designation of "measured" or "saturated")
"measured" represents measured moisture based upon sample volume and water collected
"saturated" is a calculated value based upon stack pressure and temperature
$_o$ = average of initial and final system zero gas calibration bias checks (ppm, percent)
$_g$ = average gas concentration (as measured)
$_3$ = concentration of particulate matter, back half (gr/dscf,lb/dscf, etc.)
$_d$ = concentration of condensibles (grain/dscf)
$_s$ = concentration of coarse particulate (gr/dscf)
$_r$ = measured concentration of a calibration gas when introduced in direct calibration mode
$_a$ = concentration of particulate matter, front half, actual stack flow (gr /acf)
$_s$ = concentration of particulate matter, front half (gr/dscf,lb/dscf, etc.)
$_s$ = C_{avg} corrected for initial and final system bias checks (Equation 7E-5)
$_n$ = average of initial and final system upscale gas calibration bias checks (ppm, percent)
$_a$ = actual concentration of upscale calibration gas
$_l$ = concentration of metals (ppm, $\mu g/ft^3$, etc.) atomic symbol replaces "metal"
$_2$ = percent carbon dioxide in the stack gas
$_p$ = pitot tube coefficient (0.84)
$_o$ = concentration of PM_{10} particulate (gr/dscf)
$_d$ = concentration of radionuclides (pCi/dscf)
$_s$ = measured concentration of a calibration gas when introduced in system calibration mode
$_x$ = Any species symbol may replace X. Units may be expressed as ppm, lb/dscf, etc.
$_o$ = actual gas concentration corrected to required percent O_2
$_s$ = Measured radionuclides per sample. Units may be pCi or uCi.
$_o$ = jet diameter (cm)
$_x$ = Dioxins and Furans (See laboratory report for D/F descriptions and nomenclacture)
Δ_H = orifice pressure drop (inches H_2O)
$_o$ = orifice pressure (inches H_2O)
$_d$ = orifice pressure head (inches H_2O) needed for impactor flow rate
$_n$ = nozzle diameter (inches)
$_s$ = stack flow pressure differential (inches H_2O)
$_o$ = 50% effective cutoff diameter of particle (cm)
$_s$ = diameter of the stack (feet)
$_\lambda$ = percent excess air
$_3$ = emission rate of back half particulate (lb/hr)
$_d$ = emission rate of condensibles (lb/hr)
$_s$ = emission rate of coarse particulate (lb/hr)
$_s$ = emission rate of front half particulate (lb/hr)
$_x$ = emission rate of a gas (lb/hr)
$_d$ = emission rate per mmBtu of fuel
$_o$ = emission rate of PM_{10} particulate (lb/hr)
$_d$ = emission rate of radionuclides (pCi/hr)
$_x$ = emission rate of compound which replaces X. Units are usually in lb/hr.
$_o$ = Dry based fuel factor. Ratio of the gas volume of the products of combustion to the heat content
See 40 CFR 60, Appendix A, Method 19, Table 19-2 for fuel factor values.
$_c$ = Cunningham slip correction factor
$_\lambda$ = mean free path of molecules in gas phase (cm)
$_m$ = million Btu

ı = million Btu

ɔ = mass of particulate matter in probe and front wash (mg)

ɔ = mass of PM_{10} particulate (milligrams)

s = molecular weight of stack gas, wet basis (lb/lbmol)

ɛ = mass of species "X". Units may vary and other descriptive subscripts may apply.

ɜ = gas viscosity (poise)

= molecular weight of gas species (g/gmol)

I = number of jets per plate

2 = percent nitrogen in the stack gas

2 = percent oxygen in the stack gas

ɔ = average of the square roots of ΔP (may also be referred to as ASΔP)

1 = square root of ΔP at point 1 of the current test, Method 201A

' = square root of ΔP at point 1 of the previous traverse, Method 201A

ə = average of the square roots of ΔP from the previous traverse, Method 201A

n = absolute barometric pressure at the dry gas meter (inches Hg)

ɔ = absolute barometric pressure at the sample location (inches Hg)

ɜ = stack static pressure (inches H_2O)

s = absolute stack pressure (inches Hg)

ɪ = absolute pressure at standard conditions (29.92 inches Hg.)

) = time of test (minutes)

ı = sample time (duration in minutes) at first sample point for Method 201A

ı = sample time (duration in minutes) at sample point "n" for Method 201A

st = target test time for Method 201A (minutes)

a = stack gas volumetric flow rate (acfm)

s = stack gas volumetric flow rate (dscfm)

= actual gas flow rate through the cyclone (acfm)

= actual gas flow rate through the impactor (acfm)

/ = wet stack gas std. volumetric flow (ft^3/min, wscfm)

ɛ = gas constant (21.85 inches Hg*ft^3/(lbmol*R))

ɔ = particle density (1 g/cm^3)

ɜ = stack gas density (g/cm^3)

n = stack temperature (°F)

s = stack temperature (°F)

ɪ = absolute temperature at standard conditions (528°R)

t = Duration of test run in minutes. Also see θ

n = mean molecular speed (cm/s)

ı = sample volume (ft^3) at meter conditions

ɪ = volume standard (dscf), sample volume adjusted to 68°F and 29.92 inches Hg.

s = velocity of stack gas (fpm)

v = volume water vapor (scf) at 68°F and 29.92 inches Hg.

ɔ = weight of the condensed water collected (grams)

ɪ = fraction of dry gas

ʳ = meter calibration Y-factor (dimensionless)

ʳ = dimensionless inertial impaction parameter, 0.14

General Sample Equations

$$\%I = Vm_{std} \cdot (T_s + 460) \cdot 1039 / (\theta \cdot V_s \cdot P_s \cdot X_d \cdot D_n^2)$$

$$A_s = (D_s^2 / 4) \cdot \pi$$

$$B_{ws} = V_w / (Vm_{std} + V_w)$$

$$C_B = M_B \cdot 0.01543 / Vm_{std}$$

$$C_{cond} = M_{cond} \cdot 0.01543 / Vm_{std}$$

$$C_{cors} = M_{cors} \cdot 0.01543 / Vm_{std}$$

$$C_{fa} = T_{std} \cdot C_{fp} \cdot P_s \cdot X_d / [P_{std} \cdot (T_m + 460)]$$

$$C_f = M_{fp} \cdot 0.01543 / Vm_{std}$$

$$C_{PM10} = M_{PM10} \cdot 0.01543 / Vm_{std}$$

$$C_{rad} = Curies/Vm_{std}$$

$$C_{gas\ (corr)} = C_{gas} \cdot (20.9 - \text{desired } \%O_2) / (20.9 - \text{actual } \%O_2)$$

$$_{casc}\ Dp_{50} = \sqrt{[\mu s \cdot \psi \cdot N \cdot \pi \cdot D_c^3 \cdot 18 / (K_c \cdot \rho_p \cdot Q_{sce} \cdot 4)]}$$

$$_{PM_{10}}\ Dp_{50} = 0.15625 \cdot [(T_s + 460) / (M_s \cdot P_s)]^{0.2091} \cdot (\mu_s / Q_{sc})^{0.7091}$$

$$ER_{cond} = C_{cond} \cdot Q_s \cdot 0.00857$$

$$ER_{cors} = C_{cors} \cdot Q_s \cdot 0.00857$$

$$ER_F = C_f \cdot Q_s \cdot 0.00857$$

$$ER_{gas} = P_{std} \cdot Q_s \cdot M_{wgas} \cdot C_{gas} \cdot 60 / (R \cdot T_{std} \cdot 10^6)$$

$$ER_{gas} = C_{gas(lb/dscf)} \cdot Qs \cdot 60$$

(Either ER_{gas} equation gives equivalent lb/hr values to 3 sig. figures)

$$ER_{mmBtu} = C_{gas(lb/dscf)} \cdot F_d \cdot (20.9/(20.9 - \%O_2)$$, Method 19 Equation 19-1

$$ER_{PM10} = C_{PM10} \cdot Q_s \cdot 0.00857$$

$$ER_{rad} = C_{rad} \cdot Qs \cdot 60$$

$$K_c = 1 + 2 \cdot \lambda \cdot 1.257 / Dp_{50}$$

$$\lambda = \mu_s / (0.499 \cdot \rho_s \cdot u_m)$$

$$M_d = CO_2 \cdot 0.44 + O_2 \cdot 0.32 + N_2 \cdot 0.28$$

$$M_s = (M_d \cdot X_d) + (18 \cdot B_{ws})$$

$$\mu_s = [51.05 + 0.207 \cdot (T_s + 460) + 3.24 \cdot 10^{-5} \cdot (T_s + 460)_2 + 0.53147 \cdot \%O_2 - 74.143 \cdot B_{ws}] \cdot 10^{-6}$$

$$P_s = Pb_p + (P_G / 13.6)$$

$$\theta_1 = (\sqrt{\Delta P_1'} / \sqrt{\Delta P'_{ave}}) \cdot (\theta_{test} / pts)$$

$$\theta_n = \theta_1 \cdot \sqrt{\Delta P_n} / \sqrt{\Delta P_1}$$

$$Q_a = V_s \cdot A_s$$

$$Q_s = Qa \cdot Xd \cdot Ps \cdot T_{std} / [(Ts + 460) \cdot P_{std}]$$

$$Q_{sc} = [(T_s + 460) \cdot P_{std} / (T_{std} \cdot P_s)] \cdot [(Vm_{std} + V_w) / \theta]$$

$$Q_{sce} = [(T_s + 460) \cdot P_{std} / (T_{std} \cdot P_s)] \cdot [(Vm_{std} + V_w) / \theta]$$

$$Q_W = Q_s / X_d$$

$$\rho_s = P_s \cdot M_s \cdot 3386.39 \cdot 10^{-6} / [R \cdot (T_s + 460) / 1.8]$$

$$u_m = 100 \cdot \sqrt{\{[R \cdot (T_s + 460) / 1.8 \cdot 8 \cdot 10^3] / [\pi \cdot M_s]\}}$$

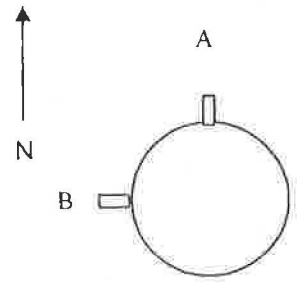
$$Vm_{std} = Vm \cdot Y \cdot T_{std} \cdot (Pb_m + \Delta H / 13.6) / [P_{std} \cdot (T_m + 460)]$$

$$V_s = 85.49 \cdot 60 \cdot Cp \cdot \sqrt{\Delta P} \cdot \sqrt{[(T_s + 460) / (P_s \cdot M_s)]}$$

$$V_w = Wt_{wc} \cdot 0.04715$$

$$X_d = 1 - B_{ws}$$

South Yellow Cake Dryer Scrubber



Stack Dia 12.75 Reference: 0

Ports are 7' Upstream from next disturbance

Ports are 30' Downstream from last disturbance

Facility Energy Fuels

Stack Identification South Yellow Cake Dryer Scrubber

Date _____

Barometric Pressure

Pb_m _____ in Hg Pb_p _____ in Hg

Static Pressure (P_G) _____ in H_2O

Estimated Moisture (Bw_s) 4-6% %

Sample Height from Ground 70 feet

Comments: _____

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	6.7	0.85	0.85						
2	25.0	3.19	3.19						
3	75.0	9.56	9.56						
4	93.3	11.90	11.90						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

m5 Field Data Sheet

Filter 6206 TETCO Sample Box E/4

Page 1 of 1 Run # 1

Plant: Energy Fuels

Date: 6/16/14 6/17/14

Location: South Yellow Cake Dryer Scrubber

Operator: [illegible]

Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H₂O)	ΔH (in H₂O) Desired	ΔH (in H₂O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe out	Oven	Effluent	DGM Temp (T_m) Out	In
1	13:53	0	517.500	.28	1.21	1.21	3	110	260	230	231	59	78	78
1		20	532.216	.30	1.29	1.29	3	115	259	250	237	57	74	76
1		40	548.428	.26	1.13	1.13	3	116	259	240	245	64	75	77
2		60	562.311	.25	1.09	1.09	3	117	259	256	243	65	75	76
2		80	576.470	.25	1.09	1.09	3	118	254	237	238	66	76	75
2		100	590.614	.26	1.13	1.13	4	119	262	230	235	61	72	75
3		120	604.950	.24	1.04	1.04	5	120	262	235	236	63	72	75
3		140	618.935	.24	1.04	1.04	5	120	260	231	230	65	74	78
3		160	632.926	.25	1.09	1.09	5	119	262	258	259	50	76	79
4		180	646.922	.27	1.15	1.15	5	119	253	240	238	56	76	80
4	6/16	200	661.212	.27	1.15	1.15	5	120	253	258	257	59	77	79
4		220	675.186	.26	1.11	1.11	6	119	251	232	231	58	77	81
1	8:09	240	689.368	.23	.99	.99	6	105	237	236	237	64	70	70
1	6/17	260	703.353	.25	1.08	1.08	4	111	244	244	234	52	72	75
1		280	717.314	.24	1.02	1.02	4	112	247	248	249	55	77	79
2		300	731.300	.28	1.18	1.18	4	113	242	244	243	57	77	81
2		320	745.721	.27	1.14	1.14	5	109	241	237	238	59	78	82
2		340	760.468	.26	1.12	1.12	5	108	243	241	241	62	80	84
3		360	774.895	.25	1.08	1.08	5	110	241	235	236	64	76	80
3		380	789.289	.26	1.12	1.12	5	106	243	236	235	66	77	80
3		400	804.100	.26	1.12	1.12	5	105	243	235	236	50	76	80
4		420	818.856	.23	.99	.99	5	108	239	232	233	49	76	80
4		440	832.665	.24	1.03	1.03	5	108	242	235	233	52	76	80
4		460	846.789	.25	1.08	1.08	5	109	239	231	232	55	76	80
	12:09	480	861.214											
Total			343.714	√12.1430		26.47		2716					3692	
Average				√.5060		1.103		113.2					76.9	

Stack Diameter 12.75" Port Reference 0"

Ports are 7' Upstream from next disturbance

Ports are 30' Downstream from last disturbance

Assumed Moisture 4-6 %

Probe 21 Cp 0.84

Nozzle Calibration 274 274 275 275

Avg D_n 2745 inches

Gas Bag E-05

Console 4

Y-Factor 1.000

$\Delta H_@$ 1.425 in H_2O

Barometric Pressures

Pb_m 24.30 in Hg

Pb_p 24.23 in Hg

P_G -.28 in H_2O

Leak Check:	Pre	Post
ft³/min	0.008	0.004
vac in Hg	22	12

Pitot Rate	Pre	Post
	0.0	0.0
in H_2O	5.5	5.5

Water Collected 434.1 g

Time Sampled 480 min

Review [illegible]

K = @T_m

K = @T_m

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)

M5 Field Data Sheet

TETCO

Filter 6208 Sample Box D E A

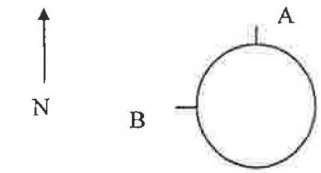
Page 1 of 1 Run # 2

Plant: Energy Fuels

Date: 6/17/18 | 14

Location: South Yellow Cake Dryer Scrubber

Operator: [illegible]



Stack Diameter 12.75" Port Reference 0"

Ports are 7' Upstream from next disturbance

Ports are 30' Downstream from last disturbance

Assumed Moisture 4-6 %

Probe 21 Cp 0.84

Nozzle Calibration

274 274 275 275

Avg D_n 274.5 inches

Gas Bag 5-05

Console 4

Y-Factor 1.000

$\Delta H_@$ 1.495 in H_2O

Barometric Pressures

Pb_m 24.30 in Hg

Pb_p 24.23 in Hg

P_G (-.28) in H_2O

Traverse Point	Time Clock	Time Min (θ)	DGM (ft^3)	ΔP (in H_2O)	ΔH (in H_2O) Desired	ΔH Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe out	Oven	Effluent	DGM Temp (T_m) Out	In
1	13:14	0	862.000	.24	1.02	1.02	3	~~213~~ 112	231	232	232	65	70	70
1		20	875.900	.24	1.02	1.02	3	111	230	260	257	56	69	73
1		40	889.805	.26	1.11	1.11	3	107	260	249	248	61	72	75
2		60	904.872	.28	1.20	1.20	3	109	261	266	265	63	72	75
2		80	919.695	.27	1.15	1.15	3	112	261	260	247	64	72	76
2		100	934.518	.26	1.11	1.11	3	114	261	258	258	54	78	83
3		120	948.223	.25	1.07	1.07	3	114	261	254	253	55	82	87
3		140	962.251	.24	1.02	1.02	3	114	264	253	254	56	80	83
3		160	976.248	.23	.98	.98	4	113	260	257	256	62	78	81
4		180	990.096	.25	1.07	1.07	5	113	258	259	257	62	77	80
4		200	1004.231	.24	1.02	1.02	5	113	257	264	265	63	76	79
4	17:14	220	1018.179	.24	1.02	1.02	6	112	256	258	257	64	75	78
1	8:22	240	1031.900	.26	1.11	1.11	4	104	254	234	235	65	66	66
1		260	1046.113	.25	1.07	1.07	4	110	270	265	266	49	70	73
1		280	1059.928	.25	1.07	1.07	4	113	269	245	246	51	72	76
2		300	1073.445	.27	1.15	1.15	4	114	267	236	235	57	75	79
2		320	1087.641	.27	1.15	1.15	4	114	263	232	230	59	77	81
2		340	1101.526	.25	1.07	1.07	5	114	262	231	231	62	73	75
3		360	1115.624	.25	1.07	1.07	5	114	265	230	231	64	75	80
3		380	1129.935	.24	1.02	1.02	5	112	253	231	232	50	75	79
3		400	1143.920	.23	.98	.98	5	112	253	231	231	51	75	79
4		420	1157.592	.25	1.07	1.07	6	112	243	235	235	56	76	80
4		440	1171.735	.24	1.02	1.02	6	112	247	235	236	59	77	81
4		460	1185.735	.24	1.02	1.02	6	112	248	238	236	62	77	81
	12:22	480	1199.542											
Total			337.542	11.996		25.59		2687					3659	
Average				.4998		1.066		112.0					76.2	

Leak Check:

	Pre	Post
ft^3/min	0.009	0.004
vac in Hg	22	12
Pitot Rate	0.0	0.0
In H_2O	5.5	5.5

Water Collected 433.9 g

Time Sampled 480 min

Review [illegible]

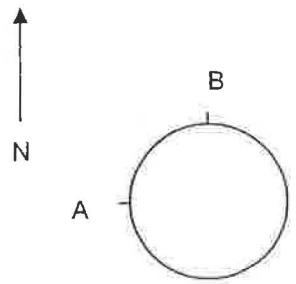
K = @T_m

K = @T_m

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft^3/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft^3/min)

Yellow Cake Dryer Baghouse



Stack Dia 16 Reference 0

Ports are 57" Upstream from next disturbance

Ports are 468" Downstream from last disturbance

Facility Denison Mines

Stack Identification North Yellow Cake Dryer Baghouse

Date _____

Barometric Pressure

Pb_m _____ in Hg Pb_p _____ in Hg

Static Pressure (P_G) _____ in H_2O

Estimated Moisture (Bw_s) 1 %

Sample Height from Ground _____ feet

Comments: _____

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	B	C	D	E	F
1	4.4	0.70	0.70						
2	14.6	2.34	2.34						
3	29.6	4.74	4.74						
4	70.4	11.26	11.26						
5	85.4	13.66	13.66						
6	95.6	15.30	15.30						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

m5 Field Data Sheet

Filter 6207 TETCO Sample Box D

Page 1 of 1 Run # 1

Plant: Denison Mines

Date: 6/17/14

Location: Yellowcake Dryer Baghouse

Operator: M. McNamara

N

B

A

Stack Diameter 16" Port Reference 0.0"

Ports are 57" Upstream from next disturbance

Ports are 468" Downstream from last disturbance

	Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H₂O)	ΔH (in H₂O) Desired	ΔH (in H₂O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe Out	Filter	Effluent	DGM Temp (T_m) Out	In
B	1	14:00	0	294.824	.50	1.14	1.14	4	106	240	230	230	55	75	77
	2		10	301.675	.42	.94	.94	4	107	230	235	235	49	77	76
	3		20	308.220	.30	.67	.67	4	106	264	230	230	51	81	75
	4		30	317.770	.72	1.61	1.61	4	107	270	232	232	54	85	75
	5		40	321.615	.81	1.81	1.81	5	107	238	230	230	54	90	76
	6		50	330.175	.72	1.61	1.61	5	106	242	231	231	56	92	77
A	1	15:04	60	338.475	.67	1.50	1.50	4	107	270	225	255	58	89	79
	2		70	346.260	.68	1.52	1.52	4	107	250	267	267	60	94	80
	3		80	354.180	.61	1.37	1.37	4	107	260	270	270	60	96	81
	4		90	361.820	.60	1.34	1.34	4	108	255	272	272	61	98	85
	5		100	368.210	.57	1.28	1.28	4	108	246	272	272	60	98	84
	6		110	376.495	.60	1.34	1.34	4	109	247	250	250	57	98	84
		16:04	120	383.854											
Total				89.030	9.2283	16.130			1285					2022	
Average					.7690	1.344			107.1					84.3	

Assumed Moisture 1 %

Probe 27.1 Cp 0.84

Nozzle Calibration

.222 .222 .222 .222

Avg D_n .222 inches

Gas Bag Ambient Air

Console 9

Y-Factor 1.002

$\Delta H_@$ 1.652 in H_2O

Barometric Pressures

Pb_m 24.30 in Hg

Pb_p 24.23 in Hg

P_G -.24 in H_2O

Leak Check:	Pre	Post
ft³/min	0.005	0.003
vac in Hg	20.0	9.0
Pitot Rate	0.0	0.0
In H_2O	7.0	7.0

Water Collected 6.1 g

Time Sampled 120 min

Review [illegible]

K = @T_m

K = @T_m

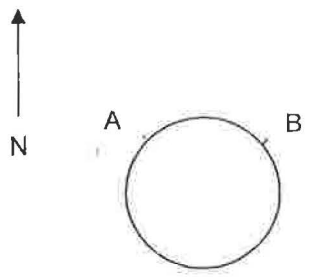
Comments:

Time	Baghouse ΔP	Time	Baghouse ΔP
14:04	9.0	15:05	8.6
14:19	9.0	15:20	9.2
14:34	8.7	15:36	9.1
14:51	8.9	15:56	9.0

9 Barrels

Grizzly Baghouse

Prelim 12 pts blank



Stack Dia. 18.75 Reference: 3.0

Ports are 24.5" Upstream from next disturbance

Ports are 48" Downstream from last disturbance

Facility Denison Mines

Stack Identification Grizzly Baghouse

Date 6/18/14

Barometric Pressure

Pb_m 24.30 in Hg Pb_p 24.27 in Hg

Static Pressure (P_G) -.056 in H_2O

Estimated Moisture (Bw_s) 1 %

Sample Height from Ground 30 feet

Comments:

Must use 36" probe or longer to keep box outside handrail

Traverse Point	Percent Diameter	Distance From: ID	Distance From: Reference	Ports A	Ports B	Ports C	Ports D	Ports E	Ports F
1	2.1	0.50	3.50		.060 70				
2	6.7	1.26	4.26						
3	11.8	2.21	5.21		.070 75				
4	17.7	3.32	6.32						
5	25.0	4.69	7.69						
6	35.6	6.68	9.68		.074 74				
7	64.4	12.08	15.08						
8	75.0	14.06	17.06						
9	82.3	15.43	18.43		.068 74				
10	88.2	16.54	19.54						
11	93.2	17.48	20.48		.075 74				
12	97.9	18.25	21.25						

Averages:

T_S _____ ∠ Flow _____

ΔP _____ √ΔP _____

KEY => T_S ∠ Flow ΔP

MS Field Data Sheet

TETCO

Filter ~~6209~~ 6210 Sample Box D

Page 1 of 1 Run # 1

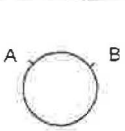
Plant: Denison Mines

Location: Grizzly Baghouse

Date: 6/18/14

Operator: M. McNamara

	Traverse Point	Time Clock	Time Min (θ)	DGM (ft³)	ΔP (in H₂O)	ΔH (in H₂O) Desired	ΔH (in H₂O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (Ts)	Probe	Probe Out	Filter	Effluent	DGM Temp (Tm) Out	In
B	1	8:13	0	~~394.001~~	.060	1.57	1.57	3	70	255	270	270	53	74	69
	2		20	400.110	.070	1.90	1.90	3	72	260	265	265	51	87	72
	3		40	417.660	.068	1.84	1.84	3	75	269	238	238	52	93	77
1	4		60	435.075	.072	1.96	1.96	4	77	250	240	240	52	95	80
	5		80	453.130	.066	1.80	1.80	4	78	270	249	249	52	93	81
	6		100	470.370	.074	2.02	2.02	4	78	270	255	255	52	93	82
2	7		120	488.520	.070	1.91	1.91	4	79	270	230	230	54	93	83
	8		140	506.300	.070	1.91	1.91	4	80	248	240	240	54	93	83
	9		160	524.135	.068	1.85	1.85	4	80	250	260	260	55	90	83
3	10		180	541.800	.069	1.88	1.88	4	79	260	270	270	60	87	81
	11		200	559.115	.075	2.04	2.04	4	80	266	264	264	44	89	81
	12		220	576.920	.070	1.91	1.91	4	81	265	249	249	45	89	82
A 4	1	12:21	240	594.672	.067	1.82	1.82	4	80	267	243	243	61	83	81
	2		260	611.886	.072	1.96	1.96	4	81	265	249	249	48	85	80
	3		280	629.775	.074	2.02	2.02	4	86	260	254	254	51	89	81
5	4		300	647.915	.082	2.23	2.23	4	84	262	255	255	54	88	82
	5		320	667.095	.079	2.15	2.15	4	89	240	243	243	56	88	82
	6		340	685.830	.075	2.04	2.04	4	90	225	239	239	57	86	82
6	7		360	704.070	.064	1.74	1.74	4	92	230	229	229	43	86	82
	8		380	720.835	.057	1.55	1.55	4	92	244	244	244	46	86	83
	9		400	736.780	.057	1.55	1.55	4	92	270	252	252	47	88	84
7	10		420	752.925	.055	1.50	1.50	4	92	234	255	255	52	89	84
	11		440	768.895	.053	1.44	1.44	4	89	268	238	238	58	91	85
	12		460	784.460	.055	1.50	1.50	4	89	250	270	270	60	92	86
8		16:21	480	800.297											
Total				416.247	6.288	44.090			1984					4073	
Average					.2595	1.837			82.7					84.9	



Stack Diameter 18.75" Port Reference 3.0"

Ports are 24.5" Upstream from next disturbance

Ports are 48" Downstream from last disturbance

Assumed Moisture 1 %

Probe 38-G Cp 0.84

Nozzle Calibration

.409 .409 .409 .408

Avg D_n .40875 inches

Gas Bag Ambient Air

Console 9

Y-Factor 1.002

$\Delta H_@$ 1.652 in H_2O

Barometric Pressures

Pb_m 24.30 in Hg

Pb_p 24.27 in Hg

P_G -.056 in H_2O

Leak Check	Pre	Post
ft³/min	0.006	
vac in Hg	22	9.0
Pitot Rate	.20	.20
in H_2O	0.0	0.0

Water Collected 12.9 g

Time Sampled 480 min

Review

K = @T_m

K = @T_m

Comments DGM @ Start 384.050

APPENDIX C

South Yellow Cake Scrubber
- Sample Recovery
- Gas Analysis Data (ORSAT)

Yellow Cake Dryer Baghouse
- Sample Recovery
- Gas Analysis Data (Ambient)

Grizzly Baghouse
- Sample Recovery
- Gas Analysis Data (Ambient)

Chain of Custodies

Lab Analysis

South Yellow Cake Dryer Scrubber

METHOD 5

Facility: Energy Fuels

Date: 6/16, 6/17/14

Stack Identification: SYC Scrubber

IMPINGERS

6206

Run: 1 Sample Box: E

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	100	drop out	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)	669.2	872.9	524.0	715.5	551.3	939.6
Initial (g)	553.5	667.6	497.9	690.9	542.5	886.0
Net (g)	115.7	205.3	26.1	24.6	8.8	53.6

JG

Total (g) 434.1 ✓ JG

IMPINGERS

6208

Run: 2 Sample Box: E

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	100	drop out	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)	705.1	853.1	533.7	691.4	558.7	910.2
Initial (g)	557.2	687.8	501.7	674.9	544.9	856.8
Net (g)	152.9	165.3	32.0	16.5	13.8	53.4

Total (g) 433.9

IMPINGERS

Run: Sample Box:

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	100	drop out	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g)

IMPINGERS

Run: Sample Box:

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	drop out	100	drop out	100	—	Silica Gel
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g)

Plant Energy Fuels Location S/C
Analytical Method ORSAT

Date 6/17/14
Test No. 1
Gas Bag No. E-05
Ambient Temp 65
Operator

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2	2.0	2.0	2.0	2.0	2.0	2.0	2.0
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	19.5	17.5	19.5	17.5	19.5	17.5	17.5
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date 6/18/14
Test No. 2
Gas Bag No. E-05
Ambient Temp 65
Operator

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	19.9	18.7	19.9	18.7	19.9	18.7	18.7
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date
Test No.
Gas Bag No.
Ambient Temp
Operator

Gas	RUN 1 Actual Reading	RUN 1 Net	RUN 2 Actual Reading	RUN 2 Net	RUN 3 Actual Reading	RUN 3 Net	Average Net Volume
CO_2							
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).							
N_2 (Net is 100 Minus Actual O_2 Reading).							

CO is not measured, as it has the same molecular weight as N_2

Yellow Cake Dryer Baghouse

~~Grizzly~~

Facility: Energy Fuels

Date: 6/17/14

Stack Identification: ~~Grizzly~~ Yellow Cake Baghouse

IMPINGERS

Run: 1

Sample Box: D

Filter Number

6207

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	-	Silica Gel		
	1	2	3	4	5	6
Final (g)	604.0	616.1	613.3	910.3		
Initial (g)	618.3	616.4	613.1	889.8		
Net (g)	-14.3	-.3	.2	20.5		

Total (g) 6.1

IMPINGERS

Run: _____

Sample Box: _____

Filter Number

_____

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	-	Silica Gel		
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g) _____

IMPINGERS

Run: _____

Sample Box: _____

Filter Number

_____

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	-	Silica Gel		
	1	2	3	4	5	6
Final (g)						
Initial (g)						
Net (g)						

Total (g) _____

Grizzly Baghouse

Method 5

Facility: Energy Fuels

Date: 6/18/14

Stack Identification: Grizzly

IMPINGERS

Run: 1

Sample Box: D

Filter Number

6209 NAM

6210

NAM

	Impinger Number					
	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	100	100	-	Silica Gel		
Final (g)	555.0	631.4	618.7	951.5		
Initial (g)	604.0	616.1	613.3	910.3		
Net (g)	-49.0	15.3	5.4	41.2		

Total (g) 12.9

IMPINGERS

Run: _____

Sample Box: _____

Filter Number

_____

	Impinger Number					
	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	100	100	-	Silica Gel		
Final (g)						
Initial (g)						
Net (g)						

Total (g) _____

IMPINGERS

Run: _____

Sample Box: _____

Filter Number

_____

	Impinger Number					
	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	100	100	-	Silica Gel		
Final (g)						
Initial (g)						
Net (g)						

Total (g) _____

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Tetco	Dean Kitchen	6/19/2014	
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	
391 East 620 South	801-492-9106		Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact
American Fork	Ut	84003	Scott Christensen, Garren Palmer	

Project Name and Location (State)	Carrier/Waybill Number
Energy Fuels 2014 2nd Quarter	

Contract/Purchase Order/Quote No.

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	U-Nat	TH-230	Ra-226	Lead-210
R1 Dryer BH filter (6207) and beaker	6/17/14	10:00	X										X	X	X	X
R1 SYC Scrubber filter (6206) and beaker	6/16,17/14	8:00	X										X	X	X	X
R2 SYC Scrubber filter (6208) and beaker	6/17,18/14	13:00	X										X	X	X	X
R1 Grizzly filter (6210) and beaker	6/18/14	8:00	x										X	X		

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other as per method

QC Requirements (Specify)

Relinquished By	Date	Time	Received By	Date	Time
1. [signature]	6/19/14	14:00	1.		
2.			2.		
3.			3.		

Comments

When Complete Email to: Dean or Paul, tetco@tetco-ut.com

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Analytical Data Package Prepared For

Denison Mines (USA) Corp.

Radiochemical Analysis By

TestAmerica Inc

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code:

Data Package Contains 16 *Pages*

Report No.: 61895

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
48381		R1 Dryer BH filter(6207)and be	J4F240448-1	M36EH1AE	9M36EH10	4176035
		R1 Dryer BH filter(6207)and be	J4F240448-1	M36EH1AA	9M36EH10	4176037
		R1 Dryer BH filter(6207)and be	J4F240448-1	M36EH1AC	9M36EH10	4176039
		R1 Grizzly filter(6210)and bea	J4F240448-4	M36EL1AC	9M36EL10	4176035
		R1 Grizzly filter(6210)and bea	J4F240448-4	M36EL1AA	9M36EL10	4176037
		R1 SYC Scrubber filter(6206)an	J4F240448-2	M36EJ1AE	9M36EJ10	4176035
		R1 SYC Scrubber filter(6206)an	J4F240448-2	M36EJ1AA	9M36EJ10	4176037
		R1 SYC Scrubber filter(6206)an	J4F240448-2	M36EJ1AC	9M36EJ10	4176039
		R2 SYC Scrubber filter(6208)an	J4F240448-3	M36EK2AE	9M36EK20	4176035
		R2 SYC Scrubber filter(6208)an	J4F240448-3	M36EK1AA	9M36EK10	4176037
		R2 SYC Scrubber filter(6208)an	J4F240448-3	M36EK1AC	9M36EK10	4176039

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

August 22, 2014

Denison Mines (USA) Corp
1050 17th Street, Suite 950
Denver, CO 80265

Attention: Dean Kitchen

Date Received at Lab	:	June 24, 2014
Project Name	:	Energy Fuels 2014 2nd Quarter
Sample Type	:	Four (4) Stack Filter Samples
SDG Number	:	48381

CASE NARRATIVE

I. Introduction

On June 24, 2014, four stack filter samples were received at TestAmerica's Richland laboratory for radiochemical analysis. Upon receipt, the samples were assigned the TestAmerica identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Numbers J4F240448.

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical uncertainties.

The analysis requested was:

Alpha Spectroscopy
Thorium-228, -230, -232 by method RL-ALP-001
Uranium-234, -235, -238 by method RL-ALP-004
Gas Proportional Counting
Pb-210 by method RL-GPC-011
Alpha Scintillation
Radium-226 by method RL-RA-001

IV. Quality Control

The analytical result for each analysis performed includes a minimum of one laboratory control sample (LCS), and one reagent blank sample analysis. Any exceptions have been noted in the "Comments" section.

V. Comments

Alpha Spectroscopy

Thorium-228, 230, 232

The batch blank result for Th-230 was above the achieved MDA; a recount confirmed results and there is no sample remaining for reanalysis. The achieved MDA of the batch exceeds the detection limit from reduced aliquot sizes taken due to historical process knowledge. There is no sample volume remaining for re-analysis. Data is reported. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

Uranium-234, 235, 238

Sample R2 SYC Scrubber had smeared spectra in the original count of this batch. The sample was stripped and rerun through cartridges. Upon completion of reanalysis, tracer yield recovered low at 12%. This sample fails and data is reported for client review.

Initial count for blank had a result for U-238 and U-234 that exceeds MDA. This sample was stripped and reprocessed, with acceptable results. The achieved MDA of samples exceed CRDL. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

Gas Proportional Counting

Pb-210

Tracer yield for batch 4176038 were insufficient for completion of the required analysis. No remaining sample for reanalysis. No data reported.

Alpha Scintillation

Radium-226

The CRDL was not met for the samples or QC for batch 4176039 due to method limitations for the matrix. The tracer yields and LCS recovery meet acceptance criteria. The blank activity is below the MDA and sample results show no indication of method contribution. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

I certify that this Certificate of Analysis is in compliance with the SOW and/or NELAC, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Robin Ebert Mays

Robin Ebert-Mays
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**TestAmerica Richland's SOP No.**
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c_ Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty.* The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 22-Aug-14

TestAmerica Inc

Ordered by Method, Batch No., Client Sample ID.

Report No. : 61895 **SDG No:** 48381

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RER2
4176037 RICHRC5011									
R1 Dryer BH filter(6207)and be									
	M36EH1AA	Th-228	3.74E-09 +- 1.5E-08	U	uCi/Sample	41%	3.47E-08	3.00E-15	
		Th-230	5.55E-07 +- 1.3E-07		uCi/Sample	41%	9.77E-09	3.00E-15	
		Th-232	4.33E-09 +- 1.1E-08	U	uCi/Sample	41%	2.48E-08	3.00E-15	
R1 Grizzly filter(6210)and bea									
	M36EL1AA	Th-228	1.03E-07 +- 4.5E-08		uCi/Sample	35%	4.34E-08	3.00E-15	
		Th-230	1.87E-05 +- 3.0E-06		uCi/Sample	35%	2.89E-08	3.00E-15	
		Th-232	2.38E-07 +- 6.9E-08		uCi/Sample	35%	2.63E-08	3.00E-15	
R1 SYC Scrubber filter(6206)an									
	M36EJ1AA	Th-228	2.08E-08 +- 2.4E-08	U	uCi/Sample	24%	3.27E-08	3.00E-15	
		Th-230	1.47E-07 +- 6.5E-08		uCi/Sample	24%	4.79E-08	3.00E-15	
		Th-232	5.57E-09 +- 1.2E-08	U	uCi/Sample	24%	1.51E-08	3.00E-15	
R2 SYC Scrubber filter(6208)an									
	M36EK1AA	Th-228	2.69E-09 +- 1.1E-08	U	uCi/Sample	41%	2.63E-08	3.00E-15	
		Th-230	2.25E-07 +- 6.2E-08		uCi/Sample	41%	2.79E-08	3.00E-15	
		Th-232	2.14E-08 +- 1.8E-08		uCi/Sample	41%	1.84E-08	3.00E-15	
4176035 FFSR									
R1 Dryer BH filter(6207)and be									
	M36EH1AE	U-234	7.08E-04 +- 1.6E-04		uCi/Sample	99%	3.10E-05	9.00E-15	
		U-235	1.48E-05 +- 1.8E-05	U	uCi/Sample	99%	2.39E-05	9.00E-15	
		U-238	9.70E-04 +- 2.1E-04		uCi/Sample	99%	2.61E-05	9.00E-15	
R1 Grizzly filter(6210)and bea									
	M36EL1AC	U-234	2.45E-05 +- 3.0E-05	U	uCi/Sample	77%	4.70E-05	9.00E-15	
		U-235	1.40E-05 +- 2.1E-05	U	uCi/Sample	77%	2.94E-05	9.00E-15	
		U-238	4.65E-05 +- 4.0E-05	U	uCi/Sample	77%	4.70E-05	9.00E-15	
R1 SYC Scrubber filter(6206)an									
	M36EJ1AE	U-234	6.75E-03 +- 1.1E-03		uCi/Sample	84%	1.24E-04	9.00E-15	
		U-235	2.67E-04 +- 9.6E-05		uCi/Sample	84%	6.19E-05	9.00E-15	
		U-238	6.94E-03 +- 1.2E-03		uCi/Sample	84%	1.18E-04	9.00E-15	
R2 SYC Scrubber filter(6208)an									
	M36EK2AE	U-234	7.92E-06 +- 2.4E-06		uCi/Sample	12%	3.28E-07	9.00E-15	
		U-235	5.02E-07 +- 3.5E-07		uCi/Sample	12%	2.33E-07	9.00E-15	
		U-238	8.35E-06 +- 2.5E-06		uCi/Sample	12%	2.54E-07	9.00E-15	
4176039 RL-RA-001									
R1 Dryer BH filter(6207)and be									
	M36EH1AC	Ra-226	4.21E-07 +- 1.1E-07		uCi/sample	100%	7.19E-08	9.00E-14	
R1 SYC Scrubber filter(6206)an									
	M36EJ1AC	Ra-226	2.65E-07 +- 9.6E-08		uCi/sample	66%	1.02E-07	9.00E-14	

TestAmerica Inc

rptTALRchSaSummary2 V5.3.3 A2002

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

Sample Results Summary

Date: 22-Aug-14

TestAmerica Inc

Ordered by Method, Batch No., Client Sample ID.

Report No. : 61895 **SDG No:** 48381

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RER2
4176039	**RL-RA-001**								
	R2 SYC Scrubber filter(6208)an								
	M36EK1AC	Ra-226	2.64E-07 +- 9.5E-08		uCi/sample	91%	7.93E-08	9.00E-14	

No. of Results: 27

TestAmerica Inc **RER2** - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

rptTALRchSaSum mary2 V5.3.3 A2002

QC Results Summary

Date: 22-Aug-14

TestAmerica Inc

Ordered by Method, Batch No, QC Type,.

Report No. : 61895 **SDG No.:** 48381

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
RICHRC5011								
4176037 BLANK QC,								
M36K11AA	Th-228	1.02E-10 +- 1.3E-10	U	uCi/Sample	31%			2.10E-10
M36K12AA	Th-228	-2.87E-11 +- 7.7E-11	U	uCi/Sample	26%			2.66E-10
M36K11AA	Th-230	7.53E-10 +- 3.1E-10		uCi/Sample	31%			7.04E-11
	Th-232	4.16E-11 +- 7.7E-11	U	uCi/Sample	31%			1.47E-10
4176037 LCS,								
M36K11AC	Th-230	1.11E-08 +- 1.7E-09		uCi/Sample	79%	98%	0.0	2.19E-11
FFSR								
4176035 BLANK QC,								
M36KT2AA	U-234	2.05E-08 +- 9.0E-08	U	uCi/Sample	45%			2.23E-07
	U-235	3.26E-08 +- 5.4E-08	U	uCi/Sample	45%			1.11E-07
	U-238	9.14E-08 +- 1.0E-07	U	uCi/Sample	45%			1.98E-07
4176035 LCS,								
M36KT1AC	U-234	7.54E-07 +- 2.1E-07		uCi/Sample	81%	77%	-0.2	2.84E-08
	U-238	9.78E-07 +- 2.6E-07		uCi/Sample	81%	95%	-0.1	3.99E-08
RL-RA-001								
4176039 BLANK QC,								
M36K41AA	Ra-226	2.99E-10 +- 2.3E-10	U	uCi/sample	93%			3.41E-10
4176039 LCS,								
M36K41AC	Ra-226	4.15E-08 +- 8.5E-09		uCi/sample	100%	83%	-0.2	4.04E-10

No. of Results: 12

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 22-Aug-14

Lab Name:	**TestAmerica Inc**	**SDG:**	48381	**Collection Date:**	6/17/2014 10:00:00 AM
Lot-Sample No.:	**J4F240448-1**	**Report No. :**	61895	**Received Date:**	6/24/2014 10:40:00 AM
Client Sample ID:	**R1 Dryer BH filter(6207)and be**	**COC No. :**		**Matrix:**	SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4176035	FFSR			**Work Order:**	M36EH1AE		**Report DB ID:**	9M36EH10				
U-234	**7.08E-04**		1.2E-04	1.6E-04	3.10E-05	uCi/Sample	99%	*(22.8)*	7/15/14 10:04 p	1.0	0.00116	ALP1
						8.28E-06	9.00E-15	*(8.7)*		Sample	Sample	
U-235	**1.48E-05**	U	1.8E-05	1.8E-05	2.39E-05	uCi/Sample	99%	*0.62*	7/15/14 10:04 p	1.0	0.00116	ALP1
						5.81E-06	9.00E-15	*(1.6)*		Sample	Sample	
U-238	**9.70E-04**		1.4E-04	2.1E-04	2.61E-05	uCi/Sample	99%	*(37.2)*	7/15/14 10:04 p	1.0	0.00116	ALP1
						6.55E-06	9.00E-15	*(9.4)*		Sample	Sample	
								Ratio U-234/238 = 0.7				
Batch: 4176037	RICHRC5011			**Work Order:**	M36EH1AA		**Report DB ID:**	9M36EH10				
Th-228	**3.74E-09**	U	1.5E-08	1.5E-08	3.47E-08	uCi/Sample	41%	*0.11*	7/24/14 03:49 a	1.0	0.98985	ALP126
						1.33E-08	3.00E-15	*0.51*		Sample	Sample	
Th-230	**5.55E-07**		9.0E-08	1.3E-07	9.77E-09	uCi/Sample	41%	*(56.8)*	7/24/14 03:49 a	1.0	0.98985	ALP126
						5.36E-09	3.00E-15	*(8.9)*		Sample	Sample	
Th-232	**4.33E-09**	U	1.1E-08	1.1E-08	2.48E-08	uCi/Sample	41%	*0.17*	7/24/14 03:49 a	1.0	0.98985	ALP126
						9.43E-09	3.00E-15	*0.79*		Sample	Sample	
Batch: 4176039	RL-RA-001			**Work Order:**	M36EH1AC		**Report DB ID:**	9M36EH10				
Ra-226	**4.21E-07**		6.5E-08	1.1E-07	7.19E-08	uCi/sample	100%	*(5.9)*	8/21/14 08:17 p	1.0	0.9898	ASC1MB
						3.40E-08	9.00E-14	*(7.9)*		g	g	

No. of Results: 7 **Comments:**

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 22-Aug-14

Lab Name:	TestAmerica Inc	**SDG:**	48381	**Collection Date:**	6/18/2014 8:00:00 AM
Lot-Sample No.:	J4F240448-4	**Report No. :**	61895	**Received Date:**	6/24/2014 10:40:00 AM
Client Sample ID:	R1 Grizzly filter(6210)and bea	**COC No. :**		**Matrix:**	SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4176035	FFSR			**Work Order:**	M36EL1AC		**Report DB ID:**	9M36EL10				
U-234	**2.45E-05**	U	2.9E-05	3.0E-05	4.70E-05	uCi/Sample	77%	*0.52*	7/15/14 10:06 p	1.0	0.00102	ALP5
						1.29E-05	9.00E-15	*(1.6)*		Sample	Sample	
U-235	**1.40E-05**	U	2.1E-05	2.1E-05	2.94E-05	uCi/Sample	77%	*0.48*	7/15/14 10:06 p	1.0	0.00102	ALP5
						6.83E-06	9.00E-15	*(1.3)*		Sample	Sample	
U-238	**4.65E-05**	U	3.9E-05	4.0E-05	4.70E-05	uCi/Sample	77%	*0.99*	7/15/14 10:06 p	1.0	0.00102	ALP5
						1.29E-05	9.00E-15	*(2.3)*		Sample	Sample	
							Ratio U-234/238 = 0.5					
Batch: 4176037	RICHRC5011			**Work Order:**	M36EL1AA		**Report DB ID:**	9M36EL10				
Th-228	**1.03E-07**		4.2E-08	4.5E-08	4.34E-08	uCi/Sample	35%	*(2.4)*	7/24/14 03:50 a	1.0	0.98825	ALP129
						1.70E-08	3.00E-15	*(4.6)*		Sample	Sample	
Th-230	**1.87E-05**		5.0E-07	3.0E-06	2.89E-08	uCi/Sample	35%	*(646.5)*	7/24/14 03:50 a	1.0	0.98825	ALP129
						1.11E-08	3.00E-15	*(12.3)*		Sample	Sample	
Th-232	**2.38E-07**		5.7E-08	6.9E-08	2.63E-08	uCi/Sample	35%	*(9.1)*	7/24/14 03:50 a	1.0	0.98825	ALP129
						1.00E-08	3.00E-15	*(6.9)*		Sample	Sample	

No. of Results: 6 **Comments:**

FORM I

SAMPLE RESULTS

Date: 22-Aug-14

Lab Name:	TestAmerica Inc	**SDG:**	48381	**Collection Date:**	6/16/2014 8:00:00 AM
Lot-Sample No.:	J4F240448-2	**Report No. :**	61895	**Received Date:**	6/24/2014 10:40:00 AM
Client Sample ID:	R1 SYC Scrubber filter(6206)an	**COC No. :**		**Matrix:**	SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4176035	FFSR			**Work Order:**	M36EJ1AE		**Report DB ID:**	9M36EJ10				
U-234	**6.75E-03**		4.3E-04	1.1E-03	1.24E-04	uCi/Sample	84%	*(54.4)*	7/15/14 10:05 p	1.0	0.00105	ALP3
						4.14E-05	9.00E-15	*(11.8)*		Sample	Sample	
U-235	**2.67E-04**		8.7E-05	9.6E-05	6.19E-05	uCi/Sample	84%	*(4.3)*	7/15/14 10:05 p	1.0	0.00105	ALP3
						1.87E-05	9.00E-15	*(5.5)*		Sample	Sample	
U-238	**6.94E-03**		4.3E-04	1.2E-03	1.18E-04	uCi/Sample	84%	*(58.9)*	7/15/14 10:05 p	1.0	0.00105	ALP3
						3.91E-05	9.00E-15	*(11.9)*		Sample	Sample	
								Ratio U-234/238 = 1.0				
Batch: 4176037	RICHRC5011			**Work Order:**	M36EJ1AA		**Report DB ID:**	9M36EJ10				
Th-228	**2.08E-08**	U	2.4E-08	2.4E-08	3.27E-08	uCi/Sample	24%	*0.64*	7/24/14 03:49 a	1.0	0.98916	ALP127
						1.25E-08	3.00E-15	*(1.7)*		Sample	Sample	
Th-230	**1.47E-07**		6.0E-08	6.5E-08	4.79E-08	uCi/Sample	24%	*(3.1)*	7/24/14 03:49 a	1.0	0.98916	ALP127
						1.83E-08	3.00E-15	*(4.6)*		Sample	Sample	
Th-232	**5.57E-09**	U	1.2E-08	1.2E-08	1.51E-08	uCi/Sample	24%	*0.37*	7/24/14 03:49 a	1.0	0.98916	ALP127
						8.28E-09	3.00E-15	*0.93*		Sample	Sample	
Batch: 4176039	RL-RA-001			**Work Order:**	M36EJ1AC		**Report DB ID:**	9M36EJ10				
Ra-226	**2.65E-07**		7.6E-08	9.6E-08	1.02E-07	uCi/sample	66%	*(2.6)*	8/21/14 08:17 p	1.0	0.9892	ASCMAD
						4.79E-08	9.00E-14	*(5.5)*		g	g	

No. of Results: 7 **Comments:**

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 22-Aug-14

Lab Name: TestAmerica Inc | **SDG:** 48381 | **Collection Date:** 6/17/2014 1:00:00 PM

Lot-Sample No.: J4F240448-3 | **Report No. :** 61895 | **Received Date:** 6/24/2014 10:40:00 AM

Client Sample ID: R2 SYC Scrubber filter(6208)an | **COC No. :** | **Matrix:** SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4176035	FFSR			**Work Order:**	M36EK2AE		**Report DB ID:**	9M36EK20				
U-234	**7.92E-06**		1.3E-06	2.4E-06	3.28E-07	uCi/Sample	12%	*(24.2)*	7/24/14 03:06 p	1.0	1.0	ALP1
						8.99E-08	9.00E-15	*(6.7)*		Sample	Sample	
U-235	**5.02E-07**		3.2E-07	3.5E-07	2.33E-07	uCi/Sample	12%	*(2.2)*	7/24/14 03:06 p	1.0	1.0	ALP1
						5.67E-08	9.00E-15	*(2.9)*		Sample	Sample	
U-238	**8.35E-06**		1.3E-06	2.5E-06	2.54E-07	uCi/Sample	12%	*(32.8)*	7/24/14 03:06 p	1.0	1.0	ALP1
						6.39E-08	9.00E-15	*(6.8)*		Sample	Sample	
							Ratio U-234/238 = 0.9					
Batch: 4176037	RICHRC5011			**Work Order:**	M36EK1AA		**Report DB ID:**	9M36EK10				
Th-228	**2.69E-09**	U	1.1E-08	1.1E-08	2.63E-08	uCi/Sample	41%	*0.1*	7/24/14 03:50 a	1.0	0.98665	ALP128
						1.00E-08	3.00E-15	*0.51*		Sample	Sample	
Th-230	**2.25E-07**		5.5E-08	6.2E-08	2.79E-08	uCi/Sample	41%	*(8.1)*	7/24/14 03:50 a	1.0	0.98665	ALP128
						1.07E-08	3.00E-15	*(7.2)*		Sample	Sample	
Th-232	**2.14E-08**		1.7E-08	1.8E-08	1.84E-08	uCi/Sample	41%	*(1.2)*	7/24/14 03:50 a	1.0	0.98665	ALP128
						7.03E-09	3.00E-15	*(2.4)*		Sample	Sample	
Batch: 4176039	RL-RA-001			**Work Order:**	M36EK1AC		**Report DB ID:**	9M36EK10				
Ra-226	**2.64E-07**		6.2E-08	9.5E-08	7.93E-08	uCi/sample	91%	*(3.3)*	8/21/14 08:18 p	1.0	0.9866	ASCKMF
						3.74E-08	9.00E-14	*(5.5)*		g	g	

No. of Results: 7 **Comments:**

FORM II

BLANK RESULTS

Date: 22-Aug-14

Lab Name: TestAmerica Inc

Matrix: SOLID

SDG: 48381

Report No. : 61895

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4176039	RL-RA-001			**Work Order:**	M36K41AA	**Report DB ID:**	M36K41AB					
Ra-226	2.99E-10	U	2.2E-10	2.3E-10	3.41E-10	uCi/sample	93%	0.88	8/21/14 08:18 p	1.0	202.11	ASCLMD
					1.60E-10	9.00E-14		(2.6)		g	g	
Batch: 4176035	FFSR			**Work Order:**	M36KT2AA	**Report DB ID:**	M36KT2AB					
U-234	2.05E-08	U	9.0E-08	9.0E-08	2.23E-07	uCi/Sample	45%	0.09	7/24/14 03:06 p	0.25	0.25	ALP3
					7.39E-08	9.00E-15		0.45		Sample	Sample	
U-235	3.26E-08	U	5.3E-08	5.4E-08	1.11E-07	uCi/Sample	45%	0.29	7/24/14 03:06 p	0.25	0.25	ALP3
					3.27E-08	9.00E-15		(1.2)		Sample	Sample	
U-238	9.14E-08	U	1.0E-07	1.0E-07	1.98E-07	uCi/Sample	45%	0.46	7/24/14 03:06 p	0.25	0.25	ALP3
					6.45E-08	9.00E-15		(1.8)		Sample	Sample	
							Ratio U-234/238 = 0.2					
Batch: 4176037	RICHRC5011			**Work Order:**	M36K11AA	**Report DB ID:**	M36K11AB					
Th-228	1.02E-10	U	1.3E-10	1.3E-10	2.10E-10	uCi/Sample	31%	0.49	7/24/14 03:50 a	1.0	202.11	ALP130
					8.02E-11	3.00E-15		(1.6)		Sample	Sample	
Th-230	7.53E-10		2.8E-10	3.1E-10	7.04E-11	uCi/Sample	31%	(10.7)	7/24/14 03:50 a	1.0	202.11	ALP130
					3.86E-11	3.00E-15		(4.9)		Sample	Sample	
Th-232	4.16E-11	U	7.6E-11	7.7E-11	1.47E-10	uCi/Sample	31%	0.28	7/24/14 03:50 a	1.0	202.11	ALP130
					5.62E-11	3.00E-15		(1.1)		Sample	Sample	
Batch: 4176037	RICHRC5011			**Work Order:**	M36K12AA	**Report DB ID:**	M36K12AB					
Th-228	-2.87E-11	U	7.7E-11	7.7E-11	2.66E-10	uCi/Sample	26%	-0.11	7/31/14 02:17 a	1.0	202.11	ALP126
					1.02E-10	3.00E-15		-0.74		Sample	Sample	

No. of Results: 8 **Comments:**

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 22-Aug-14

Lab Name: TestAmerica Inc

SDG: 48381

Matrix: SOLID

Report No. : 61895

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 4176039	RL-RA-001			**Work Order:**	M36K41AC		**Report DB ID:**	M36K41CS					
Ra-226	4.15E-08		1.2E-09	8.5E-09	4.04E-10	uCi/sample	100%	5.02E-08	5.10E-10	83%	8/21/14 08:18 p	199.96	ASCNMA
							Rec Limits:	75	125	-0.2		g	
Batch: 4176035	FFSR			**Work Order:**	M36KT1AC		**Report DB ID:**	M36KT1CS					
U-234	7.54E-07		1.5E-07	2.1E-07	2.84E-08	uCi/Sample	81%	9.84E-07	3.05E-08	77%	7/15/14 10:06 p	0.26	ALP12
							Rec Limits:	75	125	-0.2		Sample	
U-238	9.78E-07		1.7E-07	2.6E-07	3.99E-08	uCi/Sample	81%	1.03E-06	3.20E-08	95%	7/15/14 10:06 p	0.26	ALP12
							Rec Limits:	75	125	-0.1		Sample	
Batch: 4176037	RICHRC5011			**Work Order:**	M36K11AC		**Report DB ID:**	M36K11CS					
Th-230	1.11E-08		6.0E-10	1.7E-09	2.19E-11	uCi/Sample	79%	1.14E-08	1.18E-10	98%	7/24/14 03:51 a	199.96	ALP131
							Rec Limits:	75	125	0.0		Sample	

No. of Results: 4 **Comments:**

TestAmerica Inc **Bias** - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V5.3.3 A2002

J4F240448
SDG-48381
Due 7-22-14

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Tetco	Dean Kitchen	6/19/2014	
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
391 East 620 South	801-492-9106		

City	State	Zip Code	Site Contact	Lab Contact
American Fork	Ut	84003	Scott Christensen, Garren Palmer	

Project Name and Location (State): Energy Fuels 2014 2nd Quarter

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	U-Nat	TH-230	Ra-226	Lead-210	Special Instructions/ Conditions of Receipt
R1 Dryer BH filter (6207) and beaker	6/17/14	10:00	X										X	X	X	X	M36EH
R1 SYC Scrubber filter (6206) and beaker	6/16,17/14	8:00	X										X	X	X	X	M36EJ
R2 SYC Scrubber filter (6208) and beaker	6/17,18/14	13:00	X										X	X	X	X	M36EK
R1 Grizzly filter (6210) and beaker	6/18/14	8:00	X										X	X			M36EL

J4F240448

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other as per method

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Dean Kitchen	6/19/14	14:00	1. Received By: Jordan Frost TALR	6/24/14	~~11:45~~ 1040 6-24-14
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: When Complete Email to: Dean or Paul, tetco@tetco-ut.com

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 6/24/14 / ~~1145~~ 1040 6-24-14 Container GM Screen Result: (Airlock) 60 cpm Initials[F]
Sample GM Screen Result (Sample Receiving) 40 cpm Initials[F]

Client: DEN SDG #: 48381 SAF #: _____ NA [✓]

Lot Number: J4E240448

Chain of Custody # N/A

Shipping Container ID or Air Bill Number : _____ NA [✓]

Samples received inside shipping container/cooler/box Yes [✓] Continue with 1 through 4. Initial appropriate response.
No [ ] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal [✓]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [✓]
3. Cooler temperature: _____ °C NA [✓]
4. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [✓] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 4
7. Containers received: 4x Filter ; 4x 250ml g
8. Sample holding times exceeded? NA [ ] Yes [ ] No [✓]
9. Samples have: _____tape _____hazard labels _____custody seals ✓ appropriate sample labels
10. Matrix: _____A (FLT, Wipe, Solid, Soil) _____I (Water) ✓ S (Air, Niosh 7400) _____T (Biological, Ni-63)
11. Samples:
    ✓ are in good condition _____are leaking _____are broken
    _____have air bubbles (Only for samples requiring no head space) _____Other _____
12. Sample pH appropriate for analysis requested Yes [ ] No [ ] NA [✓]
    (If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO_3 added and pH after addition on table)
13. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
14. Description of anomalies (include sample numbers): NA [✓] _____
15. Sample Location, Sample Collector Listed on COC? * Yes [ ] No [✓]
    *For documentation only. No corrective action needed.
16. Additional Information: N/A

[ ] Client/Courier denied temperature check. [ ] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:
Signature: _____ Date: 6-24-14

Client Notification needed? Yes [ ] No [ ] Date: _____
By: _____
Person contacted: _____

[✓] No action necessary, process as is

Project Manager _____ Date 6/25/14

APPENDIX D

South Yellow Cake Scrubber
- Figure 1. Facility Schematic Representation

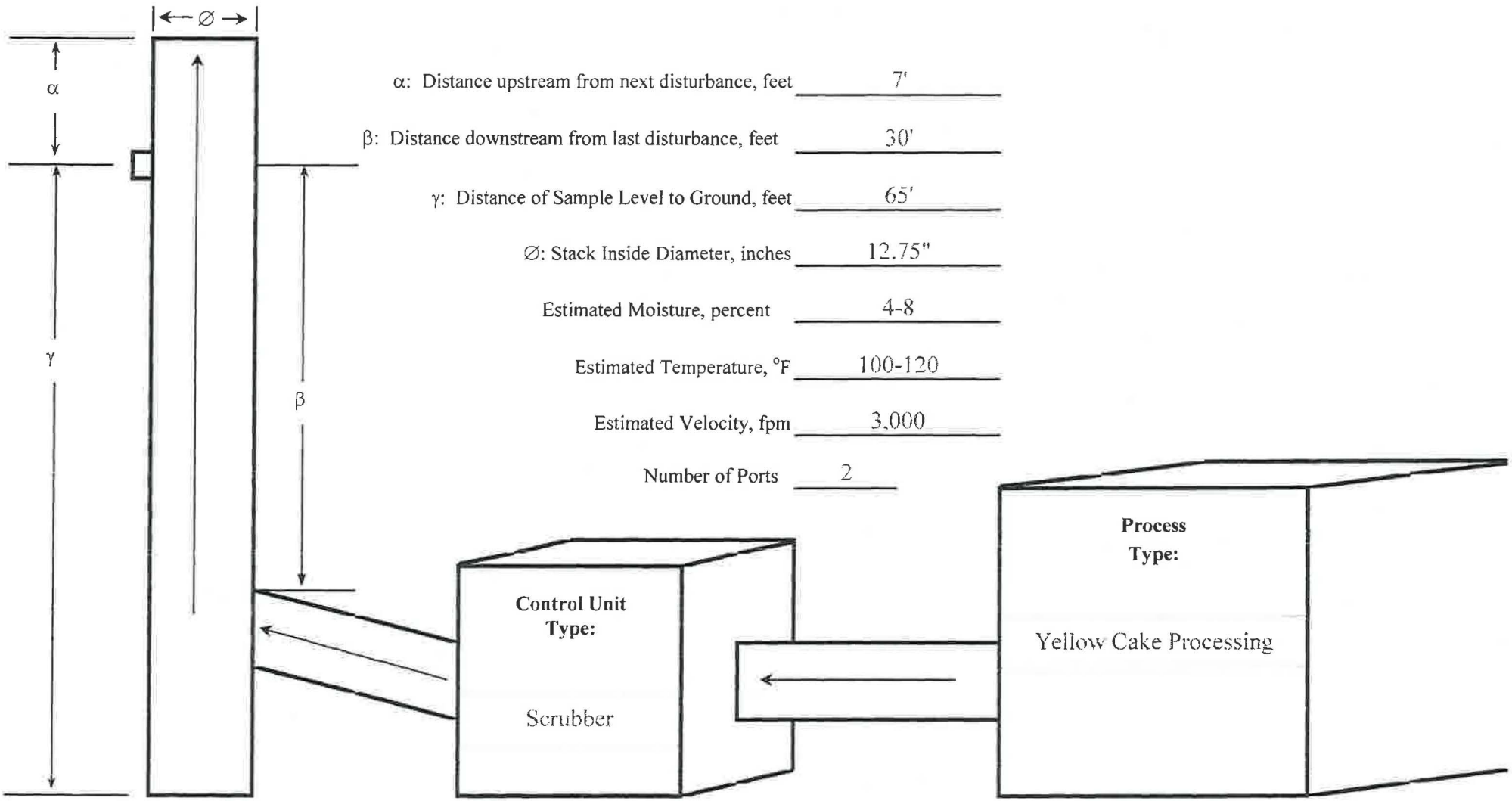
Yellow Cake Dryer Baghouse
- Figure 2. Facility Schematic Representation

Grizzly Baghouse
- Figure 3. Facility Schematic Representation

Production and Control Equipment Data
- South Yellow Cake (Scrubber Flow Rates)
- Yellow Cake Dryer Baghouse (Delta P readings on Field Data Sheets)
- Grizzly (tph of material and belt speed)

Facility: Energy Fuels Resources

Stack Identification: South Yellow Cake Scrubber



α: Distance upstream from next disturbance, feet 7'

β: Distance downstream from last disturbance, feet 30'

γ: Distance of Sample Level to Ground, feet 65'

∅: Stack Inside Diameter, inches 12.75"

Estimated Moisture, percent 4-8

Estimated Temperature, °F 100-120

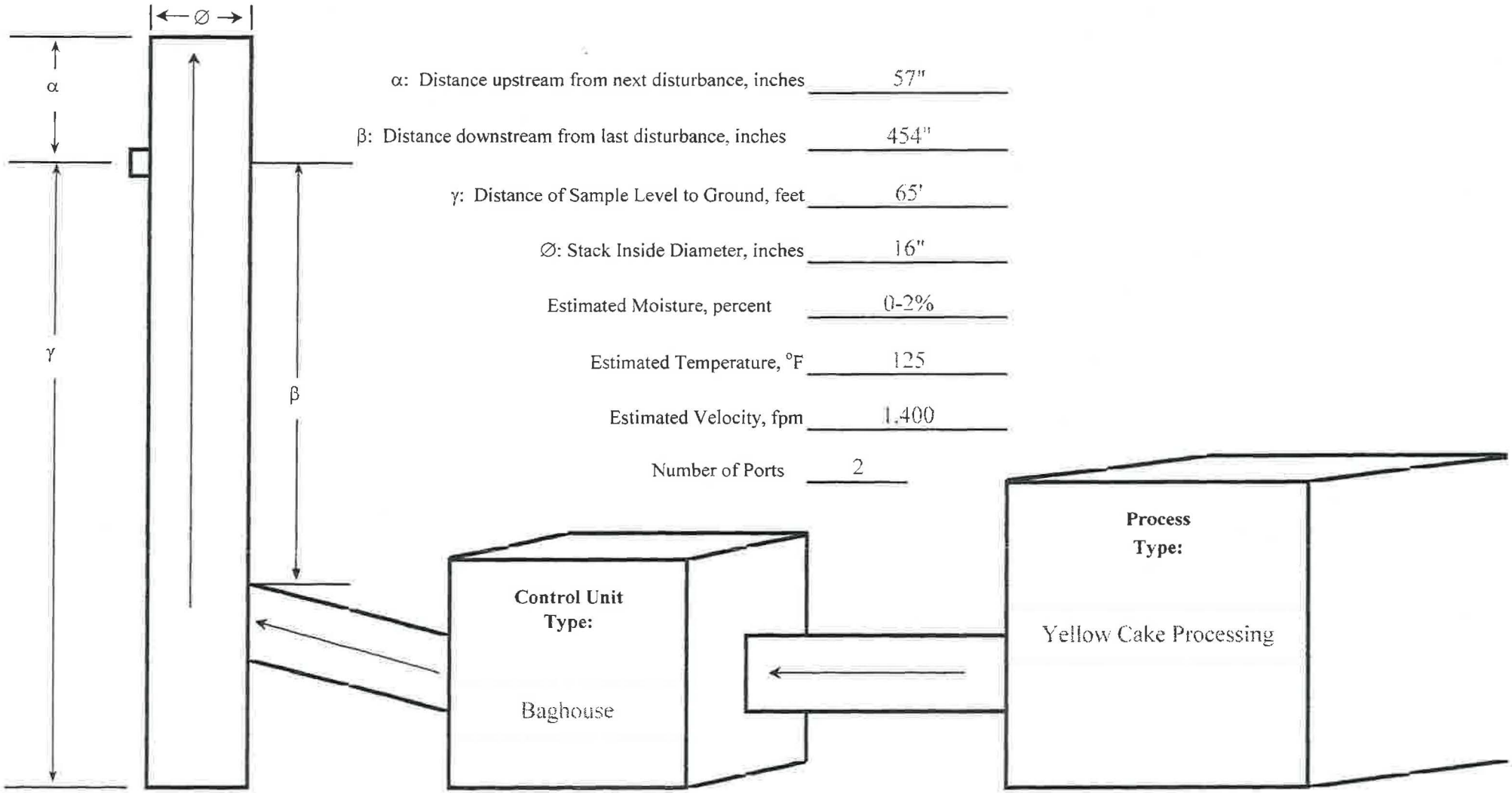
Estimated Velocity, fpm 3,000

Number of Ports 2

Figure 1. Facility Schematic Representation

Facility: Energy Fuels Resources

Stack Identification: Yellow Cake Dryer Baghouse

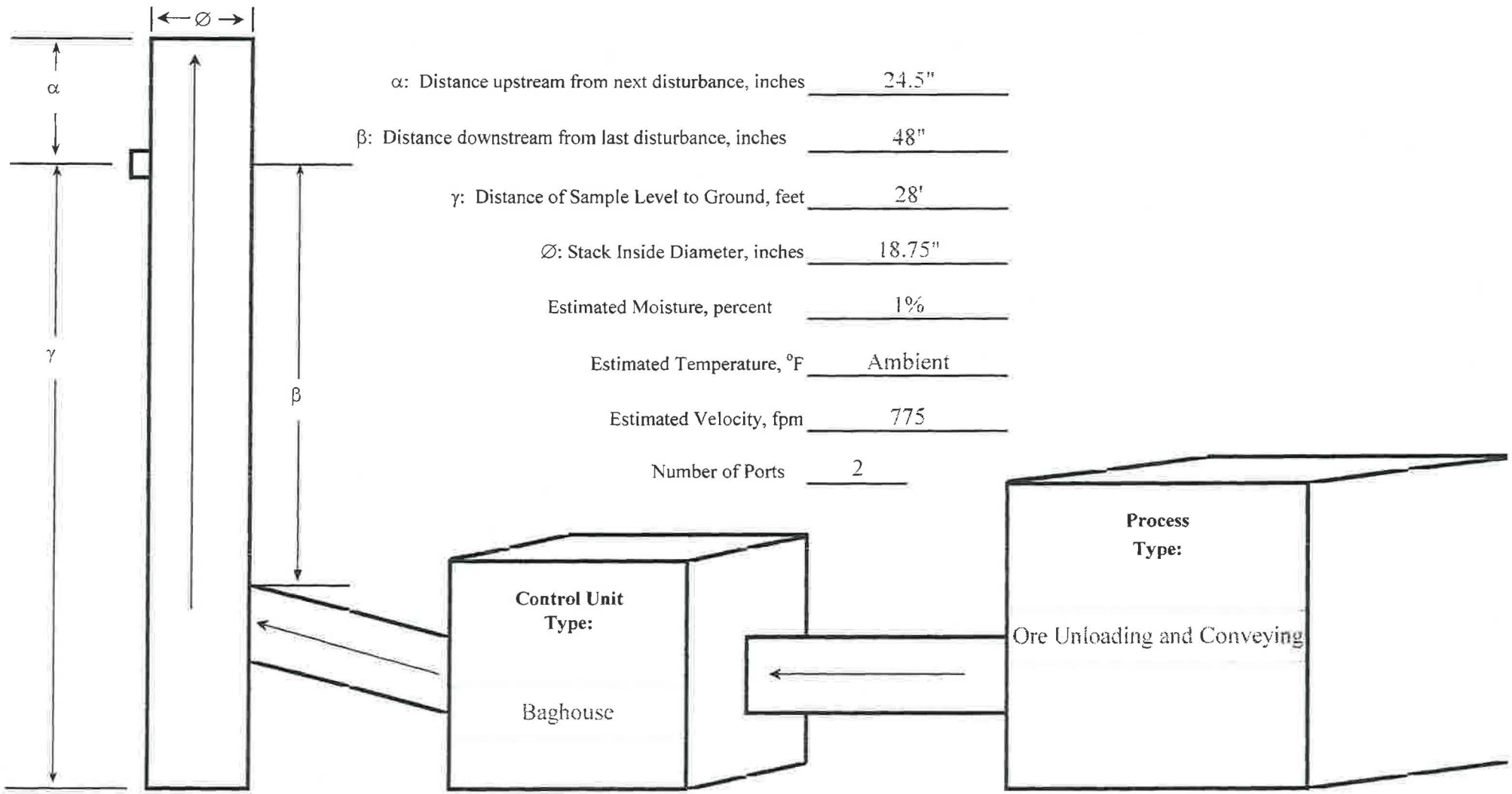


α: Distance upstream from next disturbance, inches	57"
β: Distance downstream from last disturbance, inches	454"
γ: Distance of Sample Level to Ground, feet	65'
∅: Stack Inside Diameter, inches	16"
Estimated Moisture, percent	0-2%
Estimated Temperature, °F	125
Estimated Velocity, fpm	1,400
Number of Ports	2

Figure 2. Facility Schematic Representation

Facility: Energy Fuels Resources

Stack Identification: Grizzly Baghouse



α: Distance upstream from next disturbance, inches	24.5"
β: Distance downstream from last disturbance, inches	48"
γ: Distance of Sample Level to Ground, feet	28'
∅: Stack Inside Diameter, inches	18.75"
Estimated Moisture, percent	1%
Estimated Temperature, °F	Ambient
Estimated Velocity, fpm	775
Number of Ports	2

Figure 3. Facility Schematic Representation

Energy Fuels Resources, Blanding, UT Process Data

Run 1

Source: South Yellow Cake			Date: 6/16/14	
Time	Scrubber Flow GPM #1		#2	ΔP
11:00	3.2	7.5	32.2	18.7
11:30	3.2	7.5	32.2	18.7
15:00	3.2	7.5	32.2	18.7
15:30	3.2	7.5	35	6.55
16:00	3.2	7.5	37	6.55
16:30	3.2	7.5	32.3	19.2
17:00	3.2	7.5	32.2	16.3
17:30	3.2	7.5	32.2	16.1
18:00	3.2	7.6	32.3	19.5
~~14:00~~ 30	3.2	7.5	32.0	19.22
5:00	3.2	7.5	32.0	18.1
5:30	3.2	7.5	32.1	18.3
6:00	3.2	7.5	32.1	18.2
6:30	3.3	7.1	32.0	18.3
7:00	3.1	7.5	31.9	18.4
7:30	3.1	7.5	31.9	18.5
8:00	2.8	7.5	32.1	18.6
8:30	2.9	7.5	32.1	18.4
12:00	2.9	7.5	32.1	18.5
12:30				

7.2
7.4
3.19
5.5

Energy Fuels Resources, Blanding, UT Process Data

Run 2

Source: South Yellow Cake			Date: 6/17/14	
	Scrubber Flow GPM			
Time	#1		#2	ΔP
13:15	3.2	7.5	31.9	19.95
13:45	3.1	7.4	32.0	20.00
14:15	3.2	7.5	32.1	19.95
14:45	3.2	7.5	32.0	19.99
15:15	3.2	7.4	31.9	19.8
15:45	3.2	7.4	31.9	20.03
16:15	3.2	7.5	31.9	20.00
16:45	3.2	7.5	31.8	19.99
17:15	3.1	7.4	31.7	19.85
8:00	3.7	7.3	31.5	19.90
8:30	3.8	7.2	31.5	19.90
9:00	3.8	7.2	31.4	19.95
9:30	3.8	7.1	31.5	19.5
10:00	3.8	7.0	31.8	19.00
10:30	3.9	7.0	32.0	19.00
11:00	3.9	7.1	31.9	19.15
11:30	3.9	7.0	32.0	19.12
12:00	3.8	7.0	31.9	19.10
12:30	3.8	7.0	31.7	19.23
13:00				

Energy Fuels Resources, Blanding, UT Process Data

Source: Grizzly Baghouse		Date: 6/18/14	
Time	Tons (Integrator)	tph	fpm
8:19	635800	160	111.8
8:44	635815	320	111.6
9:18	635835	145	111.4
9:49	635850	145	111.5
10:19	635870	35	111.4
10:49	635885	20	111.6
11:22	635900	45	111.7
11:49	635910	45	111.7
12:23	635925	45	111.5
12:49	635935	45	111.8
13:21	635950	30	111.3
13:48	635965	20	111.5
14:22	635985	20	111.5
14:50	636000	45	111.5
15:22	636020	35	111.6
15:45	636030	25	111.8
16:15	636045	15	111.6

APPENDIX E

Calibration of the console dry gas meter(s), pitot tubes, nozzles diameters, and temperature sensors were carried out in accordance with the procedures outlined in the Quality Assurance Handbook. The appropriate calibration data are presented in the following pages. The nozzle calibrations are recorded on the first page of the field data sheets.

Figure 4 Schematic of Method 5/114 Sampling Train
Meter Box Calibration Data and Calculations Forms
Post-test Dry Gas Meter Calibration Data Forms
Type S Pitot Tube Inspection Data
Sample Box Temperature Sensor Calibration

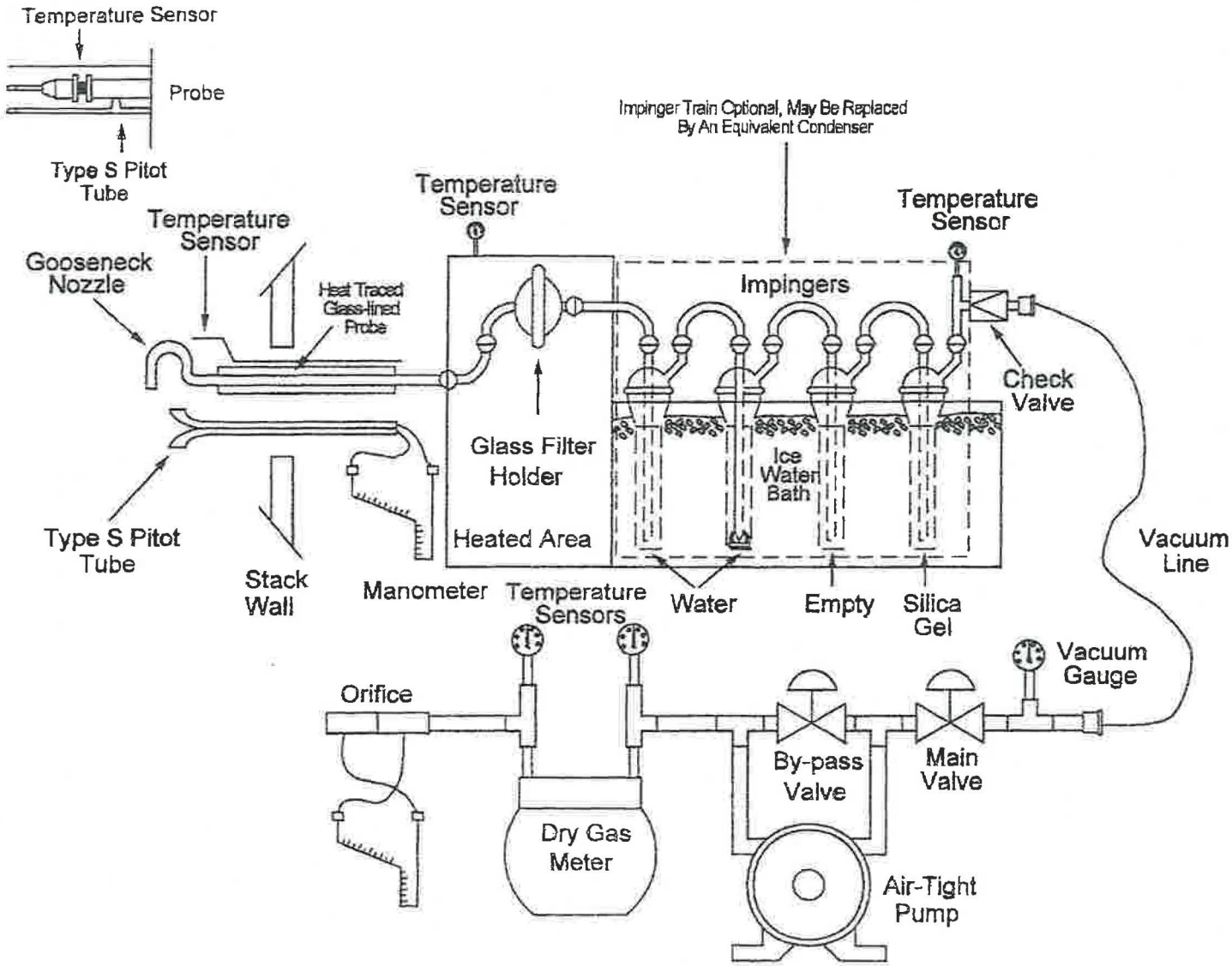


Figure 4 Schematic of Method 5/114 Sampling Train

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the GREEN cells, YELLOW cells are calculated.

2014 Pre-Calibration

DATE: 12/6/2013
METER PART #: Console 4
METER SERIAL #: 27863
CRITICAL ORIFICE SET SERIAL #: 14536
BAROMETRIC PRESSURE (in Hg): INITIAL 25.45 | FINAL 25.25 | AVG (P_{bar}) 25.35
EQUIPMENT ID #: Console #4

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	13	261.525	268.512	6.987	69	75	75	77	80	76.75	6.50	2.60	5.6683	5.8312	0.994		1.526
	2	0.8137	13	268.512	275.475	6.963	69	76	75	76	80	76.75	6.50	2.60	5.8481	5.8312	0.997		1.526
	3	0.8137	13	275.475	281.878	6.403	69	72	77	75	82	76.50	6.00	2.60	5.3803	5.3826	1.000		1.527
																AVG =	0.997	-0.25	
19	1	0.5317	13	300.021	306.251	6.230	69	67	68	68	69	68.00	9.00	1.10	5.2963	5.2758	0.996		1.531
	2	0.5317	13	306.251	312.128	5.877	69	68	69	68	71	69.00	8.50	1.10	4.9867	4.9827	0.999		1.528
	3	0.5317	13	312.128	318.340	6.212	69	68	71	67	70	69.00	9.00	1.10	5.2710	5.2758	1.001		1.528
																AVG =	0.999	-0.11	
12	1	0.3307	13	242.840	248.398	5.558	69	65	64	69	70	67.00	13.00	0.40	4.7244	4.7397	1.003		1.439
	2	0.3307	13	248.398	254.428	6.030	69	69	70	69	71	69.75	14.00	0.40	5.0989	5.1043	1.001		1.431
	3	0.3307	13	254.428	260.240	5.812	69	69	71	75	76	72.75	13.50	0.40	4.8869	4.9220	1.007		1.423
																AVG =	1.004	0.40	

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = **1.000**

AVERAGE $\Delta H_@$ = **1.495**

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

Temperature Sensors

	Reference °F	In °F	Out °F
Ice Bath	33	33	33
Ambient Air	62	62	62
Boiling Water	202	203	203

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the GREEN cells, YELLOW cells are calculated.

ENVIRONMENTAL SUPPLY COMPANY

2014 Pre-Calibration Console 9

DATE: 1/8/2014 | METER SERIAL #: 1297-3245 | BAROMETRIC PRESSURE (in Hg): INITIAL 25.45, FINAL 25.45, AVG (P_{bar}) 25.45

METER PART #: Console 9 | CRITICAL ORIFICE SET SERIAL #: 1453S | EQUIPMENT ID #: Console 9

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	12	88.612	94.007	5.395	65	78	79	75	75	76.75	5.00	3.00	4.5541	4.5203	0.993		1.743
	2	0.8137	12	94.007	99.387	5.380	65	79	79	75	75	77.00	5.00	3.00	4.5393	4.5203	0.996		1.742
	3	0.8137	12	99.387	104.803	5.416	65	79	80	75	75	77.25	5.00	3.00	4.5676	4.5203	0.990		1.741
																AVG =	0.993	-0.96	
19	1	0.5317	12	105.106	110.310	5.204	70	75	76	69	71	72.75	7.50	1.20	4.4031	4.4097	1.001		1.652
	2	0.5317	12	110.310	115.878	5.568	70	76	78	71	71	74.00	8.00	1.20	4.70	4.7036	1.001		1.648
	3	0.5317	12	115.878	121.084	5.206	70	78	80	71	71	75.00	7.50	1.20	4.3862	4.4097	1.005		1.645
																AVG =	1.003	0.02	
12	1	0.3307	12	121.205	126.327	5.122	72	76	76	71	72	73.75	12.00	0.44	4.3161	4.380	1.015		1.565
	2	0.3307	12	126.327	131.458	5.131	72	76	76	72	72	74.00	12.00	0.44	4.3217	4.380	1.013		1.565
	3	0.3307	12	131.458	137.053	5.595	72	76	76	72	72	74.00	13.00	0.44	4.7125	4.7450	1.007		1.565
																AVG =	1.012	0.94	

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = **1.002**

AVERAGE $\Delta H_@$ = **1.652**

(1) $$Vm_{std} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{std} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{std}}{Vm_{std}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

Temperature Sensors

Reference °F	In °F	Out °F
32	33	33
72	73	73
201	202	203

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet
4) Record data and information in the GREEN cells, YELLOW cells are calculated.

Energy Fuels
SYC Dryer

DATE: 6/19/2014
METER PART #: Console 4
METER SERIAL #: 27863
CRITICAL ORIFICE SET SERIAL #: 14535
BAROMETRIC PRESSURE (in Hg): INITIAL 25.55 | FINAL 25.55 | AVG (P_{bar}) 25.55
EQUIPMENT ID #: Console #4

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
30	1	0.8137	13			.0						0							
	2	0.8137	13			.0						0							
	3	0.8137	13			.0						0.00							
																AVG =			
19	1	0.5317	13	211.804	217.365	5.561	68	66	69	79	77	72.75	8.00	1.10	4.7222	4.7311	1.002		1.502
	2	0.5317	13	217.365	222.939	5.574	68	69	70	77	77	73.25	8.00	1.10	4.7288	4.7311	1.000		1.501
	3	0.5317	13	222.939	228.520	5.581	68	70	70	77	77	73.50	8.00	1.10	4.7325	4.7311	1.000		1.500
																AVG =	1.001	0.00	
12	1	0.3307	13			.0						0.00							
	2	0.3307	13			.0						0.00							
	3	0.3307	13			.0						0.00							
																AVG =			

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = **1.001**

AVERAGE $\Delta H_@$ = **1.501**

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

Temperature Sensors

	Reference °F	In °F	Out °F
Ice Bath	33	33	33
Ambient Air	62	62	62
Boiling Water	202	203	203

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the GREEN cells, YELLOW cells are calculated.

ENVIRONMENTAL SUPPLY COMPANY

Energy Fuels
Dryer Baghouse

DATE: 6/19/2014
METER PART #: Console 9
METER SERIAL #: 1297-3245
CRITICAL ORIFICE SET SERIAL #: 1453S
BAROMETRIC PRESSURE (in Hg): INITIAL 25.55 | FINAL 25.55 | AVG (P_{bar}) 25.55
EQUIPMENT ID #: Console 9

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
19	1	0.5317	13	833.506	838.984	5.478	72	69	72	66	67	68.50	8.00	2.05	4.7019	4.7132	1.002		2.852
	2	0.5317	13	838.984	844.124	5.140	72	72	75	67	68	70.50	7.50	2.05	4.3952	4.4186	1.005		2.841
	3	0.5317	13	844.124	849.259	5.135	72	75	75	68	68	71.50	7.50	2.05	4.3826	4.4186	1.008		2.835
																AVG =	1.005	0.00	
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = **1.005**

AVERAGE $\Delta H_@$ = **2.843**

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

Temperature Sensors

Reference °F	In °F	Out °F
32	33	33
72	73	73
201	202	203

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
2) Record barometric pressure before and after calibration procedure.
3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.
4) Record data and information in the GREEN cells, YELLOW cells are calculated.

ENVIRONMENTAL SUPPLY COMPANY

Energy Fuels
Grizzly

DATE: 6/19/2014
METER PART #: Console 9
METER SERIAL #: 1297-3245
CRITICAL ORIFICE SET SERIAL #: 1453S
BAROMETRIC PRESSURE (in Hg): INITIAL 25.55 | FINAL 25.55 | AVG (P_{bar}) 25.55
EQUIPMENT ID #: Console 9

IF Y VARIATION EXCEEDS 2.00%, ORIFICE SHOULD BE RECALIBRATED

ORIFICE #	RUN #	K' FACTOR (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT^3) INITIAL	DGM READINGS (FT^3) FINAL	DGM READINGS (FT^3) NET (V_m)	TEMPERATURES °F AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL	DGM AVG	ELAPSED TIME (MIN) θ	DGM ΔH (in H_2O)	(1) V_m (STD)	(2) V_{cr} (STD)	(3) Y	Y VARIATION (%)	$\Delta H_@$
25	1	0.6808	13	814.600	820.405	5.805	68	76	79	63	63	70.25	6.50	2.05	4.9661	4.9219	0.991		1.720
	2	0.6808	13	820.405	827.109	6.704	68	79	80	63	65	71.75	7.50	2.05	5.7191	5.6791	0.993		1.716
	3	0.6808	13	827.109	832.485	5.376	68	80	81	65	66	73.00	6.00	2.05	4.5754	4.5433	0.993		1.712
																AVG =	0.992	0.00	
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			

USING THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:
The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical orifice, V_{cr} (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = **0.992**

AVERAGE $\Delta H_@$ = **1.716**

(1) $$Vm_{(std)} = K_1 * Vm * \frac{Pbar + (\Delta H / 13.6)}{Tm}$$

= Net volume of gas sample passed through DGM, corrected to standard conditions
K_1 = 17.64 °R/in. Hg (English), 0.3858 °K/mm Hg (Metric)
T_m = Absolute DGM avg. temperature (°R - English, °K - Metric)

(2) $$Vcr_{(std)} = K' * \frac{Pbar * \Theta}{\sqrt{Tamb}}$$

= Volume of gas sample passed through the critical orifice, corrected to standard conditions
T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)
K' = Average K' factor from Critical Orifice Calibration

(3) $$Y = \frac{Vcr_{(std)}}{Vm_{(std)}}$$

= DGM calibration factor

$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr}(std)}\right)^2 \Delta H \left(\frac{V_m(std)}{V_m}\right)$$

Temperature Sensors

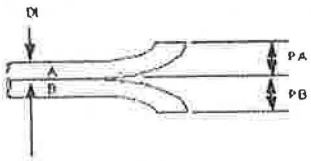
Reference °F	In °F	Out °F
32	33	33
72	73	73
201	202	203

Type S Pitot Tube Inspection Data

Date: 12/12/13

Pitot Tube Identification: 21

Technician: M. McNamara



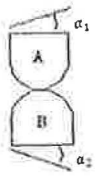
Dt= .375 in.

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

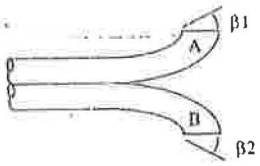
P_A = .525 in.

P_B = .525 in.



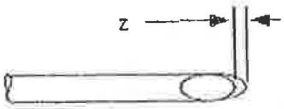
$\alpha_1 < 10°$ α_1 = 0 °

$\alpha_2 < 10°$ α_2 = 2 °

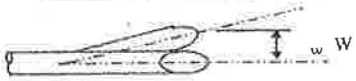


$\beta_1 < 5°$ β_1 = 1 °

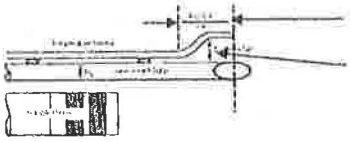
$\beta_2 < 5°$ β_2 = 0 °



$Z \le 0.125$ in. Z = .018 in.

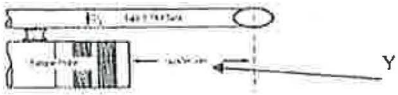


$W \le 0.03125$ in. W = .014 in



W > 3 inches W = 6.5 in.

Z > 3/4 inch Z = 1 in.



Y ≥ 3 inches Y = 4 in.

The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration

Reference:

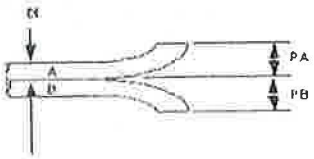
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	68	69	1
	Continuity			Yes
	Heat Check 248		Yes	250
Stack	AIR	68	68	0
	ICE WATER	33	34	1
	BOIL WATER	202	202	1
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date: 12/12/13

Pitot Tube Identification: 27-1

Technician: M. McNamara



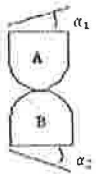
D_t = .250 in

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

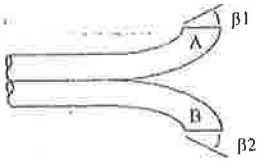
P_A = .265 in.

P_B = .265 in



$\alpha_1 < 10°$ α_1 = 0 °

$\alpha_2 < 10°$ α_2 = 2 °

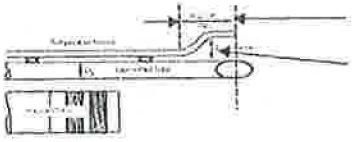


$\beta_1 < 5°$ β_1 = 3 °

$\beta_2 < 5°$ β_2 = 1 °

$Z \le 0.125$ in. Z = .014 in.

$W \le 0.03125$ in. W = .009 in.



W > 3 inches W = 7 in.

Z > 3/4 inch Z = 1.5 in.

Y ≥ 3 inches Y = 3.25 in

The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration

Reference:

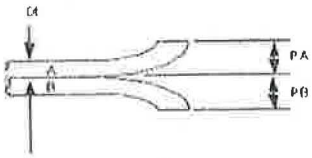
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	71	72	1
	Continuity			Yes
	Heat Check 248		Yes	250
Stack	AIR	69	70	1
	ICE WATER	33	31	1
	BOIL WATER	202	201	1
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date: 12/13/13

Pitot Tube Identification: 38-G

Technician: M. McNamara



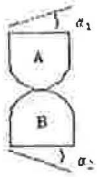
Dt= .375 in.

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

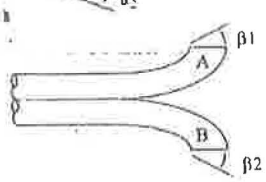
P_A = .460 in.

P_B = .460 in.



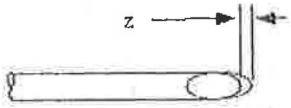
$\alpha_1 < 10°$ α_1 = 1 °

$\alpha_2 < 10°$ α_2 = 1 °



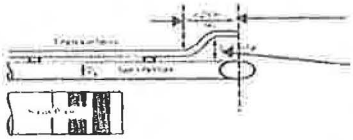
$\beta_1 < 5°$ β_1 = 2 °

$\beta_2 < 5°$ β_2 = 3 °



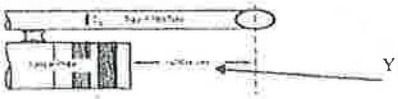
$Z \le 0.125$ in. Z = .016 in.

$W \le 0.03125$ in. W = .008 in.



W > 3 inches W = 6 in.

Z > 3/4 inch Z = 3/4 in



Y ≥ 3 inches Y = 3 1/2 in

The pitot tube meets the specifications for a calibration factor of 0.84? Yes

Temperature Sensor Calibration

Reference:

	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	66	67	1
	Continuity		Yes	
	Heat Check 248	250	Yes	
Stack	AIR	67	66	1
	ICE WATER	34	34	0
	BOIL WATER	204	203	1
	SILICONE OIL			

TETCO

Sample Box Temperature Sensor Calibration

Date: 12/13/13 Calibrator: Dean Kitchen Reference: Omega CL3512A

Unit ID	Thermocouple Location	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
A	Oven	Water	32	34	2
		Water	204	203	-1
	Oven (4)	Water	33	34	1
		Water	204	202	-2
	Impinger Out	Water	33	34	1
		Water	204	203	-1
B	Oven	Water	33	33	0
		Water	204	202	-2
	Oven (4)	Water	33	34	1
		Water	203	203	0
	Impinger Out	Water	32	33	1
		Water	204	202	-2
C	Oven	Water	32	33	1
		Water	204	203	-1
	Oven (4)	Water	33	34	1
		Water	204	204	0
	Impinger Out	Water	33	33	0
		Water	203	202	-1
D	Oven	Water	33	34	1
		Water	203	203	0
	Oven (4)	Water	33	34	1
		Water	204	204	0
	Impinger Out	Water	33	33	0
		Water	204	202	-2
E	Oven	Water	33	34	1
		Water	203	202	-1
	Oven (4)	Water	33	33	0
		Water	204	203	-1
	Impinger Out	Water	33	34	1
		Water	204	203	-1
F	Oven	Water	33	34	1
		Water	204	202	-2
	Oven (4)	Water	33	34	1
		Water	204	202	-2
	Impinger Out	Water	33	33	0
		Water	203	202	-1
	Impinger Out G	Water	33	34	1
		Water	204	203	-1
	Impinger Out H	Water	33	34	1
		Water	204	202	-2
	Impinger Out I	Water	33	33	0
		Water	204	202	-2
	Impinger Out J	Water	33	34	1
		Water	203	202	-1

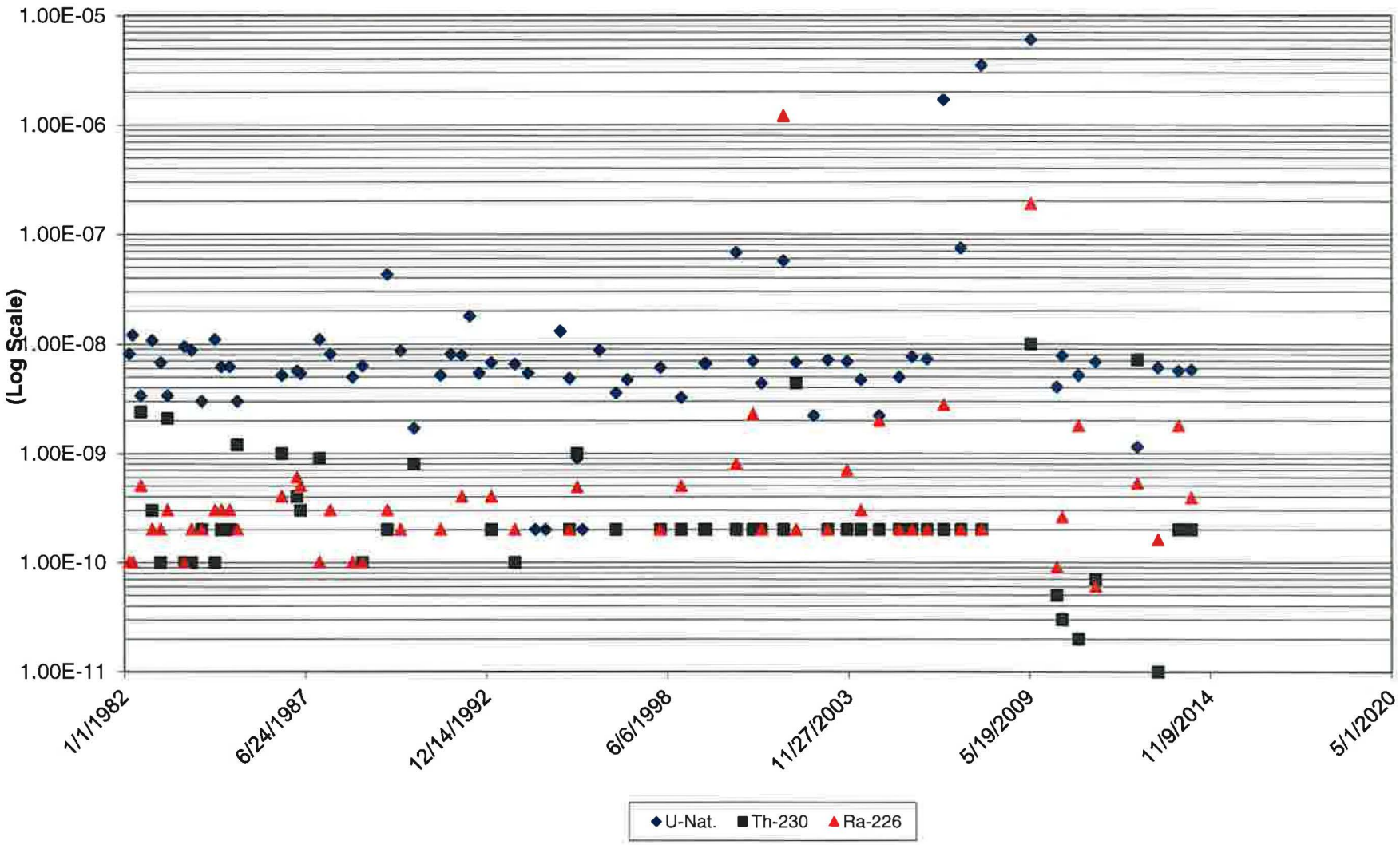
APPENDIX F

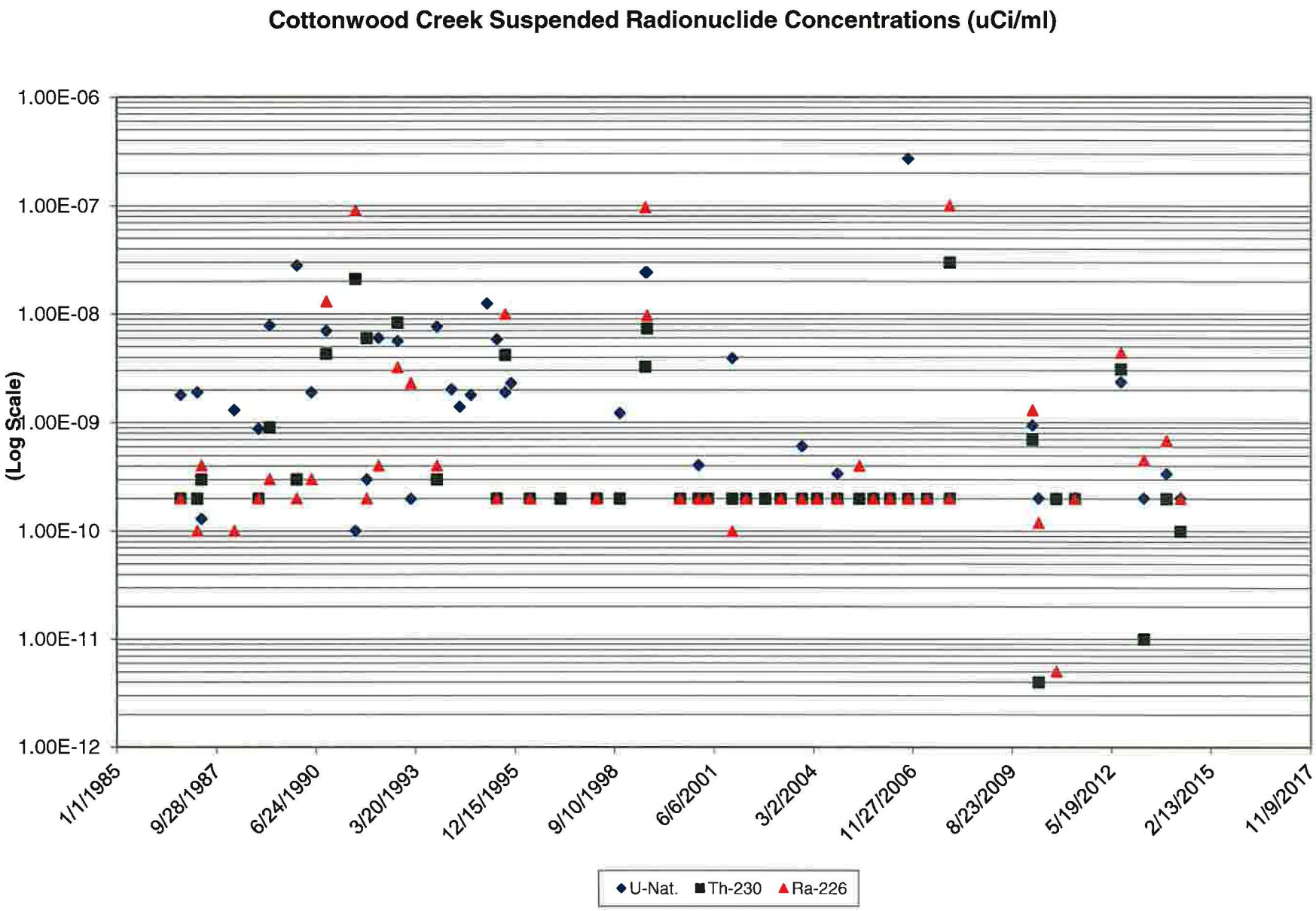
The testing followed the same procedures as outlined in previous protocols and tests at this facility.

ATTACHMENT H

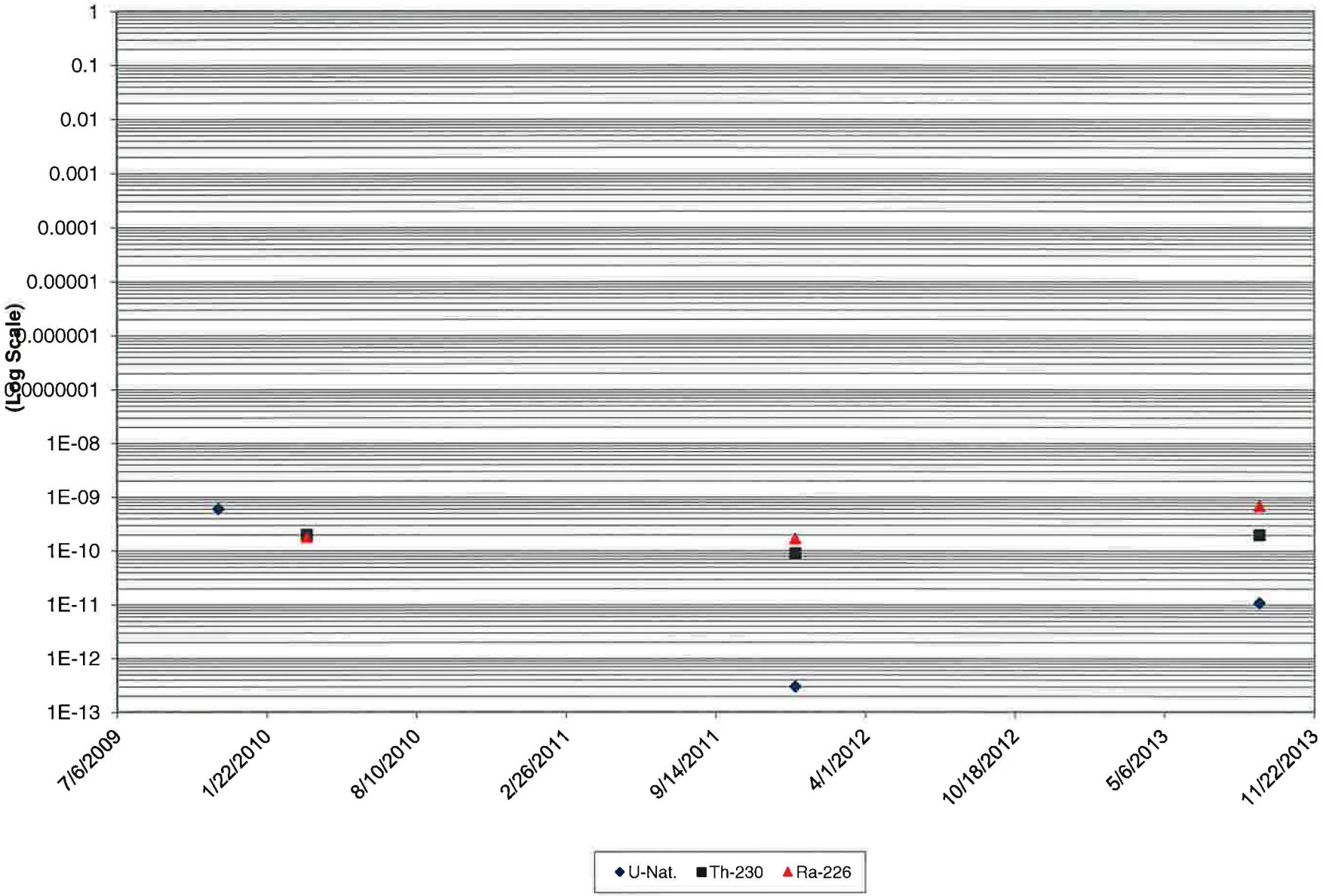
SURFACE WATER GRAPHS AND FIELD DATA SHEETS

Cottonwood Creek Dissolved Radionuclide Concentrations (uCi/ml)

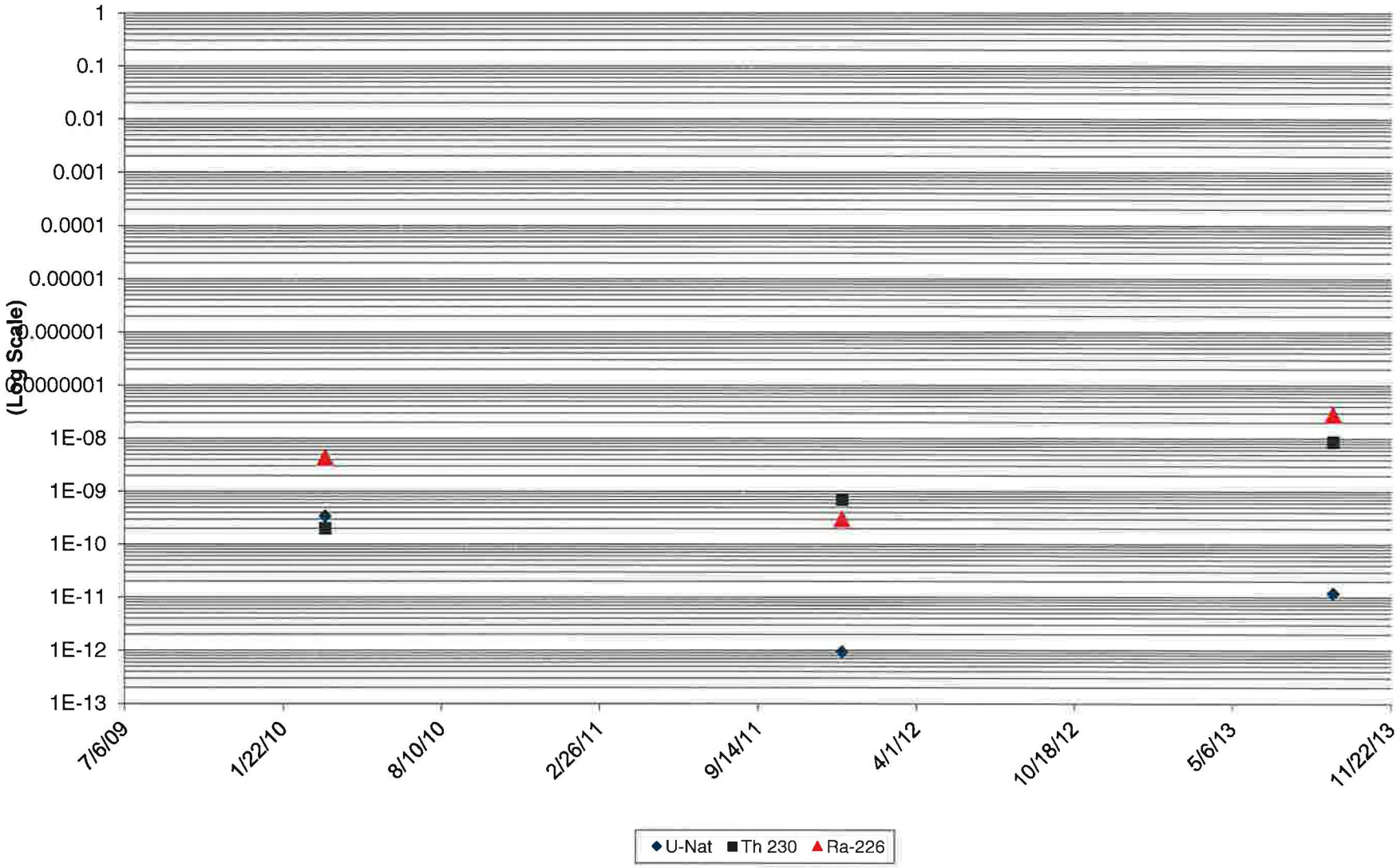



Cottonwood Creek Suspended Radionuclide Concentrations (uCi/ml)
(Log Scale)
1.00E-06
1.00E-07
1.00E-08
1.00E-09
1.00E-10
1.00E-11
1.00E-12
1/1/1985
9/28/1987
6/24/1990
3/20/1993
12/15/1995
9/10/1998
6/6/2001
3/2/2004
11/27/2006
8/23/2009
5/19/2012
2/13/2015
11/9/2017
U-Nat.
Th-230
Ra-226

Westwater Creek Dissolved Radionuclide Concentrations
(uCi/ml)



Westwater Creek Suspended Radionuclide Concentrations (uCi/ml)



Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): Cottonwood Creek Westwater Canyon Other (describe)_____

DATE: 3/5/2014 BY: T.H (Sampler's initials)

pH BUFFER 7.0 7.0 pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 999 µMHOs

STEAM DEPTH: 4"

pH of WATER 7.81 TEMP 13.61

COND µmhos 679	COND µmhos 684
pH Units 7.73	pH units 7.85
Temp °C 13.75	Temp °C 13.56
COND µmhos 684	COND µmhos 684
pH units 7.80	pH units 7.87
Temp °C 13.60	Temp °C 13.55

Comments:

Arrived on site at 1210, Grab samples performed at 1215 Left site at 1217. Tanner, Garrin, Clay all present for sampling event.

3/5/14
1215

Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): Cottonwood Creek / Westwater Canyon / Other (describe) _____

DATE: 3/5/2014

BY: Garrin Palmer / G.P.
(Sampler's initials)

pH BUFFER 7.0 7.0

pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 999 µMHOs

STEAM DEPTH: 0

pH of WATER _____

TEMP _____

COND µmhos _____

pH Units _____

Temp °C _____

COND µmhos _____

pH units _____

Temp °C _____

COND µmhos _____

pH units _____

Temp °C _____

COND µmhos _____

pH units _____

Temp °C _____

Comments:

Arrived on site at 1244. Garrin, Tanner, clay present. Creek was Dry, photo was taken. Left site at 1246. 3/14/14 Arrived on site at 1000. Garrin, David present. Creek was dry, see photo. 3/27/14 Arrived on site at 1500. Creek was dry. See photo.

3/5/14
1245

3/14/14
1000

3/27/14
1500

ANALYTICAL SUMMARY REPORT

March 12, 2014

Energy Fuels Resources (USA) Inc
225 Union Blvd Ste 600
Lakewood, CO 80228-1826

Workorder No.: C14030228

Project Name: 1st Quarter Surface Water 2014

Energy Laboratories, Inc. Casper WY received the following 1 sample for Energy Fuels Resources (USA) Inc on 3/7/2014 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C14030228-001	Cottonwood Creek	03/05/14 12:15	03/07/14	Aqueous	Solids, Total Dissolved Solids, Total Suspended

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Radiochemistry analyses were performed at Energy Laboratories, Inc., 2325 Kerzell Lane, Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Kathryn Hamre
Report Proofing Specialist

Digitally signed by
Kathy Hamre
Date: 2014.03.12 14:46:12 -06:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Surface Water 2014
Sample Delivery Group: C14030228

Report Date: 03/12/14

CASE NARRATIVE

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

GROSS ALPHA ANALYSIS
Method 900.0 for gross alpha and gross beta is intended as a drinking water method for low TDS waters. Data provided by this method for non potable waters should be viewed as inconsistent.

RADON IN AIR ANALYSIS
The desired exposure time is 48 hours (2 days). The time delay in returning the canister to the laboratory for processing should be as short as possible to avoid excessive decay. Maximum recommended delay between end of exposure to beginning of counting should not exceed 8 days.

SOIL/SOLID SAMPLES
All samples reported on an as received basis unless otherwise indicated.

ATRAZINE, SIMAZINE AND PCB ANALYSIS
Data for PCBs, Atrazine and Simazine are reported from EPA 525.2. PCB data reported by ELI reflects the results for seven individual Aroclors. When the results for all seven are ND (not detected), the sample meets EPA compliance criteria for PCB monitoring.

SUBCONTRACTING ANALYSIS
Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT
eli-r - Energy Laboratories, Inc. - Rapid City, SD
eli-cs - Energy Laboratories, Inc. - College Station, TX

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001, Radiochemical WY200002; Utah: WY00002; Washington: C836

ISO 17025 DISCLAIMER:
The results of this Analytical Report relate only to the items submitted for analysis.

ENERGY LABORATORIES, INC. - CASPER,WY certifies that certain method selections contained in this report meet requirements as set forth by the above accrediting authorities. Some results requested by the client may not be covered under these certifications. All analysis data to be submitted for regulatory enforcement should be certified in the sample state of origin. Please verify ELI's certification coverage by visiting www.energylab.com

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Surface Water 2014
Lab ID: C14030228-001
Client Sample ID: Cottonwood Creek

Report Date: 03/12/14
Collection Date: 03/05/14 12:15
DateReceived: 03/07/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	419	mg/L	D	10		A2540 C	03/10/14 16:08 / tmm
Solids, Total Suspended TSS @ 105 C	86	mg/L		10		A2540 D	03/11/14 10:04 / alp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Surface Water 2014

Report Date: 03/12/14
Work Order: C14030228

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: TDS140310A
Sample ID: MB-1_140310A		Method Blank				Run: BAL-19_140310A				03/10/14 16:05
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Sample ID: LCS-2_140310A		Laboratory Control Sample				Run: BAL-19_140310A				03/10/14 16:06
Solids, Total Dissolved TDS @ 180 C		1960	mg/L	20	98	90	110			
Sample ID: C14030198-002A DUP		Sample Duplicate				Run: BAL-19_140310A				03/10/14 16:06
Solids, Total Dissolved TDS @ 180 C		16.0	mg/L	10				3.8	5	
Sample ID: C14030198-003A MS		Sample Matrix Spike				Run: BAL-19_140310A				03/10/14 16:07
Solids, Total Dissolved TDS @ 180 C		1130	mg/L	11	99	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 1st Quarter Surface Water 2014

Report Date: 03/12/14
Work Order: C14030228

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 D										Batch: TSS140311A
Sample ID: MB-1_140311A		Method Blank				Run: BAL-19_140311A				03/11/14 10:03
Solids, Total Suspended TSS @ 105 C		ND	mg/L	2						
Sample ID: LCS-2_140311A		Laboratory Control Sample				Run: BAL-19_140311A				03/11/14 10:03
Solids, Total Suspended TSS @ 105 C		100.0	mg/L	10	100	80	120			
Sample ID: C14030214-001A DUP		Sample Duplicate				Run: BAL-19_140311A				03/11/14 10:04
Solids, Total Suspended TSS @ 105 C		ND	mg/L	10					5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist

Energy Fuels Resources (USA) Inc C14030228

Login completed by: Dorian Quis
Date Received: 3/7/2014
Reviewed by: BL2000\khelm
Received by: dw
Reviewed Date: 3/10/2014
Carrier name: NDA

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	2.4°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

Samples Shipped to:	Energy Laboratories 2393 Salt Creek Hwy Casper WY, 82601	Contact:	Garrin Palmer Ph: 435 678 4115 gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	**Samplers Name**	**Samplers Signature**
1st Quarter Surface Water 2014	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
Cottonwood Creek	3/5/2014	1215	Total Dissolved Solids, Total Suspended Solids

Comments: Samples are not preserved or filtered.

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer Garrin Palmer	3/6/2014 1030		
Relinquished By:(Signature)	**Date/Time**	**Received By:(Signature)**	**Date/Time**
		[illegible]	955 3-7-14

~~C1303~~
C14030228

Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): Cottonwood Creek Westwater Canyon Other (describe)_____

DATE: 4/14/14

BY: Garrin Palmer - GP
(Sampler's initials)

pH BUFFER 7.0 7.0

pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 999 µMHOs

STEAM DEPTH: 3 inches

pH of WATER 8.17

TEMP 18.92

COND µmhos ~~7.88~~ 786.8

pH Units 8.00

Temp °C 18.87

COND µmhos 782.7

pH units 8.17

Temp °C 18.89

COND µmhos 786.9

pH units 8.24

Temp °C 18.94

COND µmhos 784.5

pH units 8.29

Temp °C 18.98

Comments:

Arrived on site at 1310 hours. Garrin Palmer and David Turk are present for event. Weather conditions are clear, breezy and cold. Water is free flowing and clear. A photograph was taken. Two samples were collected. Left site at 1321 hours. Samples were collected at 1315.

4/14/14
1315

Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): Cottonwood Creek (Westwater Canyon) Other (describe) _____

DATE: 4/14/2014 BY: Garrin Palmer
(Sampler's initials)

pH BUFFER 7.0 7.0 pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 999 µMHOs

STEAM DEPTH: NA

pH of WATER NA TEMP NA

COND µmhos _____ COND µmhos _____

pH Units _____ pH units _____

Temp °C _____ Temp °C _____

COND µmhos _____ COND µmhos _____

pH units _____ pH units _____

Temp °C _____ Temp °C _____

Comments:

Arrived on site at 1330. Creek was dry, see photo.
6/6/14 - Arrived on site at 0900. Creek was dry. (see photo)
6/30/14 - Arrived on site at 1330. Creek was dry (see photo).
Unable to sample location because no water was present.
Will sample soils at location during August event.

4/14/14
1330

6/6/14
0900

6/30/14
1330

ANALYTICAL SUMMARY REPORT

April 29, 2014

Energy Fuels Resources (USA) Inc
225 Union Blvd Ste 600
Lakewood, CO 80228-1826

Work Order: C14040518

Project Name: 2nd Quarter Surface Water 2014

Energy Laboratories, Inc. Casper WY received the following 1 sample for Energy Fuels Resources (USA) Inc on 4/16/2014 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C14040518-001	CottonWood Creek	04/14/14 13:15	04/16/14	Filter	Sample Filtering Uranium, Dissolved Uranium, Suspended Digestion, Total Metals Gross Alpha, Gross Beta Radium 226, Dissolved Radium 226, Suspended Thorium, Isotopic Thorium, Suspended Isotopic Solids, Total Dissolved Solids, Total Suspended

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Radiochemistry analyses were performed at Energy Laboratories, Inc., 2325 Kerzell Lane, Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Kathryn Hamre
Report Proofing Specialist

Digitally signed by
Kathy Hamre
Date: 2014.04.29 12:48:59 -06:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014
Sample Delivery Group: C14040518

Report Date: 04/29/14

CASE NARRATIVE

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

GROSS ALPHA ANALYSIS
Method 900.0 for gross alpha and gross beta is intended as a drinking water method for low TDS waters. Data provided by this method for non potable waters should be viewed as inconsistent.

RADON IN AIR ANALYSIS
The desired exposure time is 48 hours (2 days). The time delay in returning the canister to the laboratory for processing should be as short as possible to avoid excessive decay. Maximum recommended delay between end of exposure to beginning of counting should not exceed 8 days.

SOIL/SOLID SAMPLES
All samples reported on an as received basis unless otherwise indicated.

ATRAZINE, SIMAZINE AND PCB ANALYSIS
Data for PCBs, Atrazine and Simazine are reported from EPA 525.2. PCB data reported by ELI reflects the results for seven individual Aroclors. When the results for all seven are ND (not detected), the sample meets EPA compliance criteria for PCB monitoring.

SUBCONTRACTING ANALYSIS
Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT
eli-r - Energy Laboratories, Inc. - Rapid City, SD
eli-cs - Energy Laboratories, Inc. - College Station, TX

CERTIFICATIONS:
USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001, Radiochemical WY200002; Utah: WY00002; Washington: C836

ISO 17025 DISCLAIMER:
The results of this Analytical Report relate only to the items submitted for analysis.

ENERGY LABORATORIES, INC. - CASPER,WY certifies that certain method selections contained in this report meet requirements as set forth by the above accrediting authorities. Some results requested by the client may not be covered under these certifications. All analysis data to be submitted for regulatory enforcement should be certified in the sample state of origin. Please verify ELI's certification coverage by visiting www.energylab.com

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014
Lab ID: C14040518-001
Client Sample ID: CottonWood Creek

Report Date: 04/29/14
Collection Date: 04/14/14 13:15
DateReceived: 04/16/14
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	485	mg/L	D	10		A2540 C	04/17/14 15:21 / tmm
Solids, Total Suspended TSS @ 105 C	12	mg/L		10		A2540 D	04/18/14 11:13 / alp
METALS - DISSOLVED							
Uranium	0.0086	mg/L		0.0003		E200.8	04/17/14 20:49 / clm
METALS - SUSPENDED							
Uranium	ND	mg/L		0.0003		E200.8	04/22/14 21:16 / clm
RADIONUCLIDES - DISSOLVED							
Gross Alpha	13.0	pCi/L				E900.0	04/25/14 17:28 / lbb
Gross Alpha precision (±)	2.3	pCi/L				E900.0	04/25/14 17:28 / lbb
Gross Alpha MDC	2.5	pCi/L				E900.0	04/25/14 17:28 / lbb
Radium 226	0.39	pCi/L				E903.0	04/23/14 06:32 / lmc
Radium 226 precision (±)	0.15	pCi/L				E903.0	04/23/14 06:32 / lmc
Radium 226 MDC	0.16	pCi/L				E903.0	04/23/14 06:32 / lmc
Thorium 230	-0.004	pCi/L	U			E908.0	04/23/14 09:01 / dmf
Thorium 230 precision (±)	0.08	pCi/L				E908.0	04/23/14 09:01 / dmf
Thorium 230 MDC	0.2	pCi/L				E908.0	04/23/14 09:01 / dmf
RADIONUCLIDES - SUSPENDED							
Radium 226	0.01	pCi/L	U			E903.0	04/28/14 07:48 / lmc
Radium 226 precision (±)	0.12	pCi/L				E903.0	04/28/14 07:48 / lmc
Radium 226 MDC	0.20	pCi/L				E903.0	04/28/14 07:48 / lmc
Thorium 230	0.1	pCi/L				E908.0	04/25/14 08:52 / dmf
Thorium 230 precision (±)	0.07	pCi/L				E908.0	04/25/14 08:52 / dmf
Thorium 230 MDC	0.09	pCi/L				E908.0	04/25/14 08:52 / dmf

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014

Report Date: 04/29/14
Work Order: C14040518

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS140417A	
Lab ID: MB-1_140417A		Method Blank				Run: BAL-19_140417A			04/17/14 15:20	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-2_140417A		Laboratory Control Sample				Run: BAL-19_140417A			04/17/14 15:20	
Solids, Total Dissolved TDS @ 180 C		1980	mg/L	20	99	90	110			
Lab ID: C14040512-001B DUP		Sample Duplicate				Run: BAL-19_140417A			04/17/14 15:20	
Solids, Total Dissolved TDS @ 180 C		370	mg/L	10				0.3	5	
Lab ID: C14040518-001A MS		Sample Matrix Spike				Run: BAL-19_140417A			04/17/14 15:21	
Solids, Total Dissolved TDS @ 180 C		1600	mg/L	11	101	90	110			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014

Report Date: 04/29/14
Work Order: C14040518

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 D										Batch: TSS140418A
Lab ID: MBLK		Method Blank				Run: BAL-19_140418A				04/18/14 11:12
Solids, Total Suspended TSS @ 105 C		ND	mg/L	2						
Lab ID: LCS		Laboratory Control Sample				Run: BAL-19_140418A				04/18/14 11:12
Solids, Total Suspended TSS @ 105 C		92.0	mg/L	10	92	80	120			
Lab ID: C14040507-002B DUP		Sample Duplicate				Run: BAL-19_140418A				04/18/14 11:13
Solids, Total Suspended TSS @ 105 C		22.0	mg/L	10				4.7	5	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014

Report Date: 04/29/14
Work Order: C14040518

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**									Analytical Run: ICPMS2-C_140417A	
Lab ID:	**ICV**		Initial Calibration Verification Standard							04/17/14 12:35	
Uranium			0.0507	mg/L	0.00030	101	90	110			
Method:	**E200.8**									Batch: R185609	
Lab ID:	**LRB**		Method Blank				Run: ICPMS2-C_140417A			04/17/14 13:10	
Uranium			ND	mg/L	1E-05						
Lab ID:	**LFB**		Laboratory Fortified Blank				Run: ICPMS2-C_140417A			04/17/14 13:14	
Uranium			0.0498	mg/L	0.00030	100	85	115			
Lab ID:	**C14040511-001AMS**		Sample Matrix Spike				Run: ICPMS2-C_140417A			04/17/14 20:29	
Uranium			0.0555	mg/L	0.00030	107	70	130			
Lab ID:	**C14040511-001AMSD**		Sample Matrix Spike Duplicate				Run: ICPMS2-C_140417A			04/17/14 20:32	
Uranium			0.0564	mg/L	0.00030	109	70	130	1.7	20	
Method:	**E200.8**									Analytical Run: ICPMS2-C_140421A	
Lab ID:	**ICV**		Initial Calibration Verification Standard							04/21/14 16:20	
Uranium			0.0500	mg/L	0.00030	100	90	110			
Method:	**E200.8**									Batch: 41163	
Lab ID:	**MB-41163**		Method Blank				Run: ICPMS2-C_140421A			04/22/14 20:57	
Uranium			ND	mg/L	0.0003						
Lab ID:	**LCS2-41163**		Laboratory Control Sample				Run: ICPMS2-C_140421A			04/22/14 21:00	
Uranium			0.100	mg/L	0.00030	100	85	115			
Lab ID:	**C14040560-007AMS**		Sample Matrix Spike				Run: ICPMS2-C_140421A			04/22/14 21:58	
Uranium			0.242	mg/L	0.00030	97	70	130			
Lab ID:	**C14040560-007AMSD**		Sample Matrix Spike Duplicate				Run: ICPMS2-C_140421A			04/22/14 22:01	
Uranium			0.242	mg/L	0.00030	97	70	130	0.1	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014

Report Date: 04/29/14
Work Order: C14040518

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.0										Batch: GrAB-1724R
Lab ID: Th230-GrAB-1724		Laboratory Control Sample				Run: TENNELEC-3_140422A			04/25/14 17:27	
Gross Alpha		135	pCi/L		115	80	120			
Lab ID: MB-GrAB-1724	3	Method Blank				Run: TENNELEC-3_140422A			04/25/14 17:27	
Gross Alpha		3	pCi/L							
Gross Alpha precision (±)		0.8	pCi/L							
Gross Alpha MDC		1.0	pCi/L							
Lab ID: C14040086-003ADUP	3	Sample Duplicate				Run: TENNELEC-3_140422A			04/25/14 17:28	
Gross Alpha		645	pCi/L					2.8	18.5	
Gross Alpha precision (±)		27.4	pCi/L							
Gross Alpha MDC		11.3	pCi/L							
Lab ID: C14040415-001FMS		Sample Matrix Spike				Run: TENNELEC-3_140422A			04/25/14 17:27	
Gross Alpha		356	pCi/L		84	70	130			
Lab ID: C14040415-001FMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_140422A			04/25/14 17:27	
Gross Alpha		292	pCi/L		32	70	130	20	20	S

- Sample activity for this radionuclide is much larger than the spike activity added. Therefore the matrix spike recovery could not be calculated. The LCS and the RPD of the MS/MSD pair are acceptable; this batch is approved.

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014

Report Date: 04/29/14
Work Order: C14040518

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 41163
Lab ID: C14040518-001DMS		Sample Matrix Spike				Run: BERTHOLD 770-2_140422A				04/28/14 07:48
Radium 226		18	pCi/L		110	70	130			
Lab ID: C14040518-001DMSD		Sample Matrix Spike Duplicate				Run: BERTHOLD 770-2_140422A				04/28/14 07:48
Radium 226		17	pCi/L		104	70	130	5.8	18.8	
Lab ID: LCS-41163		Laboratory Control Sample				Run: BERTHOLD 770-2_140422A				04/28/14 11:15
Radium 226		22.6	pCi/L		105	80	120			
Lab ID: MB-41163	3	Method Blank				Run: BERTHOLD 770-2_140422A				04/28/14 11:15
Radium 226		-0.02	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.3	pCi/L							
Method: E903.0										Batch: RA226-7150
Lab ID: C14040519-001DMS		Sample Matrix Spike				Run: G542M_140417A				04/23/14 06:32
Radium 226		19	pCi/L		84	70	130			
Lab ID: C14040519-001DMSD		Sample Matrix Spike Duplicate				Run: G542M_140417A				04/23/14 06:32
Radium 226		20	pCi/L		88	70	130	4.3	21.6	
Lab ID: LCS-RA226-7150		Laboratory Control Sample				Run: G542M_140417A				04/23/14 06:32
Radium 226		7.8	pCi/L		69	80	120			S
- LCS response is outside of the acceptance range for this analysis. Since the MB, MS, and MSD are acceptable the batch is approved.										
Lab ID: MB-RA226-7150	3	Method Blank				Run: G542M_140417A				04/23/14 06:32
Radium 226		0.04	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014

Report Date: 04/29/14
Work Order: C14040518

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-2032
Lab ID: LCS-RA-TH-ISO-2032		Laboratory Control Sample				Run: ALPHANALYST_140421B				04/23/14 09:01
Thorium 230		6.5	pCi/L		98	80	120			
Lab ID: C14040518-001CMS		Sample Matrix Spike				Run: ALPHANALYST_140421B				04/23/14 09:01
Thorium 230		13	pCi/L		102	70	130			
Lab ID: C14040518-001CMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_140421B				04/23/14 09:01
Thorium 230		13	pCi/L		103	70	130	0.3	44.3	
Lab ID: MB-RA-TH-ISO-2032	3	Method Blank				Run: ALPHANALYST_140421B				04/23/14 09:01
Thorium 230		0.05	pCi/L							U
Thorium 230 precision (±)		0.08	pCi/L							
Thorium 230 MDC		0.2	pCi/L							
Method: E908.0										Batch: 41163
Lab ID: C14040518-001DMS		Sample Matrix Spike				Run: ALPHANALYST_140423A				04/25/14 08:52
Thorium 230		19	pCi/L		109	70	130			
Lab ID: C14040518-001DMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_140423A				04/25/14 08:52
Thorium 230		17	pCi/L		98	70	130	11	29.9	
Lab ID: LCS-41163		Laboratory Control Sample				Run: ALPHANALYST_140423A				04/25/14 08:52
Thorium 230		16.4	pCi/L		94	80	120			
Lab ID: MB-41163	3	Method Blank				Run: ALPHANALYST_140423A				04/25/14 08:52
Thorium 230		0.2	pCi/L							
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 2nd Quarter Surface Water 2014

Report Date: 04/29/14
Work Order: C14040518

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**SW6020**									Batch: 41163
Lab ID:	**C14040560-002ADIL**	Serial Dilution				Run: ICPMS2-C_140421A			04/22/14 21:29	
Uranium		3.28E-08	mg/L	1.5E-10				5.3	20	
Lab ID:	**C14040560-007AMS**	Sample Matrix Spike				Run: ICPMS2-C_140421A			04/22/14 21:58	
Uranium		0.242	mg/L	4.3E-05	97	75	125			
Lab ID:	**C14040560-007AMSD**	Sample Matrix Spike Duplicate				Run: ICPMS2-C_140421A			04/22/14 22:01	
Uranium		0.242	mg/L	4.3E-05	97	75	125	0.1	20	
Lab ID:	**MB-41163**	Method Blank				Run: ICPMS2-C_140421A			04/22/14 20:57	
Uranium		4E-05	mg/L	4E-05						
Lab ID:	**LCS2-41163**	Laboratory Control Sample				Run: ICPMS2-C_140421A			04/22/14 21:00	
Uranium		0.100	mg/L	4.3E-05	100	85	115			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

Workorder Receipt Checklist

Energy Fuels Resources (USA) Inc C14040518

Login completed by: Debra Williams
Date Received: 4/16/2014
Reviewed by: BL2000\khelm
Received by: dw
Reviewed Date: 4/17/2014
Carrier name: NDA

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	2.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Sample will be filtered and preserved as necessary.

Sheet 1 of 1

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 Salt Creek Hwy
Casper WY, 82601

Contact: Garrin Palmer
Ph: 435 678 4115
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
2nd Quarter Surface Water 2014	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
CottonWood Creek	4/14/2014	1315	TDS
			TSS
			Dissolved Gross Alpha
			Suspended U-nat
			Dissolved U-nat
			Suspended Ra-226
			Dissolved Ra-226
			Suspended Th-230
			Dissolved Th-230

Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer Garrin Palmer	4/14/2014 1200		
Relinquished By:(Signature)	**Date/Time**	**Received By:(Signature)**	**Date/Time**
		J Mullin	930 4-16-15

C14040518

ATTACHMENT I

SOIL SAMPLE GRAPHS, DATA TABLE, LABORATORY RESULTS AND QA/QC

*Soil samples are collected during the third quarter. This attachment has been deliberately left blank.