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February 21, 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
July 1, 2013 through December 31, 2013

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 July 1, 2013 through December 31, 2013.

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

Yours very truly,

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
(July through December 2013)

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

February 21, 2014

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WHITE MESA URANIUM MILL
SEMI-ANNUAL EFFLUENT REPORT, JULY THROUGH DECEMBER 2013

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 radiation;

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) 3rd and 4th Quarters 2013

Monitoring Station	3rd Qtr. Result (uCi/ml)	4th Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	8.89E-16	5.21E-16	9.00E-14	7.83E-01
BHV2	1.76E-16	6.20E-16	9.00E-14	4.42E-01
BHV4	2.98E-15	3.88E-15	9.00E-14	3.81E+00
BHV5	2.78E-15	6.70E-15	9.00E-14	5.27E+00
BHV6	2.68E-15	1.60E-14	9.00E-14	1.04E+01

Table 3- Air Monitoring Station Results Th-230 (Comparison to Limits) 3rd and 4th Quarters 2013

Monitoring Station	3rd Qtr. Result (uCi/ml)	4th Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	9.13E-17	4.34E-17	2.00E-14	3.37E-01
BHV2	2.52E-17	4.19E-17	2.00E-14	1.68E-01
BHV4	4.49E-16	1.03E-16	2.00E-14	1.38E+00
BHV5	6.92E-16	3.93E-16	2.00E-14	2.71E+00
BHV6	3.97E-16	2.48E-16	2.00E-14	1.61E+00

Table 4- Air Monitoring Station Results Ra-226 (Comparison to Limits) 3rd and 4th Quarters 2013

Monitoring Station	3rd Qtr. Result (uCi/ml)	4th Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	1.05E-16	3.70E-17	9.00E-13	7.89E-03
BHV2	6.13E-17	3.72E-17	9.00E-13	5.47E-03
BHV4	1.54E-16	4.47E-17	9.00E-13	1.10E-02
BHV5	3.29E-16	2.53E-16	9.00E-13	3.23E-02
BHV6	1.04E-16	1.05E-16	9.00E-13	1.16E-02

Table 5- Air Monitoring Station Results Pb-210 (Comparison to Limits) 3rd and 4th Quarters 2013

Monitoring Station	3rd Qtr. Result (uCi/ml)	4th Qtr. Result (uCi/ml)	Effluent Concentration Limit (ECL) (uCi/ml)	Average Percent ECL
BHV1	8.00E-15	2.59E-14	6.00E-13	2.83E+00
BHV2	4.90E-15	2.50E-14	6.00E-13	2.49E+00
BHV4	7.49E-15	2.93E-14	6.00E-13	3.07E+00
BHV5	6.62E-15	2.78E-14	6.00E-13	2.87E+00
BHV6	6.13E-15	2.67E-14	6.00E-13	2.74E+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	3rd Qtr Result (mrem)	4th Qtr Result (mrem)	3rd Qtr Result Less Background (mrem)	4th Qtr Result Less Background (mrem)	Cumulative Semi-Annual Estimate (mrem)
BHV1	33.5	38.9	3.9	7.5	11.4
BHV2	31.5	33.3	1.9	1.9	3.8
BHV3	29.6	31.4	0.0	0.0	0.0
BHV4	34.5	32.1	4.9	0.7	5.6
BHV5	34.6	38.0	5.0	6.6	11.6
BHV6	30.4	33.7	0.8	2.3	3.1

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 2013 grazing season, three sets of samples were collected on April 30, 2013, June 20, 2013, and November 14, 2013. The data from the April and June sampling events were included in the January through June 2013 Semi-Annual Effluent Report ("SAER") which was submitted to the DRC on August 29, 2013. Data from the November sampling event is 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 2013 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 3rd and 4th quarters of 2013, as well as for the 1st and 2nd quarter 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, Ra-226 and Pb-210 at each of the stacks sampled. The actual analytical results reported by the laboratory for the 3rd and 4th quarters of 2013 are provided in Attachment G to this report.

As shown on Table 8, due to operational conditions at the Mill during the 1st quarter of 2013, EFRI was unable to achieve the steady state required for representative stack sampling at the yellowcake dryers and the yellowcake baghouse as required by NRC Regulatory Guide 4.14. The Mill did not operate during January 2013. The grizzly baghouse operated periodically during February and March 2013. The south yellowcake dryer and yellowcake packaging baghouse operated only intermittently during February and March 2013 due to multiple dryer equipment shutdowns. As a result of the repeated startups and shutdowns, the dryers only achieved representative steady state conditions, suitable for stack monitoring during the 1st quarter of 2013. The south yellowcake dryer, yellowcake baghouse, and the grizzly baghouse operated at a steady state in the 2nd quarter of 2013 and were sampled as required.

The south yellowcake dryer and yellowcake baghouse operated during the 3rd and 4th quarters of 2013. 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. The grizzly baghouse did not operate during the 3rd or 4th quarters of 2013, and therefore, was not sampled during this reporting period.

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
1st Qtr, 2013*								
South YC Dryer, Run 1	EFRI was unable to sample in the 1st quarter of 2013 due to operational conditions at the Mill.		Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
South YC Dryer, Run 2			Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
Yellowcake Baghouse			Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
2nd Qtr, 2013*								
South YC Dryer, Run 1	2.94E-09	2.61E-03	8.51E-14	7.55E-08	1.07E-14	9.52E-09	3.59E-13	3.19E-07
South YC Dryer, Run 2	2.86E-09	2.56E-03	8.75E-14	7.85E-08	5.54E-14	4.96E-08	3.95E-13	3.54E-07
Yellowcake Baghouse	3.93E-08	6.29E-02	5.04E-12	8.07E-06	1.20E-13	1.92E-07	5.98E-13	9.58E-07
Grizzly Baghouse	1.68E-11	1.11E-05	1.80E-13	1.18E-07	Not Required	Not Required	Not Required	Not Required
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	2.30E-07	1.34E-01	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

*The North Yellowcake Dryer was not in operation during 2013.

** 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 2013, because no water was present during the reporting period. A surface water sample was collected from Westwater Canyon in the third quarter of 2013, and was analyzed for the constituents required by the License, Part 11.2 B. As shown on the laboratory data report in Attachment H, the total dissolved solids ("TDS") result for Westwater Canyon is "H" flagged, indicating the analysis was completed outside of the recommended method holding time. The laboratory noted that the TDS result was analyzed past the recommended holding time due to reanalysis required due to severe matrix interference. The original analysis was completed on September 13, 2013 within holding time, however, sample matrix interference caused the result to be non-detect at an increased reporting limit. The sample was reanalyzed six more times in an effort to achieve a result above the reporting limit. The matrix interference was most likely caused by the significant amount of rainfall seen at the Mill during September 2013. The rainfall made it possible to collect a sample from the Westwater Canyon, however; the increased water flow caused the sample to have a high solids content which caused the matrix interference. When a reportable result was achieved by the laboratory, the holding time had already expired. These data are considered useable for the intended purposed, because there are duplicate analyses to support the reported result.

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 3rd quarter, and was sampled for TDS, TSS, and the radionuclides during the 4th 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 were collected in August 2013. The soil samples were analyzed, on a dry basis, for Ra-226 and U-nat. The results of these samplings indicate that soil activity levels at the air monitoring stations remain low and within the range of typical background levels. A graphical presentation of the historical results for soils at the air monitoring stations, together with analytical sample results for the August 2013 sampling are provided in Attachment I.

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 July through December 2013. 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 February 21, 2014

Energy Fuels Resources (USA) Inc.

By:

Frank Filas
Vice President, Permitting and Environmental Affairs

ATTACHMENT A

HIGH VOLUME AIR MONITORING STATIONS

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

BHV-2

N

2000 0 2000

SCALE IN FEET

Creek

Westwater

BHV-1

NORTH CONTROL #2

NORTH CONTROL #1

CELL NO. 1

MILL SITE

CELL NO. 2

CELL NO. 3

CELL NO. 4B

CELL NO. 4A

BHV-5

BHV-4

BHV-6

Corral Canyon

MURPHY POINT

Cottonwood Wash

191

E MESA

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:		
1/1/09 dlc	High Volume Air Monitoring Stations		
1/13/11 GM			
1/27/11 GM			
3/2/12 GM			
Scale: as shown	Date: JAN 2011	figure 2.3-1_air monitorin..dv	
Author: HRR	Drafted By: B. Munkhbaatar		

ATTACHMENT B

BHV AIR SAMPLING GRAPHS AND DATA TABLES

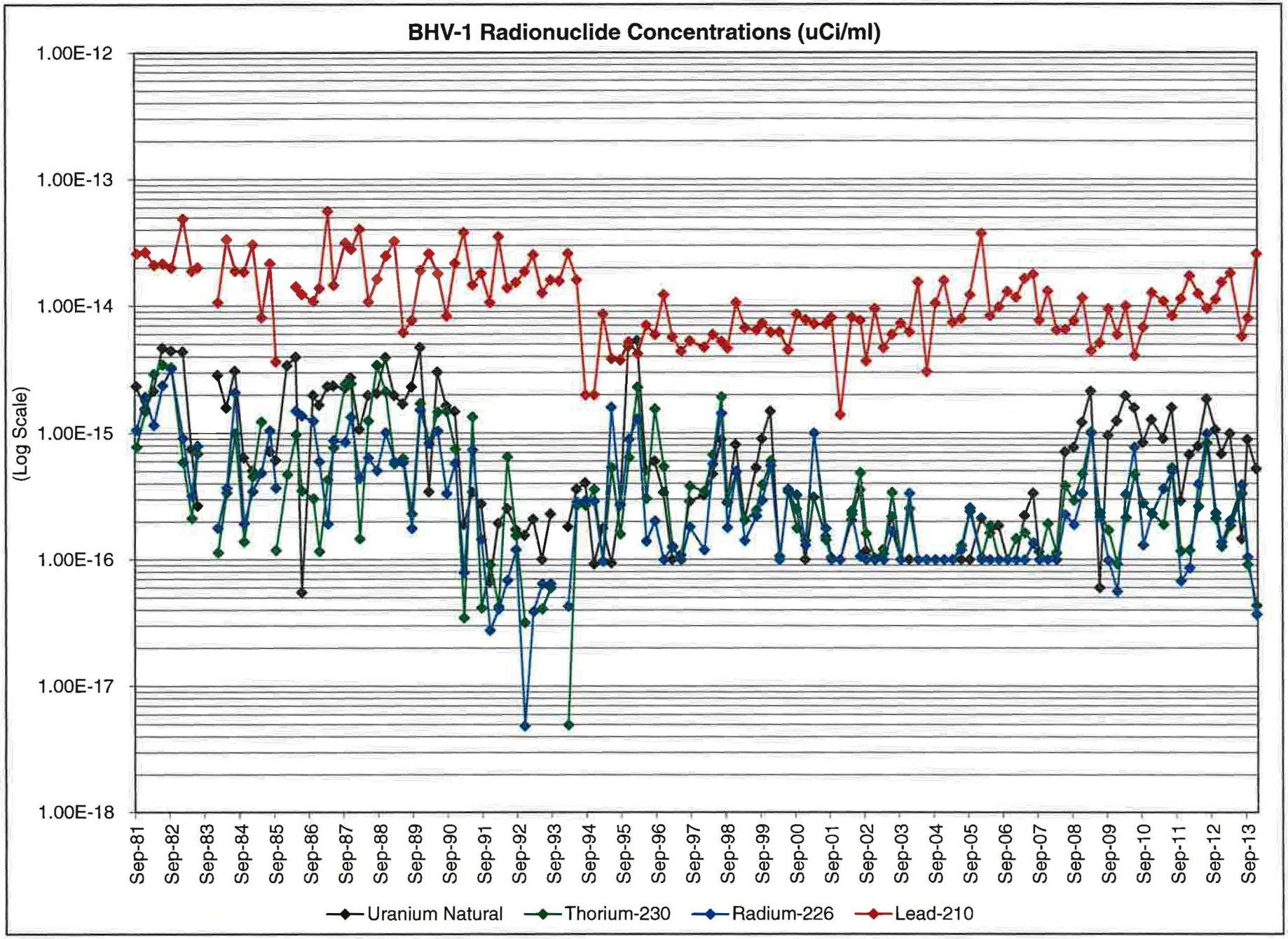
TAB 1

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 =	BE-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


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
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Sep-87
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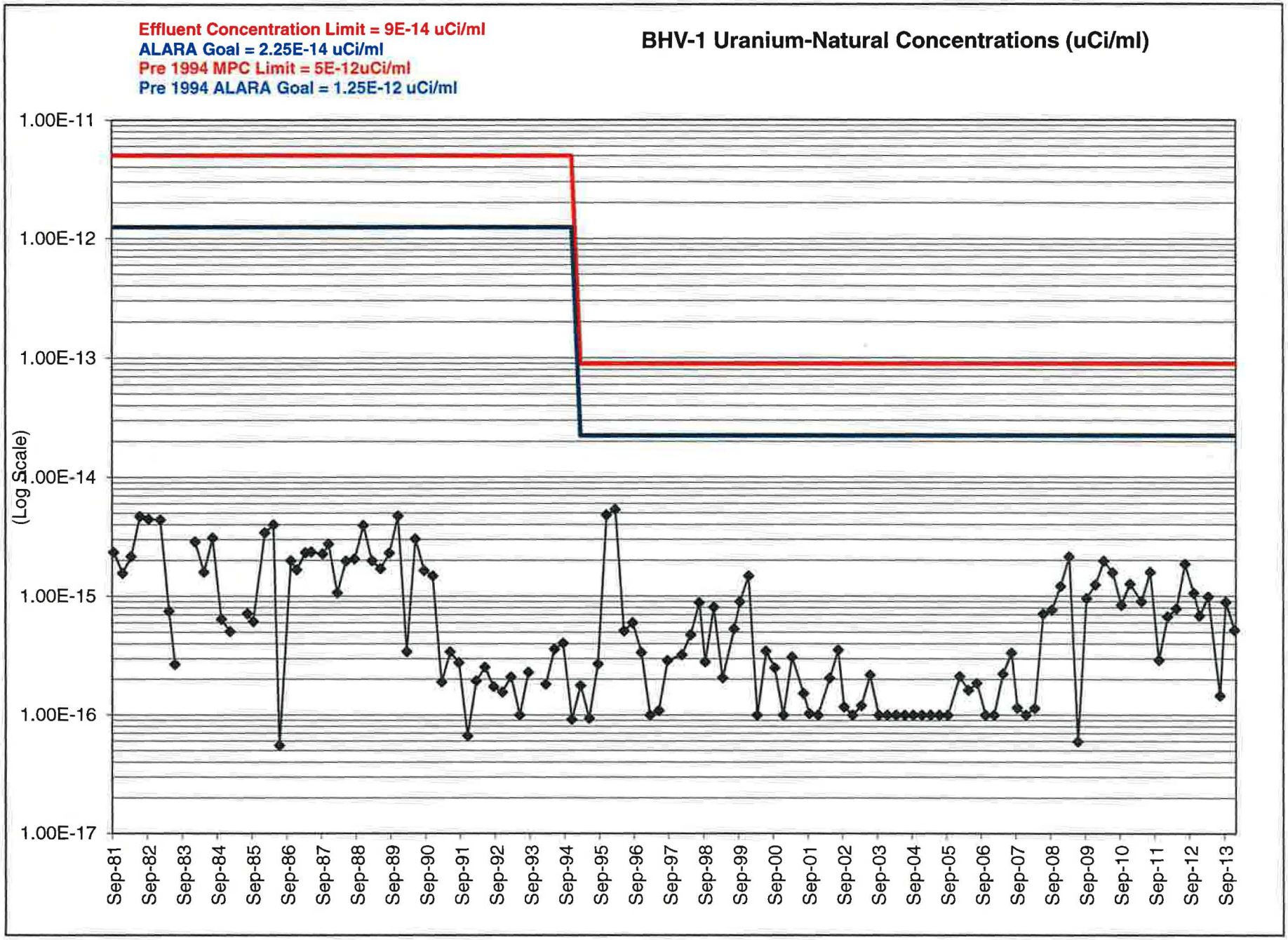
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


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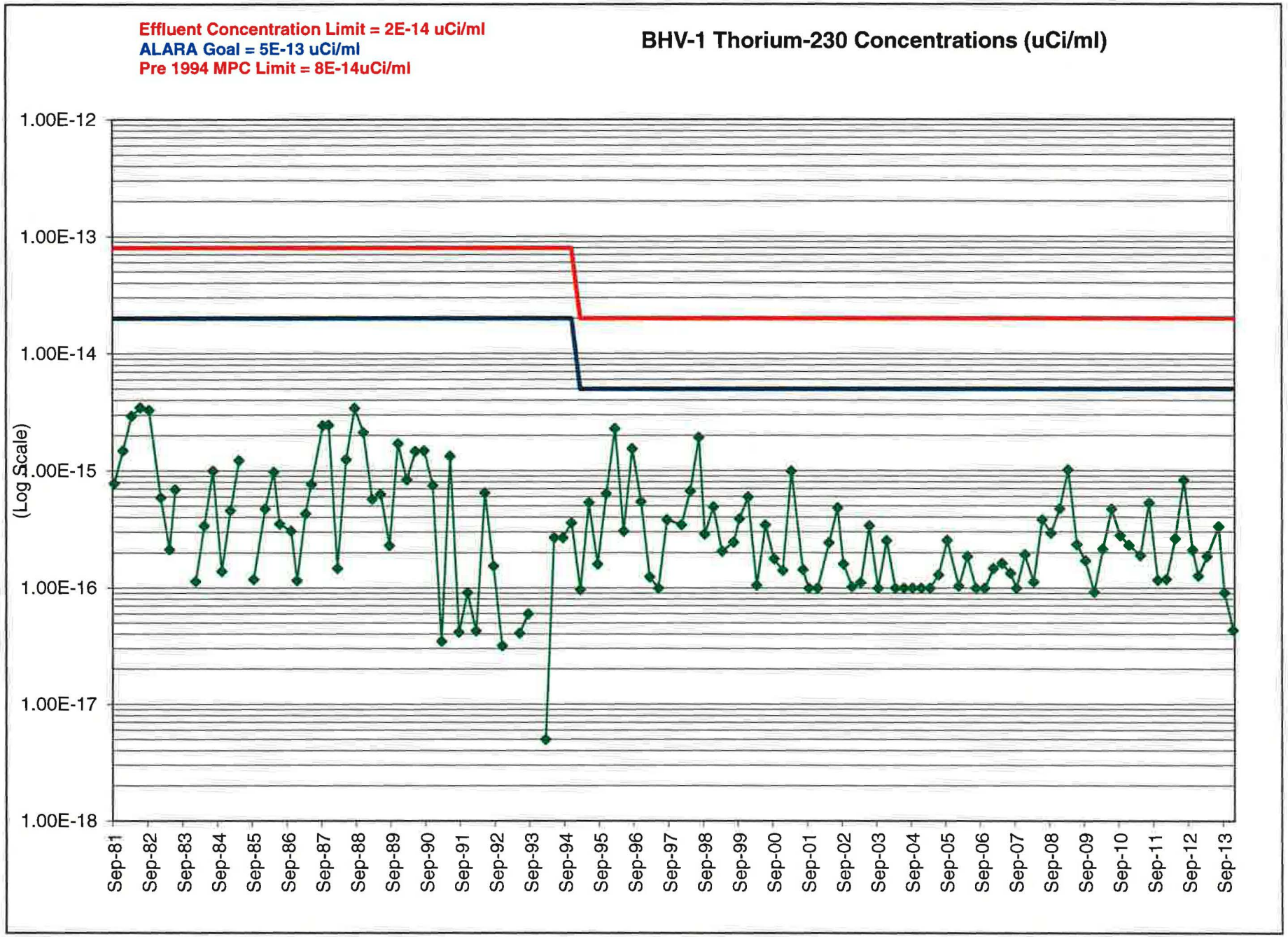
Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-1 Thorium-230 Concentrations (uCi/ml)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
(Log Scale)
Sep-81
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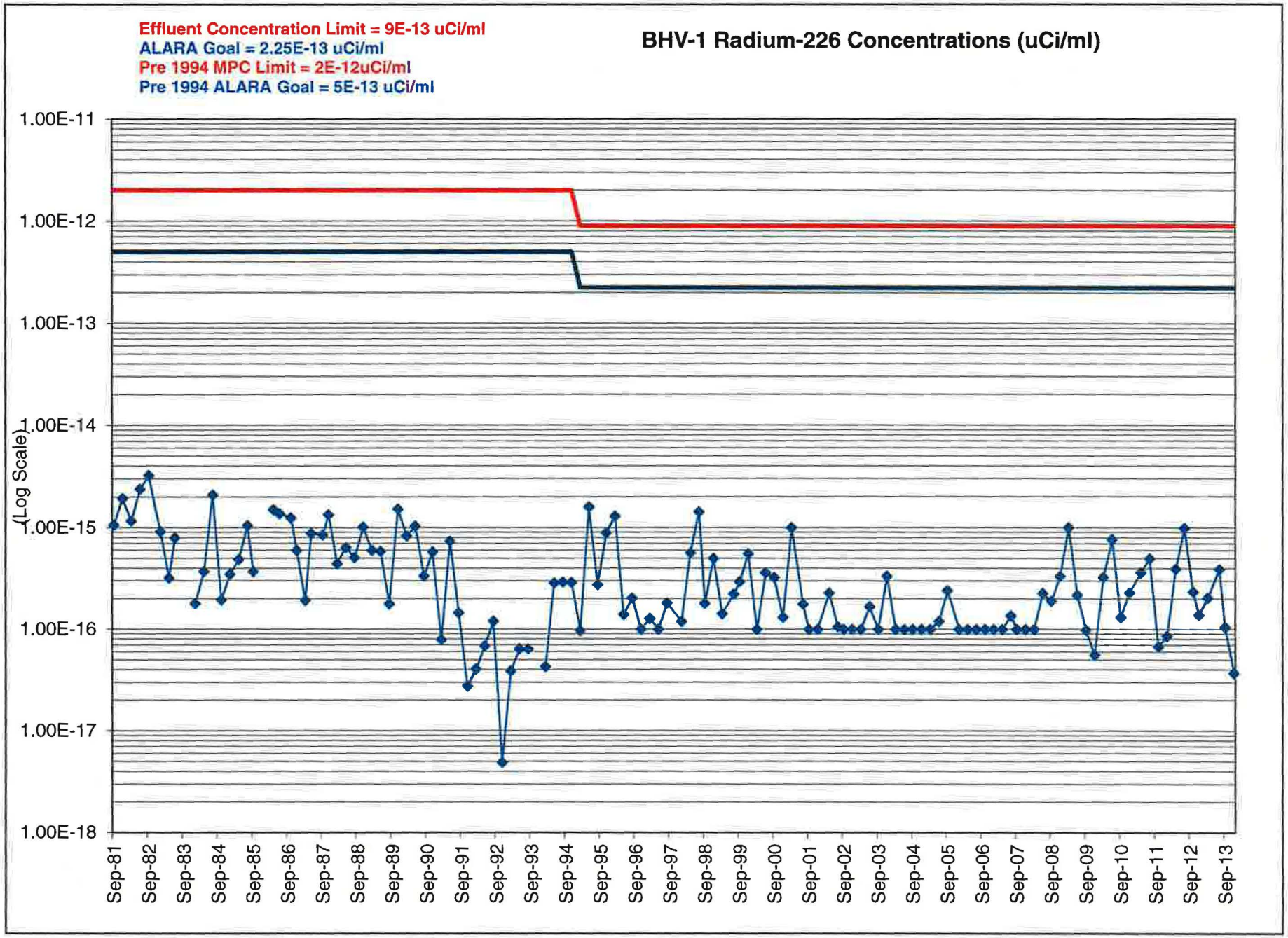
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-1 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
Sep-81
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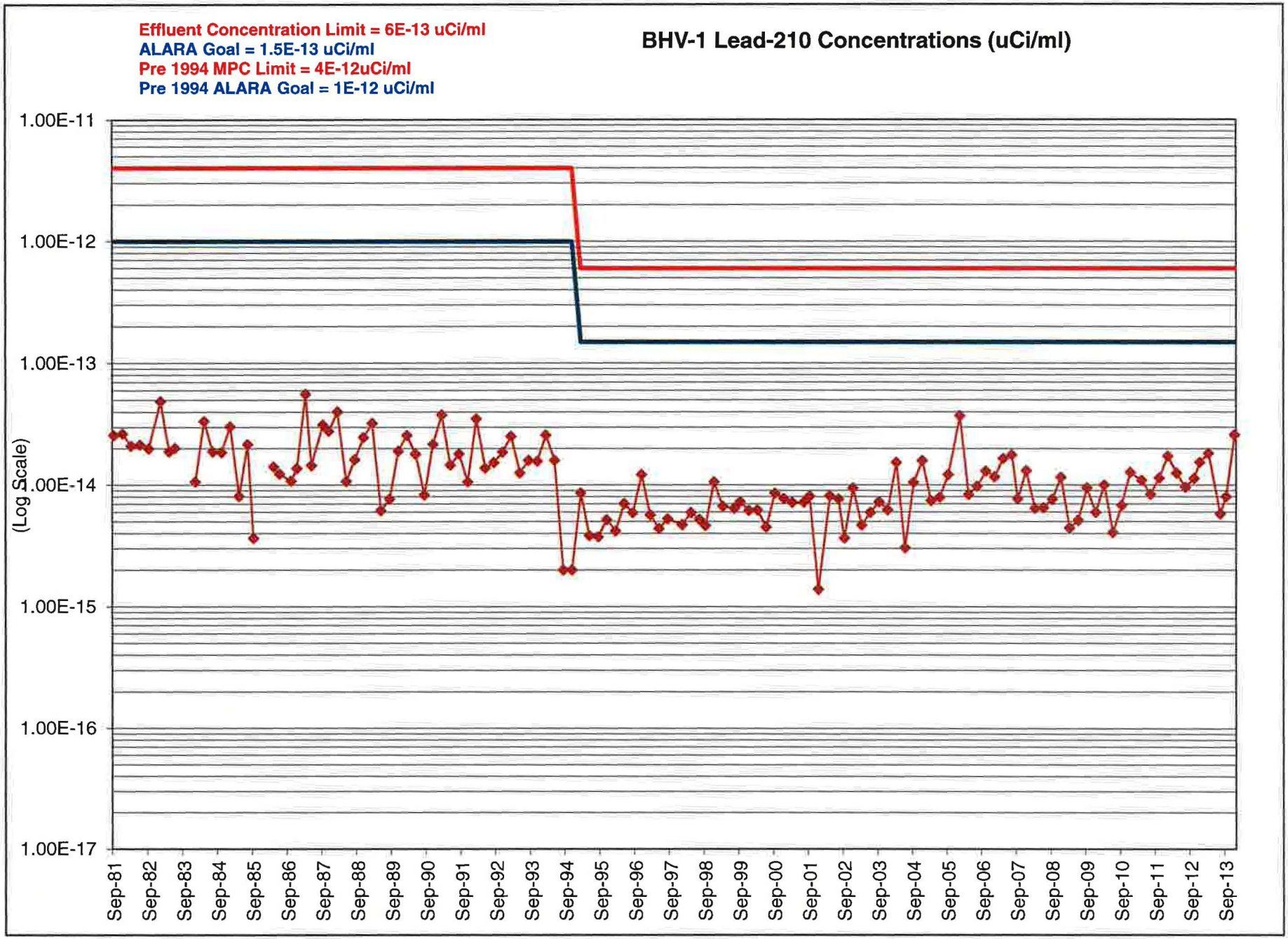
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-1 Lead-210 Concentrations (uCi/ml)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
(Log Scale)
Sep-81
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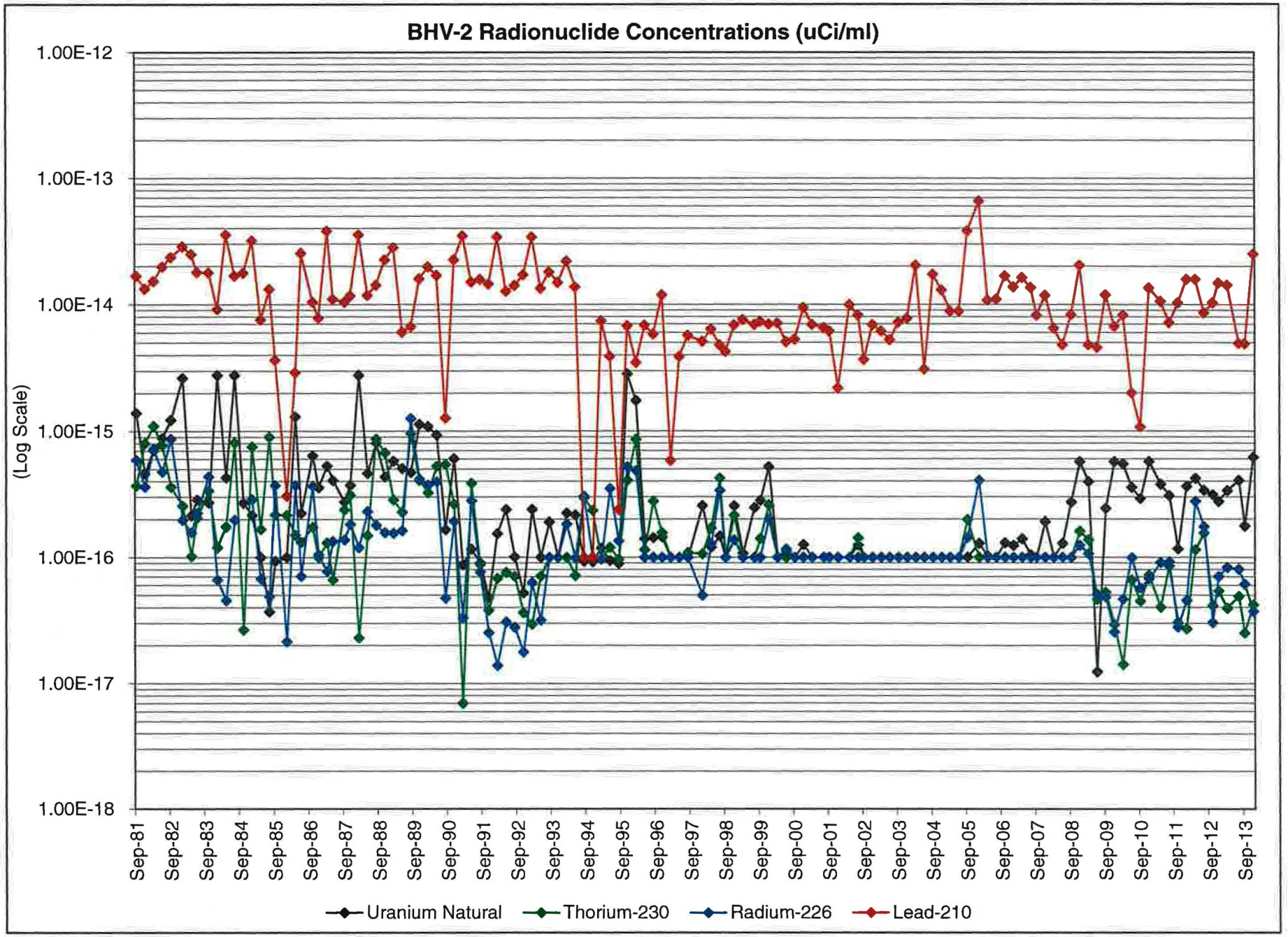
TAB 2

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


BHV-2 Radionuclide Concentrations (uCi/ml)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
(Log Scale)
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-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
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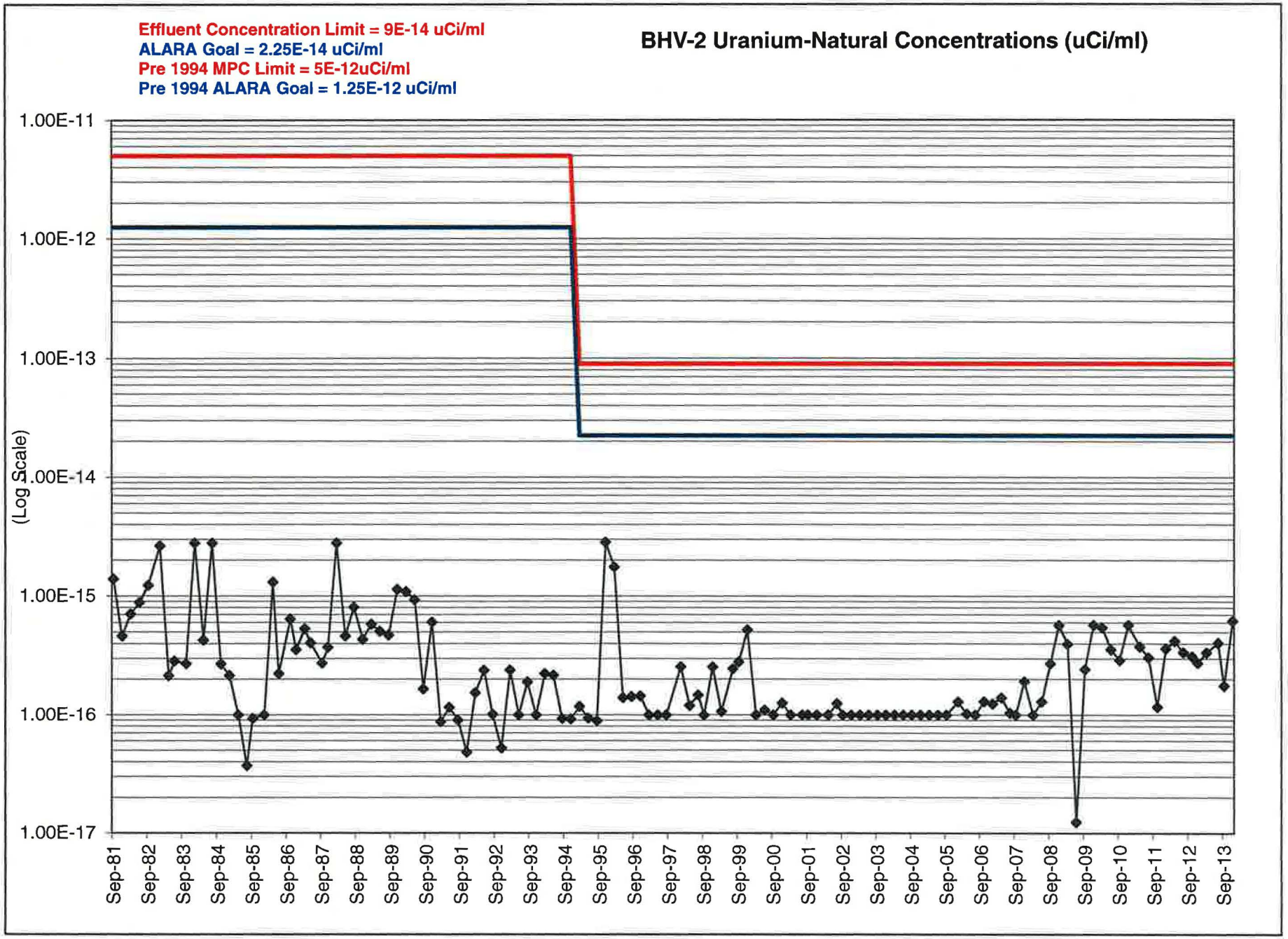
Uranium Natural
Thorium-230
Radium-226
Lead-210


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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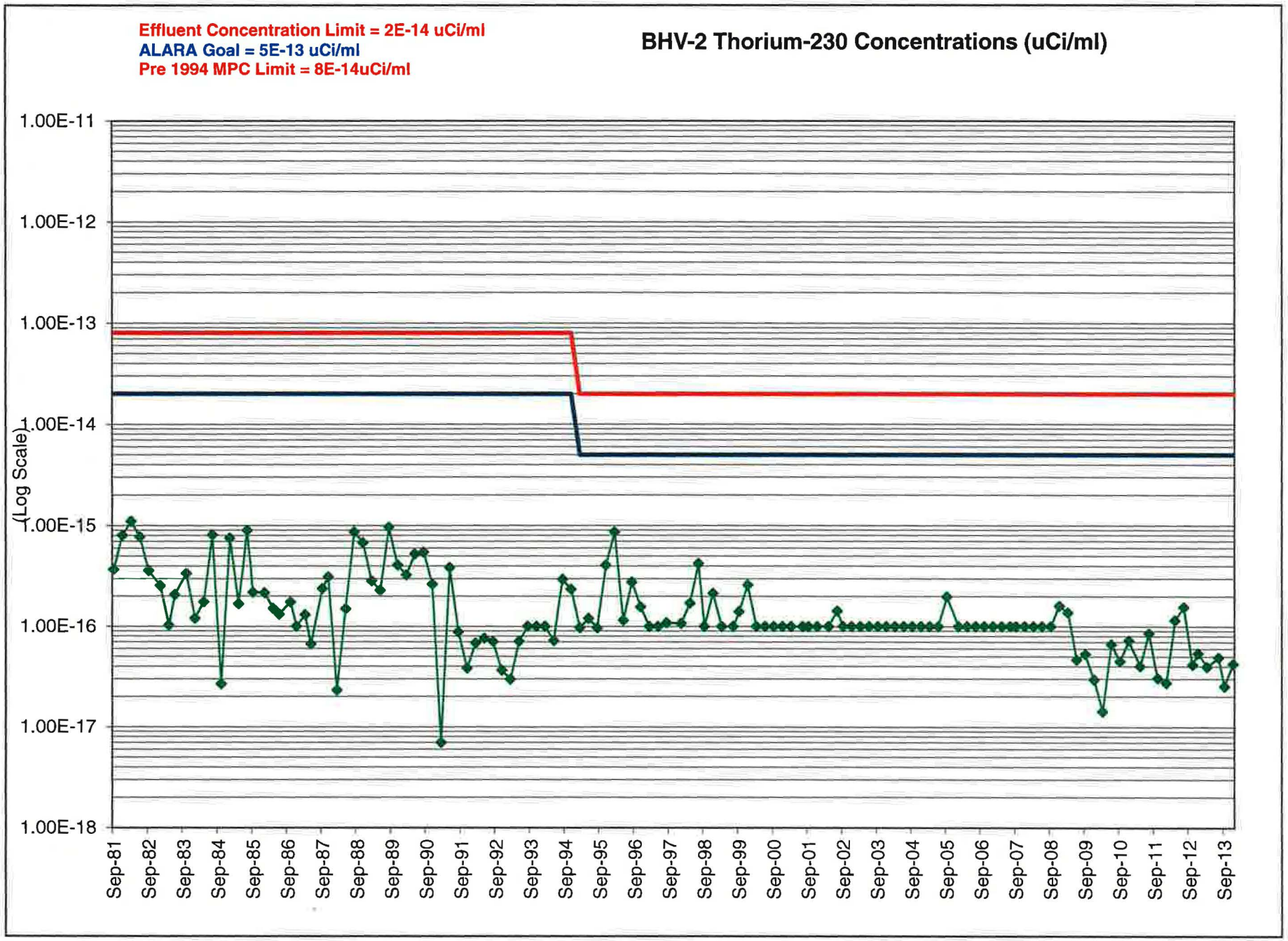
Sep-11
Sep-12
Sep-13


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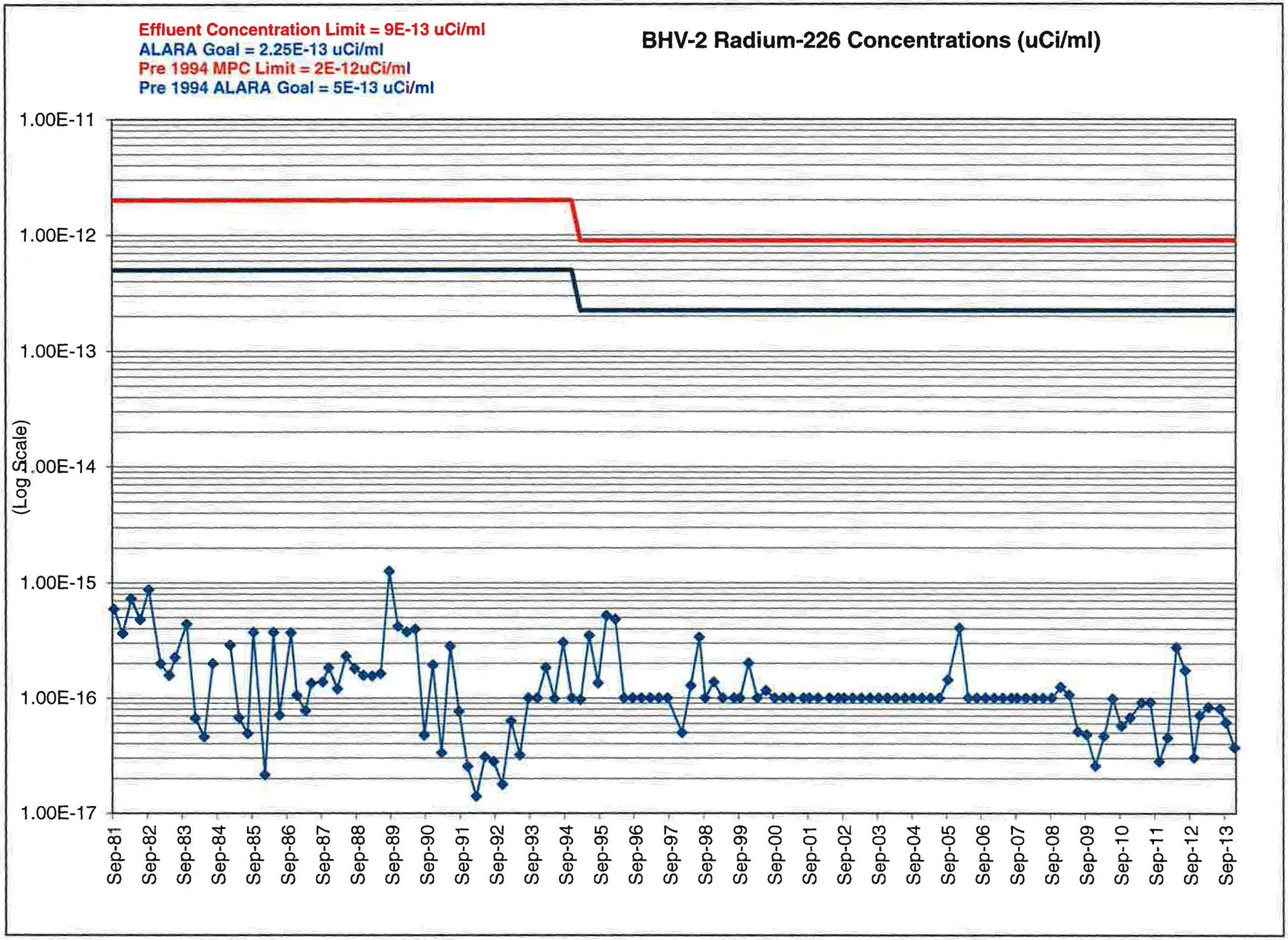
Effluent Concentration Limit = 9E-13 uCi/ml
ALARA Goal = 2.25E-13 uCi/ml
Pre 1994 MPC Limit = 2E-12uCi/ml
Pre 1994 ALARA Goal = 5E-13 uCi/ml
BHV-2 Radium-226 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
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Sep-83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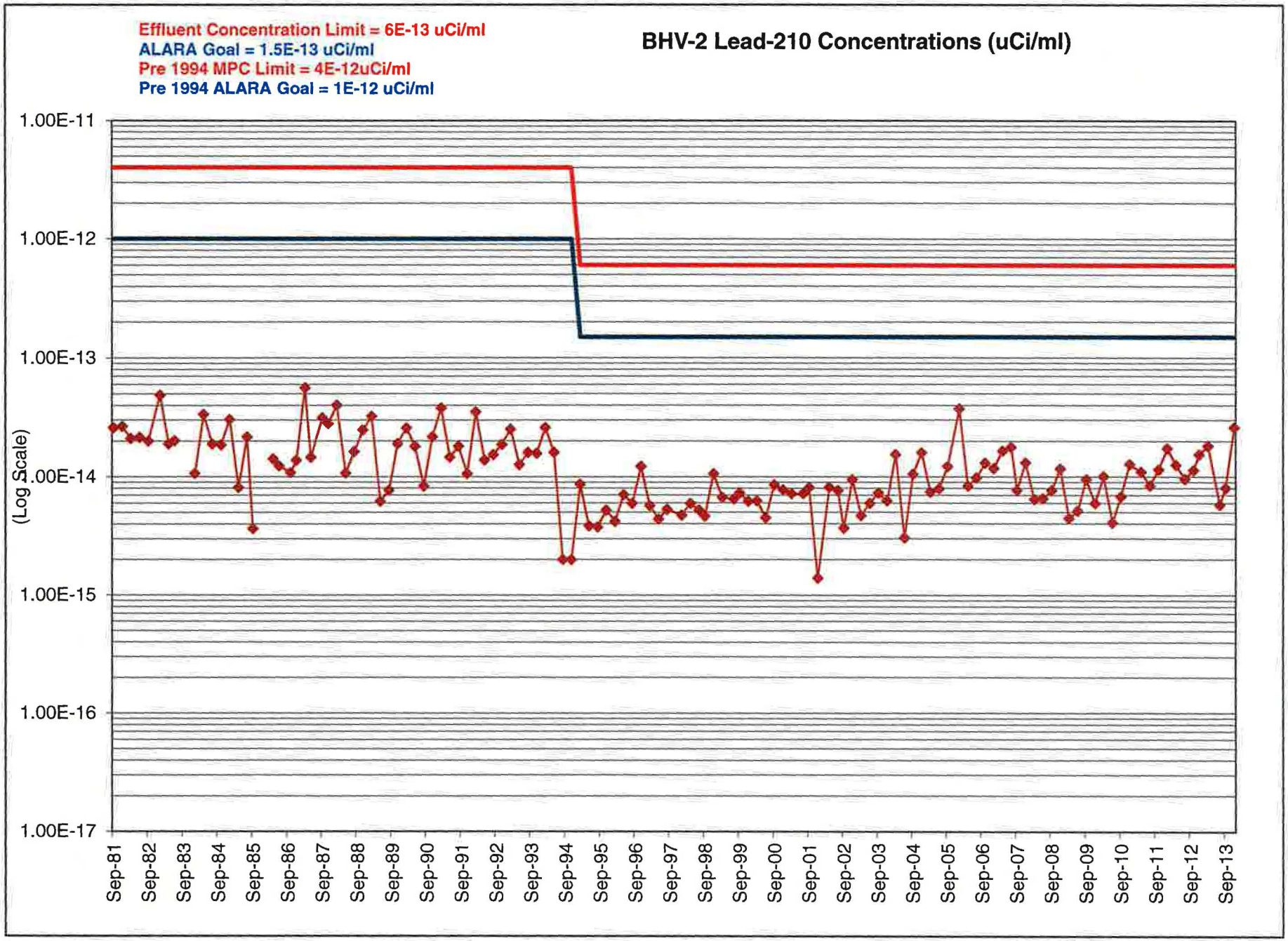
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-2 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
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Sep-83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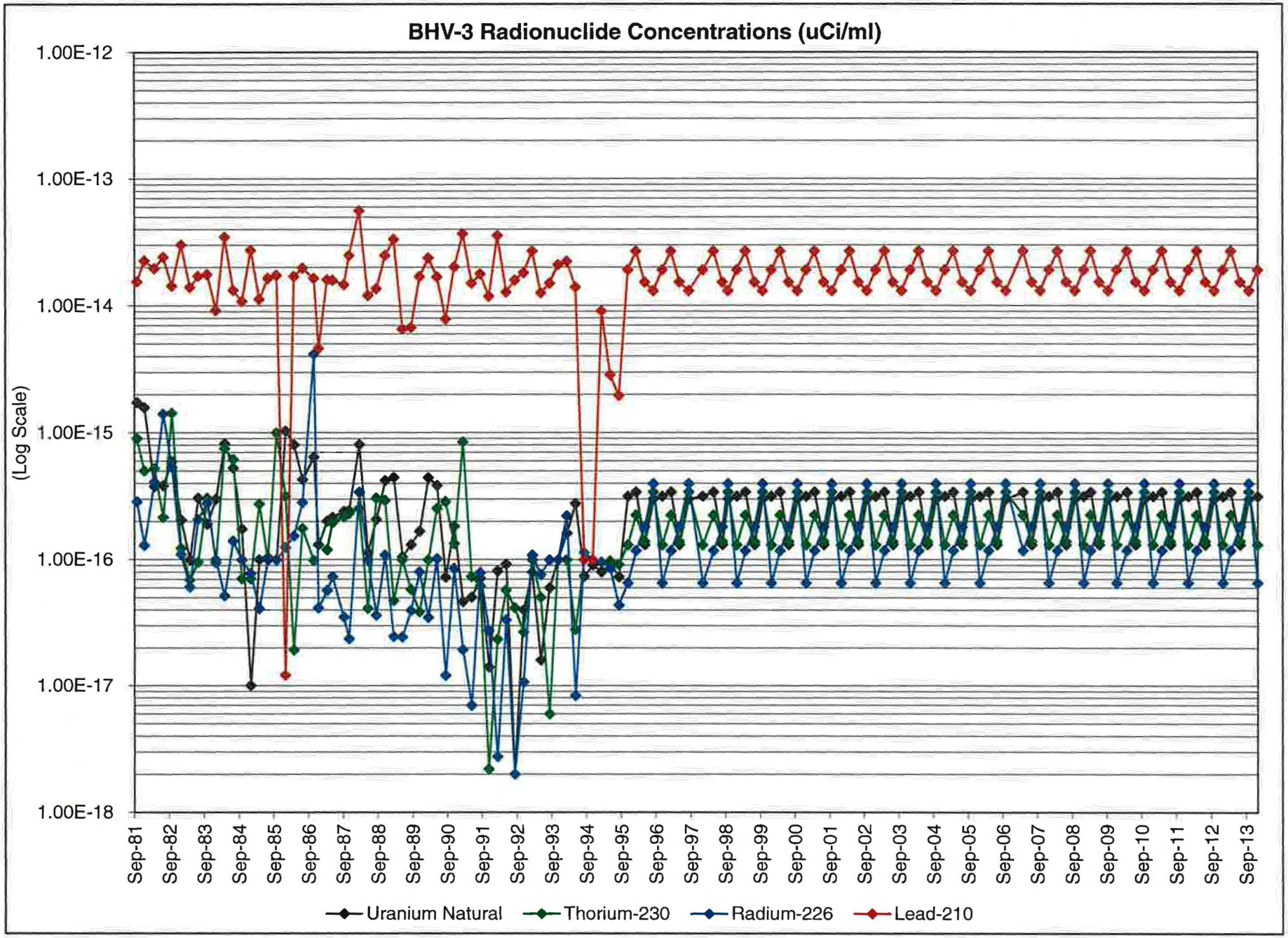
TAB 3

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


BHV-3 Radionuclide Concentrations (uCi/ml)
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
1.00E-18
(Log Scale)
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
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Sep-89
Sep-90
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Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
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Sep-00
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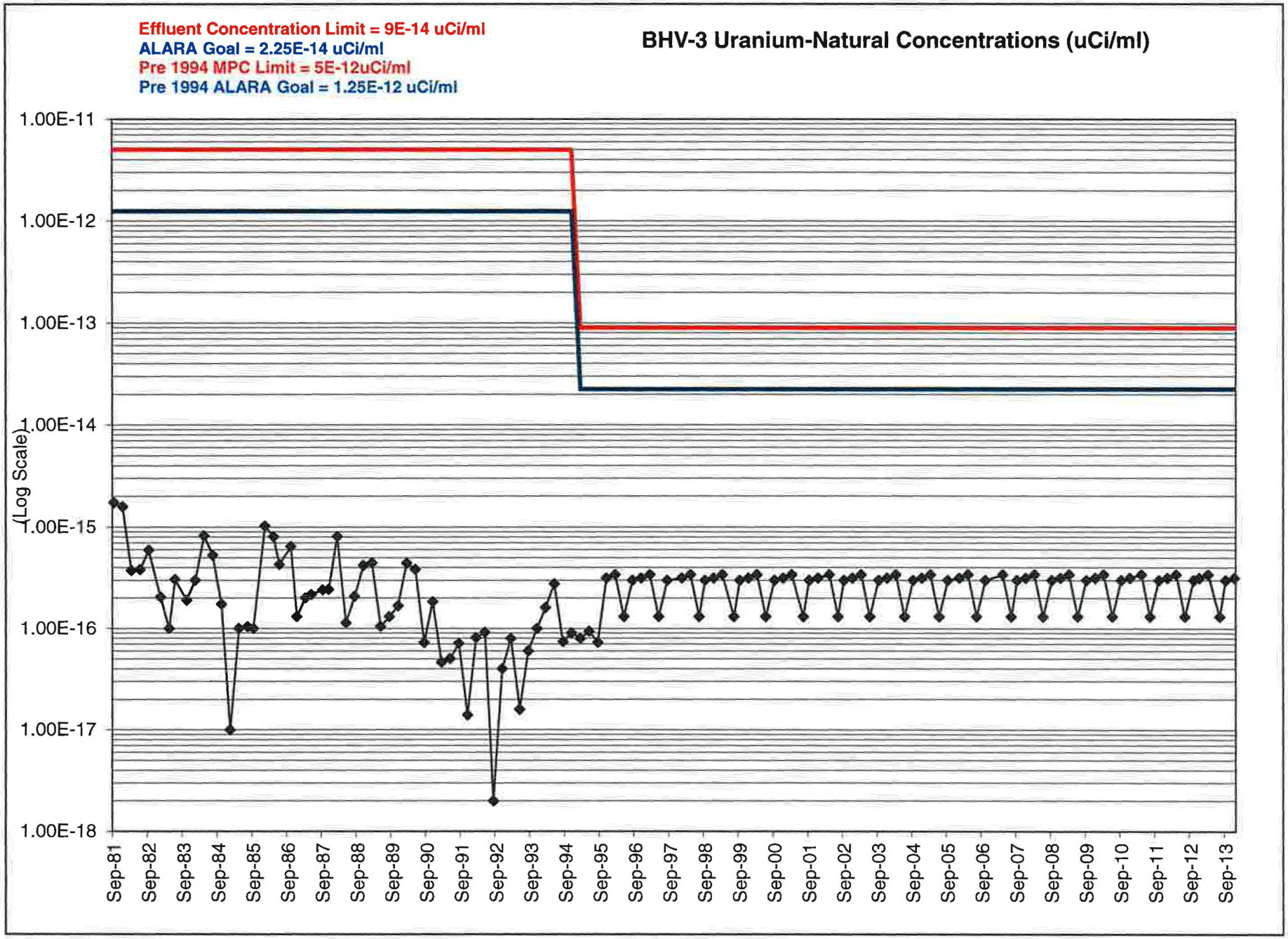
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


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-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-97
Sep-98
Sep-99
Sep-00
Sep-01
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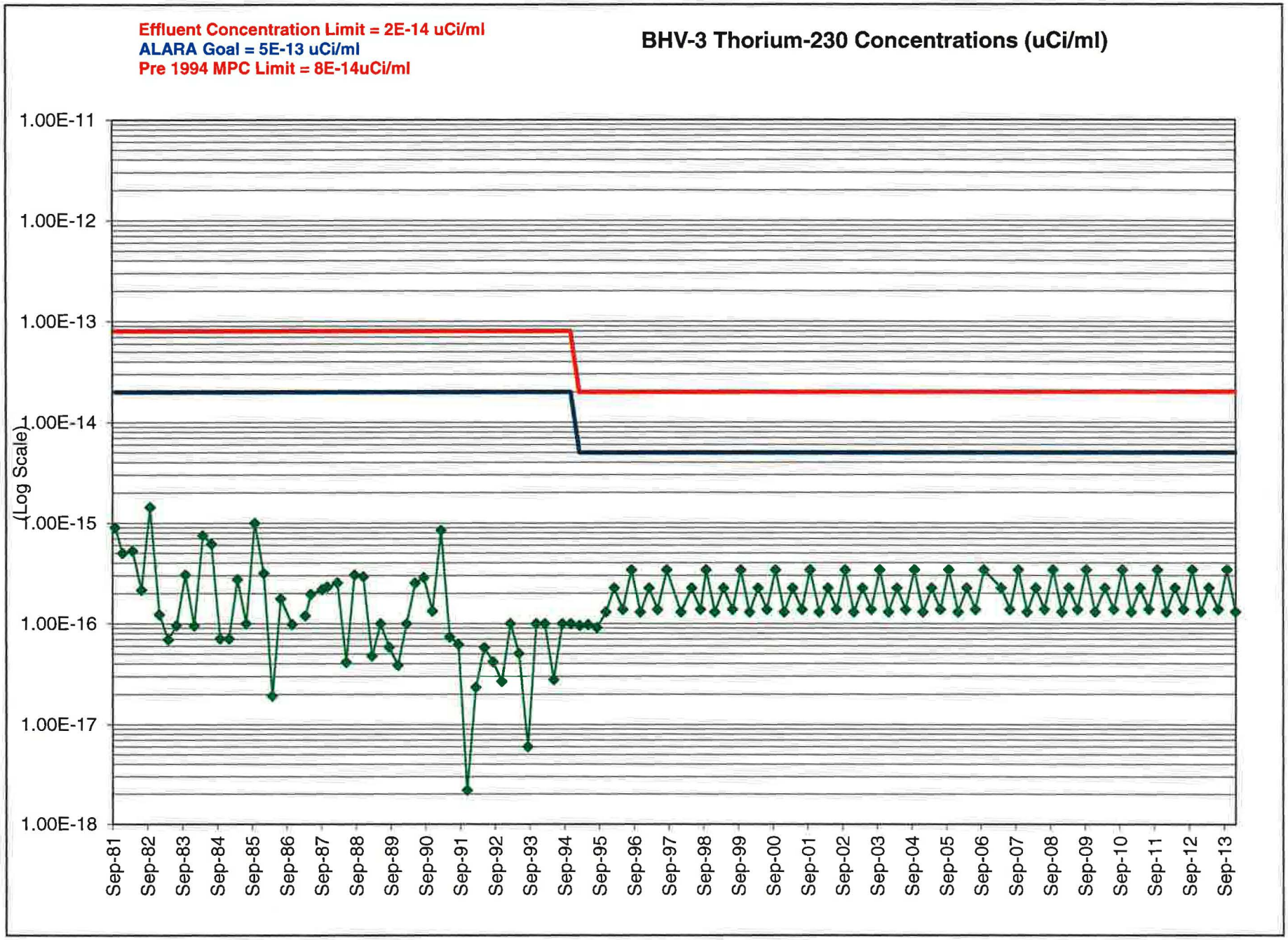
Sep-11
Sep-12
Sep-13


Effluent Concentration Limit = 2E-14 uCi/ml
ALARA Goal = 5E-13 uCi/ml
Pre 1994 MPC Limit = 8E-14uCi/ml
BHV-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-98
Sep-99
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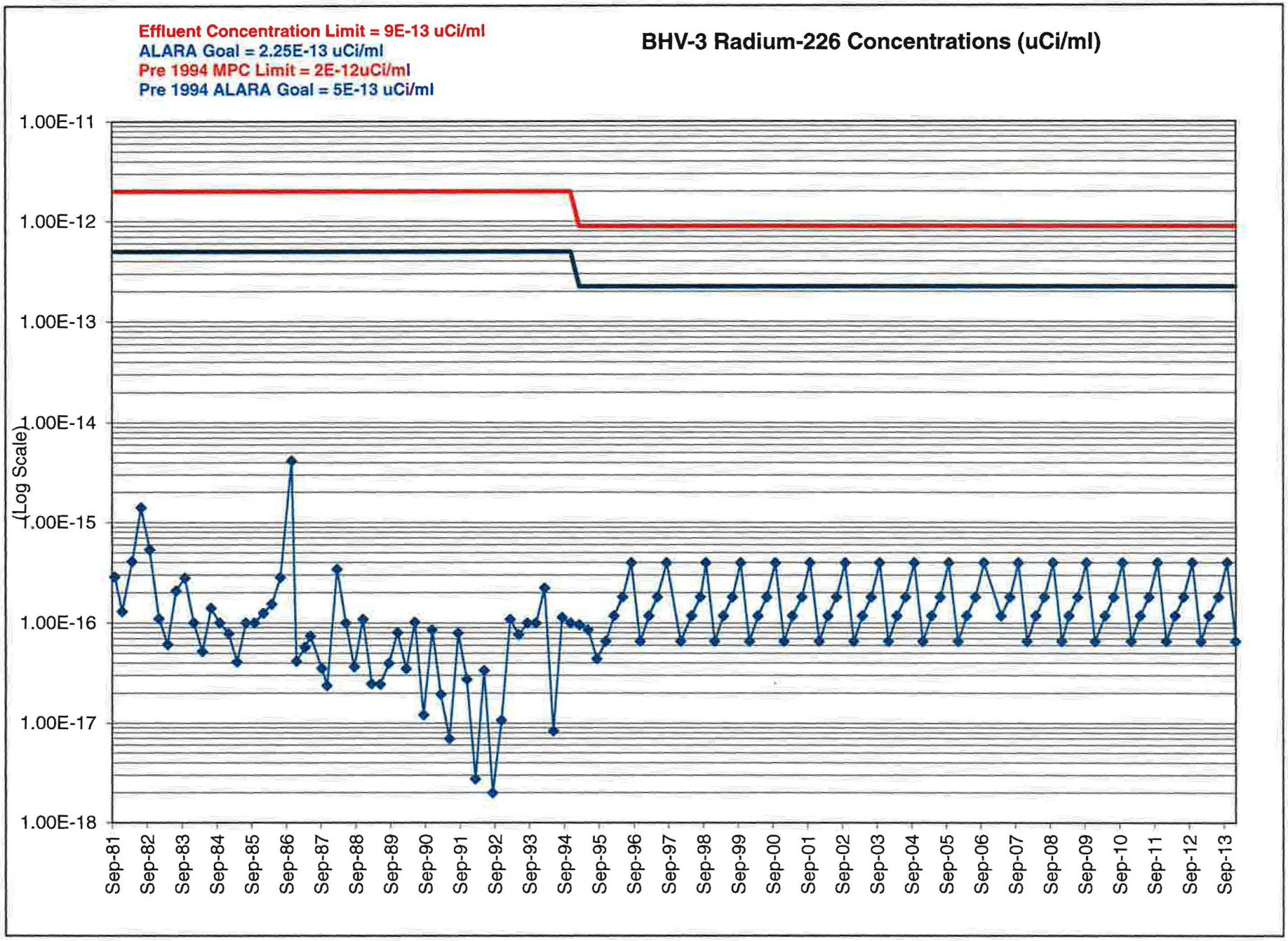
Sep-12
Sep-13


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-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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Sep-97
Sep-98
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Sep-00
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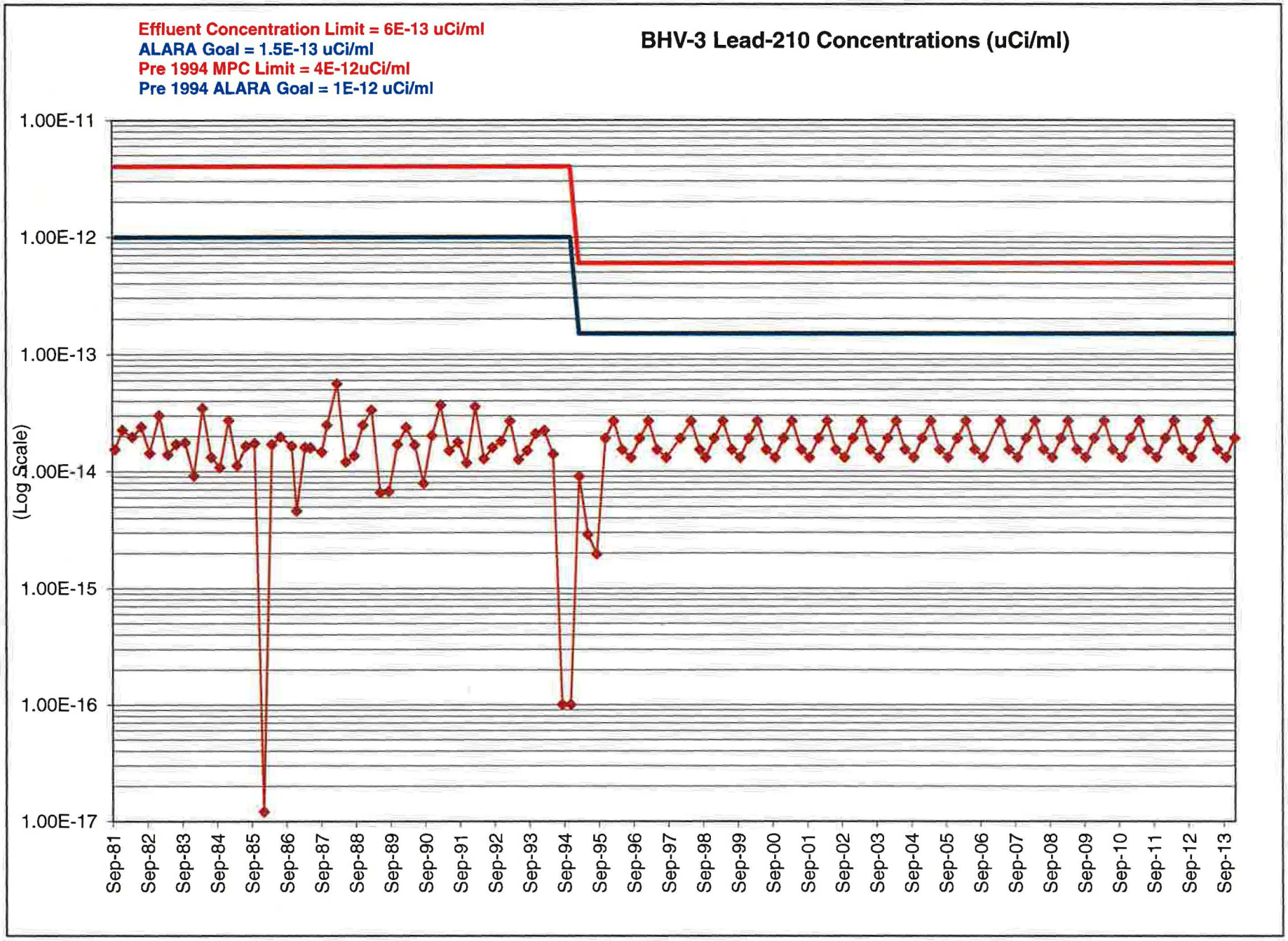
Sep-12
Sep-13


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-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
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
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Sep-97
Sep-98
Sep-99
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Sep-13

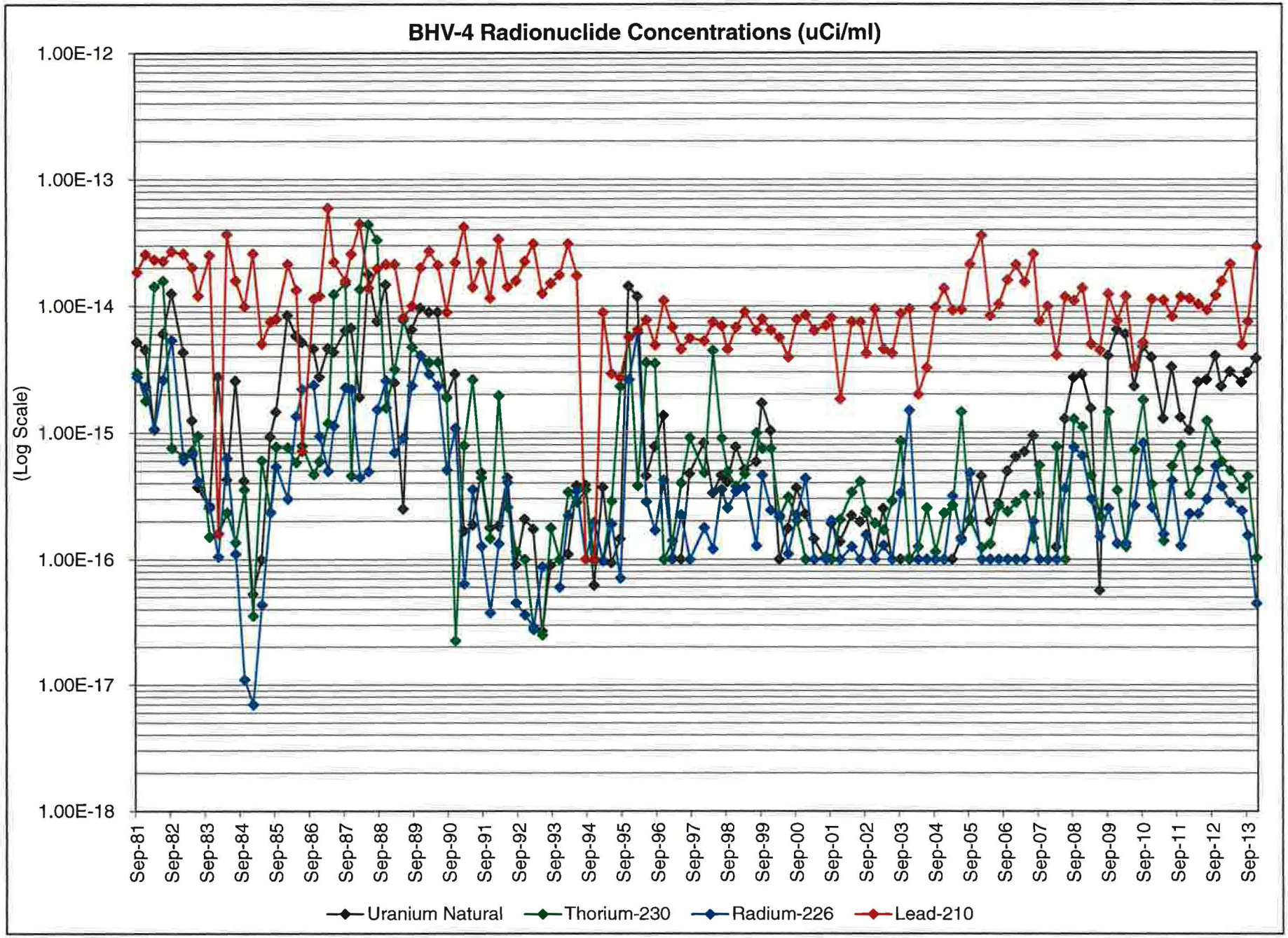
TAB 4

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


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
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Sep-03
Sep-04
Sep-05
Sep-06
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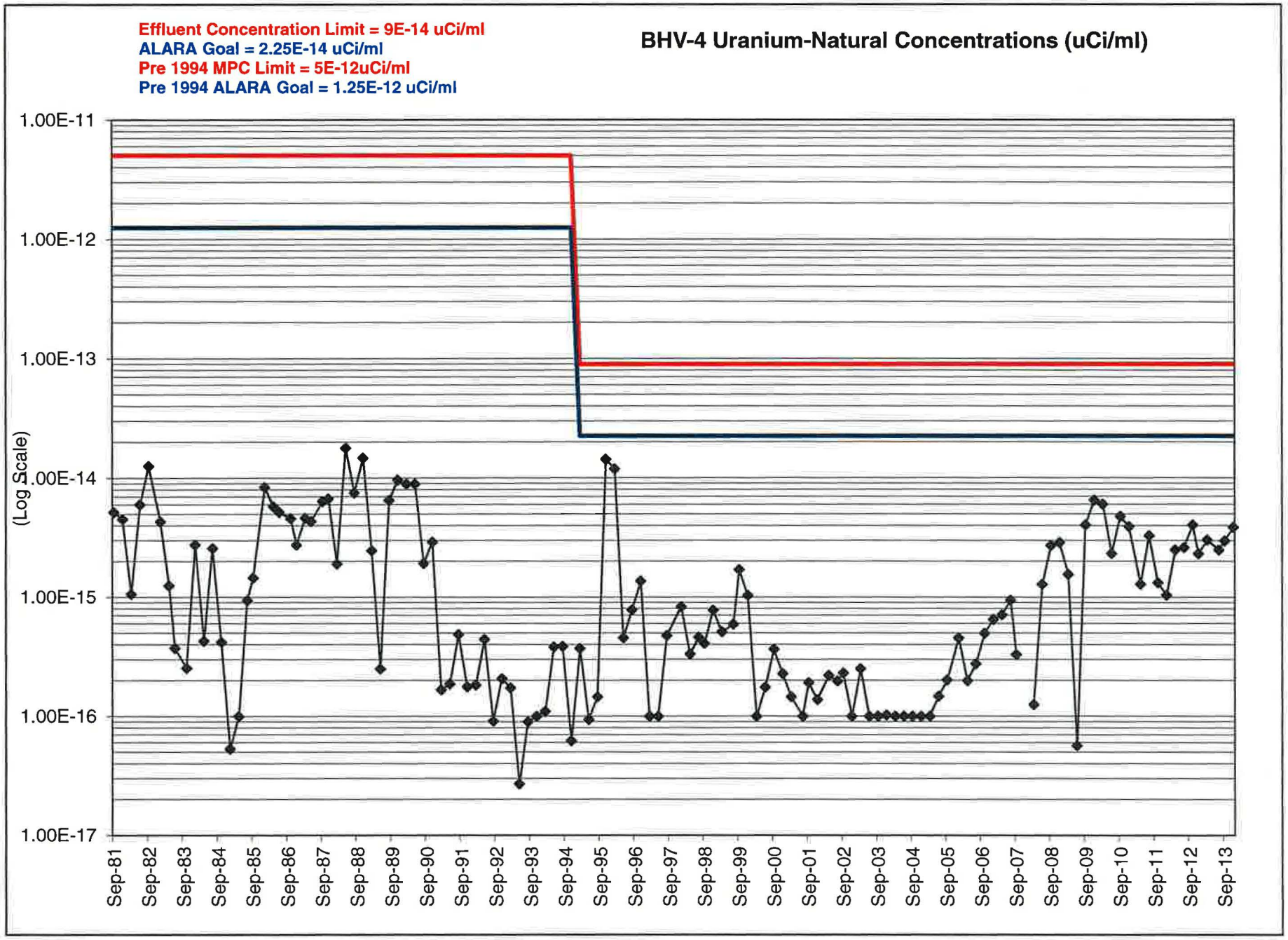
Sep-11
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


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
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Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
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Sep-95
Sep-96
Sep-97
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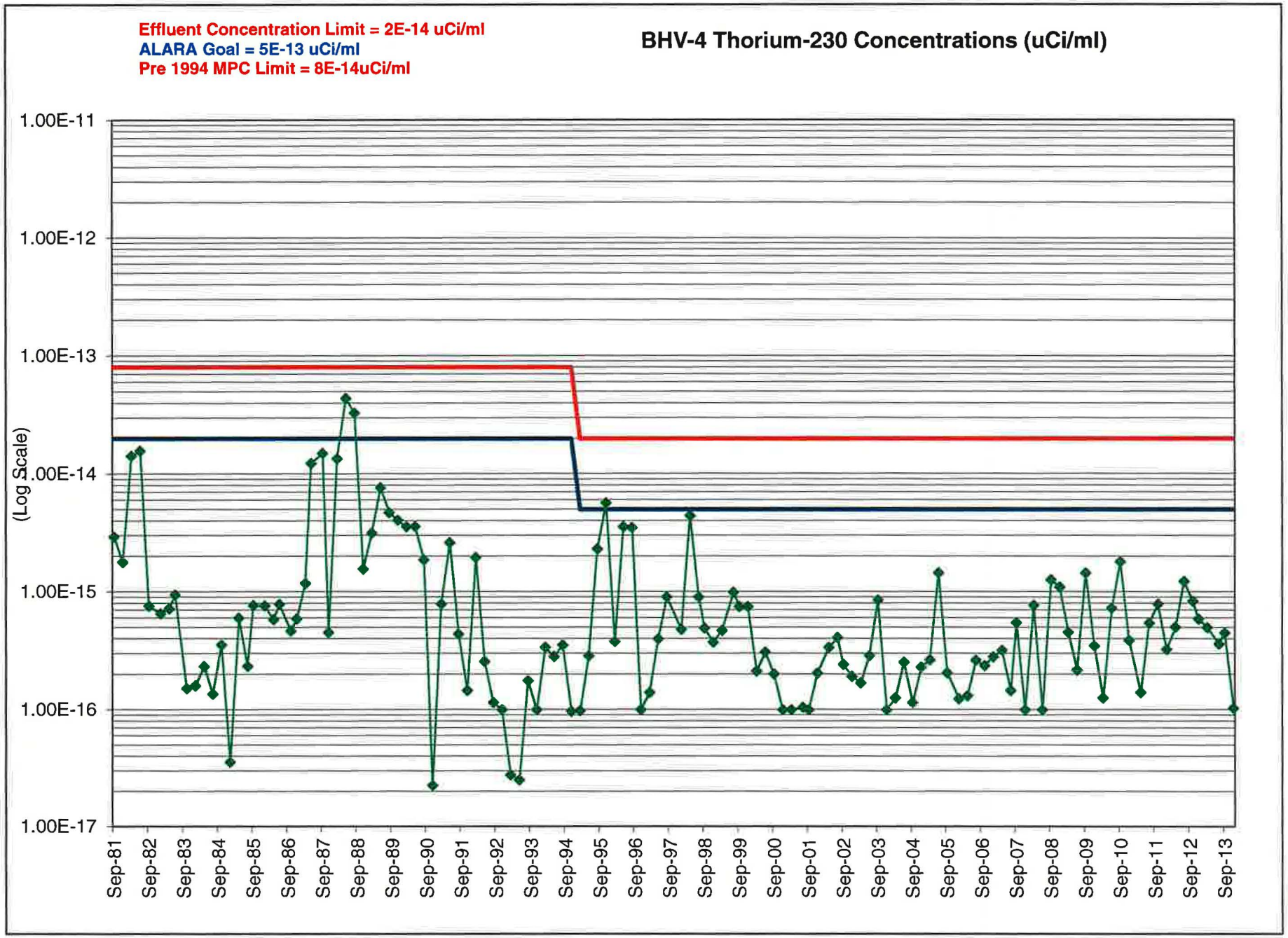
Sep-12
Sep-13


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-90
Sep-91
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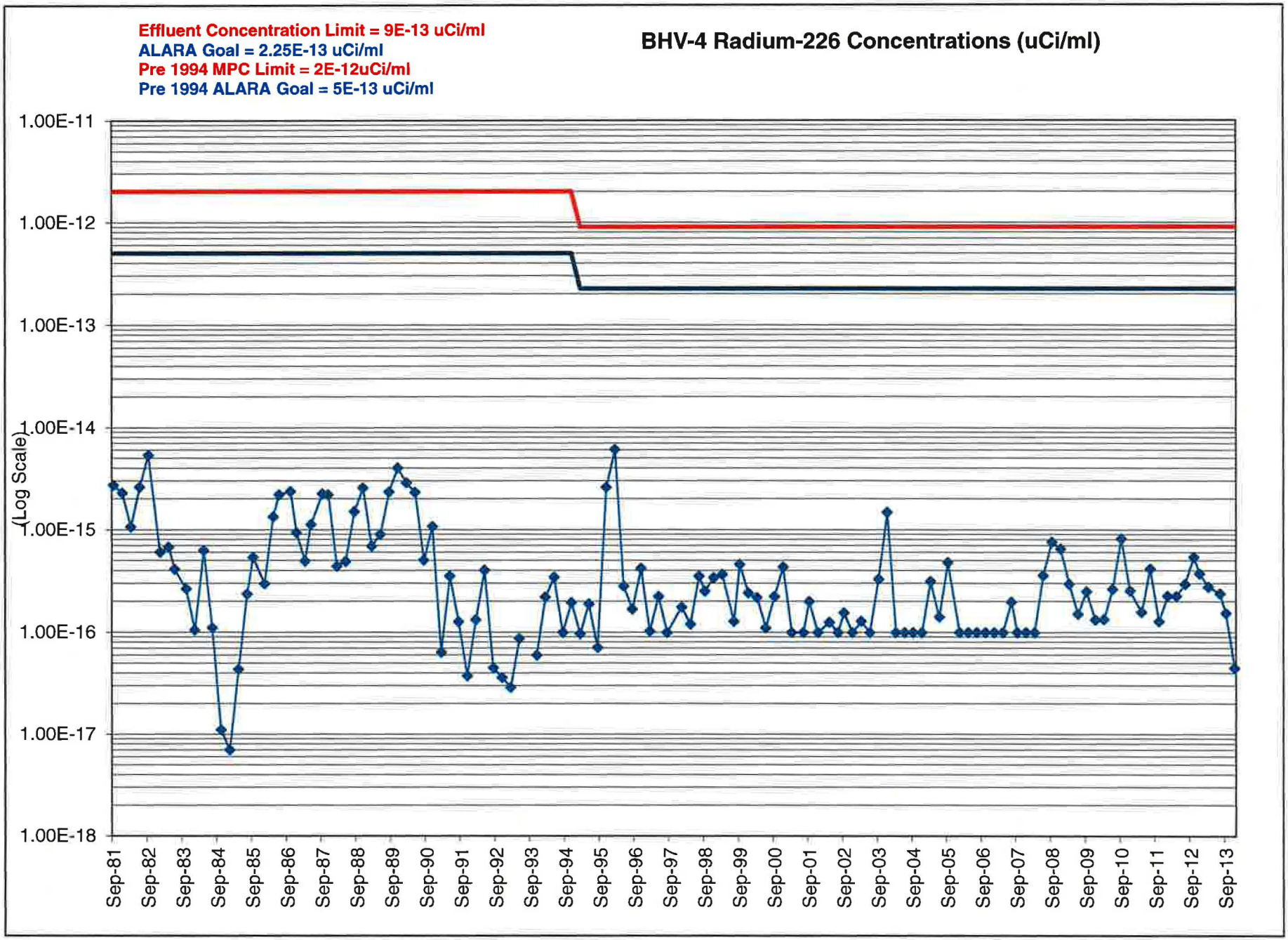
Sep-13


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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Sep-89
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Sep-96
Sep-97
Sep-98
Sep-99
Sep-00
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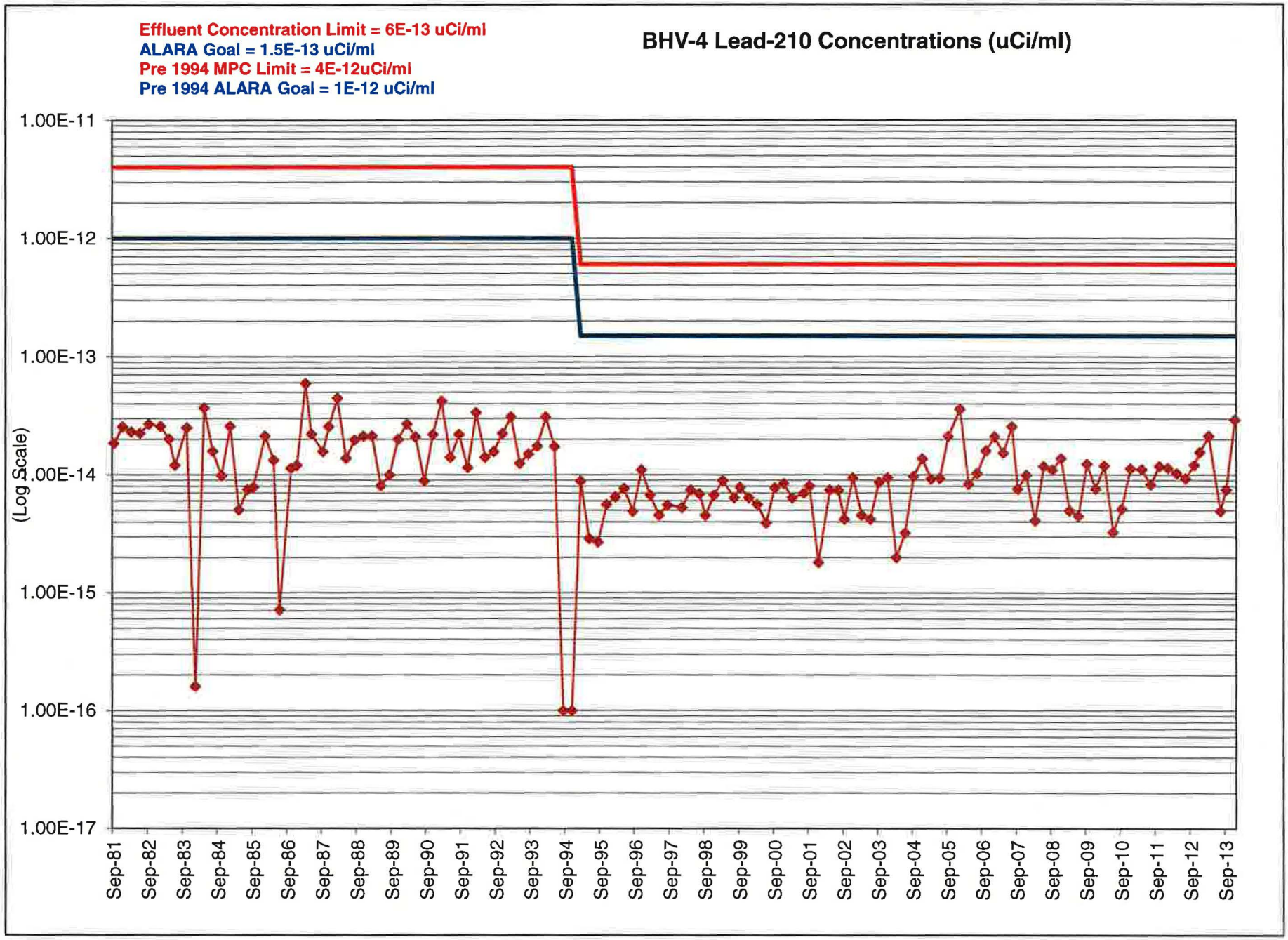
Effluent Concentration Limit = 6E-13 uCi/ml
ALARA Goal = 1.5E-13 uCi/ml
Pre 1994 MPC Limit = 4E-12uCi/ml
Pre 1994 ALARA Goal = 1E-12 uCi/ml
BHV-4 Lead-210 Concentrations (uCi/ml)
(Log Scale)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
Sep-81
Sep-82
Sep-83
Sep-84
Sep-85
Sep-86
Sep-87
Sep-88
Sep-89
Sep-90
Sep-91
Sep-92
Sep-93
Sep-94
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Sep-97
Sep-98
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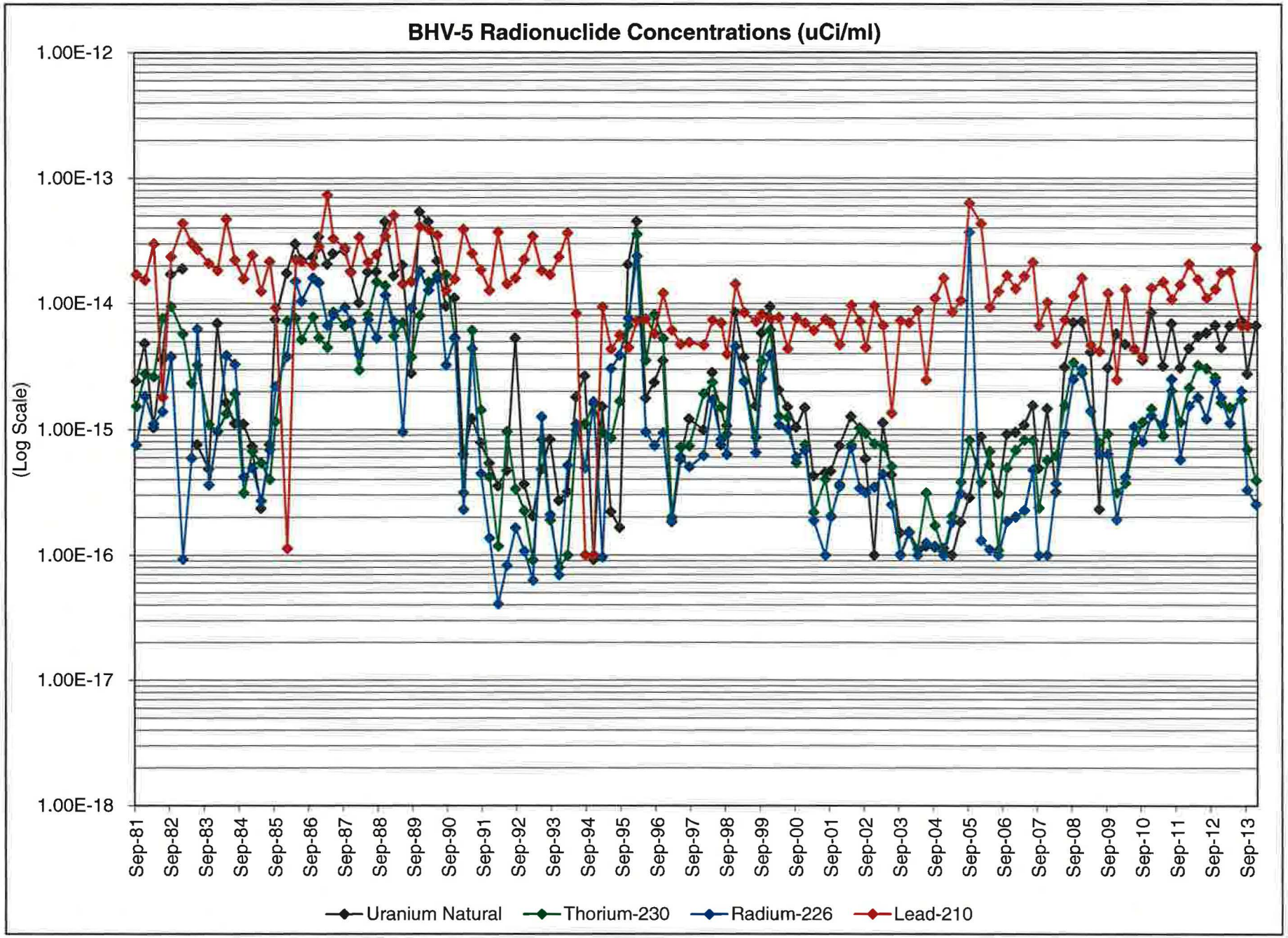
TAB 5

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


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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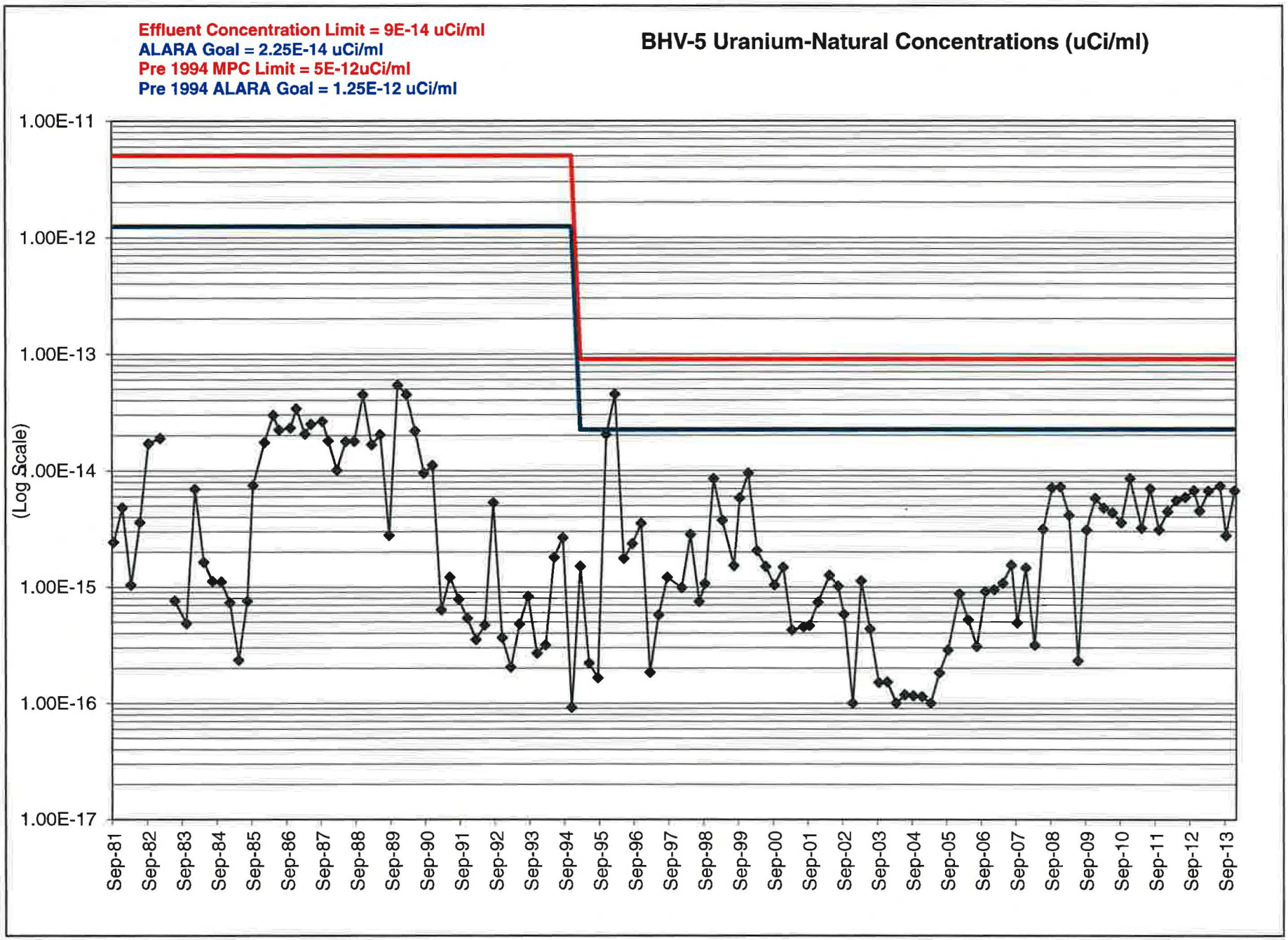
Sep-10
Sep-11
Sep-12
Sep-13
Uranium Natural
Thorium-230
Radium-226
Lead-210


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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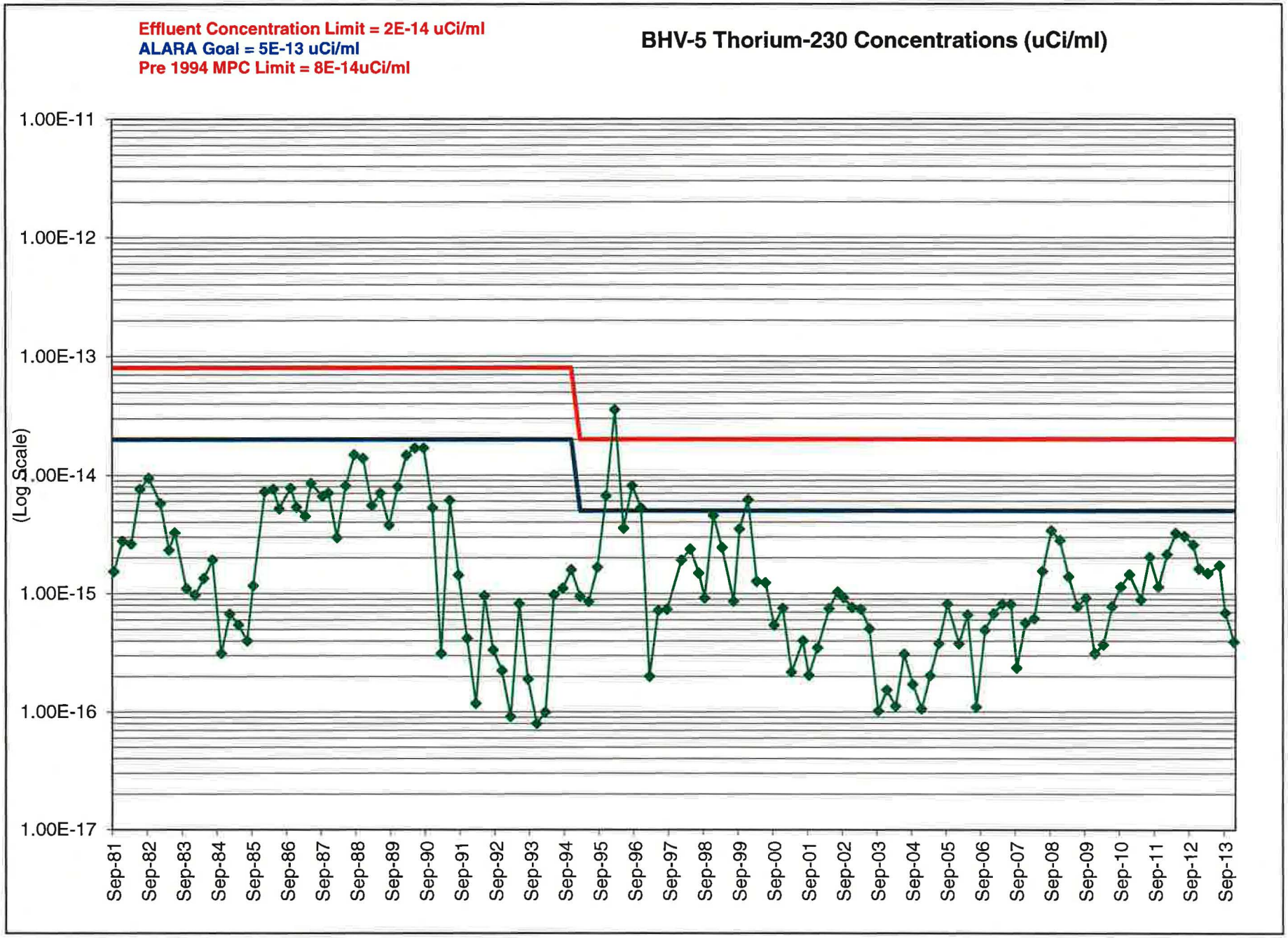
Sep-10
Sep-11
Sep-12
Sep-13


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
.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
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Sep-01
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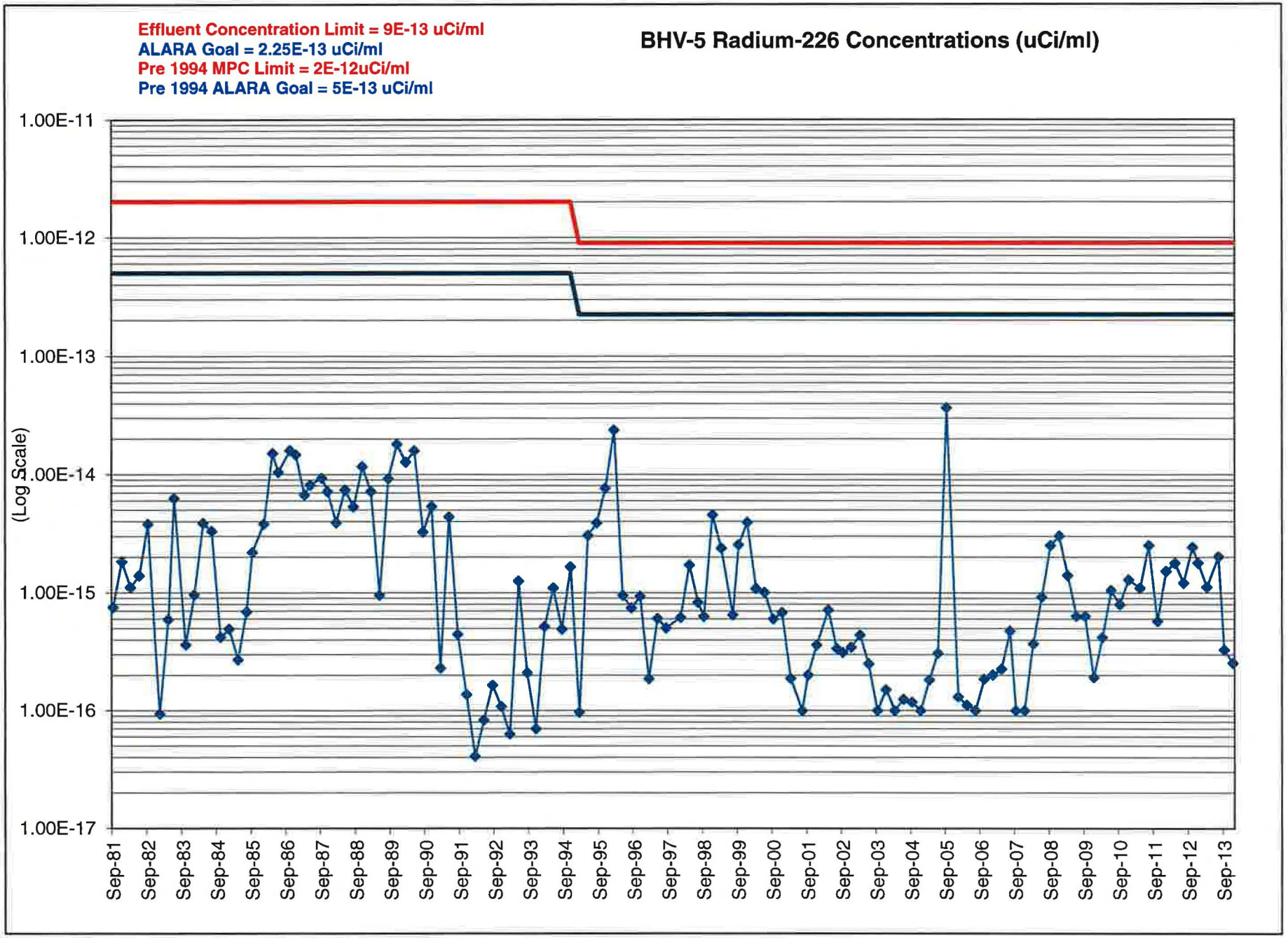
Sep-11
Sep-12
Sep-13


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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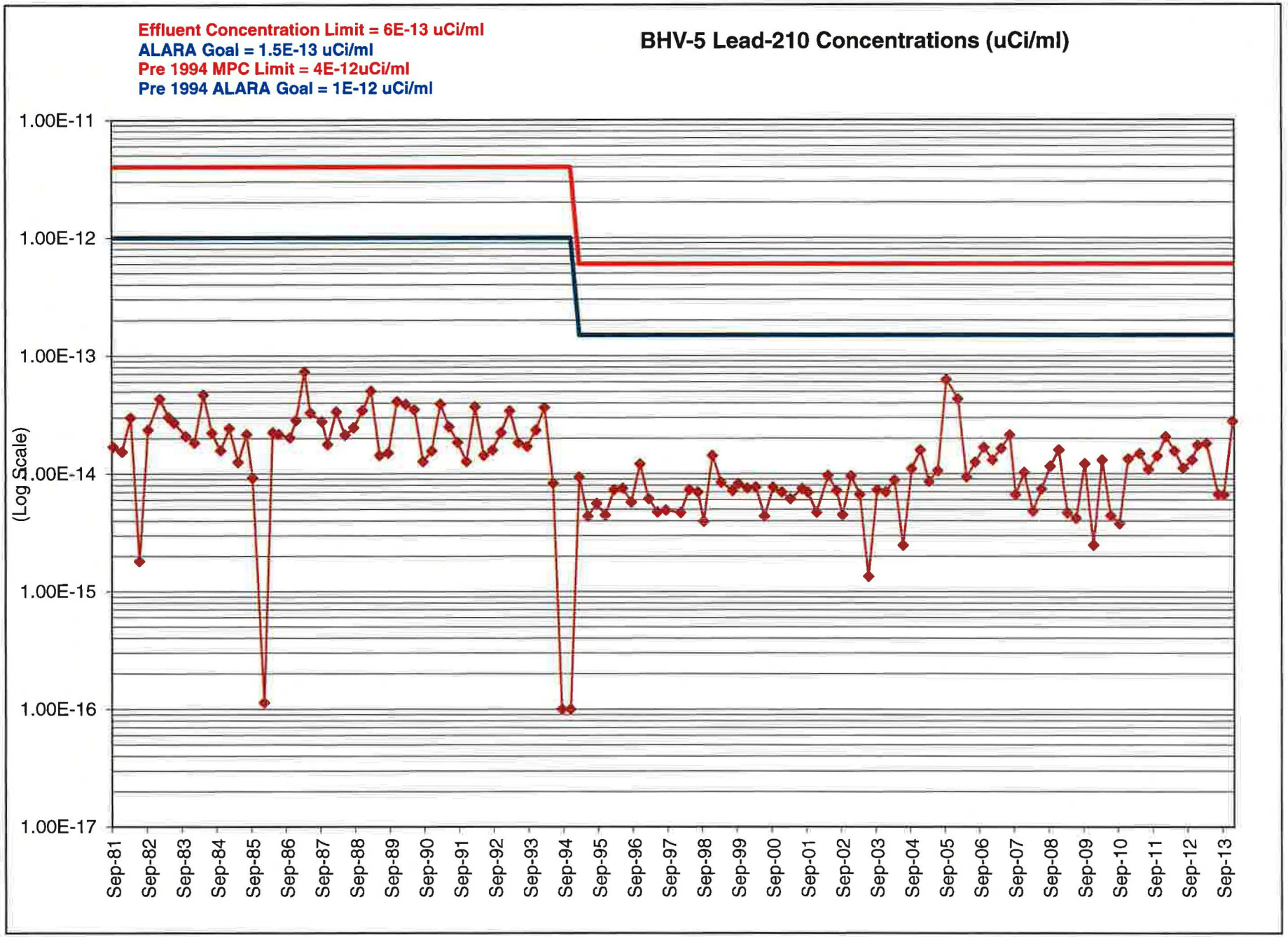
Sep-11
Sep-12
Sep-13


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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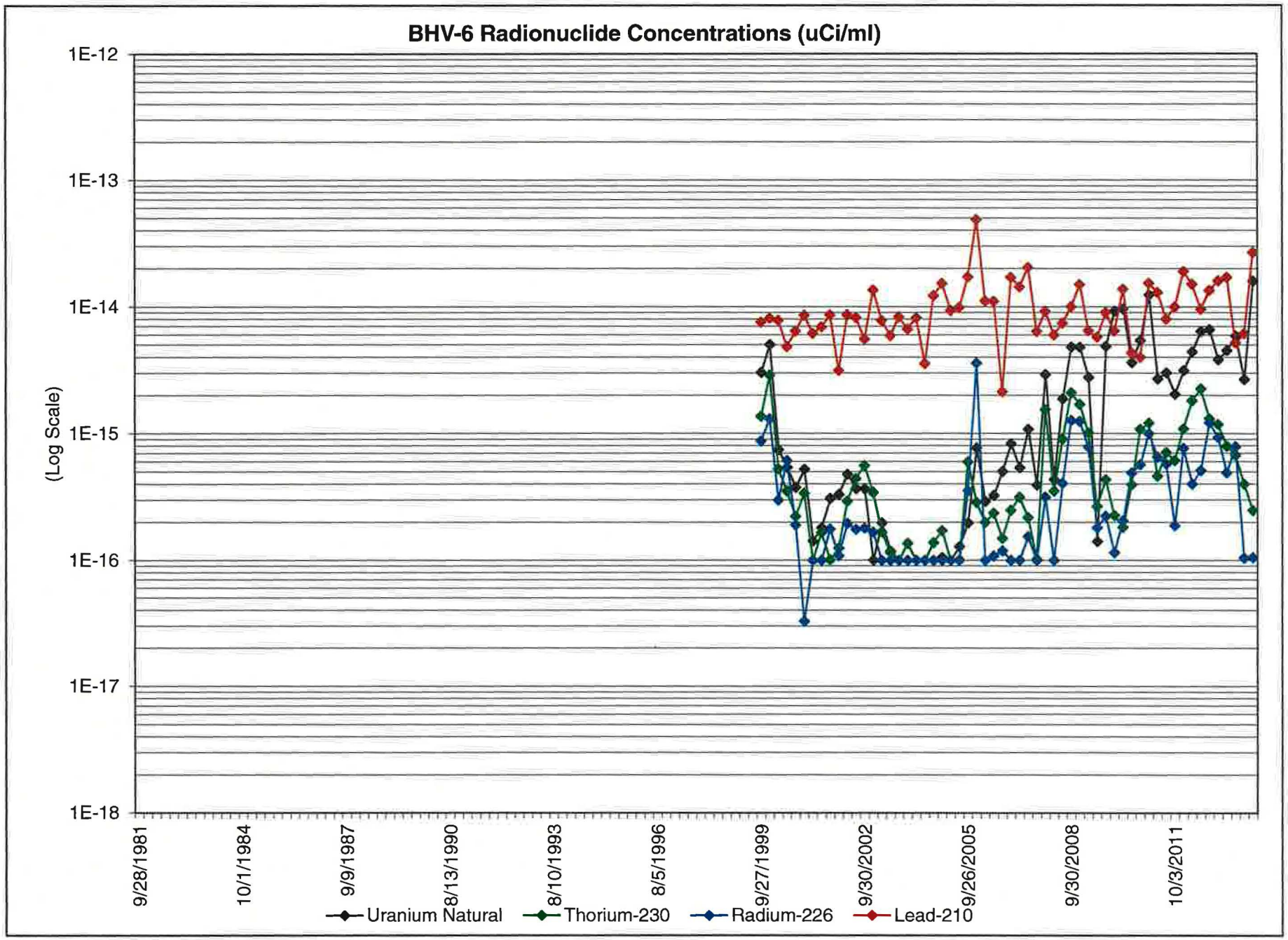
TAB 6

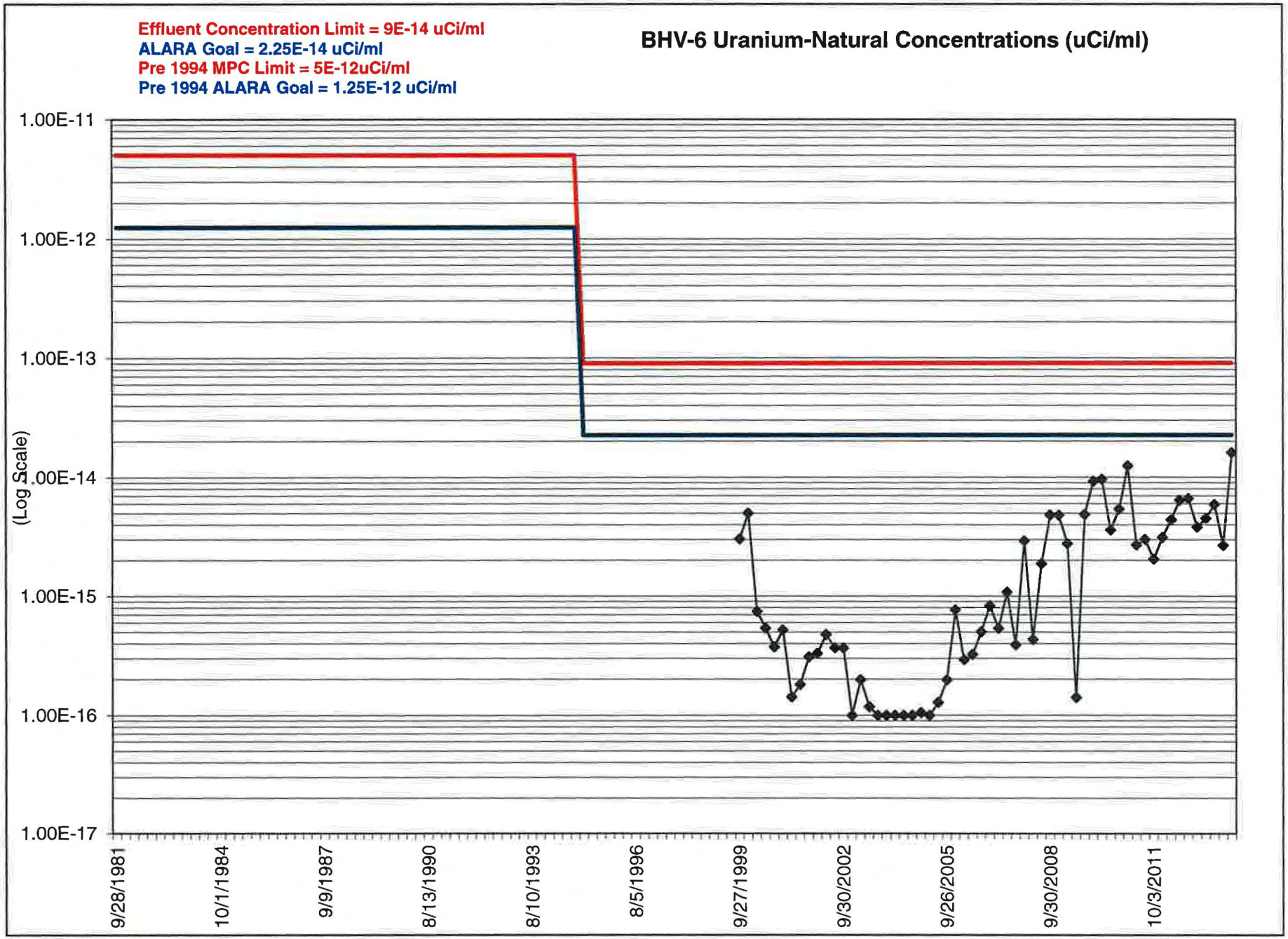
BHV-6 AIR SAMPLING GRAPHS AND DATA TABLE

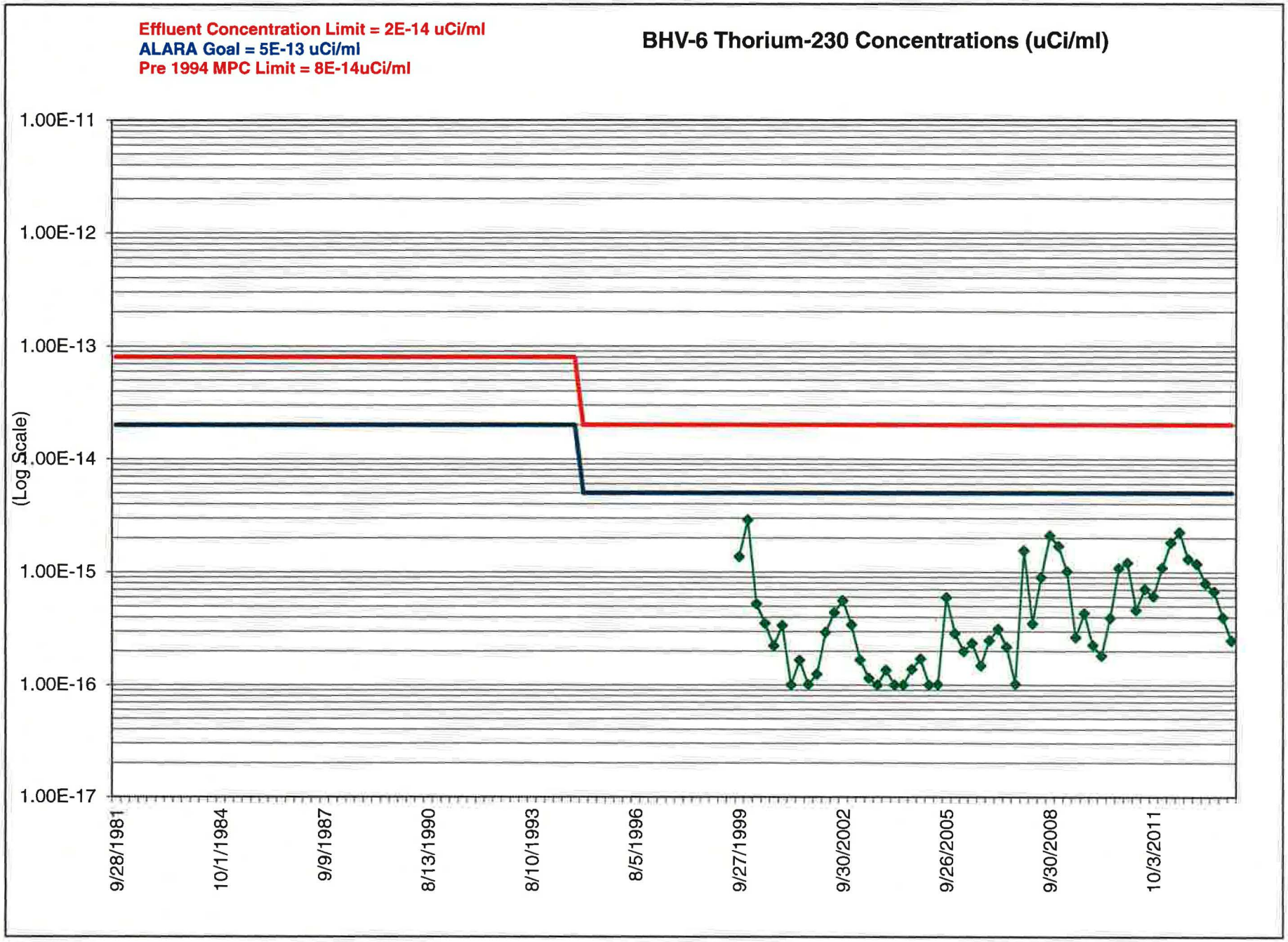
Date	Effluent Concentration Limit =	9E-14 uCi/ml	BHV-6U	Effluent Concentration Limit =	2E-14 uCi/ml	BHV-6T	Effluent Concentration Limit =	9E-13 uCi/ml	BHV-6R	Effluent Concentration Limit =	6E-13 uCi/ml	BHV-6PB
	ALARA Goal =	2.25E-14 uCi/ml		ALARA Goal =	5E-13 uCi/ml		ALARA Goal =	2.25E-13 uCi/ml		ALARA 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


BHV-6 Radionuclide Concentrations (uCi/ml)
1E-12
1E-13
1E-14
1E-15
1E-16
1E-17
1E-18
(Log Scale)
9/28/1981
10/1/1984
9/9/1987
8/13/1990
8/10/1993
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008
10/3/2011
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)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
(Log Scale)
9/28/1981
10/1/1984
9/9/1987
8/13/1990
8/10/1993
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008
10/3/2011


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
10/1/1984
9/9/1987
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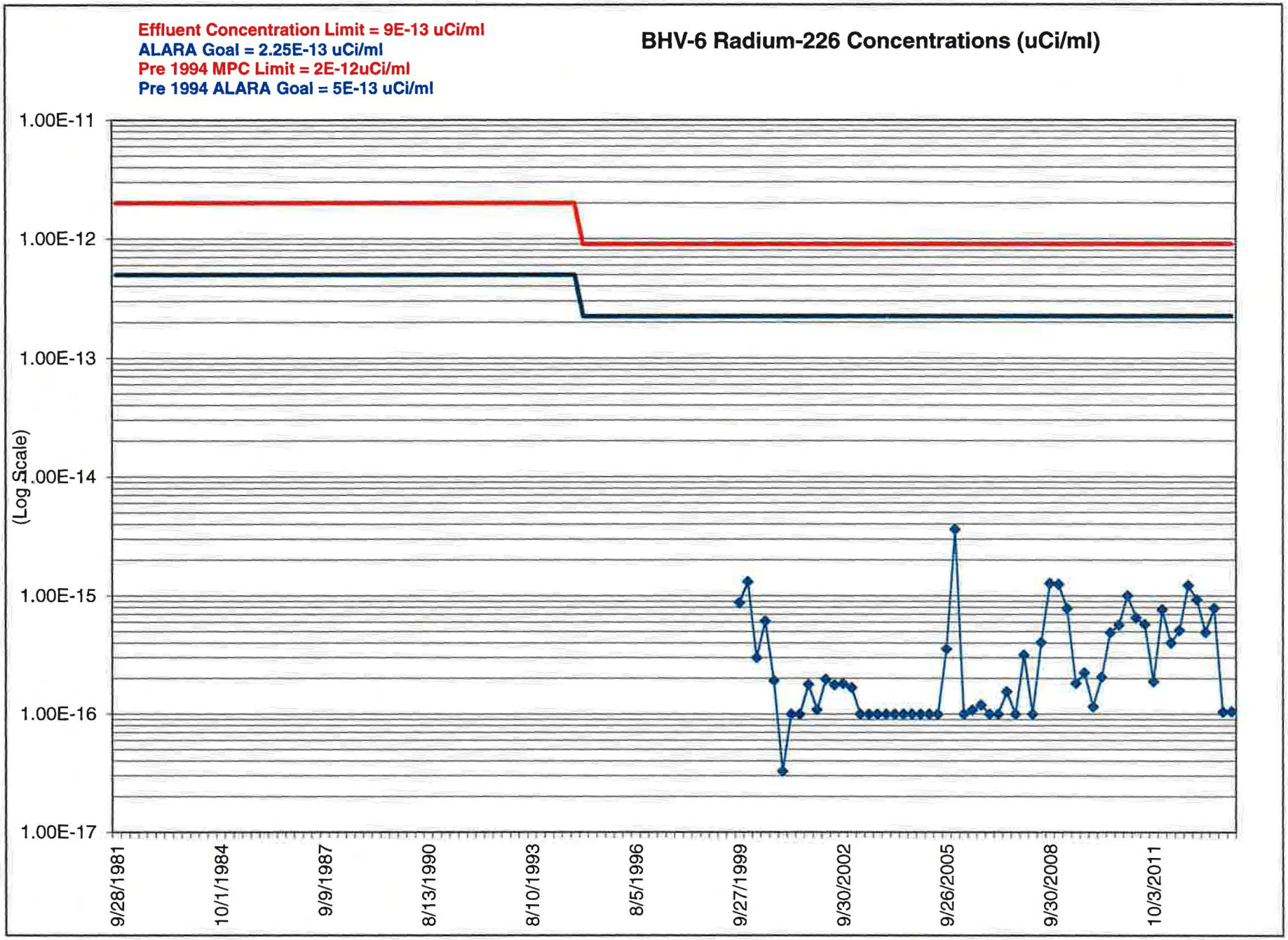
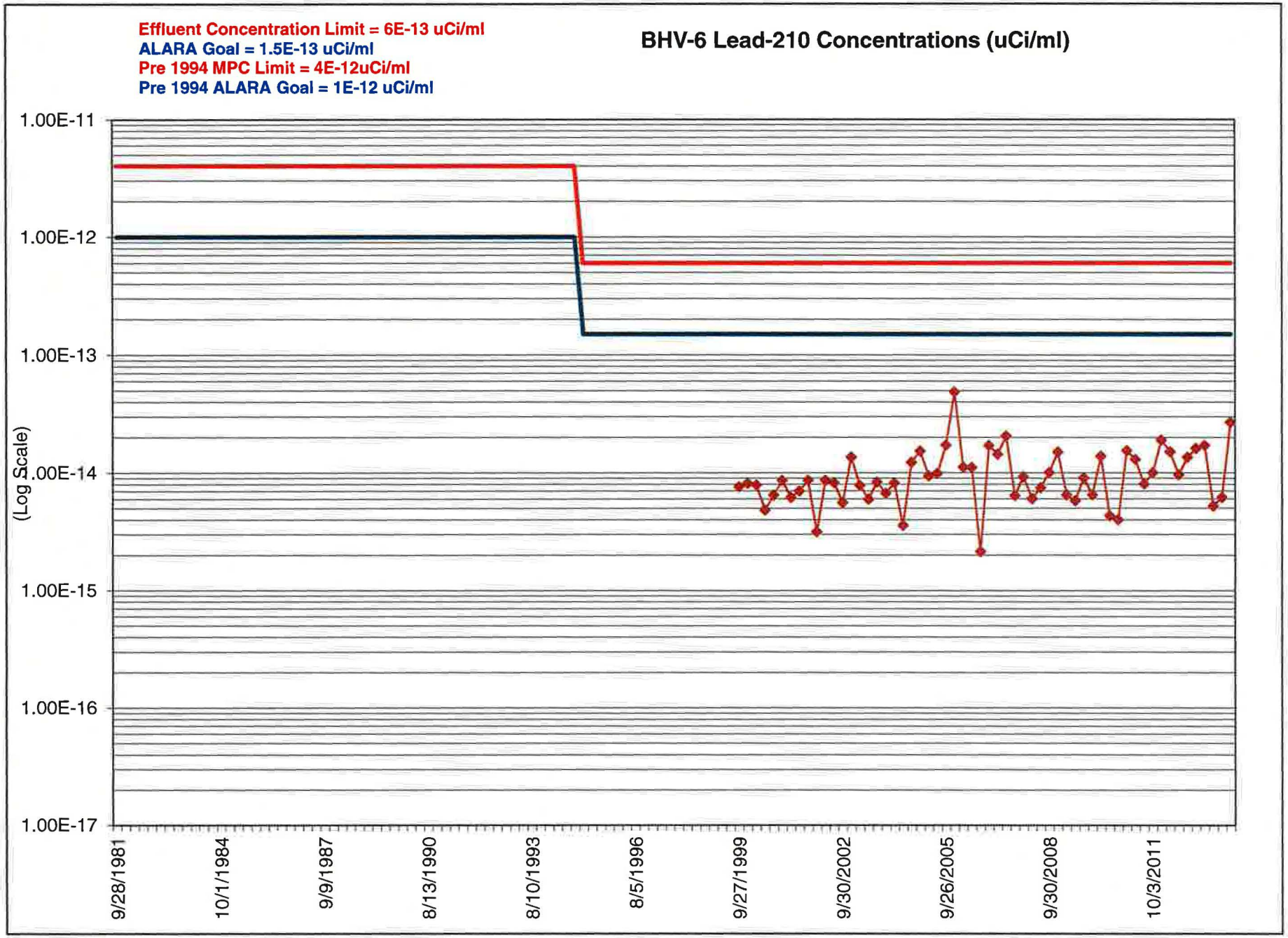
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008
10/3/2011


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)
1.00E-11
1.00E-12
1.00E-13
1.00E-14
1.00E-15
1.00E-16
1.00E-17
(Log Scale)
9/28/1981
10/1/1984
9/9/1987
8/13/1990
8/10/1993
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008
10/3/2011


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)
1.00E-11
1.00E-12
1.00E-13
.00E-14
1.00E-15
1.00E-16
1.00E-17
(Log Scale)
9/28/1981
10/1/1984
9/9/1987
8/13/1990
8/10/1993
8/5/1996
9/27/1999
9/30/2002
9/26/2005
9/30/2008
10/3/2011

ATTACHMENT C

BHV AIR SAMPLING LABORATORY RESULTS AND QA/QC

ANALYTICAL SUMMARY REPORT

November 11, 2013

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

Workorder No.: C13100250

Project Name: 3rd Quarter Air 2013

Energy Laboratories, Inc. Casper WY received the following 6 samples for Energy Fuels Resources (USA) Inc on 10/7/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C13100250-001	BHV-1	09/30/13 00:00	10/07/13	Filter	Composite of two or more samples Metals, Total Digestion, Total Metals Lead 210 Radium 226 Thorium, Isotopic
C13100250-002	BHV-2	09/30/13 00:00	10/07/13	Filter	Same As Above
C13100250-003	BHV-4	09/30/13 00:00	10/07/13	Filter	Same As Above
C13100250-004	BHV-5	09/30/13 00:00	10/07/13	Filter	Same As Above
C13100250-005	BHV-6	09/30/13 00:00	10/07/13	Filter	Same As Above
C13100250-006	Blank	09/30/13 00:00	10/07/13	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:

Interim Branch Manager

Digitally signed by
Steve Carlston
Date: 2013.11.11 18:04:08 -07:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Air 2013
Sample Delivery Group: C13100250

Report Date: 11/11/13

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

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

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: November 11, 2013
PROJECT: 3rd Quarter Air 2013

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
C13040210-001	^{nat}U	9.91E-16	N/A	N/A	1E-16	9E-14	1.10E+00
First Quarter 2013	^{230}Th	1.86E-16	5E-17	2E-17	1E-16	3E-14	6.21E-01
Air Volume in mLs	^{226}Ra	2.04E-16	1E-17	4E-18	1E-16	9E-13	2.27E-02
1.36E+11	^{210}Pb	1.82E-14	2E-16	5E-17	2E-15	6E-13	3.03E+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
C13070231-001	^{nat}U	1.46E-15	N/A	N/A	1E-16	9E-14	1.62E+00
Second Quarter 2013	^{230}Th	3.34E-16	5E-17	2E-17	1E-16	3E-14	1.11E+00
Air Volume in mLs	^{226}Ra	3.91E-16	2E-17	3E-18	1E-16	9E-13	4.35E-02
1.34E+11	^{210}Pb	5.78E-15	1E-16	6E-17	2E-15	6E-13	9.64E-01

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
C13100250-001	^{nat}U	8.89E-16	N/A	N/A	1E-16	9E-14	9.88E-01
Third Quarter 2013	^{230}Th	9.13E-17	3E-17	2E-17	1E-16	3E-14	3.04E-01
Air Volume in mLs	^{226}Ra	1.05E-16	1E-17	2E-18	1E-16	9E-13	1.17E-02
1.37E+11	^{210}Pb	8.00E-15	1E-16	4E-17	2E-15	6E-13	1.33E+00

+LLD's are from 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: 3rd Quarter Air 2013
Lab ID: C13100250-001
Client Sample ID: BHV-1

Report Date: 11/11/13
Collection Date: 09/30/13
DateReceived: 10/07/13
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.179	mg/filter		0.0003		SW6020	10/30/13 04:17 / cp
Uranium, Activity	121	pCi/Filter		0.2		SW6020	10/30/13 04:17 / cp
RADIONUCLIDES							
Lead 210	1090	pCi/Filter				E909.0	11/06/13 12:38 / eli-cs
Lead 210 precision (±)	18	pCi/Filter				E909.0	11/06/13 12:38 / eli-cs
Lead 210 MDC	5.9	pCi/Filter				E909.0	11/06/13 12:38 / eli-cs
Radium 226	14.4	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 precision (±)	1.3	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 MDC	0.2	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Thorium 230	12	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 precision (±)	3.9	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 MDC	2.4	pCi/Filter				E908.0	10/29/13 09:04 / dmf

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: November 11, 2013
PROJECT: 3rd Quarter Air 2013

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
C13040210-002	^{nat}U	3.38E-16	N/A	N/A	1E-16	9E-14	3.75E-01
First Quarter 2013	^{230}Th	3.94E-17	1E-17	9E-18	1E-16	3E-14	1.31E-01
Air Volume in mLs	^{226}Ra	8.32E-17	9E-18	4E-18	1E-16	9E-13	9.25E-03
1.36E+11	^{210}Pb	1.42E-14	2E-16	5E-17	2E-15	6E-13	2.37E+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
C13070231-002	^{nat}U	4.06E-16	N/A	N/A	1E-16	9E-14	4.51E-01
Second Quarter 2013	^{230}Th	4.89E-17	1E-17	6E-18	1E-16	3E-14	1.63E-01
Air Volume in mLs	^{226}Ra	8.06E-17	7E-18	3E-18	1E-16	9E-13	8.95E-03
1.38E+11	^{210}Pb	4.93E-15	1E-16	6E-17	2E-15	6E-13	8.21E-01

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
C13100250-002	^{nat}U	1.76E-16	N/A	N/A	1E-16	9E-14	1.96E-01
Third Quarter 2013	^{230}Th	2.52E-17	1E-17	9E-18	1E-16	3E-14	8.40E-02
Air Volume in mLs	^{226}Ra	6.13E-17	8E-18	2E-18	1E-16	9E-13	6.81E-03
1.37E+11	^{210}Pb	4.90E-15	1E-16	4E-17	2E-15	6E-13	8.17E-01

+LLD's are from 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: 3rd Quarter Air 2013
Lab ID: C13100250-002
Client Sample ID: BHV-2

Report Date: 11/11/13
Collection Date: 09/30/13
DateReceived: 10/07/13
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.0355	mg/filter		0.0003		SW6020	10/30/13 04:29 / cp
Uranium, Activity	24.0	pCi/Filter		0.2		SW6020	10/30/13 04:29 / cp
RADIONUCLIDES							
Lead 210	670	pCi/Filter				E909.0	11/06/13 13:48 / eli-cs
Lead 210 precision (±)	14	pCi/Filter				E909.0	11/06/13 13:48 / eli-cs
Lead 210 MDC	5.9	pCi/Filter				E909.0	11/06/13 13:48 / eli-cs
Radium 226	8.4	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 precision (±)	1.1	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 MDC	0.2	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Thorium 230	3.4	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 precision (±)	1.5	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 MDC	1.2	pCi/Filter				E908.0	10/29/13 09:04 / dmf

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: November 11, 2013
PROJECT: 3rd Quarter Air 2013

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
C13040210-003	^{nat}U	3.04E-15	N/A	N/A	1E-16	9E-14	3.38E+00
First Quarter 2013	^{230}Th	4.99E-16	9E-17	2E-17	1E-16	3E-14	1.66E+00
Air Volume in mLs	^{226}Ra	2.79E-16	2E-17	4E-18	1E-16	9E-13	3.10E-02
1.35E+11	^{210}Pb	2.13E-14	2E-16	5E-17	2E-15	6E-13	3.54E+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
C13070231-003	^{nat}U	2.50E-15	N/A	N/A	1E-16	9E-14	2.78E+00
Second Quarter 2013	^{230}Th	3.62E-16	5E-17	1E-17	1E-16	3E-14	1.21E+00
Air Volume in mLs	^{226}Ra	2.40E-16	1E-17	3E-18	1E-16	9E-13	2.67E-02
1.37E+11	^{210}Pb	4.93E-15	1E-16	6E-17	2E-15	6E-13	8.22E-01

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
C13100250-003	^{nat}U	2.98E-15	N/A	N/A	1E-16	9E-14	3.31E+00
Third Quarter 2013	^{230}Th	4.49E-16	8E-17	2E-17	1E-16	3E-14	1.50E+00
Air Volume in mLs	^{226}Ra	1.54E-16	1E-17	2E-18	1E-16	9E-13	1.71E-02
1.35E+11	^{210}Pb	7.49E-15	1E-16	4E-17	2E-15	6E-13	1.25E+00

+LLD's are from 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: 3rd Quarter Air 2013
Lab ID: C13100250-003
Client Sample ID: BHV-4

Report Date: 11/11/13
Collection Date: 09/30/13
DateReceived: 10/07/13
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.593	mg/filter		0.0003		SW6020	10/30/13 04:33 / cp
Uranium, Activity	401	pCi/Filter		0.2		SW6020	10/30/13 04:33 / cp
RADIONUCLIDES							
Lead 210	1010	pCi/Filter				E909.0	11/06/13 14:57 / eli-cs
Lead 210 precision (±)	17	pCi/Filter				E909.0	11/06/13 14:57 / eli-cs
Lead 210 MDC	5.8	pCi/Filter				E909.0	11/06/13 14:57 / eli-cs
Radium 226	20.8	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 precision (±)	1.6	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 MDC	0.2	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Thorium 230	61	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 precision (±)	11	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 MDC	2.5	pCi/Filter				E908.0	10/29/13 09:04 / dmf

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: November 11, 2013
PROJECT: 3rd Quarter Air 2013

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
C13040210-004	^{nat}U	6.66E-15	N/A	N/A	1E-16	9E-14	7.40E+00
First Quarter 2013	^{230}Th	1.48E-15	3E-16	4E-17	1E-16	3E-14	4.95E+00
Air Volume in mLs	^{226}Ra	1.12E-15	3E-17	4E-18	1E-16	9E-13	1.24E-01
1.35E+11	^{210}Pb	1.80E-14	2E-16	5E-17	2E-15	6E-13	3.00E+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
C13070231-004	^{nat}U	7.35E-15	N/A	N/A	1E-16	9E-14	8.16E+00
Second Quarter 2013	^{230}Th	1.72E-15	2E-16	2E-17	1E-16	3E-14	5.74E+00
Air Volume in mLs	^{226}Ra	2.02E-15	4E-17	3E-18	1E-16	9E-13	2.25E-01
1.37E+11	^{210}Pb	6.67E-15	1E-16	6E-17	2E-15	6E-13	1.11E+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
C13100250-004	^{nat}U	2.78E-15	N/A	N/A	1E-16	9E-14	3.09E+00
Third Quarter 2013	^{230}Th	6.92E-16	5E-17	3E-18	1E-16	3E-14	2.31E+00
Air Volume in mLs	^{226}Ra	3.29E-16	2E-17	2E-18	1E-16	9E-13	3.65E-02
1.35E+11	^{210}Pb	6.62E-15	1E-16	4E-17	2E-15	6E-13	1.10E+00

+LLD's are from 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: 3rd Quarter Air 2013
Lab ID: C13100250-004
Client Sample ID: BHV-5

Report Date: 11/11/13
Collection Date: 09/30/13
DateReceived: 10/07/13
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.554	mg/filter		0.0003		SW6020	10/30/13 04:54 / cp
Uranium, Activity	375	pCi/Filter		0.2		SW6020	10/30/13 04:54 / cp
RADIONUCLIDES							
Lead 210	893	pCi/Filter				E909.0	11/06/13 16:06 / eli-cs
Lead 210 precision (±)	16	pCi/Filter				E909.0	11/06/13 16:06 / eli-cs
Lead 210 MDC	5.8	pCi/Filter				E909.0	11/06/13 16:06 / eli-cs
Radium 226	44.3	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 precision (±)	2.4	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 MDC	0.2	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Thorium 230	93	pCi/Filter				E908.0	10/29/13 16:43 / dmf
Thorium 230 precision (±)	7.2	pCi/Filter				E908.0	10/29/13 16:43 / dmf
Thorium 230 MDC	0.43	pCi/Filter				E908.0	10/29/13 16:43 / dmf

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: November 11, 2013
PROJECT: 3rd Quarter Air 2013

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
C13040210-005	^{nat}U	4.52E-15	N/A	N/A	1E-16	9E-14	5.02E+00
First Quarter 2013	^{230}Th	7.93E-16	2E-16	4E-17	1E-16	3E-14	2.64E+00
Air Volume in mLs	^{226}Ra	4.91E-16	2E-17	4E-18	1E-16	9E-13	5.46E-02
1.35E+11	^{210}Pb	1.70E-14	2E-16	6E-17	2E-15	6E-13	2.83E+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
C13070231-005	^{nat}U	5.91E-15	N/A	N/A	1E-16	9E-14	6.57E+00
Second Quarter 2013	^{230}Th	6.74E-16	9E-17	2E-17	1E-16	3E-14	2.25E+00
Air Volume in mLs	^{226}Ra	7.85E-16	2E-17	3E-18	1E-16	9E-13	8.73E-02
1.37E+11	^{210}Pb	5.18E-15	1E-16	6E-17	2E-15	6E-13	8.64E-01

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
C13100250-005	^{nat}U	2.68E-15	N/A	N/A	1E-16	9E-14	2.97E+00
Third Quarter 2013	^{230}Th	3.97E-16	1E-16	4E-17	1E-16	3E-14	1.32E+00
Air Volume in mLs	^{226}Ra	1.04E-16	1E-17	2E-18	1E-16	9E-13	1.16E-02
1.35E+11	^{210}Pb	6.13E-15	1E-16	4E-17	2E-15	6E-13	1.02E+00

+LLD's are from 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: 3rd Quarter Air 2013
Lab ID: C13100250-005
Client Sample ID: BHV-6

Report Date: 11/11/13
Collection Date: 09/30/13
DateReceived: 10/07/13
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.532	mg/filter		0.0003		SW6020	10/30/13 05:03 / cp
Uranium, Activity	360	pCi/Filter		0.2		SW6020	10/30/13 05:03 / cp
RADIONUCLIDES							
Lead 210	824	pCi/Filter				E909.0	11/06/13 17:16 / eli-cs
Lead 210 precision (±)	16	pCi/Filter				E909.0	11/06/13 17:16 / eli-cs
Lead 210 MDC	5.8	pCi/Filter				E909.0	11/06/13 17:16 / eli-cs
Radium 226	14.0	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 precision (±)	1.3	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 MDC	0.2	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Thorium 230	53	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 precision (±)	13	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 MDC	5.8	pCi/Filter				E908.0	10/29/13 09:04 / dmf

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: November 11, 2013
PROJECT: 3rd Quarter Air 2013

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
C13040210-006	^{nat}U	9.60E-18	N/A	N/A	1E-16	9E-14	1.07E-02
First Quarter 2013	^{230}Th	3.27E-18	3E-18	6E-18	1E-16	3E-14	1.09E-02
Air Volume in mLs	^{226}Ra	3.89E-18	3E-18	4E-18	1E-16	9E-13	4.32E-04
1.36E+11	^{210}Pb	-4.09E-17	3E-17	5E-17	2E-15	6E-13	-6.82E-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
C13070231-006	^{nat}U	7.23E-18	N/A	N/A	1E-16	9E-14	8.03E-03
Second Quarter 2013	^{230}Th	7.06E-18	2E-18	2E-18	1E-16	3E-14	2.35E-02
Air Volume in mLs	^{226}Ra	4.52E-18	2E-18	3E-18	1E-16	9E-13	5.02E-04
1.36E+11	^{210}Pb	-7.38E-18	4E-17	6E-17	2E-15	6E-13	-1.23E-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
C13100250-006	^{nat}U	9.41E-18	N/A	N/A	1E-16	9E-14	1.05E-02
Third Quarter 2013	^{230}Th	5.84E-18	5E-18	7E-18	1E-16	3E-14	1.95E-02
Air Volume in mLs	^{226}Ra	3.64E-18	2E-18	2E-18	1E-16	9E-13	4.05E-04
1.36E+11	^{210}Pb	1.34E-18	3E-17	4E-17	2E-15	6E-13	2.23E-04

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

+LLD's are from 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: 3rd Quarter Air 2013
Lab ID: C13100250-006
Client Sample ID: Blank

Report Date: 11/11/13
Collection Date: 09/30/13
DateReceived: 10/07/13
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS							
Uranium	0.0019	mg/filter		0.0003		SW6020	10/30/13 05:07 / cp
Uranium, Activity	1.3	pCi/Filter		0.2		SW6020	10/30/13 05:07 / cp
RADIONUCLIDES							
Lead 210	0.18	pCi/Filter	U			E909.0	11/06/13 18:25 / eli-cs
Lead 210 precision (±)	3.4	pCi/Filter				E909.0	11/06/13 18:25 / eli-cs
Lead 210 MDC	5.8	pCi/Filter				E909.0	11/06/13 18:25 / eli-cs
Radium 226	0.5	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 precision (±)	0.3	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Radium 226 MDC	0.2	pCi/Filter				E903.0	10/22/13 21:12 / lmc
Thorium 230	0.79	pCi/Filter	U			E908.0	10/29/13 09:04 / dmf
Thorium 230 precision (±)	0.65	pCi/Filter				E908.0	10/29/13 09:04 / dmf
Thorium 230 MDC	1.0	pCi/Filter				E908.0	10/29/13 09:04 / dmf

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.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Report Date: 11/11/13
Project: 3rd Quarter Air 2013
Work Order: C13100250

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 39399
Sample ID: C13100312-001HMS		Sample Matrix Spike				Run: BERTHOLD 770-2_131016A				10/22/13 22:57
Radium 226		18	pCi/L		95	70	130			
Sample ID: C13100312-001HMSD		Sample Matrix Spike Duplicate				Run: BERTHOLD 770-2_131016A				10/22/13 22:57
Radium 226		18	pCi/L		97	70	130	1.8	22.4	
Sample ID: LCS-39399		Laboratory Control Sample				Run: BERTHOLD 770-2_131016A				10/22/13 22:57
Radium 226		23.3	pCi/Filter		107	80	120			
Sample ID: MB-39399	3	Method Blank				Run: BERTHOLD 770-2_131016A				10/22/13 22:57
Radium 226		0.4	pCi/Filter							
Radium 226 precision (±)		0.2	pCi/Filter							
Radium 226 MDC		0.1	pCi/Filter							

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: 11/11/13
Project: 3rd Quarter Air 2013
Work Order: C13100250

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 39399
Sample ID: C13100250-001ADUP	3	Sample Duplicate				Run: ALPHANALYST_131021A				10/29/13 09:04
Thorium 230		16.2	pCi/Filter					26	67.3	
Thorium 230 precision (±)		4.42	pCi/Filter							
Thorium 230 MDC		2.48	pCi/Filter							
Sample ID: C13100250-006AMS		Sample Matrix Spike				Run: ALPHANALYST_131021A				10/29/13 09:04
Thorium 230		77.6	pCi/Filter		100	70	130			
Sample ID: MB-39399	3	Method Blank				Run: ALPHANALYST_131021A				10/29/13 09:04
Thorium 230		0.10	pCi/Filter							U
Thorium 230 precision (±)		0.2	pCi/Filter							
Thorium 230 MDC		0.5	pCi/Filter							
Sample ID: LCS-39399		Laboratory Control Sample				Run: ALPHANALYST_131021A				10/29/13 09:04
Thorium 230		19.1	pCi/Filter		105	80	120			
Method: E908.0										Batch: 39399
Sample ID: C13100250-004AMS		Sample Matrix Spike				Run: ALPHANALYST_131028A				10/29/13 16:43
Thorium 230		2.09E-06	pCi/Filter		96	70	130			
Sample ID: C13100250-004AMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_131028A				10/29/13 16:43
Thorium 230		2.19E-06	pCi/Filter		105	70	130	4.3	25.4	
Sample ID: MB-39399	3	Method Blank				Run: ALPHANALYST_131028A				10/29/13 16:43
Thorium 230		0.2	pCi/Filter							
Thorium 230 precision (±)		0.09	pCi/Filter							
Thorium 230 MDC		0.1	pCi/Filter							
Sample ID: LCS-39399		Laboratory Control Sample				Run: ALPHANALYST_131028A				10/29/13 16:43
Thorium 230		19.6	pCi/Filter		107	80	120			

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: 11/11/13
Project: 3rd Quarter Air 2013
Work Order: C13100250

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: T_19796
Sample ID: LCS-19796		Laboratory Control Sample				Run: SUB-T53838				11/06/13 06:51
Lead 210		120	pCi/L		93	80	120			
Sample ID: MB-19796	3	Method Blank				Run: SUB-T53838				11/06/13 08:01
Lead 210		-2	pCi/L							U
Lead 210 precision (±)		3	pCi/L							
Lead 210 MDC		6	pCi/L							
Sample ID: T13100052-001HMS		Sample Matrix Spike				Run: SUB-T53838				11/06/13 10:19
Lead 210		66	pCi/L		84	70	130			
Sample ID: T13100052-001HMSD		Sample Matrix Spike Duplicate				Run: SUB-T53838				11/06/13 11:29
Lead 210		80	pCi/L		101	70	130	18	21.1	

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: 11/11/13
Project: 3rd Quarter Air 2013
Work Order: C13100250

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS4-C_131029A	
Sample ID: ICV		Initial Calibration Verification Standard							10/29/13 16:44	
Uranium		0.0511	mg/L	0.00030	102	90	110			
Sample ID: ICSA		Interference Check Sample A							10/29/13 16:48	
Uranium		4.73E-05	mg/L	0.00030						
Sample ID: ICSAB		Interference Check Sample AB							10/29/13 16:52	
Uranium		1.23E-05	mg/L	0.00030						
Method: SW6020									Batch: 39399	
Sample ID: MB-39399		Method Blank				Run: ICPMS4-C_131029A			10/30/13 04:04	
Uranium		ND	mg/filter	0.0004						
Sample ID: LCS2-39399		Laboratory Control Sample				Run: ICPMS4-C_131029A			10/30/13 04:08	
Uranium		0.0454	mg/filter	0.00030	45	85	115			S
- Response is below standard QA limit. This could indicate a low bias for the sample results. The sample results were confirmed by re-analysis of the sample, and remaining batch QC recovery was acceptable. This batch is approved.										
Sample ID: C13100250-001AMS		Sample Matrix Spike				Run: ICPMS4-C_131029A			10/30/13 04:21	
Uranium		0.692	mg/filter	0.00030	108	75	125			
Sample ID: C13100250-001AMSD		Sample Matrix Spike Duplicate				Run: ICPMS4-C_131029A			10/30/13 04:25	
Uranium		0.705	mg/filter	0.00030	111	75	125	1.8	20	
Sample ID: C13100250-004ADIL		Serial Dilution				Run: ICPMS4-C_131029A			10/30/13 04:59	
Uranium		0.550	mg/filter	0.00043				0.8	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

Workorder Receipt Checklist

Energy Fuels Resources (USA) Inc

C13100250

Login completed by: Corinne Wagner
Date Received: 10/7/2013

Reviewed by: BL2000\khelm
Received by: cav

Reviewed Date: 10/8/2013
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

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 2108
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
3rd Quarter Air	Garrin Palmer	

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
BHV-1	7/2/13-10/1/13	NA	U-NAT, Th-230, Ra-226, Pb-210
BHV-2	7/2/13-10/1/13	NA	U-NAT, Th-230, Ra-226, Pb-210
BHV-4	7/2/13-10/1/13	NA	U-NAT, Th-230, Ra-226, Pb-210
BHV-5	7/2/13-10/1/13	NA	U-NAT, Th-230, Ra-226, Pb-210
BHV-6	7/2/13-10/1/13	NA	U-NAT, Th-230, Ra-226, Pb-210
Blank	7/2/13-10/1/13	NA	U-NAT, Th-230, Ra-226, Pb-210

Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer	10/4/2013 1100		
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
		K. Delgado	9:45 10-7-13

C13100250

ENERGY LABORATORIES
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Helena, MT 877-472-0711 • Billings, MT 800-735-4489 • Casper, WY 888-235-0515
Gillette, WY 866-686-7175 • Rapid City, SD 888-672-1225 • College Station, TX 888-690-2218

ANALYTICAL SUMMARY REPORT

February 06, 2014

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

Workorder No.: C14010034

Project Name: 4th Quarter Air 2013

Energy Laboratories, Inc. Casper WY received the following 6 samples for Energy Fuels Resources (USA) Inc on 1/3/2014 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C14010034-001	BHV-1	12/30/13 00:00	01/03/14	Filter	Composite of two or more samples Metals, Total Digestion, Total Metals RAD Alternate Unit Reporting Air Filters Lead 210 Radium 226 Thorium, Isotopic
C14010034-002	BHV-2	12/30/13 00:00	01/03/14	Filter	Same As Above
C14010034-003	BHV-4	12/30/13 00:00	01/03/14	Filter	Same As Above
C14010034-004	BHV-5	12/30/13 00:00	01/03/14	Filter	Same As Above
C14010034-005	BHV-6	12/30/13 00:00	01/03/14	Filter	Same As Above
C14010034-006	Blank	12/30/13 00:00	01/03/14	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:

Interim Branch Manager

Digitally signed by
Steve Carlston
Date: 2014.02.06 17:25:13 -07:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Air 2013
Sample Delivery Group: C14010034

Report Date: 02/06/14

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

HIGH VOLUME AIR SAMPLING REPORT

CLIENT: Energy Fuels Resources (USA) Inc
REPORT DATE: February 6, 2014
PROJECT: 4th Quarter Air 2013

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
C13040210-001	^{nat}U	9.91E-16	N/A	N/A	1E-16	9E-14	1.10E+00
First Quarter 2013	^{230}Th	1.86E-16	5E-17	2E-17	1E-16	3E-14	6.21E-01
Air Volume in mLs	^{226}Ra	2.04E-16	1E-17	4E-18	1E-16	9E-13	2.27E-02
1.36E+11	^{210}Pb	1.82E-14	2E-16	5E-17	2E-15	6E-13	3.03E+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
C13070231-001	^{nat}U	1.46E-15	N/A	N/A	1E-16	9E-14	1.62E+00
Second Quarter 2013	^{230}Th	3.34E-16	5E-17	2E-17	1E-16	3E-14	1.11E+00
Air Volume in mLs	^{226}Ra	3.91E-16	2E-17	3E-18	1E-16	9E-13	4.35E-02
1.34E+11	^{210}Pb	5.78E-15	1E-16	6E-17	2E-15	6E-13	9.64E-01

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
C13100250-001	^{nat}U	8.89E-16	N/A	N/A	1E-16	9E-14	9.88E-01
Third Quarter 2013	^{230}Th	9.13E-17	3E-17	2E-17	1E-16	3E-14	3.04E-01
Air Volume in mLs	^{226}Ra	1.05E-16	1E-17	2E-18	1E-16	9E-13	1.17E-02
1.37E+11	^{210}Pb	8.00E-15	1E-16	4E-17	2E-15	6E-13	1.33E+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
C14010034-001	^{nat}U	5.21E-16	N/A	N/A	1E-16	9E-14	5.78E-01
Fourth Quarter 2013	^{230}Th	4.34E-17	2E-17	3E-17	1E-16	3E-14	1.45E-01
Air Volume in mLs	^{226}Ra	3.70E-17	8E-18	5E-18	1E-16	9E-13	4.11E-03
1.35E+11	^{210}Pb	2.59E-14	3E-16	6E-17	2E-15	6E-13	4.31E+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: 4th Quarter Air 2013
Lab ID: C14010034-001
Client Sample ID: BHV-1

Report Date: 02/06/14
Collection Date: 12/30/13
DateReceived: 01/03/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	7.7E-10	mg/L		1.5E-10		SW6020	01/10/14 00:45 / clm
Uranium, Activity	5.2E-16	uCi/mL		1.0E-16		SW6020	01/10/14 00:45 / clm
RADIONUCLIDES - IN AIR							
Lead 210	2.6E-14	uCi/mL				E909.0	01/22/14 22:21 / eli-cs
Lead 210 precision (±)	2.8E-16	uCi/mL				E909.0	01/22/14 22:21 / eli-cs
Lead 210 MDC	6.1E-17	uCi/mL				E909.0	01/22/14 22:21 / eli-cs
Radium 226	3.7E-17	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 precision (±)	7.7E-18	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 MDC	5.3E-18	uCi/mL				E903.0	01/20/14 06:50 / lmc
Thorium 230	4.3E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 precision (±)	2.4E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 MDC	2.8E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	3490	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 precision (±)	37.3	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 MDC	8.2	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226	5.0	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 precision (±)	1.0	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 MDC	0.72	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230	5.8	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 precision (±)	3.3	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 MDC	3.8	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Uranium, Activity	70.1	pCi/Filter		0.20		RADCALC	02/01/14 13:02 / sec

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: February 6, 2014
PROJECT: 4th Quarter Air 2013

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
C13040210-002	^{nat}U	3.38E-16	N/A	N/A	1E-16	9E-14	3.75E-01
First Quarter 2013	^{230}Th	3.94E-17	1E-17	9E-18	1E-16	3E-14	1.31E-01
Air Volume in mLs	^{226}Ra	8.32E-17	9E-18	4E-18	1E-16	9E-13	9.25E-03
1.36E+11	^{210}Pb	1.42E-14	2E-16	5E-17	2E-15	6E-13	2.37E+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
C13070231-002	^{nat}U	4.06E-16	N/A	N/A	1E-16	9E-14	4.51E-01
Second Quarter 2013	^{230}Th	4.89E-17	1E-17	6E-18	1E-16	3E-14	1.63E-01
Air Volume in mLs	^{226}Ra	8.06E-17	7E-18	3E-18	1E-16	9E-13	8.95E-03
1.38E+11	^{210}Pb	4.93E-15	1E-16	6E-17	2E-15	6E-13	8.21E-01

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
C13100250-002	^{nat}U	1.76E-16	N/A	N/A	1E-16	9E-14	1.96E-01
Third Quarter 2013	^{230}Th	2.52E-17	1E-17	9E-18	1E-16	3E-14	8.40E-02
Air Volume in mLs	^{226}Ra	6.13E-17	8E-18	2E-18	1E-16	9E-13	6.81E-03
1.37E+11	^{210}Pb	4.90E-15	1E-16	4E-17	2E-15	6E-13	8.17E-01

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
C14010034-002	^{nat}U	6.20E-16	N/A	N/A	1E-16	9E-14	6.89E-01
Fourth Quarter 2013	^{230}Th	4.19E-17	2E-17	2E-17	1E-16	3E-14	1.40E-01
Air Volume in mLs	^{226}Ra	3.72E-17	8E-18	6E-18	1E-16	9E-13	4.13E-03
1.35E+11	^{210}Pb	2.50E-14	3E-16	6E-17	2E-15	6E-13	4.17E+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: 4th Quarter Air 2013
Lab ID: C14010034-002
Client Sample ID: BHV-2

Report Date: 02/06/14
Collection Date: 12/30/13
DateReceived: 01/03/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	9.2E-10	mg/L		1.5E-10		SW6020	01/10/14 00:48 / clm
Uranium, Activity	6.2E-16	uCi/mL		1.0E-16		SW6020	01/10/14 00:48 / clm
RADIONUCLIDES - IN AIR							
Lead 210	2.5E-14	uCi/mL				E909.0	01/22/14 23:30 / eli-cs
Lead 210 precision (±)	2.7E-16	uCi/mL				E909.0	01/22/14 23:30 / eli-cs
Lead 210 MDC	6.1E-17	uCi/mL				E909.0	01/22/14 23:30 / eli-cs
Radium 226	3.7E-17	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 precision (±)	8.0E-18	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 MDC	5.7E-18	uCi/mL				E903.0	01/20/14 06:50 / lmc
Thorium 230	4.2E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 precision (±)	1.7E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 MDC	1.5E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	3370	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 precision (±)	36.8	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 MDC	8.2	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226	5.0	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 precision (±)	1.1	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 MDC	0.77	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230	5.6	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 precision (±)	2.3	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 MDC	2.1	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Uranium, Activity	83.5	pCi/Filter		0.20		RADCALC	02/01/14 13:02 / sec

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: February 6, 2014
PROJECT: 4th Quarter Air 2013

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
C13040210-003	^{nat}U	3.04E-15	N/A	N/A	1E-16	9E-14	3.38E+00
First Quarter 2013	^{230}Th	4.99E-16	9E-17	2E-17	1E-16	3E-14	1.66E+00
Air Volume in mLs	^{226}Ra	2.79E-16	2E-17	4E-18	1E-16	9E-13	3.10E-02
1.35E+11	^{210}Pb	2.13E-14	2E-16	5E-17	2E-15	6E-13	3.54E+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
C13070231-003	^{nat}U	2.50E-15	N/A	N/A	1E-16	9E-14	2.78E+00
Second Quarter 2013	^{230}Th	3.62E-16	5E-17	1E-17	1E-16	3E-14	1.21E+00
Air Volume in mLs	^{226}Ra	2.40E-16	1E-17	3E-18	1E-16	9E-13	2.67E-02
1.37E+11	^{210}Pb	4.93E-15	1E-16	6E-17	2E-15	6E-13	8.22E-01

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
C13100250-003	^{nat}U	2.98E-15	N/A	N/A	1E-16	9E-14	3.31E+00
Third Quarter 2013	^{230}Th	4.49E-16	8E-17	2E-17	1E-16	3E-14	1.50E+00
Air Volume in mLs	^{226}Ra	1.54E-16	1E-17	2E-18	1E-16	9E-13	1.71E-02
1.35E+11	^{210}Pb	7.49E-15	1E-16	4E-17	2E-15	6E-13	1.25E+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
C14010034-003	^{nat}U	3.88E-15	N/A	N/A	1E-16	9E-14	4.31E+00
Fourth Quarter 2013	^{230}Th	1.03E-16	4E-17	3E-17	1E-16	3E-14	3.42E-01
Air Volume in mLs	^{226}Ra	4.47E-17	9E-18	6E-18	1E-16	9E-13	4.96E-03
1.34E+11	^{210}Pb	2.93E-14	3E-16	6E-17	2E-15	6E-13	4.88E+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: 4th Quarter Air 2013
Lab ID: C14010034-003
Client Sample ID: BHV-4

Report Date: 02/06/14
Collection Date: 12/30/13
DateReceived: 01/03/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	5.7E-09	mg/L		1.5E-10		SW6020	01/10/14 00:51 / clm
Uranium, Activity	3.9E-15	uCi/mL		1.0E-16		SW6020	01/10/14 00:51 / clm
RADIONUCLIDES - IN AIR							
Lead 210	2.9E-14	uCi/mL				E909.0	01/23/14 00:40 / eli-cs
Lead 210 precision (±)	3.0E-16	uCi/mL				E909.0	01/23/14 00:40 / eli-cs
Lead 210 MDC	6.1E-17	uCi/mL				E909.0	01/23/14 00:40 / eli-cs
Radium 226	4.5E-17	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 precision (±)	9.0E-18	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 MDC	6.1E-18	uCi/mL				E903.0	01/20/14 06:50 / lmc
Thorium 230	1.0E-16	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 precision (±)	3.6E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 MDC	2.6E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	3920	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 precision (±)	39.6	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 MDC	8.2	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226	6.0	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 precision (±)	1.2	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 MDC	0.81	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230	13.8	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 precision (±)	4.9	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 MDC	3.5	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Uranium, Activity	520	pCi/Filter		0.20		RADCALC	02/01/14 13:02 / sec

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: February 6, 2014
PROJECT: 4th Quarter Air 2013

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
C13040210-004	^{nat}U	6.66E-15	N/A	N/A	1E-16	9E-14	7.40E+00
First Quarter 2013	^{230}Th	1.48E-15	3E-16	4E-17	1E-16	3E-14	4.95E+00
Air Volume in mLs	^{226}Ra	1.12E-15	3E-17	4E-18	1E-16	9E-13	1.24E-01
1.35E+11	^{210}Pb	1.80E-14	2E-16	5E-17	2E-15	6E-13	3.00E+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
C13070231-004	^{nat}U	7.35E-15	N/A	N/A	1E-16	9E-14	8.16E+00
Second Quarter 2013	^{230}Th	1.72E-15	2E-16	2E-17	1E-16	3E-14	5.74E+00
Air Volume in mLs	^{226}Ra	2.02E-15	4E-17	3E-18	1E-16	9E-13	2.25E-01
1.37E+11	^{210}Pb	6.67E-15	1E-16	6E-17	2E-15	6E-13	1.11E+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
C13100250-004	^{nat}U	2.78E-15	N/A	N/A	1E-16	9E-14	3.09E+00
Third Quarter 2013	^{230}Th	6.92E-16	5E-17	3E-18	1E-16	3E-14	2.31E+00
Air Volume in mLs	^{226}Ra	3.29E-16	2E-17	2E-18	1E-16	9E-13	3.65E-02
1.35E+11	^{210}Pb	6.62E-15	1E-16	4E-17	2E-15	6E-13	1.10E+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
C14010034-004	^{nat}U	6.70E-15	N/A	N/A	1E-16	9E-14	7.44E+00
Fourth Quarter 2013	^{230}Th	3.93E-16	1E-16	5E-17	1E-16	3E-14	1.31E+00
Air Volume in mLs	^{226}Ra	2.53E-16	2E-17	5E-18	1E-16	9E-13	2.81E-02
1.34E+11	^{210}Pb	2.78E-14	3E-16	6E-17	2E-15	6E-13	4.64E+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: 4th Quarter Air 2013
Lab ID: C14010034-004
Client Sample ID: BHV-5

Report Date: 02/06/14
Collection Date: 12/30/13
DateReceived: 01/03/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	9.9E-09	mg/L		1.5E-10		SW6020	01/10/14 01:16 / clm
Uranium, Activity	6.7E-15	uCi/mL		1.0E-16		SW6020	01/10/14 01:16 / clm
RADIONUCLIDES - IN AIR							
Lead 210	2.8E-14	uCi/mL				E909.0	01/23/14 01:49 / eli-cs
Lead 210 precision (±)	2.9E-16	uCi/mL				E909.0	01/23/14 01:49 / eli-cs
Lead 210 MDC	6.0E-17	uCi/mL				E909.0	01/23/14 01:49 / eli-cs
Radium 226	2.5E-16	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 precision (±)	1.8E-17	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 MDC	4.9E-18	uCi/mL				E903.0	01/20/14 06:50 / lmc
Thorium 230	3.9E-16	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 precision (±)	1.1E-16	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 MDC	5.5E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	3730	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 precision (±)	38.3	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 MDC	8.0	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226	33.9	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 precision (±)	2.4	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 MDC	0.66	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230	52.7	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 precision (±)	14.1	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 MDC	7.4	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Uranium, Activity	897	pCi/Filter		0.20		RADCALC	02/01/14 13:02 / sec

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: February 6, 2014
PROJECT: 4th Quarter Air 2013

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
C13040210-005	^{nat}U	4.52E-15	N/A	N/A	1E-16	9E-14	5.02E+00
First Quarter 2013	^{230}Th	7.93E-16	2E-16	4E-17	1E-16	3E-14	2.64E+00
Air Volume in mLs	^{226}Ra	4.91E-16	2E-17	4E-18	1E-16	9E-13	5.46E-02
1.35E+11	^{210}Pb	1.70E-14	2E-16	6E-17	2E-15	6E-13	2.83E+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
C13070231-005	^{nat}U	5.91E-15	N/A	N/A	1E-16	9E-14	6.57E+00
Second Quarter 2013	^{230}Th	6.74E-16	9E-17	2E-17	1E-16	3E-14	2.25E+00
Air Volume in mLs	^{226}Ra	7.85E-16	2E-17	3E-18	1E-16	9E-13	8.73E-02
1.37E+11	^{210}Pb	5.18E-15	1E-16	6E-17	2E-15	6E-13	8.64E-01

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
C13100250-005	^{nat}U	2.68E-15	N/A	N/A	1E-16	9E-14	2.97E+00
Third Quarter 2013	^{230}Th	3.97E-16	1E-16	4E-17	1E-16	3E-14	1.32E+00
Air Volume in mLs	^{226}Ra	1.04E-16	1E-17	2E-18	1E-16	9E-13	1.16E-02
1.35E+11	^{210}Pb	6.13E-15	1E-16	4E-17	2E-15	6E-13	1.02E+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
C14010034-005	^{nat}U	1.60E-14	N/A	N/A	1E-16	9E-14	1.78E+01
Fourth Quarter 2013	^{230}Th	2.48E-16	8E-17	6E-17	1E-16	3E-14	8.26E-01
Air Volume in mLs	^{226}Ra	1.05E-16	1E-17	5E-18	1E-16	9E-13	1.16E-02
1.34E+11	^{210}Pb	2.67E-14	3E-16	6E-17	2E-15	6E-13	4.44E+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: 4th Quarter Air 2013
Lab ID: C14010034-005
Client Sample ID: BHV-6

Report Date: 02/06/14
Collection Date: 12/30/13
DateReceived: 01/03/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	2.4E-08	mg/L		1.5E-10		SW6020	01/10/14 01:19 / clm
Uranium, Activity	1.6E-14	uCi/mL		1.0E-16		SW6020	01/10/14 01:19 / clm
RADIONUCLIDES - IN AIR							
Lead 210	2.7E-14	uCi/mL				E909.0	01/23/14 02:58 / eli-cs
Lead 210 precision (±)	2.8E-16	uCi/mL				E909.0	01/23/14 02:58 / eli-cs
Lead 210 MDC	6.0E-17	uCi/mL				E909.0	01/23/14 02:58 / eli-cs
Radium 226	1.0E-16	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 precision (±)	1.2E-17	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 MDC	5.2E-18	uCi/mL				E903.0	01/20/14 06:50 / lmc
Thorium 230	2.5E-16	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 precision (±)	8.5E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 MDC	6.0E-17	uCi/mL				E908.0	01/14/14 12:00 / dmf
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	3570	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 precision (±)	37.6	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 MDC	8.1	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226	14.0	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 precision (±)	1.6	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 MDC	0.69	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230	33.2	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 precision (±)	11.3	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 MDC	8.1	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Uranium, Activity	2150	pCi/Filter		0.20		RADCALC	02/01/14 13:02 / sec

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: February 6, 2014
PROJECT: 4th Quarter Air 2013

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
C13040210-006	^{nat}U	9.60E-18	N/A	N/A	1E-16	9E-14	1.07E-02
First Quarter 2013	^{230}Th	3.27E-18	3E-18	6E-18	1E-16	3E-14	1.09E-02
Air Volume in mLs	^{226}Ra	3.89E-18	3E-18	4E-18	1E-16	9E-13	4.32E-04
1.36E+11	^{210}Pb	-4.09E-17	3E-17	5E-17	2E-15	6E-13	-6.82E-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
C13070231-006	^{nat}U	7.23E-18	N/A	N/A	1E-16	9E-14	8.03E-03
Second Quarter 2013	^{230}Th	7.06E-18	2E-18	2E-18	1E-16	3E-14	2.35E-02
Air Volume in mLs	^{226}Ra	4.52E-18	2E-18	3E-18	1E-16	9E-13	5.02E-04
1.36E+11	^{210}Pb	-7.38E-18	4E-17	6E-17	2E-15	6E-13	-1.23E-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
C13100250-006	^{nat}U	9.41E-18	N/A	N/A	1E-16	9E-14	1.05E-02
Third Quarter 2013	^{230}Th	5.84E-18	5E-18	7E-18	1E-16	3E-14	1.95E-02
Air Volume in mLs	^{226}Ra	3.64E-18	2E-18	2E-18	1E-16	9E-13	4.05E-04
1.36E+11	^{210}Pb	1.34E-18	3E-17	4E-17	2E-15	6E-13	2.23E-04

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
C14010034-006	^{nat}U	1.79E-17	N/A	N/A	1E-16	9E-14	1.99E-02
Fourth Quarter 2013	^{230}Th	2.83E-18	1E-18	2E-18	1E-16	3E-14	9.42E-03
Air Volume in mLs	^{226}Ra	3.26E-18	2E-18	3E-18	1E-16	9E-13	3.62E-04
1.36E+11	^{210}Pb	6.38E-18	3E-17	4E-17	2E-15	6E-13	1.06E-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: 4th Quarter Air 2013
Lab ID: C14010034-006
Client Sample ID: Blank

Report Date: 02/06/14
Collection Date: 12/30/13
DateReceived: 01/03/14
Matrix: Filter

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
TRACE METALS - IN AIR							
Uranium	0.0036	mg/L	D	0.000043		SW6020	01/10/14 01:22 / clm
Uranium, Activity	2.4E-09	uCi/mL	D	2.9E-11		SW6020	01/10/14 01:22 / clm
- Air data for this sample uses a system default volume of 1,000 mL.							
RADIONUCLIDES - IN AIR							
Lead 210	8.7E-10	uCi/mL	U			E909.0	01/23/14 06:26 / eli-cs
Lead 210 precision (±)	3.5E-09	uCi/mL				E909.0	01/23/14 06:26 / eli-cs
Lead 210 MDC	5.8E-09	uCi/mL				E909.0	01/23/14 06:26 / eli-cs
Radium 226	4.4E-10	uCi/mL	U			E903.0	01/20/14 06:50 / lmc
Radium 226 precision (±)	3.4E-10	uCi/mL				E903.0	01/20/14 06:50 / lmc
Radium 226 MDC	4.5E-10	uCi/mL				E903.0	01/20/14 06:50 / lmc
Thorium 230	3.8E-10	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 precision (±)	2.0E-10	uCi/mL				E908.0	01/14/14 12:00 / dmf
Thorium 230 MDC	2.5E-10	uCi/mL				E908.0	01/14/14 12:00 / dmf
- Air data for this sample uses a system default volume of 1,000 mL.							
RADIONUCLIDES - IN AIR - PER FILTER							
Lead 210	0.87	pCi/Filter	U			RADCALC	02/01/14 13:02 / sec
Lead 210 precision (±)	3.5	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Lead 210 MDC	5.8	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226	0.44	pCi/Filter	U			RADCALC	02/01/14 13:02 / sec
Radium 226 precision (±)	0.34	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Radium 226 MDC	0.45	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230	0.38	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 precision (±)	0.20	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Thorium 230 MDC	0.25	pCi/Filter				RADCALC	02/01/14 13:02 / sec
Uranium, Activity	2.4	pCi/Filter		0.20		RADCALC	02/01/14 13:02 / sec

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: 02/06/14
Project: 4th Quarter Air 2013
Work Order: C14010034

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-7026
Sample ID: C14010038-001AMS		Sample Matrix Spike				Run: BERTHOLD 770-2_140110A			01/20/14 06:50	
Radium 226		1.72E-05	pCi/L		75	70	130			
Sample ID: C14010038-002ADUP	3	Sample Duplicate				Run: BERTHOLD 770-2_140110A			01/20/14 08:27	
Radium 226		7.12E-08	pCi/L					37	209	U
Radium 226 precision (±)		6.47E-08	pCi/L							
Radium 226 MDC		9.11E-08	pCi/L							
Sample ID: LCS-40245		Laboratory Control Sample				Run: BERTHOLD 770-2_140110A			01/20/14 08:27	
Radium 226		24.3	pCi/L		113	80	120			
Sample ID: MB-40245	3	Method Blank				Run: BERTHOLD 770-2_140110A			01/20/14 08:27	
Radium 226		0.01	pCi/L							U
Radium 226 precision (±)		0.2	pCi/L							
Radium 226 MDC		0.3	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
Report Date: 02/06/14
Project: 4th Quarter Air 2013
Work Order: C14010034

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: 40245
Sample ID: C14010038-003AMS		Sample Matrix Spike				Run: ALPHANALYST_140108B				01/14/14 12:00
Thorium 230		1.19E-05	pCi/L		103	70	130			
Sample ID: C14010038-003AMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_140108B				01/14/14 12:00
Thorium 230		1.13E-05	pCi/L		98	70	130	5.4	29.6	
Sample ID: LCS-40245		Laboratory Control Sample				Run: ALPHANALYST_140108B				01/14/14 12:00
Thorium 230		18.3	pCi/L		101	80	120			
Sample ID: MB-40245	3	Method Blank				Run: ALPHANALYST_140108B				01/14/14 12:00
Thorium 230		0.09	pCi/L							U
Thorium 230 precision (±)		0.09	pCi/L							
Thorium 230 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
Report Date: 02/06/14
Project: 4th Quarter Air 2013
Work Order: C14010034

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0										Batch: T_20358
Sample ID: LCS-20358		Laboratory Control Sample				Run: SUB-T55050				01/22/14 20:02
Lead 210		121	pCi/L		92	80	120			
Sample ID: MB-20358	3	Method Blank				Run: SUB-T55050				01/22/14 21:11
Lead 210		-0.4	pCi/L							U
Lead 210 precision (±)		3	pCi/L							
Lead 210 MDC		6	pCi/L							
Sample ID: C14010034-005AMS		Sample Matrix Spike				Run: SUB-T55050				01/23/14 04:08
Lead 210		3.13E-05	pCi/L		94	70	130			
Sample ID: C14010034-005AMSD		Sample Matrix Spike Duplicate				Run: SUB-T55050				01/23/14 05:17
Lead 210		3.15E-05	pCi/L		101	70	130	0.9	13.8	

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:** 02/06/14

Project: 4th Quarter Air 2013 **Work Order:** C14010034

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS2-C_140109A	
Sample ID: ICV		Initial Calibration Verification Standard							01/09/14 13:55	
Uranium		0.0494	mg/L	0.00030	99	90	110			
Sample ID: ICSA		Interference Check Sample A							01/09/14 13:58	
Uranium		1.76E-05	mg/L	0.00030						
Sample ID: ICSAB		Interference Check Sample AB							01/09/14 14:01	
Uranium		2.80E-06	mg/L	0.00030						
Method: SW6020									Batch: 40245	
Sample ID: MB-40245		Method Blank				Run: ICPMS2-C_140109A			01/10/14 00:35	
Uranium		ND	mg/L	4E-05						
Sample ID: LCS2-40245		Laboratory Control Sample				Run: ICPMS2-C_140109A			01/10/14 00:38	
Uranium		0.0960	mg/L	4.3E-05	96	85	115			
Sample ID: C14010034-003AMS		Sample Matrix Spike				Run: ICPMS2-C_140109A			01/10/14 00:54	
Uranium		8.34E-09	mg/L	1.5E-10	104	75	125			
Sample ID: C14010034-003AMSD		Sample Matrix Spike Duplicate				Run: ICPMS2-C_140109A			01/10/14 00:57	
Uranium		8.34E-09	mg/L	1.5E-10	104	75	125	0.0	20	
Sample ID: C14010038-001ADIL		Serial Dilution				Run: ICPMS2-C_140109A			01/10/14 01:28	
Uranium		1.60E-10	mg/L	1.5E-10					20	N
Method: SW6020									Batch: 40245	
Sample ID: MB-40245		Method Blank				Run: ICPMS4-C_140203A			02/04/14 00:13	
Uranium		ND	mg/L	4.0E-05						
Sample ID: LCS2-40245		Laboratory Control Sample				Run: ICPMS4-C_140203A			02/04/14 00:17	
Uranium		0.0997	mg/L	4.3E-05	100	85	115			
Sample ID: C14010034-005ADIL		Serial Dilution				Run: ICPMS4-C_140203A			02/04/14 00:25	
Uranium		2.16E-08	mg/L	1.5E-10				8.3	20	
Sample ID: C14010034-005AMS		Sample Matrix Spike				Run: ICPMS4-C_140203A			02/04/14 00:29	
Uranium		2.63E-08	mg/L	1.5E-10		75	125			A
Sample ID: C14010034-005AMSD		Sample Matrix Spike Duplicate				Run: ICPMS4-C_140203A			02/04/14 00:33	
Uranium		2.65E-08	mg/L	1.5E-10		75	125	0.9	20	A

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

C14010034

Login completed by: Debra Williams
Date Received: 1/3/2014

Reviewed by: Kathy Hamre
Received by: dw

Reviewed Date: 1/6/2014
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:	NA°C NA		
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

Energy Fuels

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
4th Quarter Air 2013	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
BHV-1	1/10/13 - 12/30/13	NA	U-NAT, Th-230, Ra-226, Pb-210
BHV-2	1/10/13 - 12/30/13	NA	U-NAT, Th-230, Ra-226, Pb-210
BHV-4	1/10/13 - 12/30/13	NA	U-NAT, Th-230, Ra-226, Pb-210
BHV-5	1/10/13 - 12/30/13	NA	U-NAT, Th-230, Ra-226, Pb-210
BHV-6	1/10/13 - 12/30/13	NA	U-NAT, Th-230, Ra-226, Pb-210
Blank	1/10/13 - 12/30/13	NA	U-NAT, Th-230, Ra-226, Pb-210

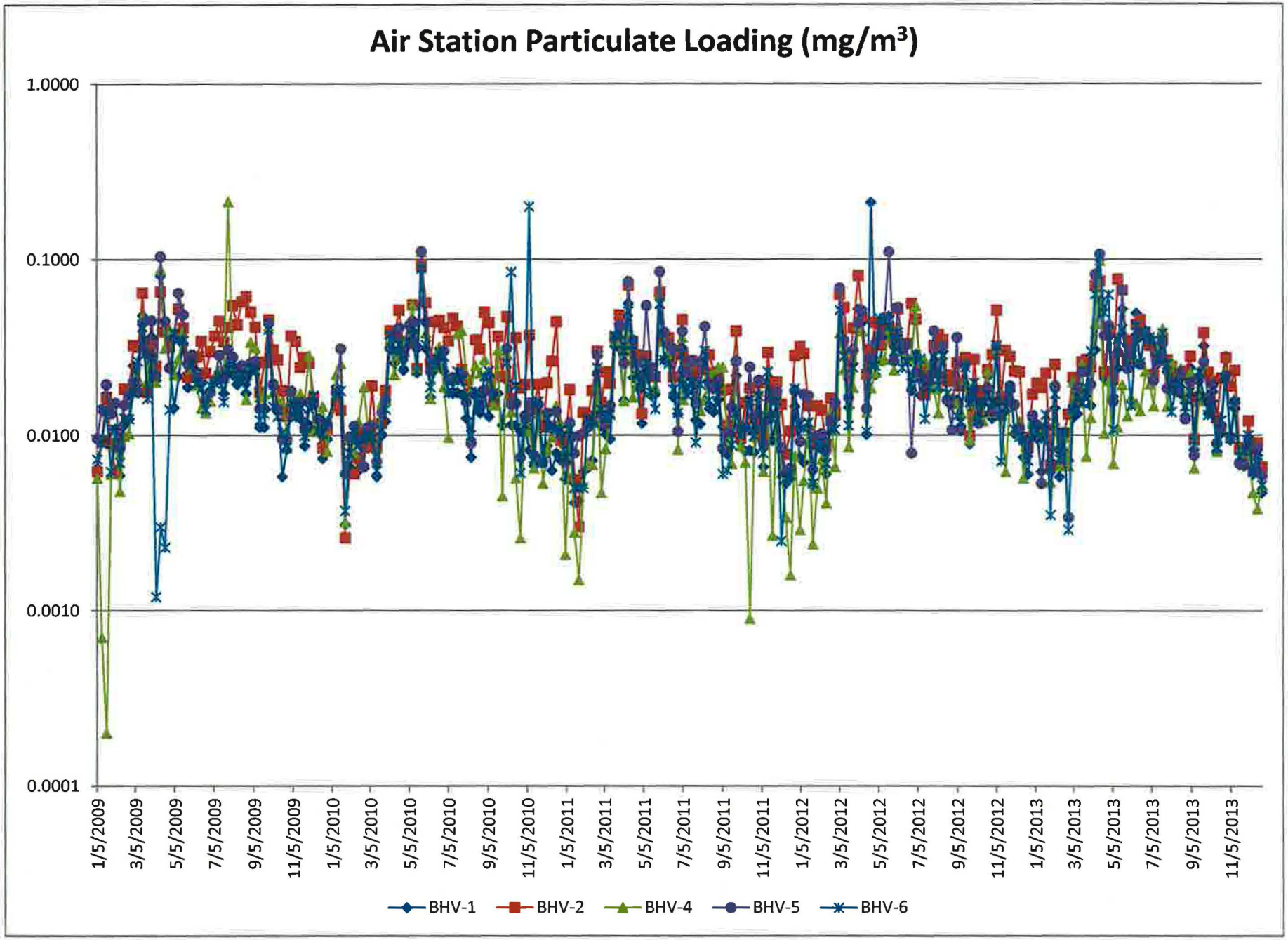
Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer Garrin Palmer	12/30/2013 1200		1-9-14 945
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time

C1401G034

ATTACHMENT D

AIR PARTICULATE LOADING GRAPHS AND SUPPORTING DATA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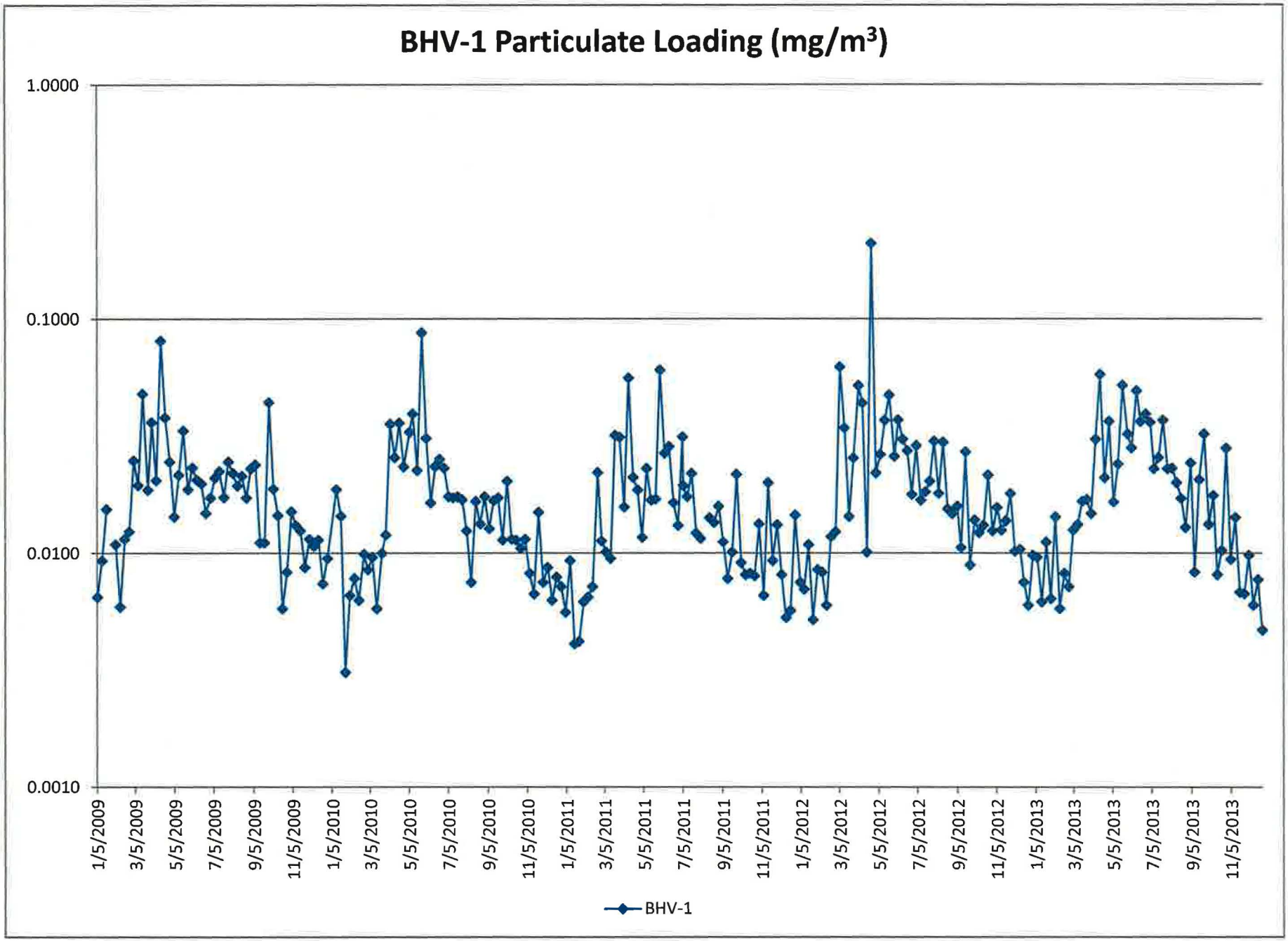
BHV-4
BHV-5
BHV-6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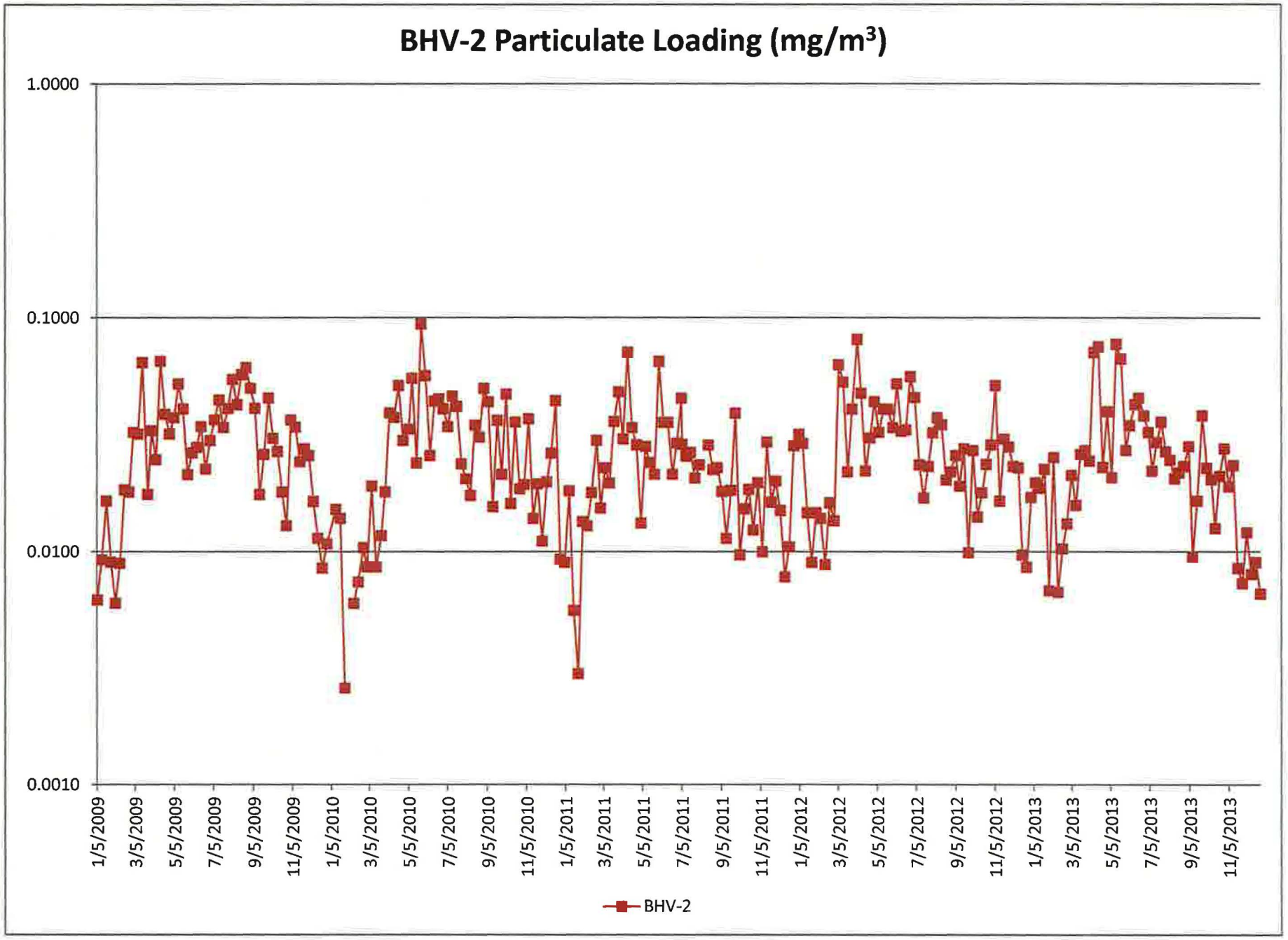
11/5/2013
BHV-1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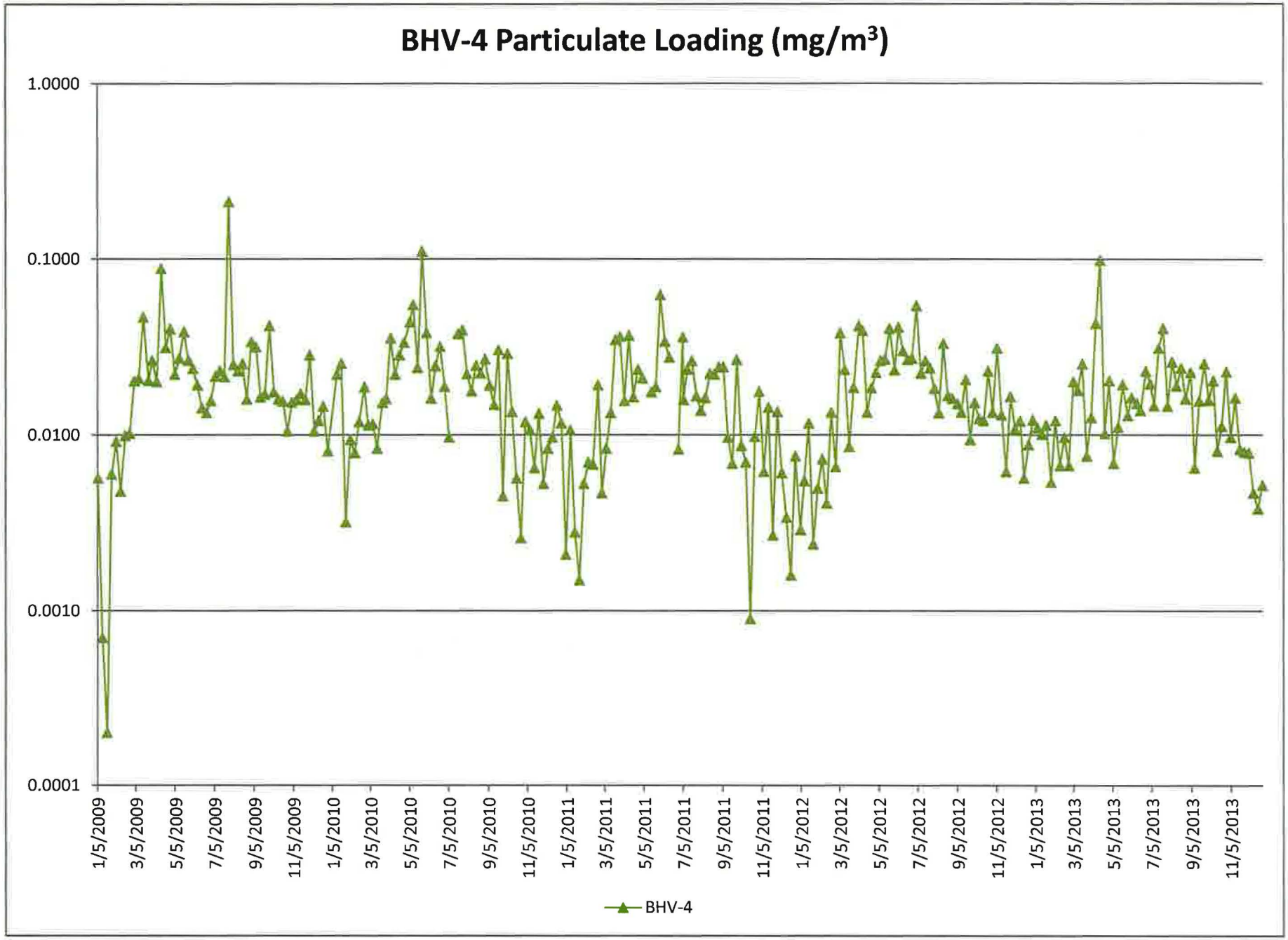
11/5/2013
BHV-2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0.0010
0.0001
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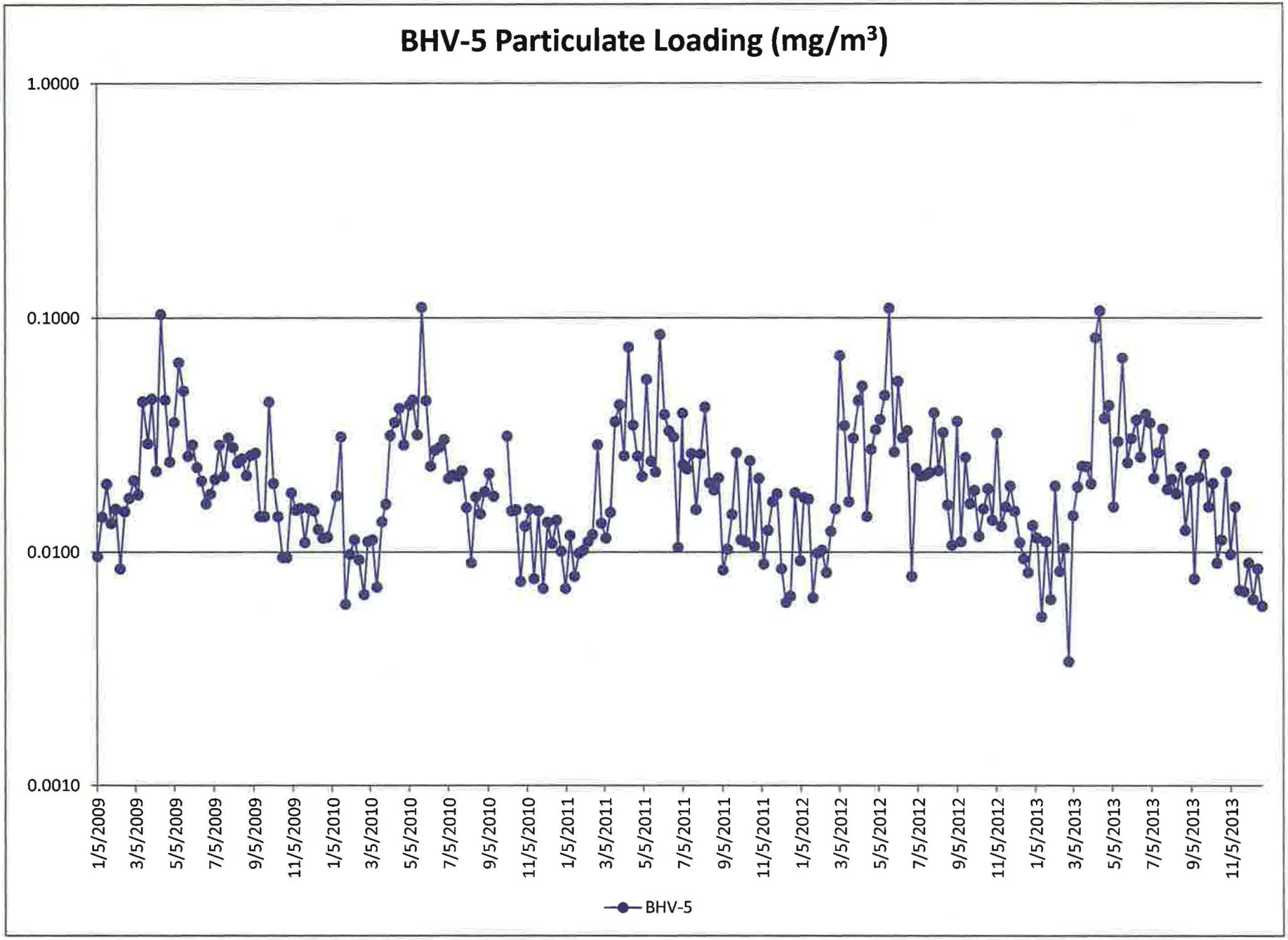
BHV-4


BHV-5 Particulate Loading (mg/m3)
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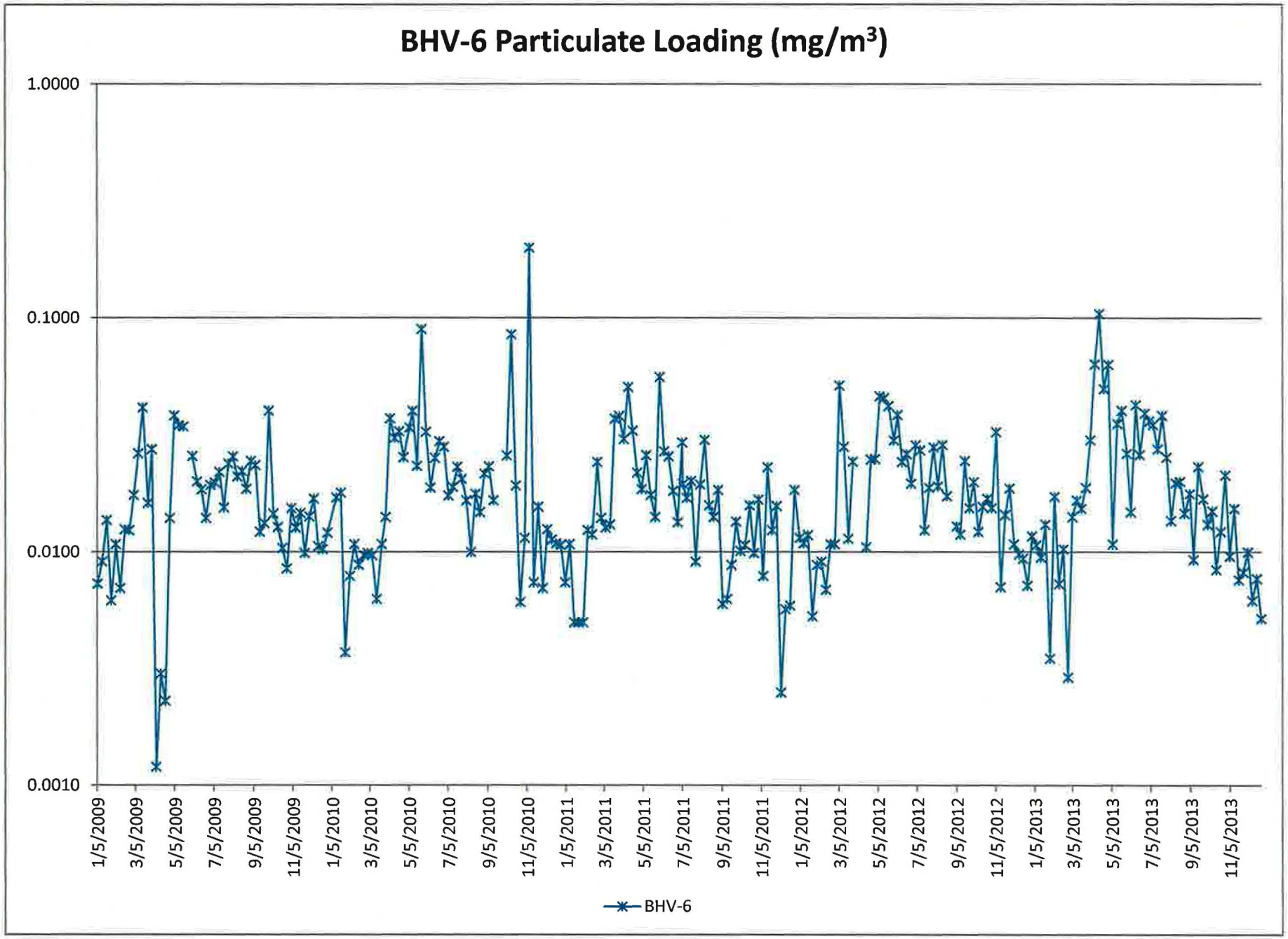
11/5/2013
BHV-5


BHV-6 Particulate Loading (mg/m3)
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11/5/2013
BHV-6

Period: July 2, 2013 through , October 1, 2013 (3rd Quarter 2013)

BHV-1 on stream % 100.2% **BHV-1** Total Volume: 4.83E+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	8400895	2-Jul-13	8-Jul-13	4.6082	4.2860	0.3222	48245.1	48101.8	8598.0	8,886,591	0.0363	99.5%	36.5
2	8400889	08-Jul-13	15-Jul-13	4.5688	4.3248	0.2440	48413.6	48245.1	10112.4	10,594,997	0.0230	100.3%	37.0
3	8400878	15-Jul-13	22-Jul-13	4.5453	4.2774	0.2679	48579.7	48413.6	9967.8	10,443,497	0.0257	98.9%	37.0
4	8400876	22-Jul-13	29-Jul-13	4.7394	4.3432	0.3962	48750.1	48579.7	10218.6	10,706,266	0.0370	101.4%	37.0
5	8400868	29-Jul-13	5-Aug-13	4.5290	4.2808	0.2482	48921.9	48750.1	10308.0	10,799,932	0.0230	102.3%	37.0
6	8400864	05-Aug-13	12-Aug-13	4.5488	4.3096	0.2392	49086.3	48921.9	9864.0	10,334,743	0.0231	97.9%	37.0
7	8400853	12-Aug-13	19-Aug-13	4.5623	4.3507	0.2116	49254.1	49086.3	10068.6	10,520,596	0.0201	99.9%	36.9
8	8400851	19-Aug-13	26-Aug-13	4.4989	4.3192	0.1797	49421.1	49254.1	10024.2	10,474,203	0.0172	99.4%	36.9
9	8400845	26-Aug-13	3-Sep-13	4.4437	4.2878	0.1559	49613.2	49421.1	11526.6	12,044,048	0.0129	100.1%	36.9
10	8400835	03-Sep-13	9-Sep-13	4.5353	4.3158	0.2195	49758.3	49613.1	8708.4	9,025,356	0.0243	100.8%	36.6
11	8400833	09-Sep-13	16-Sep-13	4.4214	4.3365	0.0849	49923.8	49758.3	9931.2	10,236,418	0.0083	98.5%	36.4
12	8400823	16-Sep-13	24-Sep-13	4.5364	4.3208	0.2156	50092.6	49923.8	10125.6	10,436,792	0.0207	87.9%	36.4
13	8400821	24-Sep-13	1-Oct-13	4.6607	4.2687	0.3920	50289.0	50092.6	11784.6	12,146,779	0.0323	116.9%	36.4
	Totals	91	2184.0	4.5537077	4.309331	0.2444			131238	136,650,219	0.0234	100.3%	36.8

BHV-2 on stream % 100.1% **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	8400894	02-Jul-13	08-Jul-13	4.6184	4.3299	0.2885	58511.1	58367.8	8599.8	8,868,452	0.0325	99.5%	36.5
2	8400888	08-Jul-13	15-Jul-13	4.5509	4.3153	0.2356	58679.7	58511.1	10112.4	10,594,997	0.0222	100.3%	37.0
3	8400879	15-Jul-13	22-Jul-13	4.6160	4.3090	0.3070	58845.8	58679.7	9966.0	10,441,611	0.0294	98.9%	37.0
4	8400875	22-Jul-13	29-Jul-13	4.6912	4.3053	0.3859	59016.1	58845.8	10218.6	10,706,266	0.0360	101.4%	37.0
5	8400869	29-Jul-13	05-Aug-13	4.5923	4.3033	0.2890	59187.6	59016.1	10290.6	10,781,702	0.0268	102.1%	37.0
6	8400863	05-Aug-13	12-Aug-13	4.5861	4.3305	0.2556	59352.4	59187.6	9886.2	10,358,002	0.0247	98.1%	37.0
7	8400854	12-Aug-13	19-Aug-13	4.5308	4.3137	0.2171	59520.1	59352.4	10066.8	10,518,715	0.0206	99.9%	36.9
8	8400850	19-Aug-13	26-Aug-13	4.5679	4.3395	0.2284	59687.2	59520.1	10024.8	10,474,830	0.0218	99.5%	36.9
9	8400844	26-Aug-13	03-Sep-13	4.6136	4.3342	0.2794	59879.4	59687.2	11529.0	12,046,556	0.0232	100.1%	36.9
10	8400836	03-Sep-13	09-Sep-13	4.6062	4.3522	0.2540	60024.0	59879.4	8677.8	8,993,642	0.0282	100.4%	36.6
11	8400832	09-Sep-13	16-Sep-13	4.4500	4.3524	0.0976	60189.6	60024.0	9933.6	10,238,892	0.0095	98.5%	36.4
12	8400824	16-Sep-13	24-Sep-13	4.4644	4.2920	0.1724	60358.2	60189.6	10119.6	10,430,608	0.0165	87.8%	36.4
13	8400820	24-Sep-13	01-Oct-13	4.7844	4.3185	0.4659	60554.7	60358.2	11789.4	12,151,726	0.0383	117.0%	36.4
	Totals	91	2184.0	4.59017	4.32275	0.2674			131214.6	136,625,999	0.0254	100.3%	36.8

BHV-4 on stream % 98.8% **BHV-4** Total Volume: 4.76E+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	8400893	02-Jul-13	08-Jul-13	4.5226	4.3486	0.1740	33790.3	33646.8	8611.2	8,900,234	0.0196	99.7%	36.5
2	8400887	08-Jul-13	15-Jul-13	4.4725	4.3197	0.1528	33955.4	33790.3	9906.6	10,379,376	0.0147	98.3%	37.0
3	8400880	15-Jul-13	22-Jul-13	4.6281	4.3046	0.3235	34119.7	33955.4	9856.8	10,327,199	0.0313	97.8%	37.0
4	8400874	22-Jul-13	29-Jul-13	4.7694	4.3361	0.4333	34289.8	34119.7	10206.0	10,693,064	0.0405	101.2%	37.0
5	8400866	29-Jul-13	05-Aug-13	4.4783	4.3207	0.1576	34461.0	34289.8	10269.0	10,759,071	0.0146	101.9%	37.0
6	8400862	05-Aug-13	12-Aug-13	4.5603	4.2892	0.2711	34626.0	34461.0	9902.4	10,374,976	0.0261	98.2%	37.0
7	8400855	12-Aug-13	19-Aug-13	4.4868	4.2856	0.2012	34794.0	34626.0	10077.0	10,529,373	0.0191	100.0%	36.9
8	8400849	19-Aug-13	26-Aug-13	4.5790	4.3256	0.2534	34961.9	34794.0	10075.2	10,527,492	0.0241	100.0%	36.9
9	8400843	26-Aug-13	03-Sep-13	4.5364	4.3436	0.1928	35153.1	34961.9	11472.6	11,987,624	0.0161	99.6%	36.9
10	8400837	03-Sep-13	09-Sep-13	4.5231	4.3170	0.2061	35298.7	35153.1	8735.4	9,053,339	0.0228	101.1%	36.6
11	8400831	09-Sep-13	16-Sep-13	4.3589	4.2923	0.0666	35463.3	35298.7	9874.2	10,177,666	0.0065	98.0%	36.4
12	8400825	16-Sep-13	24-Sep-13	4.4342	4.2935	0.1407	35607.7	35463.3	8668.2	8,934,602	0.0157	75.2%	36.4
13	8400819	24-Sep-13	01-Oct-13	4.6219	4.3101	0.3118	35805.5	35607.7	11868.0	12,232,742	0.0255	117.7%	36.4
	Totals	91	2184.0	4.53627	4.31435	0.2219			129522.6	134,876,759	0.0213	99.1%	36.8

BHV-5 on stream % 98.8% **BHV-5** Total Volume: 4.76E+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	8400892	02-Jul-13	08-Jul-13	4.6134	4.2970	0.3164	57597.2	57453.8	8599.8	8,888,452	0.0356	99.5%	36.5
2	8400886	08-Jul-13	15-Jul-13	4.5522	4.3379	0.2143	57762.3	57597.2	9907.8	10,380,633	0.0206	98.3%	37.0
3	8400881	15-Jul-13	22-Jul-13	4.5530	4.2800	0.2730	57926.3	57762.3	9842.4	10,312,112	0.0265	97.6%	37.0
4	8400873	22-Jul-13	29-Jul-13	4.6950	4.3362	0.3588	58096.8	57926.3	10226.4	10,714,438	0.0335	101.5%	37.0
5	8400866	29-Jul-13	05-Aug-13	4.5163	4.3171	0.1992	58268.0	58096.8	10275.6	10,765,986	0.0185	101.9%	37.0
6	8400861	05-Aug-13	12-Aug-13	4.5092	4.2980	0.2112	58433.0	58268.0	9895.8	10,368,061	0.0204	98.2%	37.0
7	8400856	12-Aug-13	19-Aug-13	4.4847	4.2992	0.1855	58600.6	58433.0	10055.4	10,506,804	0.0177	99.8%	36.9
8	8400848	19-Aug-13	26-Aug-13	4.5269	4.2849	0.2420	58768.5	58600.6	10074.0	10,526,239	0.0230	99.9%	36.9
9	8400842	26-Aug-13	03-Sep-13	4.4672	4.3183	0.1489	58959.6	58768.5	11467.2	11,981,982	0.0124	99.5%	36.9
10	8400838	03-Sep-13	09-Sep-13	4.5129	4.3295	0.1834	59105.6	58959.6	8758.8	9,077,591	0.0202	101.4%	36.6
11	8400830	09-Sep-13	16-Sep-13	4.4196	4.3409	0.0787	59270.2	59105.6	9879.6	10,183,232	0.0077	98.0%	36.4
12	8400826	16-Sep-13	24-Sep-13	4.5131	4.3275	0.1856	59414.8	59270.2	8671.8	8,938,312	0.0208	75.3%	36.4
13	8400818	24-Sep-13	01-Oct-13	4.5715	4.2508	0.3207	59612.4	59414.8	11857.8	12,222,229	0.0262	117.6%	36.4
	Totals	91	2184.0	4.53346	4.30902	0.2244			129512.4	134,866,069	0.0218	99.1%	36.8

Period: July 2, 2013 through , October 1, 2013 (3rd Quarter 2013)

BHV-6 on stream % 98.6% **BHV-6** Total Volume: 4.75E+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	8400891	02-Jul-13	08-Jul-13	4.6363	4.3149	0.3214	5997.3	5854.1	8592.0	8,880,390	0.0362	99.4%	36.5
2	8400885	08-Jul-13	15-Jul-13	4.6593	4.3053	0.3540	6158.3	5997.3	9658.8	10,119,750	0.0350	95.8%	37.0
3	8400882	15-Jul-13	22-Jul-13	4.5970	4.3142	0.2828	6322.1	6158.3	9825.0	10,293,882	0.0275	97.5%	37.0
4	8400872	22-Jul-13	29-Jul-13	4.7255	4.3150	0.4105	6492.5	6322.1	10224.6	10,712,552	0.0383	101.4%	37.0
5	8400865	29-Jul-13	05-Aug-13	4.5415	4.2685	0.2730	6663.7	6492.5	10273.8	10,764,100	0.0254	101.9%	37.0
6	8400860	05-Aug-13	12-Aug-13	4.4660	4.3251	0.1409	6828.7	6663.7	9898.2	10,370,575	0.0136	98.2%	37.0
7	8400857	12-Aug-13	19-Aug-13	4.5284	4.3214	0.2070	6996.3	6828.7	10054.8	10,506,177	0.0197	99.8%	36.9
8	8400847	19-Aug-13	26-Aug-13	4.5428	4.3321	0.2107	7164.2	6996.3	10074.0	10,526,239	0.0200	99.9%	36.9
9	8400841	26-Aug-13	03-Sep-13	4.5013	4.3272	0.1741	7354.7	7164.2	11430.6	11,943,739	0.0146	99.2%	36.9
10	8400839	03-Sep-13	09-Sep-13	4.5028	4.3421	0.1607	7500.3	7354.7	8737.2	9,055,204	0.0177	101.1%	36.6
11	8400829	09-Sep-13	16-Sep-13	4.4175	4.3230	0.0945	7665.1	7500.3	9890.4	10,194,364	0.0093	98.1%	36.4
12	8400827	16-Sep-13	24-Sep-13	4.5266	4.3203	0.2063	7809.6	7665.1	8668.8	8,935,220	0.0231	75.3%	36.4
13	8400817	24-Sep-13	01-Oct-13	4.5045	4.2993	0.2052	8007.0	7809.6	11845.2	12,209,241	0.0168	117.5%	36.4
	Totals	91	2184.0	4.54996	4.31603	0.2339			129173.4	134,511,432	0.0229	98.9%	36.8

ALL BHV on stream % 99.3%

Week #	Blanks	Start Date	Stop Date	Net
1	8400884	02-Jul-13	08-Jul-13	4.2853
2	8400883	08-Jul-13	15-Jul-13	4.3314
3	8400877	15-Jul-13	22-Jul-13	4.3458
4	8400870	22-Jul-13	29-Jul-13	4.3190
5	8400859	29-Jul-13	05-Aug-13	4.3120
6	8400585	05-Aug-13	12-Aug-13	4.2671
7	8400852	12-Aug-13	19-Aug-13	4.3347
8	8400840	19-Aug-13	26-Aug-13	4.3498
9	8400846	26-Aug-13	03-Sep-13	4.3352
10	8400834	03-Sep-13	09-Sep-13	4.2951
11	8400828	09-Sep-13	16-Sep-13	4.2764
12	8400822	16-Sep-13	24-Sep-13	4.3025
13	8400816	24-Sep-13	01-Oct-13	4.2956
	Totals	91	2184.0	4.3116

Period: September 30, 2013 through , December 30, 2013 (4th Quarter 2013)

BHV-1 on stream % 99.8% **BHV-1** Total Volume: 4.76E+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	8400815	1-Oct-13	8-Oct-13	4.3972	4.2813	0.1159	50429.9	50289.0	8456.4	8,740,238	0.0133	83.9%	36.5
2	8400806	08-Oct-13	14-Oct-13	4.4766	4.2905	0.1861	50597.4	50429.9	10048.2	10,527,734	0.0177	116.3%	37.0
3	8400803	14-Oct-13	21-Oct-13	4.4045	4.3193	0.0852	50764.2	50597.4	10011.0	10,488,758	0.0081	99.3%	37.0
4	8398997	21-Oct-13	28-Oct-13	4.4812	4.3732	0.1080	50931.2	50764.2	10021.2	10,499,445	0.0103	99.4%	37.0
5	8398988	28-Oct-13	4-Nov-13	4.6182	4.3167	0.3015	51101.9	50931.2	10239.6	10,728,268	0.0281	101.6%	37.0
6	8398986	04-Nov-13	11-Nov-13	4.4092	4.3104	0.0988	51268.4	51101.9	9993.0	10,469,899	0.0094	99.1%	37.0
7	8398975	11-Nov-13	18-Nov-13	4.4720	4.3198	0.1522	51439.2	51268.4	10246.2	10,706,169	0.0142	101.6%	36.9
8	8398973	18-Nov-13	25-Nov-13	4.3892	4.3182	0.0710	51606.5	51439.2	10039.8	10,490,503	0.0068	99.6%	36.9
9	8398964	25-Nov-13	2-Dec-13	4.4270	4.3568	0.0702	51773.7	51606.5	10032.6	10,482,980	0.0067	99.5%	36.9
10	8398961	02-Dec-13	9-Dec-13	4.4582	4.3549	0.1033	51942.6	51773.7	10133.4	10,502,221	0.0098	100.5%	36.6
11	8398952	09-Dec-13	16-Dec-13	4.3863	4.3228	0.0635	52112.4	51942.6	10188.6	10,501,729	0.0060	101.1%	36.4
12	8398949	16-Dec-13	23-Dec-13	4.4127	4.3345	0.0782	52276.8	52112.4	9861.0	10,164,060	0.0077	97.8%	36.4
13	8398943	23-Dec-13	30-Dec-13	4.4170	4.3678	0.0492	52444.1	52276.3	10069.8	10,379,277	0.0047	99.9%	36.4
	Totals	90	2160.0	4.442254	4.328169	0.1141			129340.8	134,681,283	0.0110	100.0%	36.8

BHV-2 on stream % 99.8% **BHV-2** Total Volume: 4.75E+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	8400814	01-Oct-13	08-Oct-13	4.4947	4.2950	0.1997	60696.1	60554.7	8484.0	8,768,765	0.0228	84.2%	36.5
2	8400807	08-Oct-13	14-Oct-13	4.5124	4.2982	0.2142	60863.5	60696.1	10045.2	10,524,590	0.0204	116.3%	37.0
3	8400802	14-Oct-13	21-Oct-13	4.4345	4.3019	0.1326	61030.8	60863.5	10034.4	10,513,275	0.0126	99.5%	37.0
4	8398996	21-Oct-13	28-Oct-13	4.5532	4.3318	0.2214	61197.4	61030.8	9997.2	10,474,300	0.0211	99.2%	37.0
5	8398989	28-Oct-13	04-Nov-13	4.6117	4.3157	0.2960	61368.0	61197.4	10238.4	10,727,011	0.0276	101.6%	37.0
6	8398985	04-Nov-13	11-Nov-13	4.5105	4.3111	0.1994	61534.6	61368.0	9995.4	10,472,414	0.0190	99.2%	37.0
7	8398976	11-Nov-13	18-Nov-13	4.4981	4.2480	0.2501	61705.1	61534.6	10231.2	10,690,495	0.0234	101.5%	36.9
8	8398972	18-Nov-13	25-Nov-13	4.3795	4.2907	0.0888	61872.7	61705.1	10056.0	10,507,430	0.0085	99.8%	36.9
9	8398965	25-Nov-13	02-Dec-13	4.3730	4.2968	0.0762	62040.0	61872.7	10035.0	10,485,488	0.0073	99.6%	36.9
10	8398960	02-Dec-13	09-Dec-13	4.5102	4.3836	0.1266	62208.8	62040.0	10131.6	10,500,356	0.0121	100.5%	36.6
11	8398953	09-Dec-13	16-Dec-13	4.4372	4.3534	0.0838	62378.4	62208.8	10170.6	10,483,175	0.0080	100.9%	36.4
12	8398948	16-Dec-13	23-Dec-13	4.4174	4.3263	0.0911	62542.2	62378.4	9832.2	10,134,375	0.0090	97.5%	36.4
13	8398942	23-Dec-13	30-Dec-13	4.4006	4.3319	0.0687	62710.0	62542.2	10067.4	10,376,804	0.0066	99.9%	36.4
	Totals	90	2160.0	4.471769	4.31418	0.1576			129318.6	134,658,478	0.0153	100.0%	36.8

BHV-4 on stream % 99.3% **BHV-4** Total Volume: 4.73E+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	8400813	01-Oct-13	08-Oct-13	4.4306	4.3043	0.1263	35934.6	35805.5	7746.0	8,005,994	0.0158	76.8%	36.5
2	8400808	08-Oct-13	14-Oct-13	4.4522	4.2406	0.2116	36099.7	35934.6	9904.8	10,377,490	0.0204	114.6%	37.0
3	8400801	14-Oct-13	21-Oct-13	4.3550	4.2699	0.0851	36266.5	36099.7	10010.4	10,488,130	0.0081	99.3%	37.0
4	8398995	21-Oct-13	28-Oct-13	4.4467	4.3279	0.1188	36434.6	36266.5	10080.6	10,561,680	0.0112	100.0%	37.0
5	8398990	28-Oct-13	04-Nov-13	4.5863	4.3415	0.2448	36604.1	36434.6	10174.2	10,659,747	0.0230	100.9%	37.0
6	8398984	04-Nov-13	11-Nov-13	4.4491	4.3476	0.1015	36770.9	36604.1	10005.0	10,482,472	0.0097	99.3%	37.0
7	8398977	11-Nov-13	18-Nov-13	4.5076	4.3337	0.1739	36941.2	36770.9	10219.2	10,677,957	0.0163	101.4%	36.9
8	8398971	18-Nov-13	25-Nov-13	4.4143	4.3267	0.0876	37109.0	36941.0	10080.0	10,532,508	0.0083	100.0%	36.9
9	8398966	25-Nov-13	02-Dec-13	4.4158	4.3318	0.0840	37276.1	37109.0	10021.8	10,471,695	0.0080	99.4%	36.9
10	8398959	02-Dec-13	09-Dec-13	4.4365	4.3539	0.0826	37445.0	37276.1	10136.4	10,505,330	0.0079	100.6%	36.6
11	8398954	09-Dec-13	16-Dec-13	4.4163	4.3657	0.0496	37615.6	37445.0	10233.6	10,548,112	0.0047	101.5%	36.4
12	8398947	16-Dec-13	23-Dec-13	4.3988	4.3596	0.0392	37780.8	37615.6	9912.6	10,217,246	0.0038	98.3%	36.4
13	8398941	23-Dec-13	30-Dec-13	4.4032	4.3489	0.0543	37950.7	37780.8	10192.2	10,505,439	0.0052	101.1%	36.4
	Totals	90	2160.0	4.439336	4.32708	0.1123			128716.8	134,033,800	0.0110	99.5%	36.8

BHV-5 on stream % 99.3% **BHV-5** Total Volume: 4.73E+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	8400812	01-Oct-13	08-Oct-13	4.3905	4.2658	0.1247	59741.5	59612.4	7749.6	8,009,715	0.0156	76.9%	36.5
2	8400809	08-Oct-13	14-Oct-13	4.4786	4.2751	0.2035	59906.7	59741.5	9907.8	10,380,633	0.0196	114.7%	37.0
3	8398999	14-Oct-13	21-Oct-13	4.4309	4.3364	0.0945	60073.6	59906.7	10013.4	10,491,273	0.0090	99.3%	37.0
4	8398994	21-Oct-13	28-Oct-13	4.4691	4.3497	0.1194	60241.5	60073.6	10077.6	10,558,537	0.0113	100.0%	37.0
5	8398991	28-Oct-13	04-Nov-13	4.5823	4.3488	0.2335	60411.2	60241.5	10179.0	10,664,776	0.0219	101.0%	37.0
6	8398983	04-Nov-13	11-Nov-13	4.4468	4.3439	0.1029	60577.8	60411.2	9997.2	10,474,300	0.0098	99.2%	37.0
7	8398978	11-Nov-13	18-Nov-13	4.5004	4.3340	0.1664	60747.7	60577.8	10197.0	10,654,760	0.0156	101.2%	36.9
8	8398970	18-Nov-13	25-Nov-13	4.4039	4.3309	0.0730	60915.6	60747.7	10072.2	10,524,358	0.0069	99.9%	36.9
9	8398967	25-Nov-13	02-Dec-13	4.4231	4.3521	0.0710	61082.5	60915.6	10015.8	10,465,426	0.0068	99.4%	36.9
10	8398958	02-Dec-13	09-Dec-13	4.4399	4.3454	0.0945	61251.6	61082.5	10143.0	10,512,171	0.0090	100.6%	36.6
11	8398955	09-Dec-13	16-Dec-13	4.3657	4.2996	0.0661	61422.1	61251.6	10232.4	10,546,875	0.0063	101.5%	36.4
12	8398946	16-Dec-13	23-Dec-13	4.4380	4.3511	0.0869	61587.6	61422.1	9930.6	10,235,799	0.0085	98.5%	36.4
13	8398940	23-Dec-13	30-Dec-13	4.4161	4.3539	0.0622	61757.2	61587.6	10173.0	10,485,649	0.0059	100.9%	36.4
	Totals	90	2160.0	4.445023	4.32975	0.1153			128688.6	134,004,271	0.0112	99.5%	36.8

Period: September 30, 2013 through , December 30, 2013 (4th Quarter 2013)

BHV-6 on stream % 99.3% **BHV-6** Total Volume: 4.73E+06

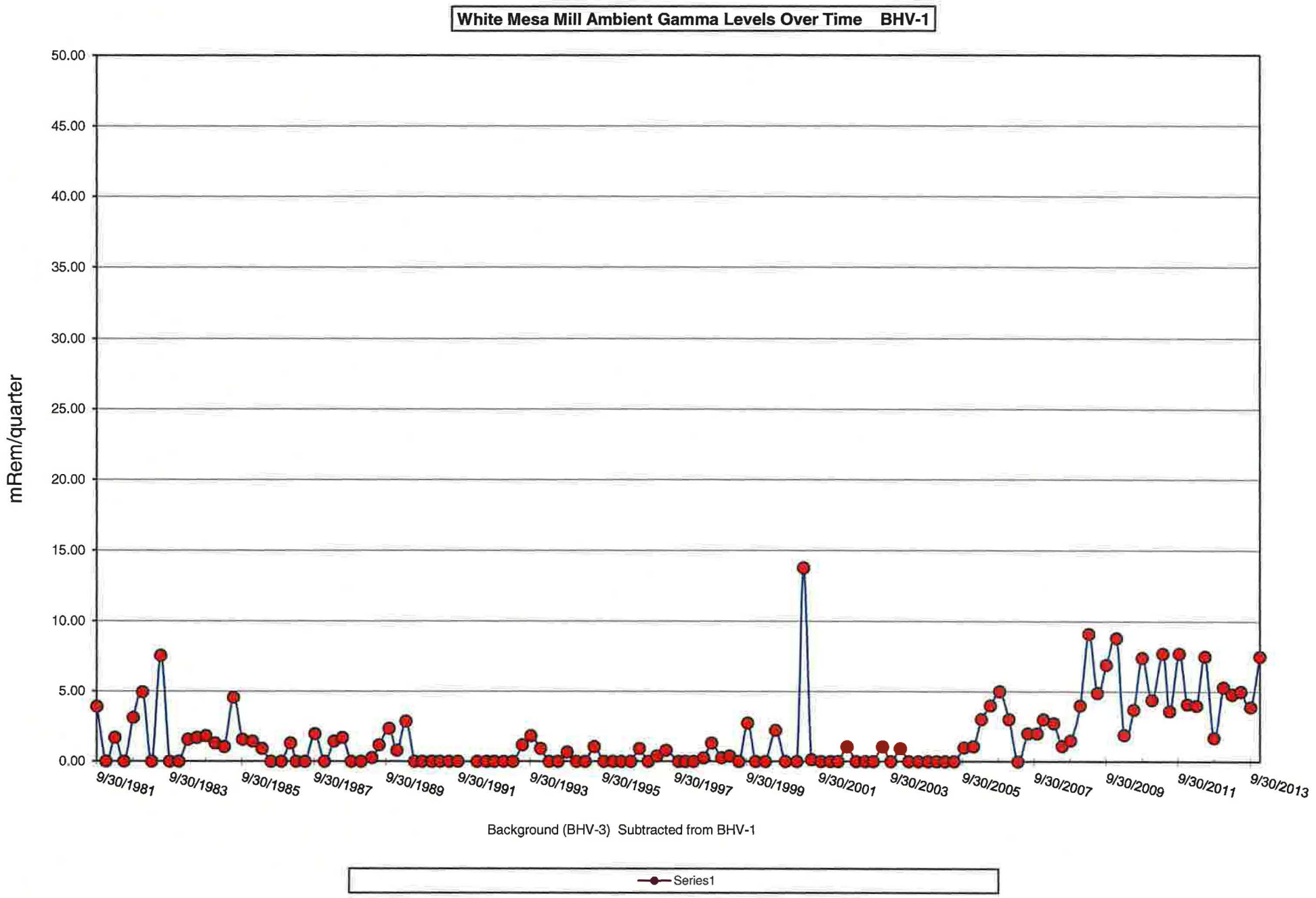
Week #	Filter Number	Start Date	Stop Date	Gross	Tare	Net	Stop Time	Start Time	Total Time	Total Liters	Loading, mg/m3	Per Cent On Stream	SCFM
1	8400811	01-Oct-13	08-Oct-13	4.3948	4.2896	0.1052	8136.4	8007.0	7765.2	8,025,838	0.0131	77.0%	36.5
2	8400810	08-Oct-13	14-Oct-13	4.4570	4.3019	0.1551	8301.6	8136.4	9907.2	10,380,005	0.0149	114.7%	37.0
3	8398998	14-Oct-13	21-Oct-13	4.4308	4.3425	0.0883	8468.4	8301.6	10012.8	10,490,644	0.0084	99.3%	37.0
4	8398993	21-Oct-13	28-Oct-13	4.4780	4.3493	0.1287	8636.4	8468.4	10078.8	10,559,794	0.0122	100.0%	37.0
5	8398992	28-Oct-13	04-Nov-13	4.5000	4.2726	0.2274	8806.0	8636.4	10176.0	10,661,633	0.0213	101.0%	37.0
6	8398982	04-Nov-13	11-Nov-13	4.3811	4.2804	0.1007	8972.7	8806.0	10000.8	10,478,072	0.0096	99.2%	37.0
7	8398979	11-Nov-13	18-Nov-13	4.4728	4.3090	0.1638	9143.0	8972.7	10218.6	10,677,330	0.0153	101.4%	36.9
8	8398969	18-Nov-13	25-Nov-13	4.4145	4.3348	0.0797	9310.9	9143.0	10073.4	10,525,612	0.0076	99.9%	36.9
9	8398968	25-Nov-13	02-Dec-13	4.4022	4.3161	0.0861	9478.1	9310.9	10033.2	10,483,607	0.0082	99.5%	36.9
10	8398957	02-Dec-13	09-Dec-13	4.4715	4.3661	0.1054	9646.9	9478.1	10125.0	10,493,516	0.0100	100.4%	36.6
11	8398956	09-Dec-13	16-Dec-13	4.4138	4.3482	0.0656	9817.5	9646.9	10236.6	10,551,204	0.0062	101.6%	36.4
12	8398945	16-Dec-13	23-Dec-13	4.3937	4.3155	0.0782	9982.4	9817.5	9897.0	10,201,167	0.0077	98.2%	36.4
13	8398939	23-Dec-13	30-Dec-13	4.3885	4.3338	0.0547	10152.6	9982.4	10212.6	10,526,466	0.0052	101.3%	36.4
	Totals	90	2160.0	4.430669	4.31998	0.1107			128737.2	134,054,886	0.0108	99.5%	36.8

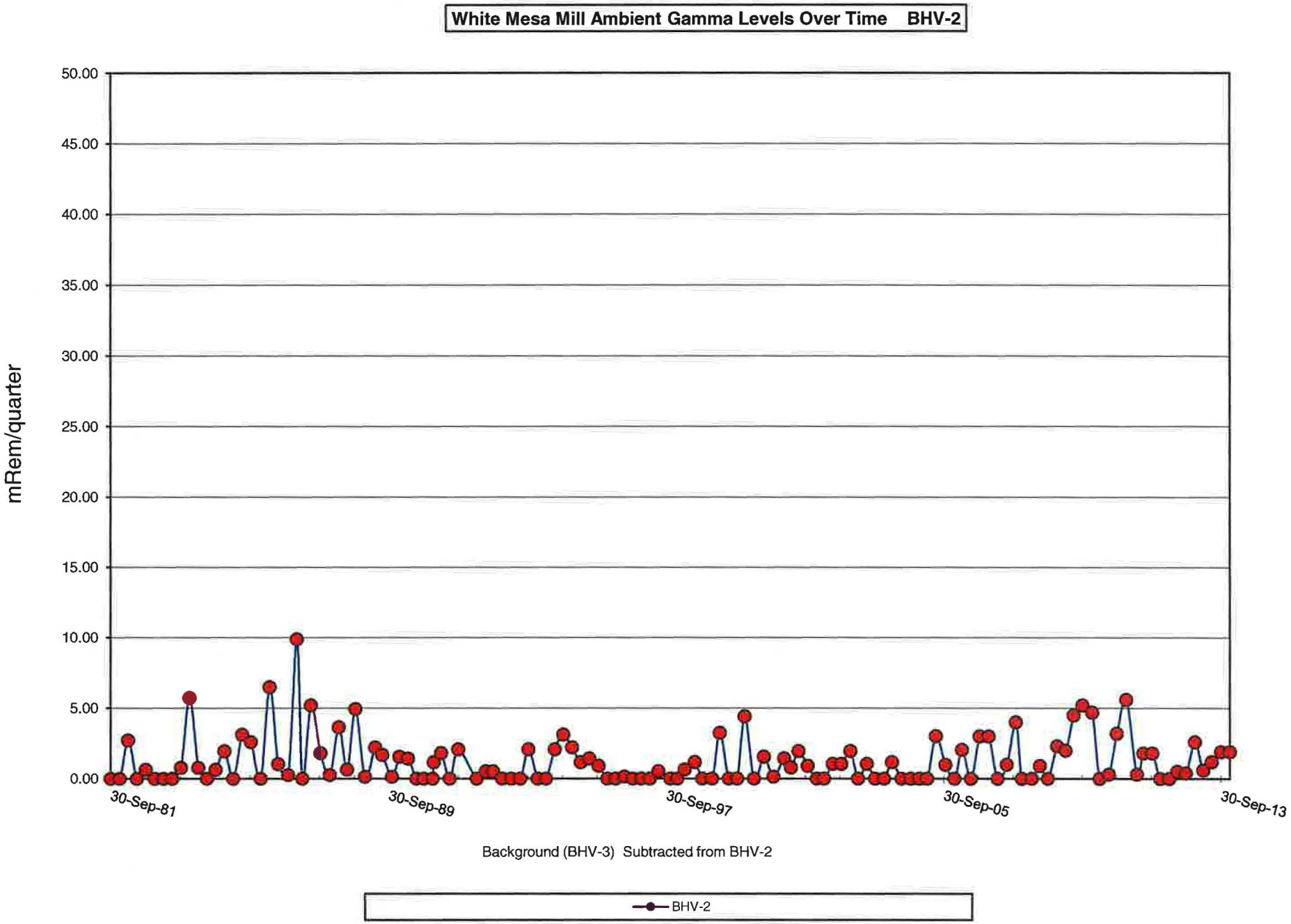
ALL BHV on stream % 99.5%

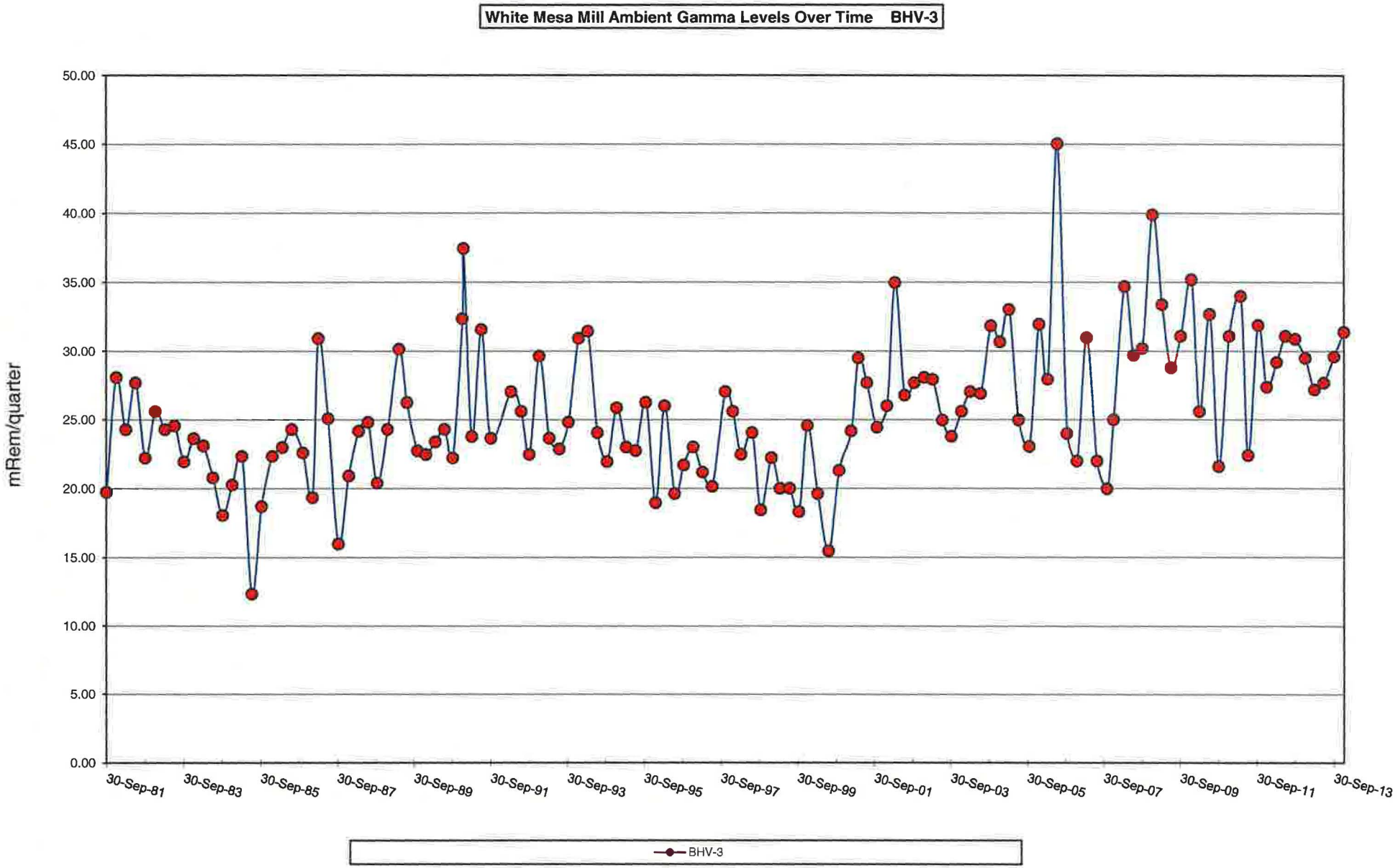
Week #	Blanks	Start Date	Stop Date	Net
1	8400805	01-Oct-13	08-Oct-13	4.2773
2	8400804	08-Oct-13	14-Oct-13	4.2850
3	8399000	14-Oct-13	21-Oct-13	4.3485
4	8398987	21-Oct-13	28-Oct-13	4.3375
5	8398981	28-Oct-13	04-Nov-13	4.3339
6	8398980	04-Nov-13	11-Nov-13	4.3413
7	8398974	11-Nov-13	18-Nov-13	4.3393
8	8398963	18-Nov-13	25-Nov-13	4.3766
9	8398962	25-Nov-13	02-Dec-13	4.3459
10	8398951	02-Dec-13	09-Dec-13	4.3411
11	8398950	09-Dec-13	16-Dec-13	4.3433
12	8398944	16-Dec-13	23-Dec-13	4.3525
13	8398933	23-Dec-13	30-Dec-13	4.3383
	Totals	90	2160.0	4.3354

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
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30-Sep-03
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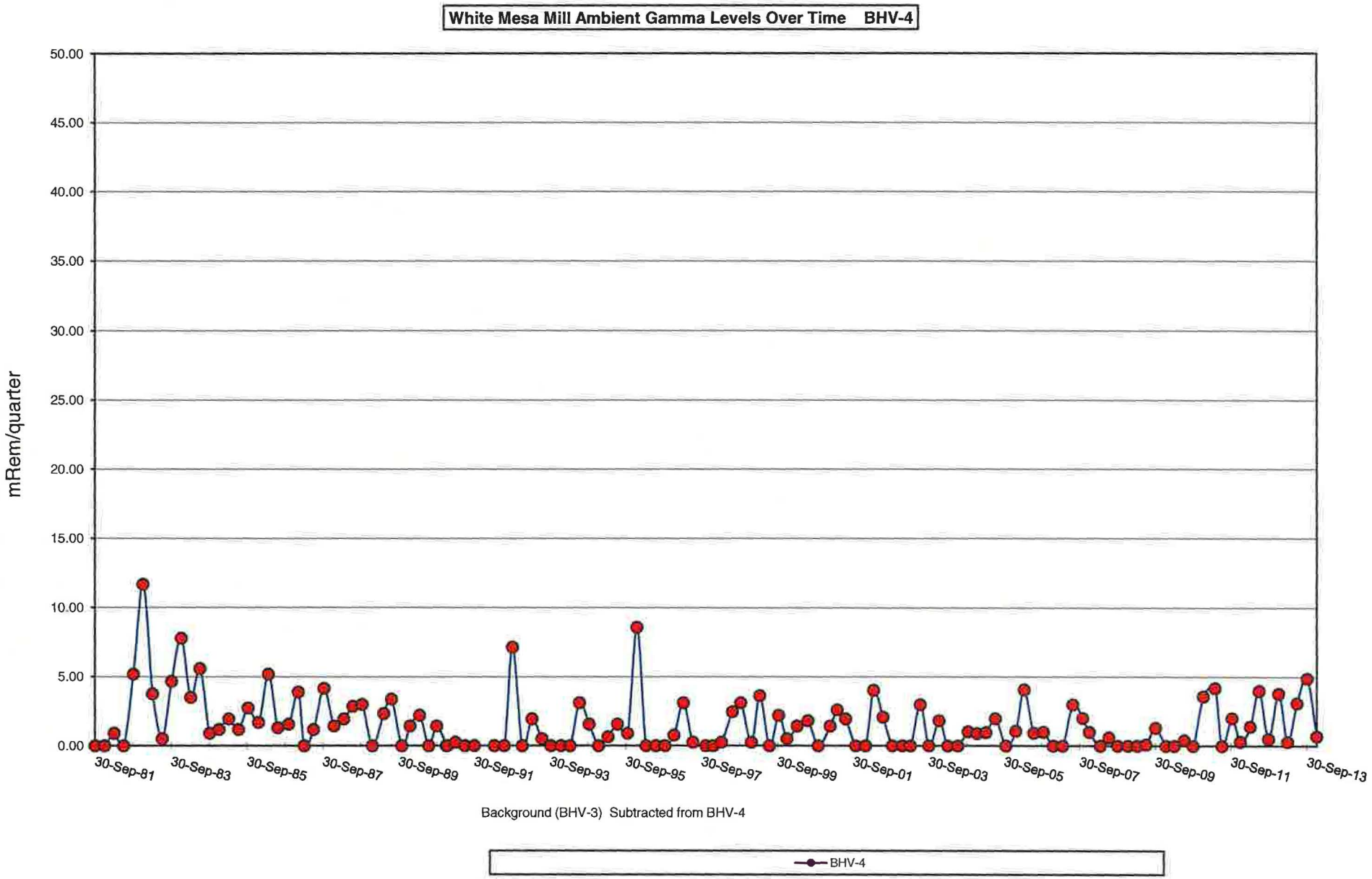
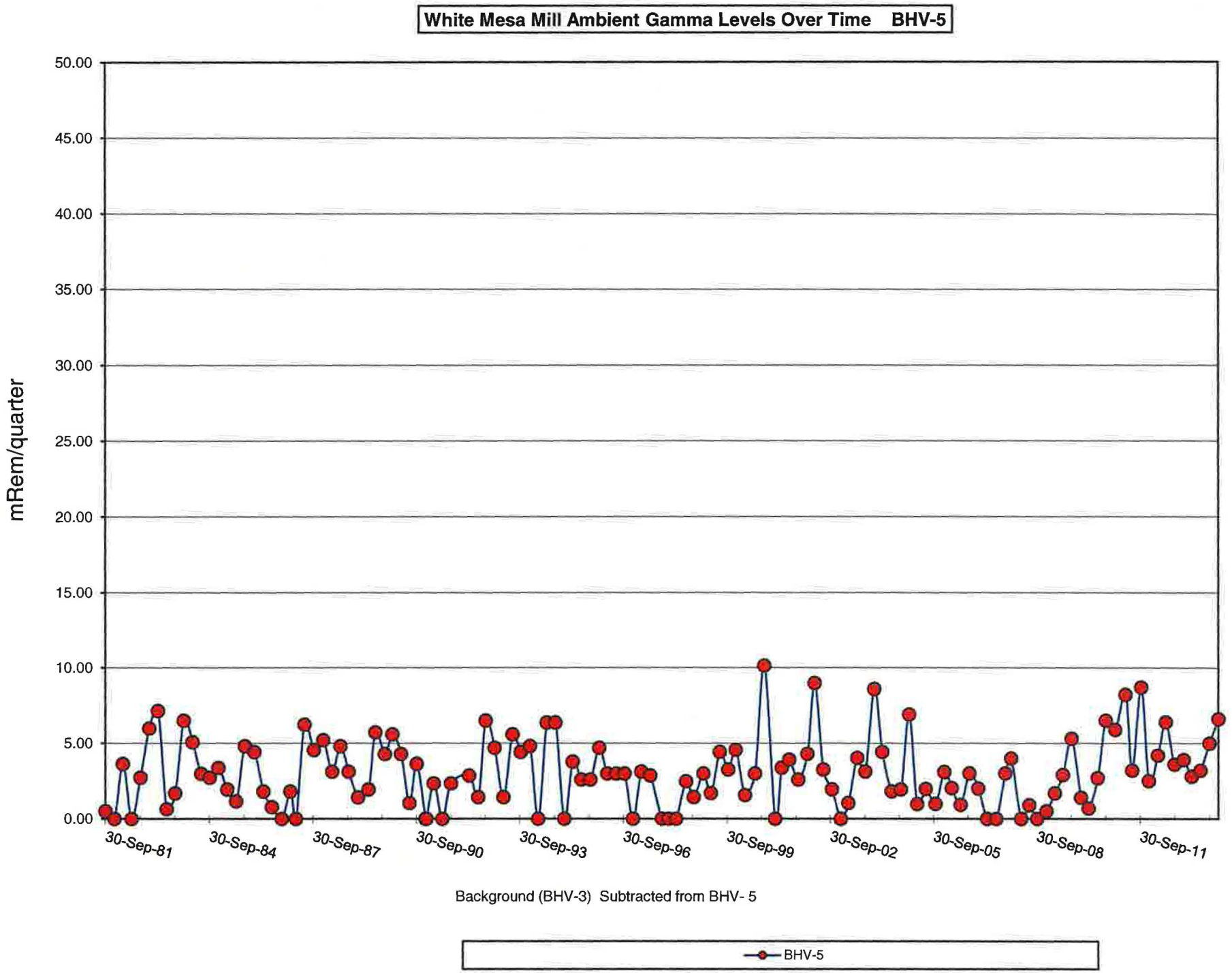
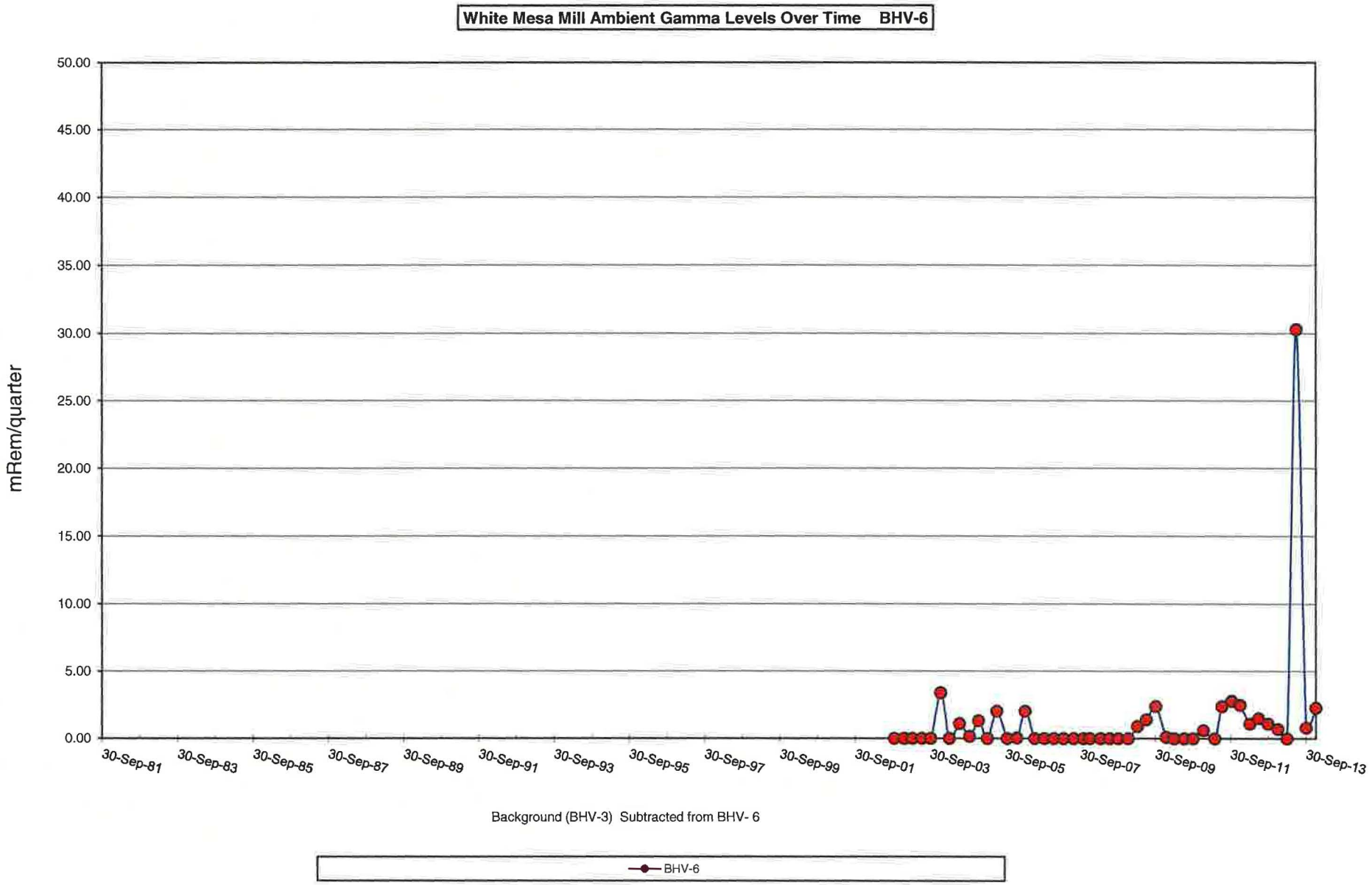
30-Sep-07
30-Sep-09
30-Sep-11
30-Sep-13
BHV-3


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 Third Quarter 2013 Environmental Spherical Gamma Monitor Results

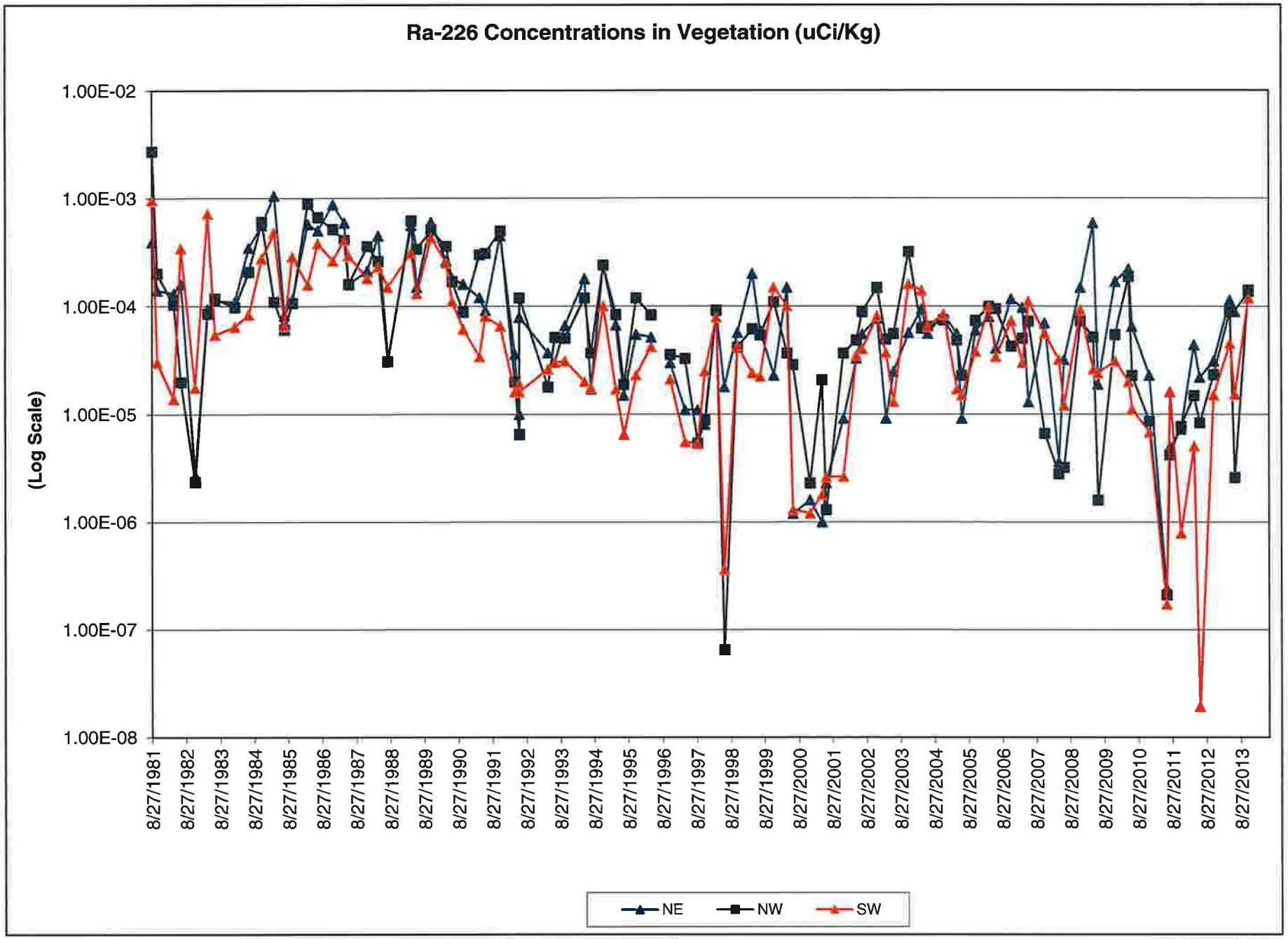
Badge Number	Location	Date Issued	Date Returned	Total Days Badge at WMM	Ambient Dose Equivalent	mRem / hour	mRem / Day	mRem / Week
Control	Administration Vault	6/26/2013	9/30/2013	96	34.6	0.02	0.360	2.52
1	V2O5 Control Room	6/26/2013	9/30/2013	96	50.5	0.02	0.526	3.68
2	BHV-6	6/26/2013	9/30/2013	96	30.4	0.01	0.317	2.22
3	Ore Stor. - Barrel Area	6/26/2013	9/30/2013	96	305.8	0.13	3.185	22.30
4	Vanadium Precip.Area	6/26/2013	9/30/2013	96	71.8	0.03	0.748	5.24
5	Yellocake Drying Area	6/26/2013	9/30/2013	96	302.7	0.13	3.153	22.07
6	Leach	6/26/2013	9/30/2013	96	138.6	0.06	1.444	10.11
7	SAG Mill Control Room	6/26/2013	9/30/2013	96	406.8	0.18	4.238	29.66
8	Yellowcake Precip.	6/26/2013	9/30/2013	96	295.5	0.13	3.078	21.55
9	Central Control Room	6/26/2013	9/30/2013	96	91.9	0.04	0.957	6.70
10	Trommel Screen (ore pad)	6/26/2013	9/30/2013	96	139.8	0.06	1.456	10.19
11	North East Corner Ore Pad	6/26/2013	9/30/2013	96	360.2	0.16	3.752	26.26
12	Met. Lab	6/26/2013	9/30/2013	96	66.4	0.03	0.692	4.84
13	Filter Press Room	6/26/2013	9/30/2013	96	173.2	0.08	1.804	12.63
14	BHV-1	6/26/2013	9/30/2013	96	33.5	0.01	0.349	2.44
15	BHV-2	6/26/2013	9/30/2013	96	31.5	0.01	0.328	2.30
16	BHV-3	6/26/2013	9/30/2013	96	29.6	0.01	0.308	2.16
17	BHV-4	6/26/2013	9/30/2013	96	34.5	0.01	0.359	2.52
18	BHV-5	6/26/2013	9/30/2013	96	34.6	0.02	0.360	2.52
19	SAG Mill	6/26/2013	9/30/2013	96	466.8	0.20	4.863	34.04
20	Tails	6/26/2013	9/30/2013	96	58.6	0.03	0.610	4.27
21	CCD	6/26/2013	9/30/2013	96	80.3	0.03	0.836	5.86
22	North SX	6/26/2013	9/30/2013	96	59.5	0.03	0.620	4.34
23	Administration Building	6/26/2013	9/30/2013	96	40.4	0.02	0.421	2.95
24	Admin Parking Lot	6/26/2013	9/30/2013	96	90.5	0.04	0.943	6.60
25	Yellowcake Packaging	6/26/2013	9/30/2013	96	1414	0.61	14.729	103.10
26	Yellowcake Storage	6/26/2013	9/30/2013	96	815.6	0.35	8.496	59.47
27	Bucking Room	6/26/2013	9/30/2013	96	165.9	0.07	1.728	12.10
28	Mill Lunch Room	6/26/2013	9/30/2013	96	54.2	0.02	0.565	3.95
29	South SX	6/26/2013	9/30/2013	96	117.9	0.05	1.228	8.60
30	Mtce. Super.'s Office	6/26/2013	9/30/2013	96	51.2	0.02	0.533	3.73
31	Ore Feed Grizzly	6/26/2013	9/30/2013	96	415.7	0.18	4.330	30.31
32	Scalehouse	6/26/2013	9/30/2013	96	216.3	0.09	2.253	15.77
33	Sample Plant (OBS)	6/26/2013	9/30/2013	96	188.5	0.08	1.964	13.74
34	Front Gate	6/26/2013	9/30/2013	96	217.1	0.09	2.261	15.83
45	AF - Barrel Dump Station	6/26/2013	9/30/2013	96	250.5	0.11	2.609	18.27
46	AF Circuit - South	6/26/2013	9/30/2013	96	70.3	0.03	0.732	5.13
47	AF Circuit - North	6/26/2013	9/30/2013	96	137.6	0.06	1.433	10.03
51	North Control # 1	6/26/2013	9/30/2013	96	38.2	0.02	0.398	2.79
52	North Control # 2	6/26/2013	9/30/2013	96	33.4	0.01	0.348	2.44
53	CaF2 Barrel Dump Station - Operator Station	6/26/2013	9/30/2013	96	283	0.12	2.948	20.64
64	KF Barrel Dump Station	6/26/2013	9/30/2013	96	195.5	0.08	2.036	14.26

White Mesa Mill Fourth Quarter 2013 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	9/30/2013	1/2/2014	94	36.2	0.02	0.385	2.70
1	V2O5 Control Room	9/30/2013	1/2/2014	94	49.3	0.02	0.524	3.67
2	BHV-6	9/30/2013	1/2/2014	94	33.7	0.01	0.359	2.51
3	Ore Stor. - Barrel Area	9/30/2013	1/2/2014	94	659.6	0.29	7.017	49.12
4	Vanadium Precip.Area	9/30/2013	1/2/2014	94	128.5	0.06	1.367	9.57
5	Yellocake Drying Area	9/30/2013	1/2/2014	94	145.7	0.06	1.550	10.85
6	Leach	9/30/2013	1/2/2014	94	176.7	0.08	1.880	13.16
7	SAG Mill Control Room	9/30/2013	1/2/2014	94	377	0.17	4.011	28.07
8	Yellowcake Precip.	9/30/2013	1/2/2014	94	160	0.07	1.702	11.91
9	Central Control Room	9/30/2013	1/2/2014	94	82.6	0.04	0.879	6.15
10	Trommel Screen (ore pad)	9/30/2013	1/2/2014	94	142.4	0.06	1.515	10.60
11	North East Corner Ore Pad	9/30/2013	1/2/2014	94	337	0.15	3.585	25.10
12	Met. Lab	9/30/2013	1/2/2014	94	84	0.04	0.894	6.26
13	Filter Press Room	9/30/2013	1/2/2014	94	186.4	0.08	1.983	13.88
14	BHV-1	9/30/2013	1/2/2014	94	38.9	0.02	0.414	2.90
15	BHV-2	9/30/2013	1/2/2014	94	33.3	0.01	0.354	2.48
16	BHV-3	9/30/2013	1/2/2014	94	31.4	0.01	0.334	2.34
17	BHV-4	9/30/2013	1/2/2014	94	32.1	0.01	0.341	2.39
18	BHV-5	9/30/2013	1/2/2014	94	38	0.02	0.404	2.83
19	SAG Mill	9/30/2013	1/2/2014	94	381.1	0.17	4.054	28.38
20	Tails	9/30/2013	1/2/2014	94	62.6	0.03	0.666	4.66
21	CCD	9/30/2013	1/2/2014	94	84.5	0.04	0.899	6.29
22	North SX	9/30/2013	1/2/2014	94	99.5	0.04	1.059	7.41
23	Administration Building	9/30/2013	1/2/2014	94	44.2	0.02	0.470	3.29
24	Admin Parking Lot	9/30/2013	1/2/2014	94	85	0.04	0.904	6.33
25	Yellowcake Packaging	9/30/2013	1/2/2014	94	1040	0.46	11.064	77.45
26	Yellowcake Storage	9/30/2013	1/2/2014	94	406	0.18	4.319	30.23
27	Bucking Room	9/30/2013	1/2/2014	94	108.5	0.05	1.154	8.08
28	Mill Lunch Room	9/30/2013	1/2/2014	94	59.1	0.03	0.629	4.40
29	South SX	9/30/2013	1/2/2014	94	112.4	0.05	1.196	8.37
30	Mtce. Super.'s Office	9/30/2013	1/2/2014	94	50.1	0.02	0.533	3.73
31	Ore Feed Grizzly	9/30/2013	1/2/2014	94	396.4	0.18	4.217	29.52
32	Scalehouse	9/30/2013	1/2/2014	94	208	0.09	2.213	15.49
33	Sample Plant (OBS)	9/30/2013	1/2/2014	94	196.3	0.09	2.088	14.62
34	Front Gate	9/30/2013	1/2/2014	94	224.9	0.10	2.393	16.75
45	AF - Barrel Dump Station	9/30/2013	1/2/2014	94	348.3	0.15	3.705	25.94
46	AF Circuit - South	9/30/2013	1/2/2014	94	81.3	0.04	0.865	6.05
47	AF Circuit - North	9/30/2013	1/2/2014	94	107.6	0.05	1.145	8.01
51	North Control # 1	9/30/2013	1/2/2014	94	40.5	0.02	0.431	3.02
52	North Control # 2	9/30/2013	1/2/2014	94	34.1	0.02	0.363	2.54
53	CaF2 Barrel Dump Station - Operator Station	9/30/2013	1/2/2014	94	197	0.09	2.096	14.67
64	KF Barrel Dump Station	9/30/2013	1/2/2014	94	178.4	0.08	1.898	13.29

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
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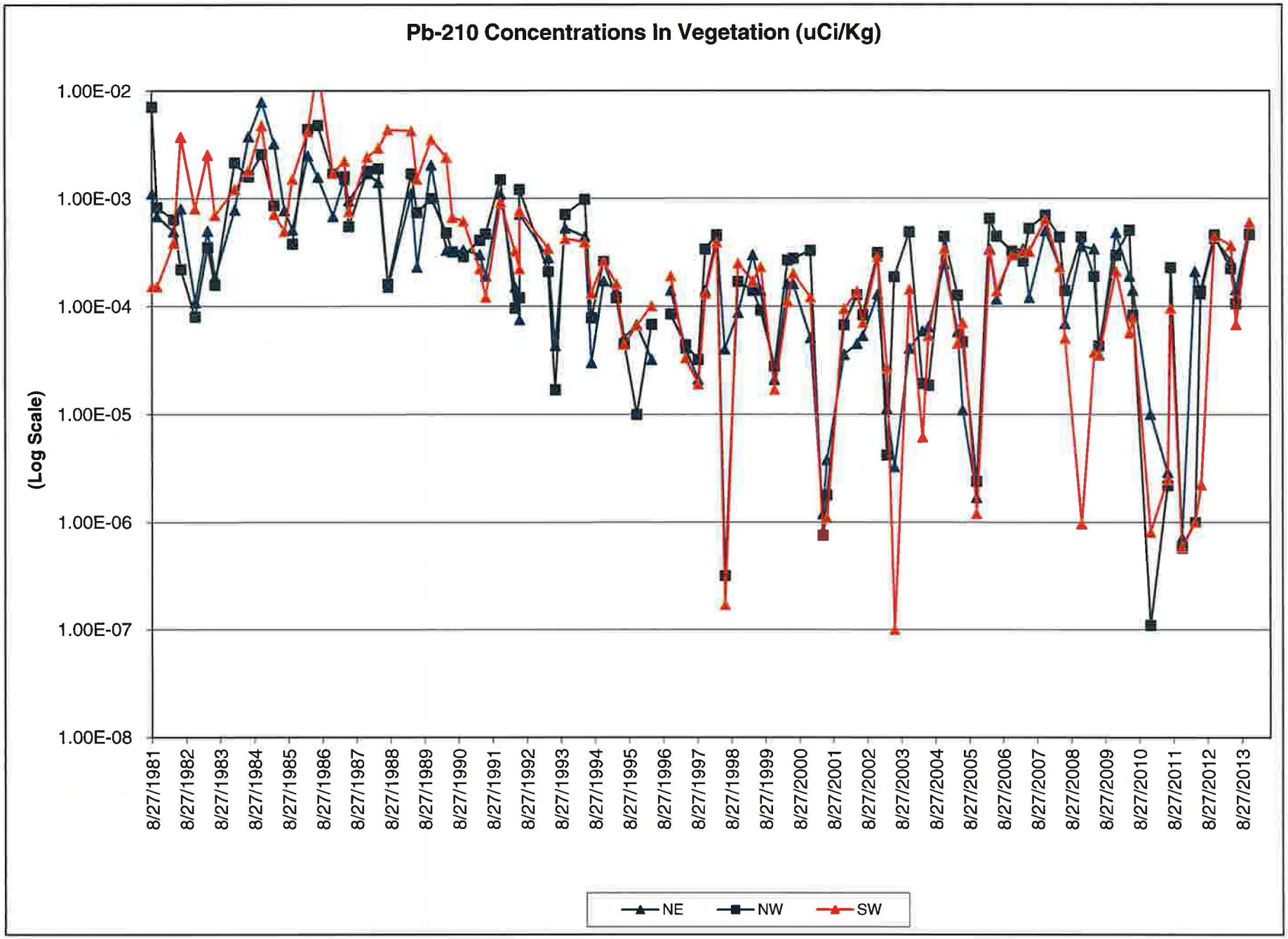
8/27/2012
8/27/2013
NE
NW
SW


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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8/27/1999
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8/27/2001
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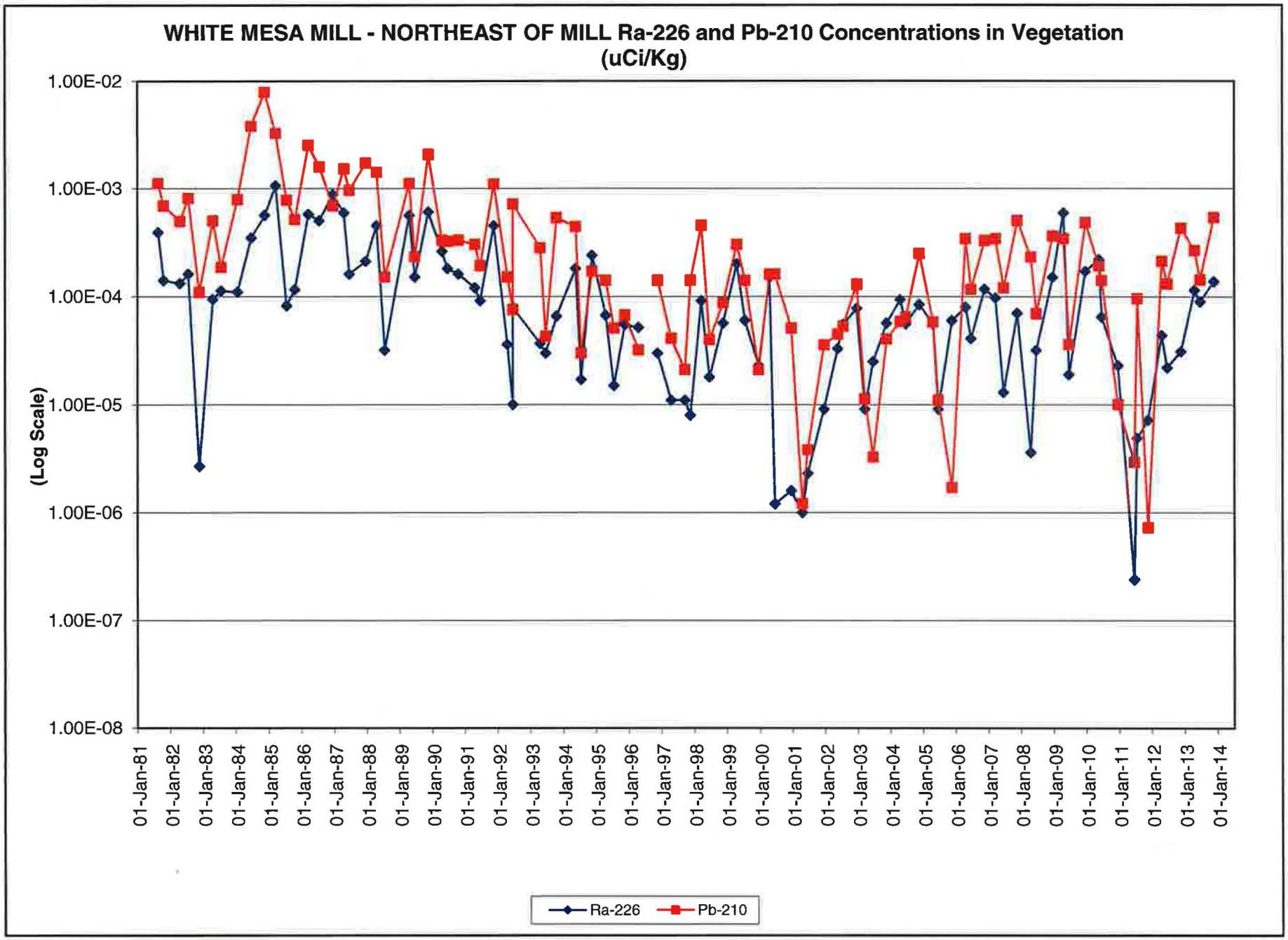
8/27/2003
8/27/2004
8/27/2005
8/27/2006
8/27/2007
8/27/2008
8/27/2009
8/27/2010
8/27/2011
8/27/2012
8/27/2013
NE
NW
SW

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 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)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
(Log Scale)
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
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01-Jan-04
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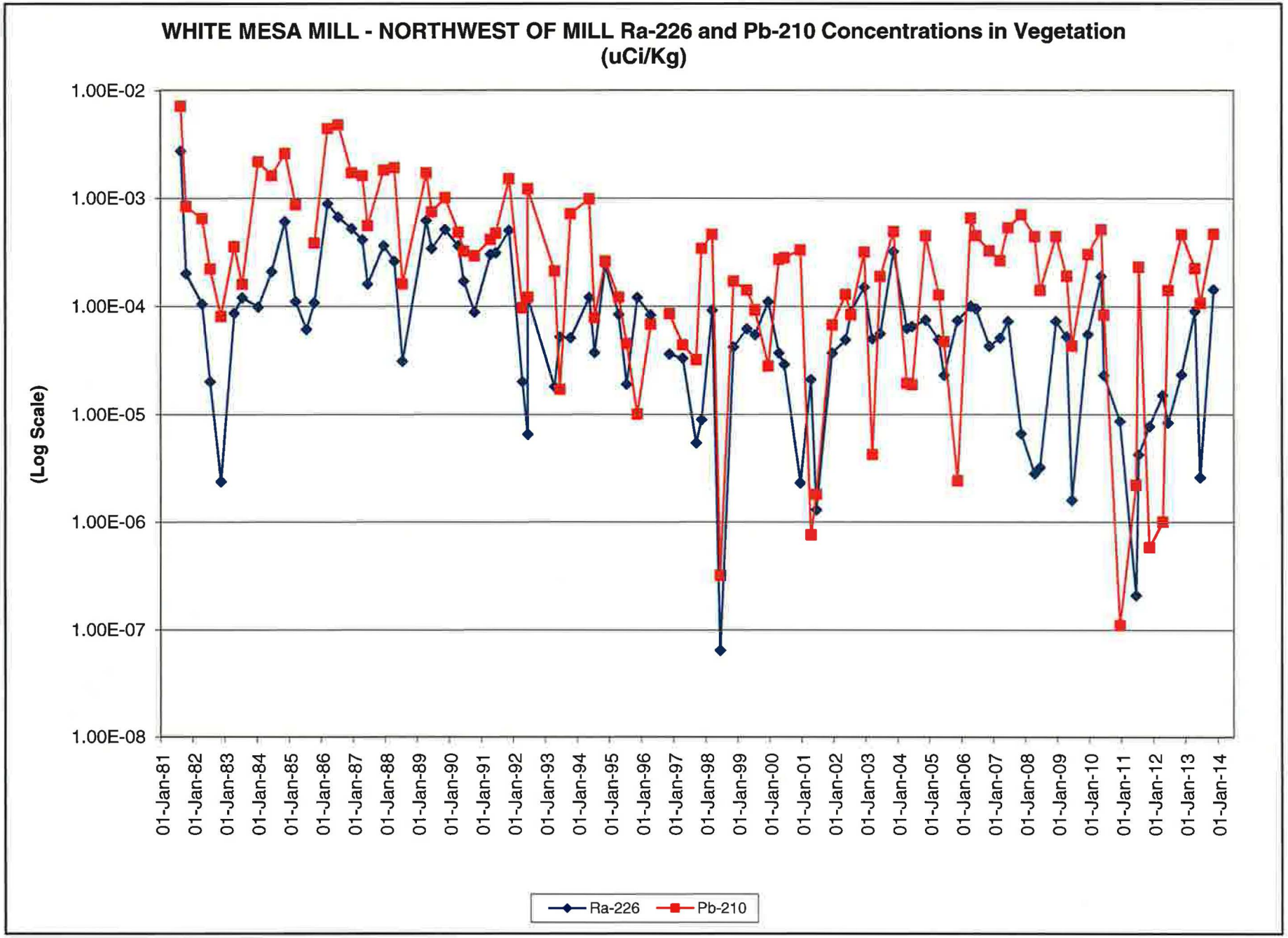
01-Jan-10
01-Jan-11
01-Jan-12
01-Jan-13
01-Jan-14
Ra-226
Pb-210

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

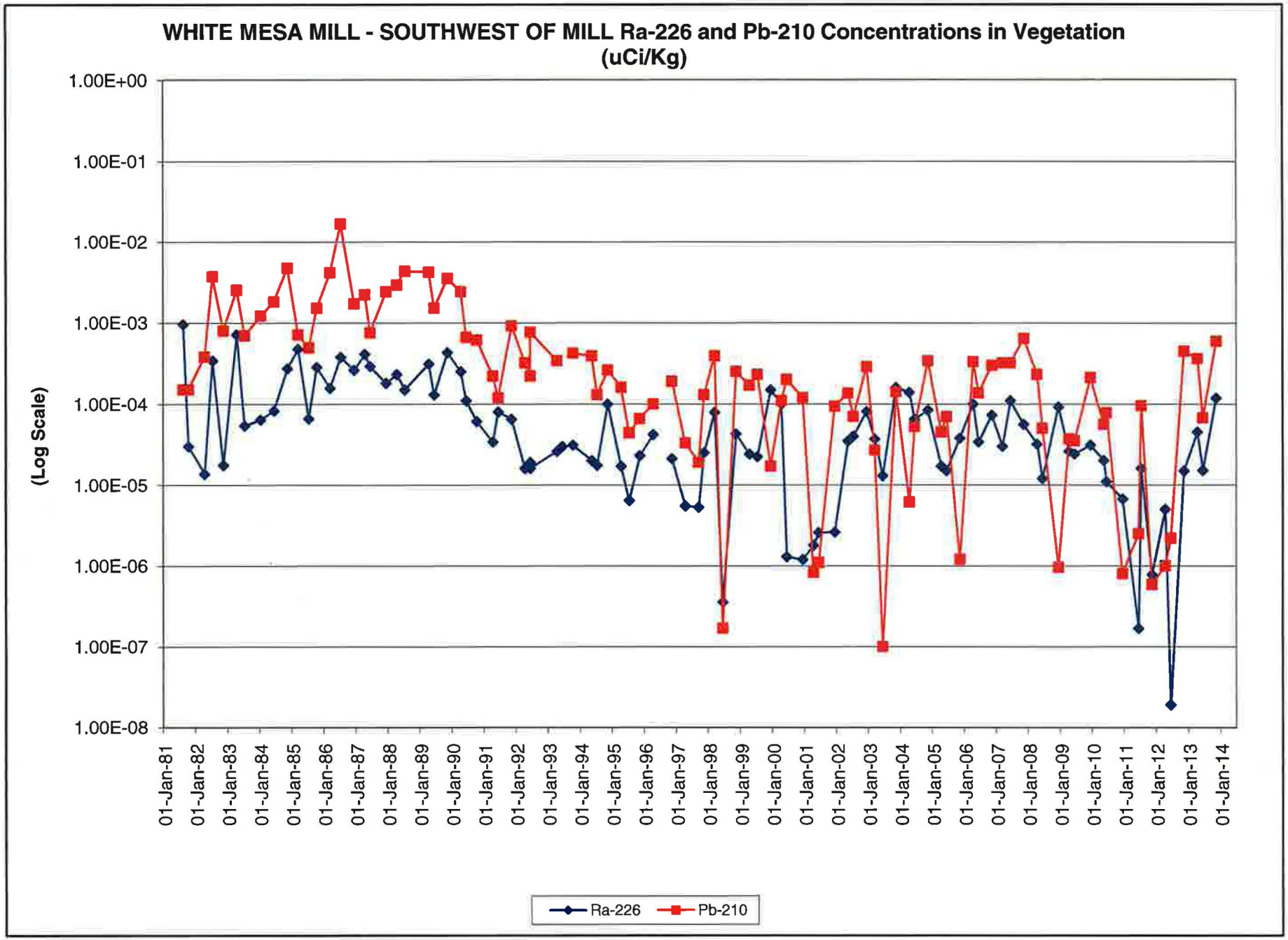

WHITE MESA MILL - NORTHWEST OF MILL Ra-226 and Pb-210 Concentrations in Vegetation
(uCi/Kg)
(Log Scale)
1.00E-02
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
01-Jan-81
01-Jan-82
01-Jan-83
01-Jan-84
01-Jan-85
01-Jan-86
01-Jan-87
01-Jan-88
01-Jan-89
01-Jan-90
01-Jan-91
01-Jan-92
01-Jan-93
01-Jan-94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

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

December 16, 2013

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

Re: Vegetation Analysis
Work Order: 337777

Dear Ms. Weinel:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 19, 2013. 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: 337777

Case Narrative

Receipt Narrative
for
Energy Fuels Resources (USA), Inc.
SDG: 337777

December 16, 2013

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 November 19, 2013 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
337777001	North East
337777002	North West
337777003	South East

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
Project Manager

Chain of Custody and Supporting Documentation

337777

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
Late Fall Vegetation 2013	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
North East	11/14/2013	1200	Ra 226, PB-210
North West	11/14/2013	1245	Ra 226, PB-210
South East	11/14/2013	1345	Ra 226, PB-210

Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer	11/14/13/1200		11-19-13 0900
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DNMI	**SDG/AR/COC/Work Order:** 337777
Received By: JP	**Date Received:** 11-19-13

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): 0 cpm
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 19
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 130442941 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: 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 1Z 187 444 02 9029 8470 " " " " 9078 4257 " " " " 9521 0869

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JP Date 11-19-13 Page 1 of 1

GEL Laboratories LLC – Login Review Report

GEL Work Order/SDG: 337777 Late Fall Vegetation 2013
Client SDG: 337777
Project Manager: Heather Shaffer
Project Name: DNMI00101 Vegetation Analysis
Purchase Order: DW16138
Package Level: LEVEL3
EDD Format: EIM_DNMI

Work Order Due Date: 19-DEC-13
Package Due Date: 16-DEC-13
EDD Due Date: 18-DEC-13
Due Date: 19-DEC-13
HXS1

Collector: C
Prelogin #: 20131110591
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
337777001	North East		14-NOV-13 12:00	19-NOV-13 09:00	-2	1	VEGETATION		30		1		
337777002	North West		14-NOV-13 12:45	19-NOV-13 09:00	-2	1	VEGETATION		30		1		
337777003	South East		14-NOV-13 13:45	19-NOV-13 09:00	-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				Cooler Seal Undisturbed	y	
	REVW	Laboratory Composite – Dry prep instructions				Temperature (C)	19	
-002 North West	REVW	GFPC, Total Alpha Radium, solid				Client Matrix	SOLID	
	REVW	GFPC, Pb210, Solid				Cooler Seal Undisturbed	y	
	REVW	Laboratory Composite – Dry prep instructions				Temperature (C)	19	
-003 South East	REVW	GFPC, Total Alpha Radium, solid				Client Matrix	SOLID	
	REVW	GFPC, Pb210, Solid				Cooler Seal Undisturbed	y	
	REVW	Laboratory Composite – Dry prep instructions				Temperature (C)	19	

Product: LABCOMP_S **Workdef ID:** 1310628 **In Product Group?** No **Group Name:** **Group Reference:**
Method: **Path:** Rad Prep SPRP
Product Description: Laboratory Composite – Dry prep instructions **Product Reference:**
Samples: 001, 002, 003 **Moisture Correction:** "As Received"
Parmname Check: All parmnames scheduled properly

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

Action	Product Name	Description	Samples

Contingent Tests

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 16 December 2013

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	T104704235-13-8
Utah NELAP	SC000122013-11
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790

Radiochemistry Case Narrative
Energy Fuels Resources (DNMI)
SDG 337777

Method/Analysis Information

Product:	**GFPC, Pb210, Solid**
Analytical Method:	DOE RP280 Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1348205
Prep Batch Number:	1348020

Sample ID	Client ID
337777001	North East
337777002	North West
337777003	South East
1202990210	Method Blank (MB)
1202990211	337777001(North East) Sample Duplicate (DUP)
1202990212	337777001(North East) Matrix Spike (MS)
1202990213	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: 337777001 (North East).

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: The blank, 1202990210 (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 1202990210 (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
Samples 1202990210 (MB), 1202990211 (North East), 337777001 (North East), 337777002 (North West) and 337777003 (South East) were recounted to confirm sample results. The original counts are reported.

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

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.

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

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GFPC, Total Alpha Radium, solid**
Analytical Method:	EPA 900.1 Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1348207
Prep Batch Number:	1348020

Sample ID	Client ID
337777001	North East
337777002	North West
337777003	South East
1202990217	Method Blank (MB)

1202990218	337777001(North East) Sample Duplicate (DUP)
1202990219	337777001(North East) Matrix Spike (MS)
1202990220	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: 337777001 (North East).

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: Refer to Data Exception Report (DER). The blank, 1202990217 (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.

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. The following DER was generated for this SDG: DER 1252304 was generated due to Failed Recovery for MS/PS. 1. The matrix spike 1202990219 does not meet the recovery requirement due to the matrix of the sample. 1. Reporting results.

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: 337777 GEL Work Order: 337777

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: Heather McCarty **Name:** **Heather McCarty**

Date: **19 DEC 2013** **Title:** **Analyst II**

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
17-DEC-13	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
GFPC	EPA 900.1 Modified	Solid	DNMI
Batch ID:	**Sample Numbers:**		
1348207	See Below		

Potentially affected work order(s)(SDG): 337777

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	DER Disposition:
1. The matrix spike 1202990219 does not meet the recovery requirement due to the matrix of the sample.	1. Reporting results.

Originator's Name:

Maryann Alforque 17-DEC-13

Data Validator/Group Leader:

Nat Long 17-DEC-13

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: December 19, 2013

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:	337777001	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	14-NOV-13 12:00		
Receive Date:	19-NOV-13		
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		0.000533	+/-1.45E-05	2.27E-05	1.00E-06	uCi/kg		KDF1	12/18/13	0920	1348205	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		0.000137	+/-3.87E-06	4.71E-06	5.00E-08	uCi/kg		KDF1	12/15/13	1837	1348207	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	11/20/13	0745	1348020

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			78.0	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			91.1	(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: December 19, 2013

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:	337777002	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	14-NOV-13 12:45		
Receive Date:	19-NOV-13		
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		0.000465	+/-1.17E-05	1.80E-05	1.00E-06	uCi/kg		KDF1	12/18/13	0920	1348205	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		0.000143	+/-3.70E-06	2.17E-06	5.00E-08	uCi/kg		KDF1	12/15/13	1837	1348207	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	11/20/13	0745	1348020

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			99.8	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			83.8	(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: December 19, 2013

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 East	Project:	DNMI00101
Sample ID:	337777003	Client ID:	DNMI001
Matrix:	SOLID		
Collect Date:	14-NOV-13 13:45		
Receive Date:	19-NOV-13		
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		0.000592	+/-1.27E-05	1.62E-05	1.00E-06	uCi/kg		KDF1	12/18/13	0920	1348205	1
GFPC, Total Alpha Radium, solid "As Received"												
Total Radium		0.000118	+/-3.39E-06	2.97E-06	5.00E-08	uCi/kg		KDF1	12/15/13	1837	1348207	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	11/20/13	0745	1348020

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE RP280 Modified	
2	EPA 900.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead Carrier	GFPC, Pb210, Solid "As Received"			107	(25%-125%)
Barium Carrier	GFPC, Total Alpha Radium, solid "As Received"			89.3	(25%-125%)

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

GEL LABORATORIES LLC

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QC Summary

Report Date: December 19, 2013

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

Contact: **Ms. Kathy Weinel**

Workorder: **337777**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 1348205										
QC1202990211 337777001 DUP										
Lead-210		0.000533		0.000483	uCi/kg	9.75		(0%-20%)	KDF1	12/18/13 09:20
	Uncertainty	+/-1.45E-05		+/-1.30E-05						
QC1202990213 LCS										
Lead-210	0.0109			0.0118	uCi/kg		109	(75%-125%)		12/18/13 09:19
	Uncertainty			+/-0.000152						
QC1202990210 MB										
Lead-210			U	1.49E-05	uCi/kg					12/18/13 09:20
	Uncertainty			+/-4.87E-06						
QC1202990212 337777001 MS										
Lead-210	0.0111	0.000533		0.0127	uCi/kg		109	(75%-125%)		12/18/13 09:19
	Uncertainty	+/-1.45E-05		+/-0.000158						
Batch 1348207										
QC1202990218 337777001 DUP										
Total Radium		0.000137		0.000115	uCi/kg	17.3		(0%-20%)	KDF1	12/15/13 18:38
	Uncertainty	+/-3.87E-06		+/-3.75E-06						
QC1202990220 LCS										
Total Radium	0.00548			0.00457	uCi/kg		83.5	(75%-125%)		12/15/13 18:09
	Uncertainty			+/-6.03E-05						
QC1202990217 MB										
Total Radium			U	-1.62E-06	uCi/kg					12/15/13 18:38
	Uncertainty			+/-1.12E-06						
QC1202990219 337777001 MS										
Total Radium	0.00566	0.000137		0.00399	uCi/kg		68.1 *	(75%-125%)		12/15/13 18:09
	Uncertainty	+/-3.87E-06		+/-6.74E-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

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QC Summary

Workorder: 337777

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.
^ 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

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

BLANDING, UTAH

August 1-2, 2013

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:

October 9, 2013

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: 10-9-13

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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 (NYC) 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

One test run on the SYC Scrubber began August 1, 2013 and finished August 2, 2013. The second test run on the SYC was completed August 2, 2013.

One run was completed on the Yellow Cake Dryer Baghouse August 2, 2013.

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	Garren Palmer	
State Agency	None	
TETCO	Dean Kitchen Jeff Graton	Doug Olsen

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	11.02	8.982E +05	294.7	6.224E+07
2	13.76	1.076E+06		
AVE	**12.39**	**9.578E+05**	**294.7**	**6.224E+07**

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 or pinkish 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.

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	96	101
2	98	

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	
	NYC 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			8/1-2/13	8/2/13	
Filter #			X124	X126	
Begin	Time Test Began		10:54	17:01	
End	Time Test Ended		16:24	23:10	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.55	24.55	
ΔH	Orifice Pressure Drop	In. H_2O	1.089	1.786	
Y	Meter Calibration Y Factor	dimensionless	1.000	1.000	
Vm	Volume Gas Sampled--Meter Conditions	cf	327.212	324.602	
T_m	Avg Meter Temperature	°F	86.1	90.8	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.5431	0.5210	
Wt_{wc}	Weight Water Collected	Grams	159.2	548.1	
T_t	Duration of Test	Minutes	480	360	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.2600	0.3100	
CO_2	Volume % Carbon Dioxide	Percent	1.30	2.00	
O_2	Volume % Oxygen	Percent	17.10	16.90	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	81.60	81.10	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	260.433	256.684	
Vw	Volume Water Vapor	scf	7.506	25.843	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.028	0.091	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.173	0.168	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.028	0.091	
X_d	Fraction of Dry Gas	Fraction	0.972	0.909	
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.89	29.00	
M_s	Molecular Wt Stack Gas	lb/lbmol	28.59	27.99	
%I	Percent Isokinetic	Percent	96.1	97.9	**AVG**
T_s	Avg Stack Temperature	°F	127.6	126.5	**127.1**
A_s	Stack Cross Sectional Area	Sq. Ft	0.887	0.887	
P_G	Stack Static Pressure	In. H_2O	-0.320	-0.320	
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.48	24.48	
P_s	Stack Pressure	In. Hg. Abs	24.456	24.456	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	1.36E+03	1.23E+03	**1.30E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	1.90E+03	1.84E+03	**1.87E+03**
V_s	Velocity of Stack Gas	fpm	2.15E+03	2.08E+03	**2.11E+03**
Curies	Radionuclides per sample	pCi	2869.9	3532.0	
Crad	Concentration of Radionuclides	pCi/dscf	11.020	13.760	**12.390**
ERrad	Emission Rate of Radionuclides	pCi/hr	8.982E+05	1.017E+06	**9.578E+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
DENISON MINES CORPORATION
YELLOW CAKE DRYER BAGHOUSE

Symbol	Description	Dimensions	Run #1
Date	Date		8/2/13
Filter #			X123
Begin	Time Test Began		16:25
End	Time Test Ended		18:27
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.55
ΔH	Orifice Pressure Drop	In. H_2O	1.576
Y	Meter Calibration Y Factor	dimensionless	1.001
Vm	Volume Gas Sampled--Meter Conditions	cf	105.123
T_m	Avg Meter Temperature	°F	95.3
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.8792
Wt_{wc}	Weight Water Collected	Grams	32.2
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	82.485
Vw	Volume Water Vapor	scf	1.518
Bw_s	Fraction H_2O in Stack Gas	Fraction	0.018
X_d	Fraction of Dry Gas	Fraction	0.982
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.64
%I	Percent Isokinetic	Percent	101.4
T_s	Avg Stack Temperature	°F	118.1
A_s	Stack Cross Sectional Area	Sq. Ft	1.396
P_G	Stack Static Pressure	In. H_2O	-0.71
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.48
P_s	Stack Pressure	In. Hg. Abs	24.428
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	3.52E+03
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	4.81E+03
V_s	Velocity of Stack Gas	fpm	3.44E+03
Curies	Radionuclides per sample	pCi	24309.0
Crad	Concentration of Radionuclides	pCi/dscf	294.7087
ERrad	Emission Rate of Radionuclides	pCi/hr	6.224E+07

General Nomenclature

%I = percent isokinetic, percent

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

ASΔP = 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 $A\sqrt{S\Delta P}$)

$\sqrt{\Delta P_1}$ = 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 (^oF)

T_s = stack temperature (^oF)

T_{std} = absolute temperature at standard conditions (528^oR)

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^oF and 29.92 inches Hg.

V_s = velocity of stack gas (fpm)

V_w = volume water vapor (scf) at 68^oF 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$ER_F = C_f \bullet Q_s \bullet 0.00857$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$Q_a = V_s \bullet A_s$$

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

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

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

$$Q_W = Q_s / X_d$$

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

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

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

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

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

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

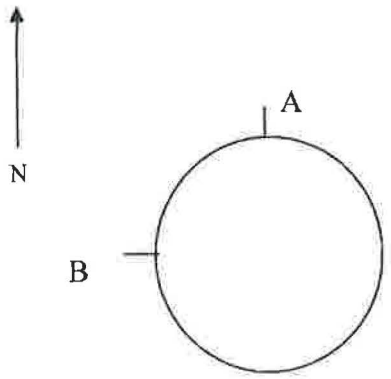
APPENDIX B

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

Preliminary S Y Cake Scrb



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 4/3/13

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	Ports B	Ports C	Ports D	Ports E	Ports F
1	6.7	0.85	0.85	105 .50	104 .55	16			
2	25.0	3.19	3.19	105 .55	107 .55				
3	75.0	9.56	9.56	106 .60	107 .60				
4	93.3	11.90	11.90	106 .60	107 .65				

Averages:

T_S _____ ∠ Flow _____

ΔP _____ $\sqrt{\Delta P}$ _____

KEY => T_S ∠ Flow ΔP

JG X124 8/1/13 TETCO

Field Data Sheet

Filter X123 Sample Box B
X125 8/2/13

Page 1 of 1 Run # 1

Plant: Energy Fuels

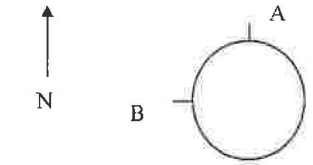
Location: South Yellow Cake Dryer Scrubber

Date: 8/1/13

Operator: JEFF GRATON

1 2 3 4 5 6 7

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	DGM Temp (T_m) In
1	10:54	0	679.531	.32	1.10	1.10	3	123	263	268	268	65	74	74
1		20	693.614	.32	1.10	1.10	3	124	255	271	271	65	75	79
1		40	707.777	.32	1.10	1.10	3	124	265	262	262	65	78	81
2		60	721.934	.32	1.10	1.10	3	124	244	248	248	65	79	83
2		80	736.186	.34	1.14	1.14	3	124	240	243	243	65	80	83
2		100	750.225	.34	1.14	1.14	3	125	245	250	250	60	81	84
3		120	764.350	.31	1.04	1.04	3	125	255	260	260	56	81	84
3		140	778.447	.31	1.04	1.04	3	125	245	245	245	57	81	84
* 3	13:35	160	792.550	.31	1.04	1.04	3	124	255	247	247	60	81	84
8/2/13 4	11:02	180	793.822	.29	.971	.971	3	128	260	245	245	67	82	82
4		200	807.645	.25	.831	.831	3	128	250	258	258	67	82	85
4		220	820.998	.25	.831	.831	3	128	247	260	260	65	83	86
1	12:24	240	845.771	.29	.964	.964	5	130	236	256	256	67	85	87
1	20	260	859.314	.29	.964	.964	5	129	255	264	264	65	86	90
1	40	280	872.975	.27	.898	.898	5	130	258	266	266	63	86	90
2	60	300	885.986	.27	.898	.898	6	130	252	267	267	65	88	93
2	20	320	899.065	.28	.928	.928	6	131	261	259	259	66	90	95
2	40	340	912.144	.28	.928	.928	6	130	256	249	249	62	90	94
3	60	360	925.998	.29	.974	.974	7	130	250	245	245	62	91	94
3	20	380	939.699	.29	.974	.974	7	131	250	246	246	62	89	93
3	40	400	953.521	.28	.940	.940	8	129	240	245	245	63	90	95
JG 967.0294	60	420	968.029	.28	.940	.940	8	130	257	251	251	61	91	95
4	20	440	980.611	.28	.940	.940	9	130	258	252	252	61	91	96
4	40	460	994.136	.31	1.041	1.041	9	130	250	255	255	61	92	97
	60	480	1008.016											
Total			113.019 ✓	√5.0993 ✓ (13.0336)	9.80 ✓ (23.81)			1118 ✓	3062				1446 ✓	4134
Average			214.194 / 327.213	0.5431 / √0.5666 ✓	1.089 ✓		0.992	124.2 ✓	127.6				80.3 ✓	86.1



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

.260 .260 .260 .260

Avg D_n .260 inches

Gas Bag C-07

Console 4

Y-Factor 1.000

$\Delta H_@$ 1.490 in H_2O

Barometric Pressures

Pb_m 24.55 in Hg

Pb_p 24.48 in Hg

P_G -.32 in H_2O

Leak Check	Pre	Post	
ft³/min	0.003	0.002	0.003
vac in Hg	22	10	13
JG 0.0			
Pitot Rate	~~0.005~~	0.0	0.0
In H_2O	~~20.0~~	5.0	5.0
JG 5.0			

Water Collected 159.2 g

JG Time Sampled 480 160 min

Review 578.5

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)
	792.550	20	.003			
	793.822	20	.003			

* SHUT DOWN 13:35 - CENTRAFUGE DOWN. JG
START UP : 11:02 8/2/13

833,171

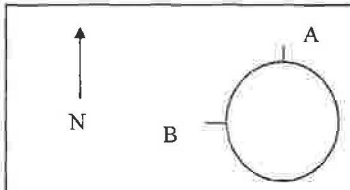
_____ Field Data Sheet

TETCO
Filter X126 X127 Sample Box B

Page 1 of 1 Run # 2

Plant: Energy Fuels
Date: 8/2/13

Location: South Yellow Cake Dryer Scrubber
Operator: JEFF CRATON



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 Mln (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	DGM Temp (T_m) In
1	5:01	0	008.940	.22	1.440	1.440	3	129	230	230	250	60	92	93
1		15	02 1.253	.22	1.440	1.440	4	128	235	235	250	60	92	97
1		30	033.465	.22	1.440	1.440	5	128	235	235	250	60	93	98
2		45	045.825	.22	1.448	1.448	5	130	240	240	255	60	93	98
2		60	058.015	.23	1.514	1.514	6	128	240	240	255	60	93	98
2	15	75	070.205	.23	1.514	1.514	7	128	245	245	255	60	92	99
3	30	90	083.989	.28	1.843	1.843	7	128	245	245	255	40	92	99
3	45	105	097.755	.28	1.843	1.843	9	128	250	250	250	40	90	96
3	60	120	111.595	.29	1.899	1.899	10	128	250	250	250	40	88	95
4	15	135	125.419	.21	1.375	1.375	12	126	258	258	260	40	89	97
4	30	150	137.630	.25	1.637	1.637	10	127	269	269	271	45	89	95
4	45	165	149.999	.25	1.637	1.637	12	127	254	250	250	49	88	95
* 1	20:1060	180	163.276	.29	1.900	1.900	4	127	230	240	240	65	86	89
1	15	195	177.943	.30	1.964	1.964	5	128	230	240	240	65	85	93
1	30	210	192.016	.30	1.964	1.964	6	127	240	250	250	53	85	93
2	45	225	206.055	.30	1.964	1.964	7	127	240	245	245	53	85	93
2	60	240	220.122	.30	1.964	1.964	8	127	240	245	245	55	84	93
2	15	255	234.242	.30	1.964	1.964	9	127	240	245	245	55	84	93
3	30	270	248.320	.29	1.900	1.900	10	126	245	245	245	55	84	93
3	45	285	262.455	.29	1.900	1.900	11	127	245	250	250	55	84	93
3	60	300	276.547	.27	1.768	1.768	12	125	250	255	255	59	84	93
4	15	315	290.110	.33	2.161	2.161	12	120	254	255	255	60	83	91
4	30	330	304.475	.36	2.357	2.357	14	120	250	250	250	64	81	89
4	45	345	319.695	.32	2.095	2.095	16	119	250	260	260	65	79	88
	23:1060	360	334.369											
Total			324.602	√12.5043	42.88			3035					4356	
Average				√.5210	1.786			126.5					90.8	

Assumed Moisture 4-6 %
Probe 276 Cp 0.84
Nozzle Calibration .310 .310 .310 .310
Avg D_n = .310 inches
Gas Bag L-07
Console 4
Y-Factor 1.005
$\Delta H_@$ 1.490 in H_2O

Barometric Pressures
Pb_m 24.55 in Hg
Pb_p 24.48 in Hg
P_G −(.32) in H_2O

Leak Check:	Pre	Post
ft³/min	0.006	0.004
vac in Hg	23	23
Pitot Rate	0.0	0.0
In H_2O	5.0	5.0

Water Collected 548.1 g
Time Sampled _____ min
Review _____

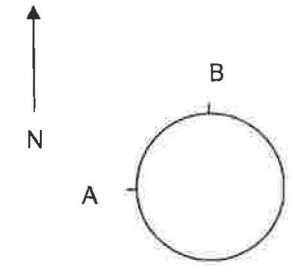
K = @T_m
K = @T_m

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)
* change filters	163.276	16	0.005			
	164.103	23	0.008			
	0.827					

Yellow Cake Dryer Baghouse

Prelim 6 pts blank



Stack Dia 16 Reference 0

Ports are 57" Upstream from next disturbance

Ports are 468" Downstream from last disturbance

Facility Energy Fuels Resources, Blanding, UT

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

MS Field Data Sheet

Filter X123 TETCO Sample Box A

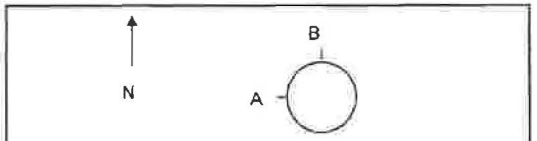
Page 1 of 1 Run # 1

Plant: Denison Mines

Date: 8/2/13

Location: Yellowcake Dryer Baghouse

Operator: [illegible]



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	DGM Temp (T_m) In
1	16:25	0	17.104	.76	1.57	1.57	3	112	230	260	260	54	82	82
2		10	20.588	.81	1.64	1.64	4	120	249	265	261	44	83	85
3		20	33.486	.87	1.76	1.76	4	120	266	266	262	46	87	93
4		30	42.683	.92	1.86	1.86	5	121	267	268	265	45	89	99
5		40	52.148	.89	1.80	1.80	5	120	270	266	262	45	92	104
6		50	61.601	.66	1.34	1.34	5	117	270	269	265	47	93	106
1	17:27	60	71.090	.68	1.38	1.38	4	114	230	267	260	54	93	104
2		70	80.623	.71	1.44	1.44	4	118	235	270	268	48	94	106
3		80	88.258	.76	1.55	1.55	4	118	262	270	270	50	94	104
4		90	96.542	.78	1.59	1.59	4	118	265	273	270	49	94	105
5		100	105.268	.72	1.47	1.47	4	117	264	269	268	49	94	105
6		110	113.731	.71	1.51	1.51	4	117	268	269	269	48	94	105
	18:27	120	122.227											
			105.123											
Total			105.123	10.5504	18.91			1417					2287	
Average				.8792	1.576			118.1					95.3	

Assumed Moisture 1 %

Probe 186 Cp 0.84

Nozzle Calibration .222 .222 .222 .222

Avg D_n .222 inches

Gas Bag Ambient Air

Console 5

Y-Factor 1.001

$\Delta H_@$ 1.48 in H_2O

Barometric Pressures

Pb_m 24.55 in Hg

Pb_p 24.48 in Hg

P_g (-.71) in H_2O

Leak Check	Pre	Post
ft³/min	0.007	0.003
vac in Hg	23	11
Pitot Rate	0.0	0.0
In H_2O	9.5	9.5

Water Collected 32.2 g

Time Sampled 120 min

Review [illegible]

K = @T_m

K = @T_m

Comments:

Time	Baghouse ΔP
4:30	9.3
5:00	10.1
5:30	10.3
6:00	10.2

Time	Baghouse ΔP
6:30	10.1
6	10.1

8 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: _____

Stack Identification: SYC Scrubber

IMPINGERS

Run: 1 Sample Box: B

X124

	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)	616.4	637.0	609.7	583.5	533.9	914.3
Initial (g)	497.9	644.7	553.5	616.7	530.4	892.4
Net (g)	118.5	-(7.7)	56.2	-33.2	3.5	21.9

Total (g) 159.2

IMPINGERS

Run: 1 Sample Box: A

X125

	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)	701.4	788.1	578.0	627.5	537.9	992.0
Initial (g)	501.9	648.0	555.8	620.5	532.3	947.1
Net (g)	199.5	140.1	22.2	7	5.6	44.9

Total (g) 419.3

IMPINGERS

Run: _____ Sample Box: B

X126

	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)	741.1	814.4	648.2	642.4	542.9	966.5
Initial (g)	504.7	657.2	577.8	627.4	537.8	908.5
Net (g)	236.4	163.2	70.4	15	5.1	58

Total (g) 548.1

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 _____

Date 8/1/13
Test No. 1
Gas Bag No. C-07
Ambient Temp 85
Operator JCH

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	1.3	1.3	1.3	1.3	1.3	1.3	1.3
O_2 (Net is Actual O_2 Reading Minus Actual CO_2 Reading).	18.4	17.1	18.4	17.1	18.4	17.1	17.1
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date 8/2/13
Test No. 2
Gas Bag No. C-07
Ambient Temp 79
Operator JCH

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).	18.9	16.9	18.9	16.9	18.9	16.9	16.9
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).							

†O_2 was determined using a gas analyzer
CO is not measured, as it has the same molecular weight as N_2

Yellow Cake Dryer Baghouse

NYC Baghouse M5

Facility: Energy Fuels Date: 9/2/13

Stack Identification: NYC Baghouse

X123

IMPINGERS

Run: 1 Sample Box: A

Impinger Number	1	2	3	4	5	6
Initial Volume of liquid (H_2O) in impingers, (ml)	100	100	—	Silica Gel		
Final (g)	619.4	703.7	529.6	911.3		
Initial (g)	619.6	694.6	526.5	891.1		
Net (g)	(0.2)	9.1	3.1	20.2		

Total (g) ~~20.2~~ 32.2

IMPINGERS

Run: _____ Sample Box: _____

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: _____

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: _____

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	8/05/2013	
Address 391 East 620 South	**Telephone Number (Area Code)/Fax Number** 801-492-9106	**Lab Number**	**Page** 1 of 1
City American Fork / **State** Ut / **Zip Code** 84003	**Site Contact** Scott Christensen, Garren Palmer / **Lab Contact**		
Project Name and Location (State) Energy Fuels 2013 3rd 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
R1 Dryer BH filter (X123) and beaker	8/2/13	16:00	X										X			
R1 SYC Scrubber filter (X124,125) and beaker	8/1,2/13	8:00	X										X			
R2 SYC Scrubber filter (X126,127) and beaker	8/2/13	15:00	X										X			

Special Instructions/ Conditions of Receipt

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	Date	Time	1. Received By	Date	Time
[signature]	8/5/13	12 00			
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

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 14 *Pages*

Report No.: 57059

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.
47154		R1 Dryer BH filter (x123)and b	J3H090411-1	M1LAX2AA	9M1LAX20	3224041
		R1 SYC Scrubber filter(x124,12	J3H090411-2	M1LA81AA	9M1LA810	3224041
		R2 SYC Scrubber filter(x124,12	J3H090411-3	M1LCA1AA	9M1LCA10	3224041

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

September 23, 2013

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

Attention: Dean Kitchen

Date Received at Lab	:	August 8, 2012
Project Name	:	Energy Fuels 2013 3rd Quarter
Sample Type	:	Three (3) Stack Filter Sample
SDG Number	:	47154

CASE NARRATIVE

I. Introduction

On August 8, 2013, 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 J3H090411.

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
Sample R1 Dryer HB Filter (X123) and Beaker had a FWHM above acceptance limits. The sample was stripped from the disk, reprocessed and recounted. The recount is now within acceptance criteria. The achieved MDA of the batch exceeds the detection limit from reduced aliquot sizes taken due to historical process knowledge. The sample activities exceed the MDAs. 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
Customer Service 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: 23-Sep-13

TestAmerica Inc

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

Report No. : 57059 **SDG No:** 47154

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RER2
3224041 FFSR									
R1 Dryer BH filter (x123)and b									
	M1LAX2AA	U-234	1.16E-02 +- 1.9E-03		uCi/Sample	83%	3.59E-05	9.00E-15	
		U-235	6.09E-04 +- 1.5E-04		uCi/Sample	83%	2.47E-05	9.00E-15	
		U-238	1.21E-02 +- 2.0E-03		uCi/Sample	83%	4.30E-05	9.00E-15	
R1 SYC Scrubber filter(x124,12									
	M1LA81AA	U-234	1.42E-03 +- 5.0E-04		uCi/Sample	94%	4.73E-05	9.00E-15	
		U-235	3.99E-05 +- 3.3E-05		uCi/Sample	94%	2.97E-05	9.00E-15	
		U-238	1.41E-03 +- 5.0E-04		uCi/Sample	94%	5.01E-05	9.00E-15	
R2 SYC Scrubber filter(x124,12									
	M1LCA1AA	U-234	1.67E-03 +- 5.3E-04		uCi/Sample	91%	5.01E-05	9.00E-15	
		U-235	2.62E-04 +- 1.1E-04		uCi/Sample	91%	3.10E-05	9.00E-15	
		U-238	1.60E-03 +- 5.0E-04		uCi/Sample	91%	4.07E-05	9.00E-15	

No. of Results: 9

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

rptSTLRchSaSum mary2 V5.2.24 A2002

QC Results Summary

TestAmerica Inc

Ordered by Method, Batch No, QC Type,.

Date: 23-Sep-13

Report No. : 57059 **SDG No.:** 47154

Batch / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
FFSR								
3224041 BLANK QC,								
M1LMK1AA	U-234	3.04E-08 +- 1.6E-07	U	uCi/Sample	95%			4.51E-07
	U-235	4.57E-08 +- 1.1E-07	U	uCi/Sample	95%			2.49E-07
	U-238	1.52E-08 +- 1.1E-07	U	uCi/Sample	95%			3.62E-07
3224041 LCS,								
M1LMK1AC	U-234	7.22E-06 +- 1.6E-06		uCi/Sample	89%	104%	0.0	2.78E-07
	U-238	6.10E-06 +- 1.4E-06		uCi/Sample	89%	84%	-0.2	2.67E-07

No. of Results: 5

TestAmerica Inc

rptSTLRchQcSummary V5.2.24 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: 23-Sep-13

Lab Name: TestAmerica Inc **SDG:** 47154 **Collection Date:** 8/2/2013 4:00:00 PM

Lot-Sample No.: J3H090411-1 **Report No. :** 57059 **Received Date:** 8/8/2013 10:55:00 AM

Client Sample ID: R1 Dryer BH filter (x123)and b **COC No. :** **Matrix:** FILTER

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: 3224041	FFSR			**Work Order:** M1LAX2AA		**Report DB ID:** 9M1LAX20						
U-234	1.16E-02		5.0E-04	1.9E-03	3.59E-05	uCi/Sample	83%	*(321.8)*	9/19/13 06:00 p	1.0	0.0012	ALP6
						1.07E-05	9.00E-15	*(12.4)*		g	g	
U-235	6.09E-04		1.1E-04	1.5E-04	2.47E-05	uCi/Sample	83%	*(24.7)*	9/19/13 06:00 p	1.0	0.0012	ALP6
						5.02E-06	9.00E-15	*(8.2)*		g	g	
U-238	1.21E-02		5.1E-04	2.0E-03	4.30E-05	uCi/Sample	83%	*(281.3)*	9/19/13 06:00 p	1.0	0.0012	ALP6
						1.42E-05	9.00E-15	*(12.4)*		g	g	

Ratio U-234/238 = 1.0

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

TestAmerica Inc
rptSTLRchSample
V5.2.24 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: 23-Sep-13

Lab Name: TestAmerica Inc | **SDG:** 47154 | **Collection Date:** 8/2/2013 8:00:00 AM

Lot-Sample No.: J3H090411-2 | **Report No. :** 57059 | **Received Date:** 8/8/2013 10:55:00 AM

Client Sample ID: R1 SYC Scrubber filter(x124,12 | **COC No. :** | **Matrix:** FILTER

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: 3224041	FFSR			**Work Order:** M1LA81AA		**Report DB ID:** 9M1LA810						
U-234	**1.42E-03**		1.7E-04	5.0E-04	4.73E-05	uCi/Sample	94%	*(30.1)*	8/30/13 10:59 a	1.0	0.0012	ALP3
						1.66E-05	9.00E-15	*(5.7)*		Sample	Sample	
U-235	**3.99E-05**		3.0E-05	3.3E-05	2.97E-05	uCi/Sample	94%	*(1.3)*	8/30/13 10:59 a	1.0	0.0012	ALP3
						7.72E-06	9.00E-15	*(2.5)*		Sample	Sample	
U-238	**1.41E-03**		1.7E-04	5.0E-04	5.01E-05	uCi/Sample	94%	*(28.2)*	8/30/13 10:59 a	1.0	0.0012	ALP3
						1.79E-05	9.00E-15	*(5.7)*		Sample	Sample	

Ratio U-234/238 = 1.0

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

TestAmerica Inc
rptSTLRchSample
V5.2.24 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: 23-Sep-13

Lab Name: TestAmerica Inc **SDG:** 47154 **Collection Date:** 8/2/2013 3:00:00 PM

Lot-Sample No.: J3H090411-3 **Report No. :** 57059 **Received Date:** 8/8/2013 10:55:00 AM

Client Sample ID: R2 SYC Scrubber filter(x124,12 **COC No. :** **Matrix:** FILTER

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: 3224041	FFSR			**Work Order:**	M1LCA1AA		**Report DB ID:**	9M1LCA10				
U-234	**1.67E-03**		1.8E-04	5.3E-04	5.01E-05	uCi/Sample	91%	*(33.4)*	8/30/13 10:59 a	1.0	0.0014	ALP4
						1.85E-05	9.00E-15	*(6.4)*		Sample	Sample	
U-235	**2.62E-04**		7.2E-05	1.1E-04	3.10E-05	uCi/Sample	91%	*(8.5)*	8/30/13 10:59 a	1.0	0.0014	ALP4
						8.98E-06	9.00E-15	*(5.)*		Sample	Sample	
U-238	**1.60E-03**		1.8E-04	5.0E-04	4.07E-05	uCi/Sample	91%	*(39.3)*	8/30/13 10:59 a	1.0	0.0014	ALP4
						1.38E-05	9.00E-15	*(6.3)*		Sample	Sample	

Ratio U-234/238 = 1.0

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

TestAmerica Inc
rptSTLRchSample
V5.2.24 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 II

BLANK RESULTS

Date: 23-Sep-13

Lab Name: TestAmerica Inc **SDG:** 47154

Matrix: FILTER **Report No. :** 57059

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: 3224041	FFSR			**Work Order:** M1LMK1AA		**Report DB ID:** M1LMK1AB						
U-234	3.04E-08	U	1.6E-07	1.6E-07	4.51E-07	uCi/Sample	95%	0.07	8/30/13 10:59 a	1.0	0.11	ALP5
					1.52E-07	9.00E-15		0.38		Sample	Sample	
U-235	4.57E-08	U	1.1E-07	1.1E-07	2.49E-07	uCi/Sample	95%	0.18	8/30/13 10:59 a	1.0	0.11	ALP5
					5.06E-08	9.00E-15		0.83		Sample	Sample	
U-238	1.52E-08	U	1.1E-07	1.1E-07	3.62E-07	uCi/Sample	95%	0.04	8/30/13 10:59 a	1.0	0.11	ALP5
					1.07E-07	9.00E-15		0.27		Sample	Sample	
								Ratio U-234/238 = 2.0				

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

TestAmerica Inc
rptSTLRchBlank
V5.2.24 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 II

Date: 23-Sep-13

LCS RESULTS

Lab Name: TestAmerica Inc **SDG:** 47154

Matrix: FILTER **Report No. :** 57059

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: 3224041	FFSR			**Work Order:**	M1LMK1AC		**Report DB ID:**	M1LMK1CS					
U-234	7.22E-06		1.1E-06	1.6E-06	2.78E-07	uCi/Sample	89%	6.95E-06	3.62E-08	104%	8/30/13 10:59 a	0.14	ALP6
							Rec Limits:	75	125	0.0		Sample	
U-238	6.10E-06		1.0E-06	1.4E-06	2.67E-07	uCi/Sample	89%	7.28E-06	3.79E-08	84%	8/30/13 10:59 a	0.14	ALP6
							Rec Limits:	75	125	-0.2		Sample	

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

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

rptSTLRchLcs
V5.2.24 A2002

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	8/05/2013	
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)	**Carrier/Waybill Number**		
Energy Fuels 2013 3rd Quarter			
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 Dryer BH filter (X123) and beaker	8/2/13	16:00	X										X				MILAX
R1 SYC Scrubber filter (X124,125) and beaker	8/1,2/13	8:00	X										X				MILAS
R2 SYC Scrubber filter (X126,127) and beaker	8/2/13	15:00	X										X				MILCA
J3H090411																	
SDG-47154																	
Due 9-5-13																	

J3H090411

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	Date	Time	1. Received By	Date	Time
[signature]	8/5/13	12 00	Julie Bock TALK	8-8-13	1055
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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 8-8-13 / 1055 Container GM Screen Result: (Airlock) 40 cpm Initials [ ]
Sample GM Screen Result (Sample Receiving) 80 cpm Initials [ ]

Client: Den SDG #: 47154 SAF #: NA [ ]

Lot Number: 330910411

Chain of Custody # _____

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): 3
7. Containers received: 3x filter; 3 x 250 mL beaker
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: 8-8-13

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

[X] No action necessary; process as is

Project Manager Emily Ford Date 8-9-13

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

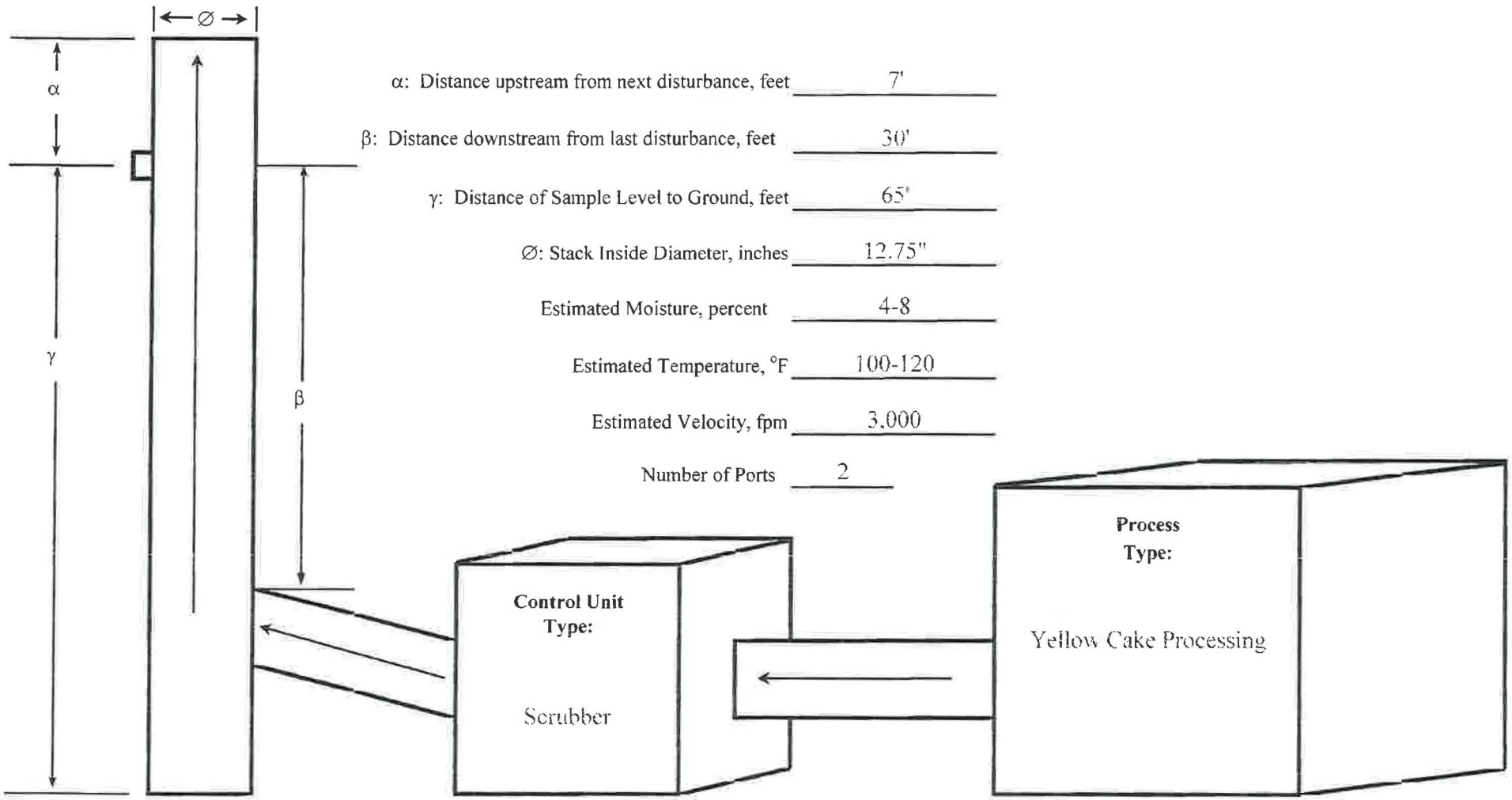


Figure 1. Facility Schematic Representation

Facility: Energy Fuels Resources

Stack Identification: Yellow Cake Dryer Baghouse

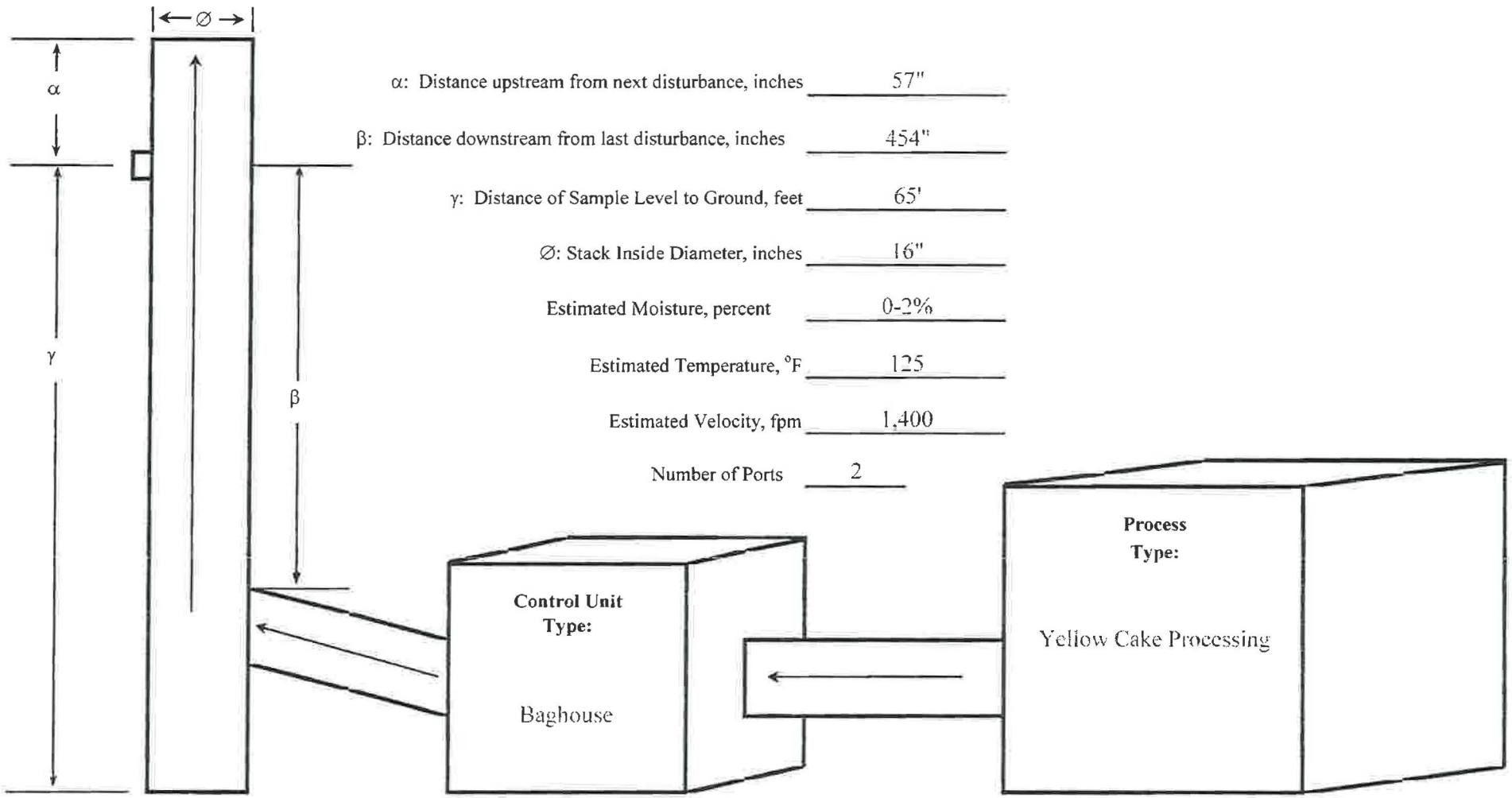


Figure 2. Facility Schematic Representation

Energy Fuels Resources, Blanding, UT Process Data

Source: South Yellow Cake		Date: 8/1/13	
	Scrubber Flow GPM		
Time	#1	~~#2~~	ΔP
10:30	30.4		10.7
11:00	30.4		10.7
11:30	30.3		10.7
12:00	30.3		10.7
12:30	30.4		10.7
13:00	30.4		10.7
13:30	30.3		10.7
~~14:00~~	30.2		10.7
~~14~~ 10:30	30.4		10.7
~~15~~ 11:00	30.4		10.7
~~15~~ 11:30	30.4		10.7
~~16~~ 12:00	30.4		10.7
~~16~~ 12:30	30.0		10.7
~~17~~ 13:00	30.3		10.7
~~17~~ 13:30	30.3		10.7
~~18~~ 14:00	30.3		10.7
~~18~~ 14:30	30.4		10.7
~~19~~ 15:00	30.0		10.7
~~19~~ 15:30	30.1		10.7
16:00	30.2		10.7
16:30	30.3		10.7

centrifuge pm
restart
8/1/13
10:30

Energy Fuels Resources, Blanding, UT Process Data

Source: South Yellow Cake		Date: 8.2.3	
	Scrubber Flow GPM		
Time	#1	#2	ΔP
17 00	29.9		10.7 17.5
17 30	29.9		10 7 17.5
18 00	30.0		17.5
18 30	30.0		17.5
19 00 30	30.0		17.5
19 30	29.9		17.5
2000	29.9		17.5
20 30	29.9		17.5
21 00	29.8		17.5
21 30	30.0		17.5
22 00	30.1		17.5
22 30	30.1		17.5
23 00	30.0		17.5
23:30	30.0		17.5

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

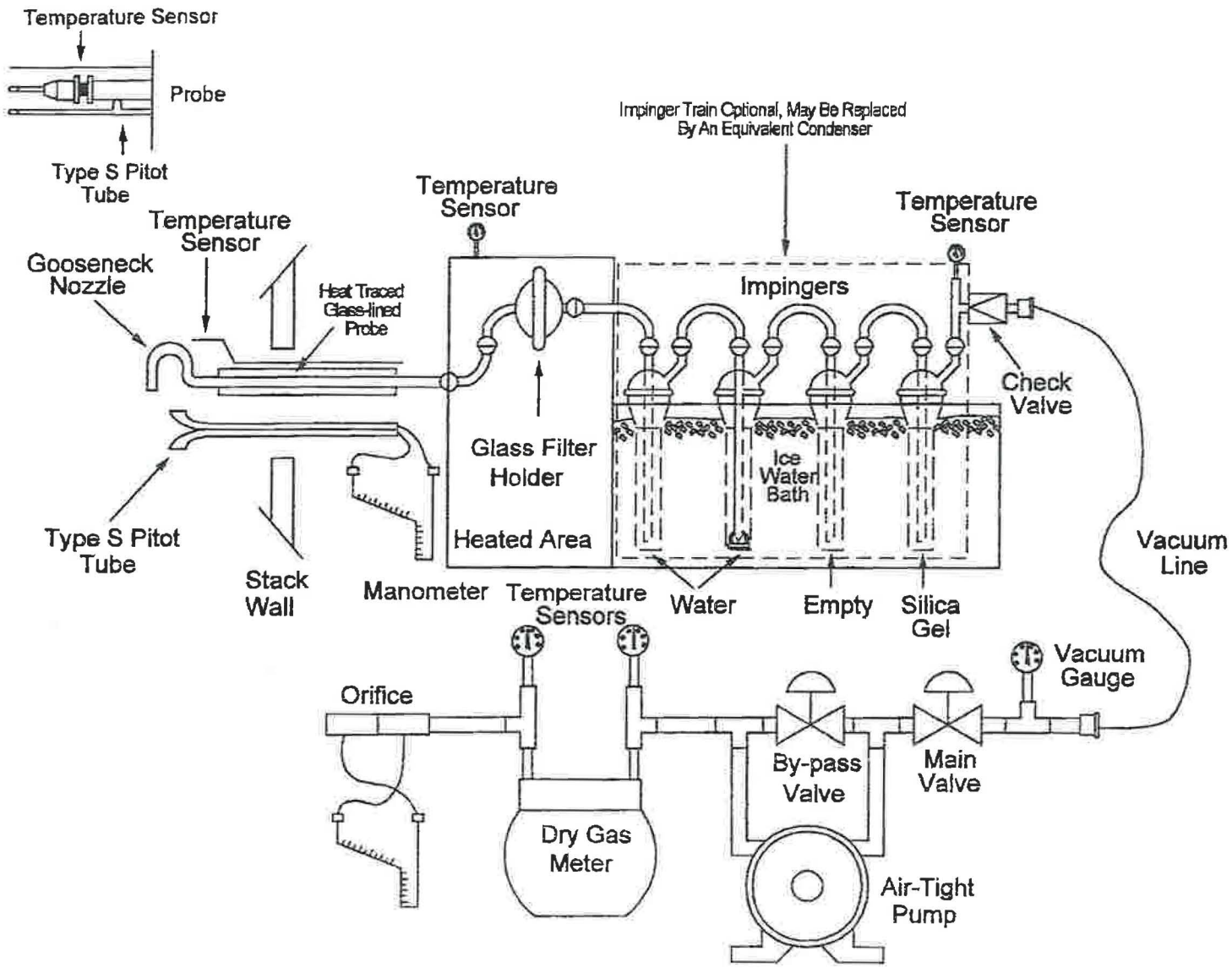


Figure 3 Schematic of Method 5/114 Sampling Train

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

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.

2013 Pre-Calibration

					INITIAL	FINAL	AVG (P_{bar})
DATE:	12/13/2012	METER SERIAL #:	27863	BAROMETRIC PRESSURE (in Hg):	25.20	25.20	25.20
METER PART #:	Console 4	CRITICAL ORIFICE SET SERIAL #:	1453S	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	645.607	652.115	6.508	71	78	79	84	87	82	6.00	2.60	5.3812	5.3407	0.992		1.526
	2	0.8137	13	652.115	658.605	6.490	71	79	79	87	87	83	6.00	2.60	5.3564	5.3407	0.997		1.523
	3	0.8137	13	658.605	665.066	6.461	71	79	79	87	87	83.00	6.00	2.60	5.3325	5.3407	1.002		1.523
																AVG =	0.997	-0.30	
19	1	0.5317	13	602.003	607.609	5.606	69	73	74	75	76	74.50	8.00	1.10	4.680	4.6618	0.996		1.521
	2	0.5317	13	613.065	618.669	5.604	69	74	75	76	77	75.50	8.00	1.10	4.6696	4.6618	0.998		1.518
	3	0.5317	13	618.669	624.268	5.599	69	75	75	77	78	76.25	8.00	1.10	4.6589	4.6618	1.001		1.516
																AVG =	0.998	-0.16	
12	1	0.3307	13	628.000	633.184	5.184	71	72	73	75	80	75.00	12.00	0.40	4.3149	4.3411	1.006		1.431
	2	0.3307	13	633.184	638.396	5.212	71	73	76	80	80	77.25	12.00	0.40	4.320	4.3411	1.005		1.425
	3	0.3307	13	638.396	643.626	5.230	71	76	76	80	80	78.00	12.00	0.40	4.3289	4.3411	1.003		1.423
																AVG =	1.005	0.46	

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 $\Delta H_@$ = **1.490**

(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 [illegible] cells, YELLOW cells are calculated.

2013 Pre-Calibration

DATE: 12/7/2012 | METER SERIAL #: 68092 | BAROMETRIC PRESSURE (in Hg): INITIAL 25.45, FINAL 25.45, AVG (P_{bar}) 25.45

METER PART #: Console 5 | CRITICAL ORIFICE SET SERIAL #: 1453S | EQUIPMENT ID #: Console #5

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	128.204	133.586	5.384	70	76	83	76	84	79.75	5.00	2.60	4.5144	4.4990	0.997		1.515
	2	0.8137	12	133.586	139.020	5.432	70	83	85	84	93	86.25	5.00	2.60	4.5004	4.4990	1.000		1.497
	3	0.8137	12	139.020	144.448	5.428	70	85	86	93	94	89.50	5.00	2.60	4.4705	4.4990	1.006		1.488
																AVG =	1.001	0.01	
19	1	0.5317	13	95.7570	100.951	5.194	70	69	70	69	71	69.75	7.50	1.11	4.4184	4.4097	0.998		1.536
	2	0.5317	13	100.951	106.479	5.528	70	70	70	71	72	70.75	8.00	1.11	4.6936	4.7036	1.002		1.534
	3	0.5317	13	106.479	111.698	5.219	70	70	73	72	75	72.50	7.50	1.11	4.4167	4.4097	0.998		1.529
																AVG =	1.000	-0.12	
12	1	0.3307	20	111.900	117.108	5.208	70	74	75	75	76	75.00	12.00	0.40	4.3778	4.3883	1.002		1.414
	2	0.3307	20	117.108	122.339	5.231	70	75	76	76	77	76.00	12.00	0.40	4.3889	4.3883	1.000		1.412
	3	0.3307	20	122.339	127.559	5.220	70	75	77	77	78	76.75	12.00	0.40	4.3736	4.3883	1.003		1.410
																AVG =	1.002	0.11	

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 $\Delta H_@$ = 1.481

(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	32
72	73	73
203	202	202

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.

Facility : **Energy Fuels SYC**

					INITIAL	FINAL	AVG (P_{bar})
DATE:	8/5/2013	METER SERIAL #:	27863	BAROMETRIC PRESSURE (in Hg):	25.45	25.45	25.45
METER PART #:	Console 4	CRITICAL ORIFICE SET SERIAL #:	1453S	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 (%)	$\Delta H_@$
12	1					.0						0							
	2	0		.0		.0						0							
	3	0		.0		.0						0.00							
																AVG =			
19	1	0.5317	13	38.903	44.153	5.250	83	82	83	84	86	83.75	7.50	1.10	4.3508	4.3565	1.001		1.520
	2	0.5317	13	44.153	49.395	5.242	84	83	84	86	88	85.25	7.50	1.10	4.3322	4.3525	1.005		1.518
	3	0.5317	13	49.395	54.655	5.260	84	84	85	88	90	86.75	7.50	1.10	4.3352	4.3525	1.004		1.514
																AVG =	1.003	0.22	
25	1	0.6808	13	59.15200	64.567	5.415	85	85	86	89	91	87.75	6.00	1.90	4.4650	4.4543	0.998		1.599
	2	0.6808	13	64.567	70.000	5.433	85	86	86	91	95	89.50	6.00	1.90	4.4656	4.4543	0.997		1.594
	3	0.6808	13	70.000	75.427	5.427	85	86	87	96	96	91.25	6.00	1.90	4.4465	4.4543	1.002		1.589
																AVG =	0.999	-0.22	

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 $\Delta H_@$ = 1.556

(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.

Energy Fuels
Dryer Baghouse

DATE: 6/5/2013 | METER SERIAL #: 68092 | BAROMETRIC PRESSURE (in Hg): INITIAL 25.35, FINAL 25.35, AVG (P_{bar}) 25.35

METER PART #: Console 5 | CRITICAL ORIFICE SET SERIAL #: 1453S | EQUIPMENT ID #: Console #5

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 (%)	$\Delta H_@$
	1					.0						0.00							
	2					.0						0.00							
	3					.0						0.00							
																AVG =			
19	1	0.5317	13	23.402	29.735	6.333	85	82	83	82	85	83.00	9.00	1.10	5.2350	5.1977	0.993		1.533
	2	0.5317	13	29.735	35.382	5.647	85	83	85	85	90	85.75	8.00	1.10	4.6444	4.6202	0.995		1.526
	3	0.5317	13	35.382	40.693	5.311	85	85	87	90	94	89.00	7.50	1.10	4.3422	4.3314	0.998		1.517
																AVG =	0.995	0.00	
	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 = 0.995

AVERAGE $\Delta H_@$ = 1.525

(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	32
72	73	73
203	202	202

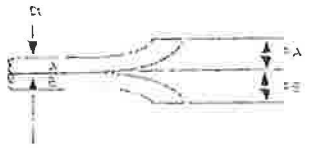
post 2013

Type S Pilot Tube Inspection Data

Date 12-12-12

Pitot Tube Identification S-18

Technician K. McNamara



D_t = .375 in

Is $P_A = P_B$? YES

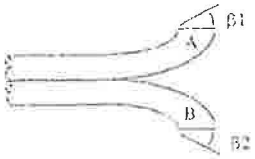
Is $1.05 \cdot D_t \le D \le 1.5 \cdot D_t$? YES

P_A = .496 in

P_B = .496 in

$\alpha_1 < 10°$ α_1 = 1 °

$\alpha_2 < 30°$ α_2 = 1 °

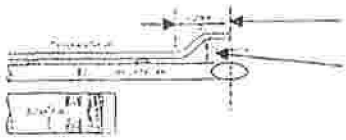


$\beta_1 < 5°$ β_1 = 2 °

$\beta_2 < 5°$ β_2 = 2 °

$Z \le 0.125$ in Z = .001 in

$W \le 0.03125$ in W = .001 in



$W > 3$ inches W = 6 1/2 in

$Z > 3/4$ inch Z = 1 in

$Y \ge 3$ inches Y = 3 1/2 in

The pitot tube meets the specifications for a calibration factor of 0.84 YES

Temperature Sensor Calibration

Reference

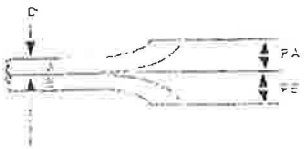
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	71	70	1
	Comments			YES
	Heat Check 243		YES	260
Stack	AIR	71	70	1
	ICE WATER	33	34	1
	BOIL WATER	202	202	0
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date 12-17-12

Pitot Tube Identification 27-9

Technician K. McNamara



D_t = .375 in

Is $P_A = P_B$? Yes

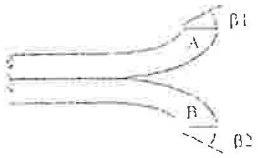
Is $1.05 \cdot D_t \le D \le 1.50 \cdot D_t$? Yes

P_A = .440 in

P_B = .440 in

$\alpha_1 < 10°$ α_2 = 2 °

$\alpha_2 < 10°$ α_2 = 0 °

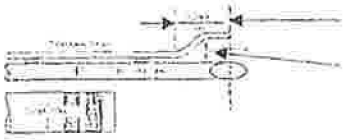


$\beta_1 < 5°$ β_1 = 1 °

$\beta_2 < 5°$ β_2 = 1 °

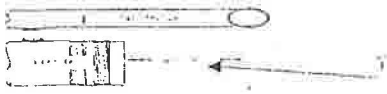
$Z \le 0.125$ in Z = .017 in

$W \le 0.03125$ in W = .015 in



W > 3 inches W = 7 in

Z > 3/4 inch Z = 1 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	73	73	0
	Continuity	—	—	yes
	Heat Check 248	—	Yes	260
Stack	AIR	73	73	0
	ICE WATER	33	33	0
	BOIL WATER	203	203	0
	SILICONE OIL			

TETCO

Sample Box Temperature Sensor Calibration

Date: 12/19/12 Calibrator: Mike McNamara Reference: Omega CL3512A

Unit ID	Thermocouple Location	Temperature Source (Medium)	Temperature		Temp. Diff. or Result (°F), P/F
			Reference (°F)	Sensor (°F)	
A	Oven	Water	33	34	1
		Water	204	204	0
	Probe Out	Water	33	34	1
		Water	204	204	0
	Impinger Out	Water	33	34	1
		Water	204	204	0
B	Oven	Water	33	35	2
		Water	204	204	0
	Probe Out	Water	33	35	2
		Water	204	204	0
	Impinger Out	Water	33	34	1
		Water	204	204	0
C	Oven	Water	33	34	1
		Water	204	204	0
	Probe Out	Water	33	34	1
		Water	204	204	0
	Impinger Out	Water	33	34	1
		Water	204	204	0
D	Oven	Water	33	33	0
		Water	204	204	0
	Probe Out	Water	33	33	0
		Water	204	204	0
	Impinger Out	Water	33	34	1
		Water	204	203	-1
E	Oven	Water	33	34	1
		Water	204	204	0
	Probe Out	Water	33	34	1
		Water	204	204	0
	Impinger Out	Water	33	34	1
		Water	204	202	-2
F	Oven	Water	33	34	1
		Water	204	204	0
	Probe Out	Water	33	34	1
		Water	20	204	0
	Impinger Out	Water	33	35	2
		Water	204	202	-2
	Impinger Out G	Water	33	34	1
		Water	204	202	-2
	Impinger Out H	Water	33	35	2
		Water	204	202	-2
	Impinger Out I	Water	33	34	1
		Water	204	204	0
	Impinger Out J	Water	33	34	1
		Water	204	203	-1
	Impinger Out K	Water	33	34	1
		Water	204	204	0

APPENDIX F

The testing followed the same procedures as outlined in previous protocols and tests at this facility.

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

BLANDING, UTAH

December 16-17, 2013

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 29, 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: 1-29-13

Doug Olsen

Reviewer: _____

Date: 1/29/13

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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 Th-230, U-Nat, Pb-210, and Ra-226.

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 December 16, 2013 and the second run on December 17, 2013.

One run was completed on the Yellow Cake Dryer Baghouse December 17, 2013.

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	7.65	5.966E +05	252.8	5.604E+07
2	7.55	5.950E+05		
AVE	**7.60**	**5.958E+05**	**252.8**	**5.604E+07**

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 moderately covered with a white or pinkish 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.

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	98	98
2	97	

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	
	NYC 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			12/16/13	12/17/13	
Filter #			6097	6098	
Begin	Time Test Began		9:30	11:21	
End	Time Test Ended		17:33	19:23	
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.75	24.80	
ΔH	Orifice Pressure Drop	In. H_2O	0.932	0.937	
Y	Meter Calibration Y Factor	dimensionless	0.987	0.987	
Vm	Volume Gas Sampled--Meter Conditions	cf	303.355	304.106	
T_m	Avg Meter Temperature	°F	82.7	85.1	
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.5163	0.5197	
Wt_{wc}	Weight Water Collected	Grams	261.5	257.4	
T_t	Duration of Test	Minutes	480	480	
C_p	Pitot Tube Coefficient	Dimensionless	0.84	0.84	
D_n	Nozzle Diameter	Inches	0.2530	0.2530	
CO_2	Volume % Carbon Dioxide	Percent	2.00	1.20	
O_2	Volume % Oxygen	Percent	16.60	17.80	
N_2 & CO	Volume % Nitrogen and Carbon Monoxide	Percent	81.40	81.00	
Vm_{std}	Volume Gas Sampled (Standard)	dscf	241.634	241.655	
Vw	Volume Water Vapor	scf	12.330	12.136	
$Bw_{s\ (measured)}$	Fraction H_2O in Stack Gas (Measured)	Fraction	0.049	0.048	
$Bw_{s\ (saturated)}$	Fraction H_2O in Stack Gas (Saturated)	Fraction	0.087	0.083	
Bw_s	Fraction H_2O in Stack Gas *	Fraction	0.049	0.048	
X_d	Fraction of Dry Gas	Fraction	0.951	0.952	
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.98	28.90	
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.45	28.38	
%I	Percent Isokinetic	Percent	98.4	97.4	**AVG**
T_s	Avg Stack Temperature	°F	103.4	102.1	**102.8**
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	24.68	24.73	
P_s	Stack Pressure	In. Hg. Abs	24.659	24.709	
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	1.30E+03	1.31E+03	**1.31E+03**
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	1.77E+03	1.78E+03	**1.77E+03**
V_s	Velocity of Stack Gas	fpm	1.99E+03	2.00E+03	**2.00E+03**
Curies	Radionuclides per sample	pCi	1849.0	1824.6	
Crad	Concentration of Radionuclides	pCi/dscf	7.652	7.550	**7.601**
ERrad	Emission Rate of Radionuclides	pCi/hr	5.966E+05	5.950E+05	**5.958E+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		12/17/13
Filter #			6099
Begin	Time Test Began		14:06
End	Time Test Ended		16:10
Pb_m	Meter Barometric Pressure	In. Hg. Abs	24.80
ΔH	Orifice Pressure Drop	In. H_2O	1.967
Y	Meter Calibration Y Factor	dimensionless	0.988
Vm	Volume Gas Sampled--Meter Conditions	cf	105.944
T_m	Avg Meter Temperature	°F	85.5
$\sqrt{\Delta P}$	Sq Root Velocity Head	Root In. H_2O	0.8818
Wt_{wc}	Weight Water Collected	Grams	17.3
T_t	Duration of Test	Minutes	120
C_p	Pitot Tube Coefficient	Dimensionless	0.84
D_n	Nozzle Diameter	Inches	0.2235
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	84.467
Vw	Volume Water Vapor	scf	0.816
Bw_s	Fraction H_2O in Stack Gas	Fraction	0.010
X_d	Fraction of Dry Gas	Fraction	0.990
M_d	Molecular Wt. Dry Gas	lb/lbmol	28.84
M_s	Molecular Wt. Stack Gas	lb/lbmol	28.73
%I	Percent Isokinetic	Percent	97.6
T_s	Avg Stack Temperature	°F	80.8
A_s	Stack Cross Sectional Area	Sq. Ft.	1.396
P_G	Stack Static Pressure	In. H_2O	-0.73
Pb_p	Sample Port Barometric Pressure	In. Hg. Abs	24.73
P_s	Stack Pressure	In. Hg. Abs	24.676
Q_s	Stack Gas Volumetric Flow Rate (Std)	dscfm	3.69E+03
Q_a	Stack Gas Volumetric Flow Rate (Actual)	cfm	4.63E+03
V_s	Velocity of Stack Gas	fpm	3.32E+03
Curies	Radionuclides per sample	pCi	21353.2
Crad	Concentration of Radionuclides	pCi/dscf	252.7982
ERrad	Emission Rate of Radionuclides	pCi/hr	5.604E+07

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 (^oF)

T_s = stack temperature (^oF)

T_{std} = absolute temperature at standard conditions (528^oR)

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^oF and 29.92 inches Hg.

V_s = velocity of stack gas (fpm)

V_w = volume water vapor (scf) at 68^oF 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$ER_F = C_f \bullet Q_s \bullet 0.00857$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$Q_a = V_s \bullet A_s$$

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

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

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

$$Q_W = Q_s / X_d$$

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

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

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

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

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

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

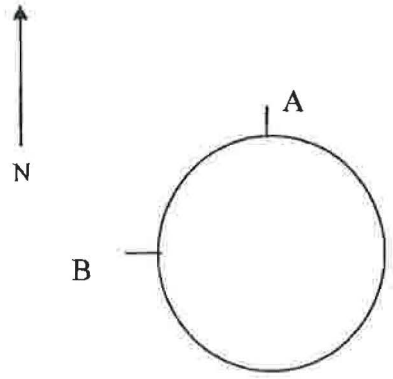
APPENDIX B

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

Preliminary S Y Cake Scrb



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 12/16/13

Barometric Pressure

Pb_m 24.75 in Hg Pb_p 24.68 in Hg

Static Pressure (P_G) [illegible] in H_2O -.28

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	Ports B	Ports C	Ports D	Ports E	Ports F
1	6.7	0.85	0.85	99 .32	M .40				
2	25.0	3.19	3.19	100 .35	98 .42				
3	75.0	9.56	9.56	100 .34	99 .30				
4	93.3	11.90	11.90	98 .32	98 .34				

Averages:

T_s _____ ∠ Flow _____

ΔP _____ $\sqrt{\Delta P}$ _____

KEY => T_s ∠ Flow ΔP

M5 Field Data Sheet

Filter 6097 TETCO Sample Box 1E

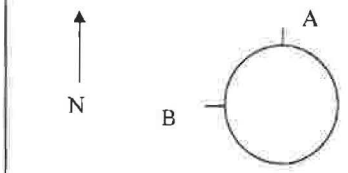
Page 1 of 1 Run # 1

Plant: Energy Fuels

Date: 12/16/13

Location: South Yellow Cake Dryer Scrubber

Operator:



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 .253 .253 .253 .253

Avg D_n .253 inches

Gas Bag C-07

Console 6

Y-Factor .987

$\Delta H_@$ 1.620 in H_2O

Barometric Pressures

Pb_m 24.75 in Hg

Pb_p 24.68 in Hg

P_G −(.28) in H_2O

Leak Check	Pre	Post
ft^3/min	0.009	0.007
vac in Hg	22	13
Pitot Rate	0.0	0.0
In H_2O	9.5	9.5

Water Collected 261.5 g

Time Sampled 480 min

Review

Traverse Point	Time: Clock	Time: Min (θ)	DGM (ft^3)	ΔP (in H_2O)	ΔH (in H_2O): Desired	ΔH (in H_2O): Actual	Vacuum (in Hg)	Temperatures (°F): Stack (T_s)	Probe	Probe out	Oven	Effluent	DGM Temp (T_m): Out	DGM Temp (T_m): In
1	9:30	0	769.701	.35	1.17	1.17	2	100	258	270	270	45	53	58
1		20	782.958	.33	1.15	1.15	2	100	245	271	268	45	61	77
1		40	796.659	.33	1.13	1.13	2	102	233	262	266	49	71	86
2		60	810.178	.30	1.03	1.03	2	101	245	256	256	47	76	84
2		80	823.352	.28	.96	.96	2	102	233	256	257	49	79	86
2		100	836.161	.27	.93	.93	2	103	241	253	255	56	82	89
3		120	848.738	.25	.86	.86	2	104	243	250	251	52	85	90
3		140	862.212	.25	.86	.86	2	104	238	250	255	56	86	91
3		160	873.423	.28	.97	.97	2	104	234	257	259	53	87	92
4		180	886.397	.29	1.01	1.01	2	104	254	263	267	47	87	94
4		200	899.940	.28	.98	.98	2	104	260	268	260	49	90	96
4		220	913.109	.28	.98	.98	2	104	265	270	270	51	91	96
1	13:33	240	926.246	.25	.88	.88	2	105	257	269	270	54	91	92
1		260	938.750	.25	.88	.88	2	106	249	265	265	51	90	92
1		280	951.189	.24	.85	.85	2	106	249	259	260	54	87	90
2		300	963.333	.23	.81	.81	2	107	258	259	261	54	85	88
2		320	975.300	.23	.81	.81	2	106	268	264	265	54	83	87
2		340	987.211	.24	.85	.85	2	105	270	270	270	54	82	87
3		360	999.821	.23	.81	.81	2	105	270	268	269	56	82	87
3		380	1012.087	.27	.95	.95	2	105	260	230	230	47	63	67
3		400	1024.301	.26	.92	.92	2	103	232	230	235	42	67	75
4		420	1036.621	.25	.88	.88	3	101	257	242	249	41	72	81
4		440	1049.884	.24	.85	.85	3	101	236	262	270	41	77	86
4		460	1060.995	.24	.85	.85	3	100	266	268	269	39	81	89
	17:33	480	1073.056											
Total			303.355	√ 12.3908		22.37		2482					3970	
Average				√ .5163		0.932		103.4					82.7	

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)

m5 Field Data Sheet

Filter 6098 TETCO Sample Box E

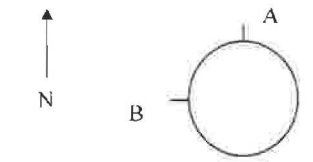
Page 1 of 1 Run # 2

Plant: Energy Fuels

Date: 12/17/13

Location: South Yellow Cake Dryer Scrubber

Operator:



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 (Ts)	Probe	Probe out	Oven	Effluent	DGM Temp (Tm): Out	DGM Temp (Tm): In
B 1	11:21	0	92.098	.28	.93	.93	2	102	230	235	246	54	52	55
1		20	101.253	.31	1.03	1.03	2	104	235	250	260	51	60	83
1		40	117.384	.31	1.05	1.05	2	104	264	257	270	56	72	86
1 2		60	130.445	.32	1.09	1.09	2	101	265	258	267	49	77	90
20 2		80	143.806	.32	1.09	1.09	2	105	267	260	267	50	81	88
40 2		100	157.275	.31	1.07	1.07	2	105	253	267	268	50	83	90
2 3		120	170.641	.32	1.11	1.11	2	107	241	237	245	52	82	94
20 3		140	184.317	.29	1.01	1.01	2	103	232	231	240	51	85	99
40 3		160	197.682	.27	.94	.94	2	103	237	235	238	55	87	95
3 4		180	210.551	.26	.91	.91	2	102	231	231	234	57	84	96
20 4		200	223.181	.26	.91	.91	2	103	259	257	244	55	84	98
40 4		220	235.768	.27	.95	.95	2	102	287	229	252	52	84	99
4 A 1	15:23	240	248.602	.25	.87	.87	2	104	256	235	243	42	84	95
20 1		260	260.983	.24	.84	.84	2	105	246	236	252	41	84	98
40 1		280	273.111	.24	.84	.84	2	105	240	231	239	41	82	89
5 2		300	285.231	.25	.87	.87	2	102	254	238	239	41	80	85
20 2		320	297.612	.26	.91	.91	2	103	270	248	242	40	78	85
40 2		340	309.664	.27	.94	.94	2	99	272	240	244	39	80	88
6 3		360	322.575	.25	.87	.87	3	98	249	244	244	40	84	92
20 3		380	334.977	.24	.84	.84	3	98	260	249	248	39	87	95
40 3		400	347.123	.24	.84	.84	3	98	268	243	242	39	87	94
7 4		420	359.358	.25	.87	.87	3	98	229	230	235	39	85	91
20 4		440	371.759	.24	.84	.84	3	99	234	235	239	41	83	87
40 4		460	384.863	.25	.87	.87	3	98	239	239	241	41	83	87
	15:23	480	396.20											
Total			304.106	√ 12.473		22.49		2451					4087	
Average				√ .5197		.937		102.1					85.1	

Assumed Moisture 4-6 %

Probe 276 Cp 0.84

Nozzle Calibration .253 .253 .253 .253

Avg D_n .253 inches

Gas Bag C-07

Console 6

Y-Factor .987

$\Delta H_@$ 1.620 in H_2O

Barometric Pressures

Pb_m 24.80 in Hg

Pb_p 24.73 in Hg

P_g (0.28) in H_2O

Leak Check	Pre	Post
ft³/min	0.008	0.004
vac in Hg	22	13
Pitot Rate	0.0	0.0
In H_2O	9.5	9.5

Water Collected 257.4 g

Time Sampled 480 min

Review

K = @T_m

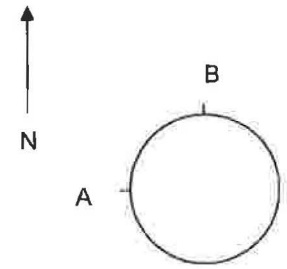
K = @T_m

Additional (Extra) Leak Check Information

	DGM before Leak Check	Vac ("Hg)	Rate (ft³/min)	DGM After Leak Check	Vac ("Hg)	Rate (ft³/min)

Yellow Cake Dryer Baghouse

Prelim 6 pts blank



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

114 Field Data Sheet

TETCO

Filter 6049 Sample Box F

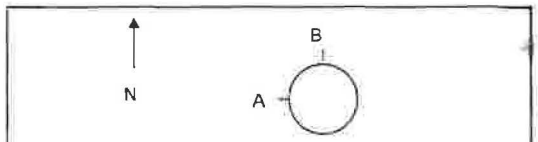
Page 1 of 1 Run # 1

Plant: Denison Mines

Date: Dec 17, 2013

Location: Yellowcake Dryer Baghouse

Operator: Paul R Kitchen



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 H_2O)	ΔH (in H_2O) Desired	ΔH (in H_2O) Actual	Vacuum (in Hg)	Temperatures (°F) Stack (T_s)	Probe	Probe Out	Filter	Effluent	DGM Temp (T_m) Out	In
A 1	14:06	0	467.612	.70	1.73	1.73	3.0	82	272	266	266	54	72	71
2		10	475.906	.72	1.78	1.78	3.0	82	242	257	256	49	72	74
3		20	484.338	.93	2.30	2.30	4.0	82	246	253	253	50	74	84
4	*	30	493.899	.98	2.42	2.42	4.0	82	252	252	252	51	76	93
5		40	503.718	.98	2.42	2.42	4.0	81	245	234	235	52	79	98
6		50	513.537	.93	2.30	2.30	4.0	81	238	234	234	51	80	100
B 1	15:10	60	523.227	.56	1.40	1.40	3.0	80	252	241	240	48	81	98
2		70	530.898	.46	1.15	1.15	3.0	80	254	240	240	45	82	98
3		80	537.853	.42	1.05	1.05	3.0	80	241	240	240	45	82	99
4		90	544.514	1.00	2.49	2.49	4.0	80	250	235	235	45	82	98
5		100	554.338	.95	2.37	2.37	4.0	80	244	246	245	46	81	100
6		110	564.126	.88	2.19	2.19	4.0	80	241	246	245	46	79	100
	16:10	120	573.556											

Assumed Moisture 1 %

Probe 18 G Cp 0.84

Nozzle Calibration .223 .223 .224 .224

Avg D_n = .2235 inches

Gas Bag Ambient Air

Console 7

Y-Factor .988

$\Delta H_@$ 1.682 in H_2O

Barometric Pressures

Pb_m 24.80 in Hg

Pb_p 24.73 in Hg

P_g -.73 in H_2O

Leak Check	Pre	Post
ft^3/min	0.004	0.001
vac in Hg	22.0	6.0

Pitot Rate		
In H_2O	9.5	9.5

Water Collected 17.3 g

Time Sampled 120 min

Review PRK

Total	105.444 ✓	√ 10.5812	23.60	970		2053
Average		√ .8818 ✓	1.967 ✓	80.8 ✓		85.5 ✓

K = @T_m

K = @T_s

Comments

Time	Baghouse ΔP	Time	Baghouse ΔP
14:05	8.0	15:12	10.0
14:22	9.8	15:27	10.0
14:38	10.0	15:44	9.5
14:52	10.0	15:58	9.5

* Shut down lost Power 14:46
started up 14:48

3 Barrels processed

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: 12/16,17/13

Stack Identification: SYC Scrubber

IMPINGERS

Run: 1 Sample Box: E 12-16-13

FILTER NUMBER 6097

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
Final (g)	~~811.6~~ 817.8	811.4	574.7	623.9	915.5	
Initial (g)	560.1	689.0	555.0	611.6	864.8	
Net (g)	86.7	122.4	19.7	12.3	50.7	

Total (g) 261.5

904.1

JG

IMPINGERS

Run: 2 Sample Box: E 12-17-13

6098

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
Final (g)	703.3	731.2	624.3	638.6	525.2	957.5
Initial (g)	563.2	688.4	556.4	680.3	518.9	915.5
Net (g)	140.1	42.8	67.9	(41.7)	6.3	42.0

Total (g) 257.4

JG

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
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
Final (g)						
Initial (g)						
Net (g)						

Total (g)

41.7

Plant Energy Fuel Location SYC

Analytical Method ORSAT

Date 12/16/13
Test No. 1
Gas Bag No. C-07
Ambient Temp 60
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).	18.6	16.6	18.6	16.6	18.6	16.6	16.6
N_2 (Net is 100 Minus Actual O_2 Reading).							

Date 12/17/13
Test No. 2
Gas Bag No. C-07
Ambient Temp 59
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	1.2	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).	19.0	17.8	19.0	17.8	19.0	17.8	17.8
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: 12/17/13

Stack Identification: Yellow cake Baghouse

IMPINGERS

Run: 1 Sample Box: _____

Filter Number

6099

	Impinger Number					
	1	2	3	4	5	6
	Initial Volume of liquid (H_2O) in impingers, (ml)					
	100	100	-	Silica Gel		
Final (g)	609.0	633.2	619.8	942.5		
Initial (g)	619.4	625.4	617.0	925.4		
Net (g)	(10.4)	7.8	2.8	17.1		

Total (g) 17.3

RM

JG

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 ☐

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TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Tetco	Dean Kitchen	12/18/2013	
Address 391 East 620 South	**Telephone Number (Area Code)/Fax Number** 801-492-9106	**Lab Number**	**Page** 1 of 1
City American Fork / **State** Ut / **Zip Code** 84003	**Site Contact** Scott Christensen, Garren Palmer	**Lab Contact**	
Project Name and Location (State) Energy Fuels 2013 4th 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
R1 Dryer BH filter (6099) and beaker	12/17/13	14:00	X										X	X	X	X
R1 SYC Scrubber filter (6097) and beaker	12/16/13	10:00	X										X	X	X	X
R2 SYC Scrubber filter (6098) and beaker	12/17/13	11:00	X										X	X	X	X

Special Instructions/ Conditions of Receipt

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	Date	Time	1. Received By	Date	Time
	12/19/13	12:00pm			
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

Analytical Data Package Prepared For

Denison Mines (USA) Corp.

Energy Fuels 2013 4th Quarter

Radiochemical Analysis By

TestAmerica Inc

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

Assigned Laboratory Code:

Data Package Contains 18 *Pages*

Report No.: 58563

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.
47656		R1 Dryer BH filter(6099) and b	J3L300411-1	M2QVR1AE	9M2QVR10	4002022
		R1 Dryer BH filter(6099) and b	J3L300411-1	M2QVR2AA	9M2QVR20	4002023
		R1 Dryer BH filter(6099) and b	J3L300411-1	M2QVR1AC	9M2QVR10	4002024
		R1 Dryer BH filter(6099) and b	J3L300411-1	M2QVR1AD	9M2QVR10	4002025
		R1 SYC Scrubber filter(6097) a	J3L300411-2	M2QVT1AE	9M2QVT10	4002022
		R1 SYC Scrubber filter(6097) a	J3L300411-2	M2QVT1AA	9M2QVT10	4002023
		R1 SYC Scrubber filter(6097) a	J3L300411-2	M2QVT1AC	9M2QVT10	4002024
		R1 SYC Scrubber filter(6097) a	J3L300411-2	M2QVT1AD	9M2QVT10	4002025
		R2 SYC Scrubber filter(6098) a	J3L300411-3	M2QVV1AE	9M2QVV10	4002022
		R2 SYC Scrubber filter(6098) a	J3L300411-3	M2QVV1AA	9M2QVV10	4002023
		R2 SYC Scrubber filter(6098) a	J3L300411-3	M2QVV1AC	9M2QVV10	4002024
		R2 SYC Scrubber filter(6098) a	J3L300411-3	M2QVV1AD	9M2QVV10	4002025

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Certificate of Analysis

January 28, 2014

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

Attention: Dean Kitchen

Date Received at Lab	:	December 24, 2013
Project Name	:	Energy Fuels 2013 4th Quarter
Sample Type	:	Three (3) Stack Filter Sample
SDG Number	:	47656

CASE NARRATIVE

I. Introduction

On December 24, 2013, three stack filter samples were received at TestAmerica's Richland laboratory for radiochemical analysis. Upon receipt, the samples were assigned the TestAmerica identification number as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Number J3L300411.

II. Sample Receipt

The sample was 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

Sample R1 Dryer BH Filter (6099) tracer recovery was above the acceptance limits. A recount confirmed the high recovery. The batch blank result for Th-230 was above the achieved MDA; it was recounted and the result is below the MDA. 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

The achieved MDA of the batch exceeds the detection limit from reduced aliquot sizes taken due to historical process knowledge. All of the batch results except for the batch blank and U-235 for sample R2 SYC Scrubber Filter (6098) exceed the MDAs. Data is accepted. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

Gas Proportional Counting

Pb-210

The achieved MDA of the batch exceeds the detection limit from reduced aliquot sizes taken due to historical process knowledge. The sample activities exceed the MDAs. Data is accepted. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

Alpha Scintillation

Radium-226

The achieved MDA of the batch exceeds the detection limit due insufficient sample volume and limitations of the method in relation to the matrix and available count time. 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.

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: 28-Jan-14

TestAmerica Inc

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

Report No. : 58563 **SDG No:** 47656

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RER2
4002023 RICHRC5011									
R1 Dryer BH filter(6099) and b									
	M2QVR2AA	Th-228	2.43E-07 +- 8.5E-08		uCi/Sample	166%	3.64E-08		
		Th-230	3.93E-05 +- 6.2E-06		uCi/Sample	166%	3.03E-08	3.00E-15	
		Th-232	3.68E-07 +- 1.1E-07		uCi/Sample	166%	2.83E-08		
R1 SYC Scrubber filter(6097) a									
	M2QVT1AA	Th-228	1.67E-08 +- 2.1E-08	U	uCi/Sample	97%	3.02E-08		
		Th-230	1.16E-07 +- 5.6E-08		uCi/Sample	97%	2.93E-08	3.00E-15	
		Th-232	-9.40E-10 +- 1.2E-08	U	uCi/Sample	97%	2.68E-08		
R2 SYC Scrubber filter(6098) a									
	M2QVV1AA	Th-228	1.18E-08 +- 2.1E-08	U	uCi/Sample	80%	4.16E-08		
		Th-230	9.56E-07 +- 2.3E-07		uCi/Sample	80%	2.87E-08	3.00E-15	
		Th-232	4.23E-08 +- 3.6E-08		uCi/Sample	80%	2.87E-08		
4002022 FFSR									
R1 Dryer BH filter(6099) and b									
	M2QVR1AE	U-234	1.03E-02 +- 1.6E-03		uCi/Sample	99%	2.90E-05	9.00E-15	
		U-235	4.10E-04 +- 1.0E-04		uCi/Sample	99%	1.60E-05	9.00E-15	
		U-238	1.06E-02 +- 1.7E-03		uCi/Sample	99%	2.13E-05	9.00E-15	
R1 SYC Scrubber filter(6097) a									
	M2QVT1AE	U-234	8.73E-04 +- 2.0E-04		uCi/Sample	95%	5.26E-05	9.00E-15	
		U-235	3.74E-05 +- 3.1E-05		uCi/Sample	95%	3.20E-05	9.00E-15	
		U-238	9.37E-04 +- 2.1E-04		uCi/Sample	95%	4.95E-05	9.00E-15	
R2 SYC Scrubber filter(6098) a									
	M2QVV1AE	U-234	8.62E-04 +- 2.0E-04		uCi/Sample	82%	4.72E-05	9.00E-15	
		U-235	1.23E-05 +- 2.0E-05	U	uCi/Sample	82%	4.10E-05	9.00E-15	
		U-238	9.48E-04 +- 2.1E-04		uCi/Sample	82%	3.44E-05	9.00E-15	
4002025 RICHRC5011									
R1 Dryer BH filter(6099) and b									
	M2QVR1AD	Pb-210	2.78E-06 +- 5.4E-07		uCi/Sample	82%	3.37E-07	6.00E-14	
R1 SYC Scrubber filter(6097) a									
	M2QVT1AD	Pb-210	1.44E-06 +- 3.6E-07		uCi/Sample	74%	3.94E-07	6.00E-14	
R2 SYC Scrubber filter(6098) a									
	M2QVV1AD	Pb-210	1.13E-06 +- 3.0E-07		uCi/Sample	87%	3.40E-07	6.00E-14	
4002024 RL-RA-001									
R1 Dryer BH filter(6099) and b									
	M2QVR1AC	RA-226	1.10E-06 +- 2.7E-07		uCi/sample	98%	2.20E-08	9.00E-14	
R1 SYC Scrubber filter(6097) a									
	M2QVT1AC	RA-226	5.31E-08 +- 2.5E-08		uCi/sample	70%	3.50E-08	9.00E-14	
R2 SYC Scrubber filter(6098) a									

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rptTALRchSaSummary2 V5.2.26 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.

Sample Results Summary

Date: 28-Jan-14

TestAmerica Inc

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

Report No. : 58563 **SDG No:** 47656

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RER2
4002024	RL-RA-001								
	R2 SYC Scrubber filter(6098) a								
	M2QVV1AC	RA-226	1.61E-07 +- 5.0E-08		uCi/sample	70%	3.55E-08	9.00E-14	

No. of Results: 24

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

rptTALRchSaSum mary2 V5.2.26 A2002

QC Results Summary

Date: 28-Jan-14

TestAmerica Inc

Ordered by Method, Batch No, QC Type,.

Report No. : 58563 **SDG No.:** 47656

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
RICHRC5011								
4002023 BLANK QC,								
M2Q542AA	Th-228	-9.87E-11 +- 2.8E-10	U	uCi/Sample	54%			9.12E-10
	Th-230	-1.06E-11 +- 2.7E-10	U	uCi/Sample	54%			5.33E-10
	Th-232	0.00E+00 +- 2.7E-10	U	uCi/Sample	54%			3.59E-10
4002023 LCS,								
M2Q541AC	Th-230	2.38E-08 +- 5.1E-09	J	uCi/Sample	86%	106%	0.1	3.22E-10
FFSR								
4002022 BLANK QC,								
M2Q531AA	U-234	9.91E-08 +- 1.4E-07	U	uCi/Sample	93%			2.52E-07
	U-235	-1.96E-08 +- 8.3E-08	U	uCi/Sample	93%			2.41E-07
	U-238	3.74E-08 +- 1.4E-07	U	uCi/Sample	93%			3.83E-07
4002022 LCS,								
M2Q531AC	U-234	5.70E-06 +- 1.3E-06		uCi/Sample	86%	99%	0.0	1.97E-07
	U-238	5.02E-06 +- 1.2E-06		uCi/Sample	86%	84%	-0.2	2.45E-07
RICHRC5011								
4002025 BLANK QC,								
M2Q561AA	Pb-210	2.28E-07 +- 2.1E-07	U	uCi/Sample	88%			3.43E-07
4002025 LCS,								
M2Q561AC	Pb-210	9.38E-06 +- 1.6E-06		uCi/Sample	92%	104%	0.0	3.20E-07
RL-RA-001								
4002024 BLANK QC,								
M2Q551AA	RA-226	2.27E-08 +- 1.7E-08	U	uCi/sample	89%			2.47E-08
4002024 LCS,								
M2Q551AC	RA-226	9.73E-06 +- 1.9E-06	J	uCi/sample	100%	96%	0.0	2.38E-08

No. of Results: 13

TestAmerica Inc

rptSTLRchQcSummary V6.2.26 A2002

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

J Qual - No U or < qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

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: 28-Jan-14

Lab Name: TestAmerica Inc | **SDG:** 47656 | **Collection Date:** 12/17/2013 2:00:00 PM

Lot-Sample No.: J3L300411-1 | **Report No. :** 58563 | **Received Date:** 12/24/2013 2:00:00 PM

Client Sample ID: R1 Dryer BH filter(6099) and b | **COC No. :** | **Matrix:** FILTER

Energy Fuels 2013 4th 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: 4002022	FFSR			**Work Order:** M2QVR1AE		**Report DB ID:** 9M2QVR10						
U-234	**1.03E-02**		4.1E-04	1.6E-03	2.90E-05	uCi/Sample	99%	*(357.4)*	1/10/14 07:09 p	1.0	0.00148	ALP2
						8.23E-06	9.00E-15	*(12.6)*		Sample	Sample	
U-235	**4.10E-04**		8.1E-05	1.0E-04	1.60E-05	uCi/Sample	99%	*(25.6)*	1/10/14 07:09 p	1.0	0.00148	ALP2
						3.73E-06	9.00E-15	*(8.)*		Sample	Sample	
U-238	**1.06E-02**		4.1E-04	1.7E-03	2.13E-05	uCi/Sample	99%	*(498.)*	1/10/14 07:09 p	1.0	0.00148	ALP2
						5.49E-06	9.00E-15	*(12.6)*		Sample	Sample	
								Ratio U-234/238 = 1.0				
Batch: 4002023	RICHRC5011			**Work Order:** M2QVR2AA		**Report DB ID:** 9M2QVR20						
Th-228	**2.43E-07**		7.6E-08	8.5E-08	3.64E-08	uCi/Sample	166%	*(6.7)*	1/20/14 03:14 p	1.0	0.9888	ALP114
						9.86E-09		*(5.7)*		Sample	Sample	
Th-230	**3.93E-05**		9.4E-07	6.2E-06	3.03E-08	uCi/Sample	166%	*(1294.5)*	1/20/14 03:14 p	1.0	0.9888	ALP114
						7.82E-09	3.00E-15	*(12.8)*		Sample	Sample	
Th-232	**3.68E-07**		9.2E-08	1.1E-07	2.83E-08	uCi/Sample	166%	*(13.)*	1/20/14 03:14 p	1.0	0.9888	ALP114
						7.12E-09		*(6.8)*		Sample	Sample	
Batch: 4002024	RL-RA-001			**Work Order:** M2QVR1AC		**Report DB ID:** 9M2QVR10						
RA-226	**1.10E-06**		3.8E-08	2.7E-07	2.20E-08	uCi/sample	98%	*(50.)*	1/22/14 05:35 p	1.0	0.9888	ASC2MA
						1.06E-08	9.00E-14	*(8.2)*		Sample	Sample	
Batch: 4002025	RICHRC5011			**Work Order:** M2QVR1AD		**Report DB ID:** 9M2QVR10						
Pb-210	**2.78E-06**		2.8E-07	5.4E-07	3.37E-07	uCi/Sample	82%	*(8.3)*	1/23/14 11:08 a	1.0	0.98881	GPC31B
						1.64E-07	6.00E-14	*(10.3)*		Sample	Sample	

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U or < qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
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: 28-Jan-14

Lab Name:	TestAmerica Inc	**SDG:**	47656	**Collection Date:**	12/17/2013 2:00:00 PM
Lot-Sample No.:	J3L300411-1	**Report No. :**	58563	**Received Date:**	12/24/2013 2:00:00 PM
Client Sample ID:	R1 Dryer BH filter(6099) and b	**COC No. :**		**Matrix:**	FILTER

Energy Fuels 2013 4th 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

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.
J Qual - No U or < qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
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: 28-Jan-14

Lab Name: TestAmerica Inc **SDG:** 47656 **Collection Date:** 12/16/2013 10:00:00 AM

Lot-Sample No.: J3L300411-2 **Report No. :** 58563 **Received Date:** 12/24/2013 2:00:00 PM

Client Sample ID: R1 SYC Scrubber filter(6097) a **COC No. :** **Matrix:** FILTER

Energy Fuels 2013 4th 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: 4002022	FFSR			**Work Order:** M2QVT1AE		**Report DB ID:** 9M2QVT10						
U-234	**8.73E-04**		1.4E-04	2.0E-04	5.26E-05	uCi/Sample	95%	*(16.6)*	1/10/14 07:09 p	1.0	0.0011	ALP3
						1.59E-05	9.00E-15	*(8.9)*		Sample	Sample	
U-235	**3.74E-05**		3.0E-05	3.1E-05	3.20E-05	uCi/Sample	95%	*(1.2)*	1/10/14 07:09 p	1.0	0.0011	ALP3
						8.43E-06	9.00E-15	*(2.4)*		Sample	Sample	
U-238	**9.37E-04**		1.5E-04	2.1E-04	4.95E-05	uCi/Sample	95%	*(18.9)*	1/10/14 07:09 p	1.0	0.0011	ALP3
						1.47E-05	9.00E-15	*(9.1)*		Sample	Sample	
								Ratio U-234/238 = 0.9				
Batch: 4002023	RICHRC5011			**Work Order:** M2QVT1AA		**Report DB ID:** 9M2QVT10						
Th-228	**1.67E-08**	U	2.1E-08	2.1E-08	3.02E-08	uCi/Sample	97%	*0.55*	1/16/14 07:53 p	1.0	0.9894	ALP114
						7.59E-09		*(1.6)*		Sample	Sample	
Th-230	**1.16E-07**		5.3E-08	5.6E-08	2.93E-08	uCi/Sample	97%	*(4.)*	1/16/14 07:53 p	1.0	0.9894	ALP114
						7.36E-09	3.00E-15	*(4.1)*		Sample	Sample	
Th-232	**-9.40E-10**	U	1.2E-08	1.2E-08	2.68E-08	uCi/Sample	97%	*-0.04*	1/16/14 07:53 p	1.0	0.9894	ALP114
						6.53E-09		*-0.16*		Sample	Sample	
Batch: 4002024	RL-RA-001			**Work Order:** M2QVT1AC		**Report DB ID:** 9M2QVT10						
RA-226	**5.31E-08**		2.3E-08	2.5E-08	3.50E-08	uCi/sample	70%	*(1.5)*	1/22/14 05:35 p	1.0	0.9888	ASC3MA
						1.69E-08	9.00E-14	*(4.2)*		Sample	Sample	
Batch: 4002025	RICHRC5011			**Work Order:** M2QVT1AD		**Report DB ID:** 9M2QVT10						
Pb-210	**1.44E-06**		2.7E-07	3.6E-07	3.94E-07	uCi/Sample	74%	*(3.6)*	1/23/14 11:08 a	1.0	0.9894	GPC31C
						1.92E-07	6.00E-14	*(7.9)*		Sample	Sample	

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U or < qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
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: 28-Jan-14

Lab Name:	TestAmerica Inc	**SDG:**	47656	**Collection Date:**	12/16/2013 10:00:00 AM
Lot-Sample No.:	J3L300411-2	**Report No. :**	58563	**Received Date:**	12/24/2013 2:00:00 PM
Client Sample ID:	R1 SYC Scrubber filter(6097) a	**COC No. :**		**Matrix:**	FILTER

Energy Fuels 2013 4th 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

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.
J Qual - No U or < qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
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: 28-Jan-14

Lab Name: TestAmerica Inc | **SDG:** 47656 | **Collection Date:** 12/17/2013 11:00:00 AM

Lot-Sample No.: J3L300411-3 | **Report No. :** 58563 | **Received Date:** 12/24/2013 2:00:00 PM

Client Sample ID: R2 SYC Scrubber filter(6098) a | **COC No. :** | **Matrix:** FILTER

Energy Fuels 2013 4th 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: 4002022	FFSR			**Work Order:**	M2QVV1AE	**Report DB ID:**	9M2QVV10					
U-234	**8.62E-04**		1.4E-04	2.0E-04	4.72E-05	uCi/Sample	82%	*(18.3)*	1/10/14 07:09 p	1.0	0.0013	ALP4
						1.38E-05	9.00E-15	*(8.7)*		Sample	Sample	
U-235	**1.23E-05**	U	2.0E-05	2.0E-05	4.10E-05	uCi/Sample	82%	*0.3*	1/10/14 07:09 p	1.0	0.0013	ALP4
						1.16E-05	9.00E-15	*(1.2)*		Sample	Sample	
U-238	**9.48E-04**		1.5E-04	2.1E-04	3.44E-05	uCi/Sample	82%	*(27.6)*	1/10/14 07:09 p	1.0	0.0013	ALP4
						9.20E-06	9.00E-15	*(9.)*		Sample	Sample	
								Ratio U-234/238 = 0.9				
Batch: 4002023	RICHRC5011			**Work Order:**	M2QVV1AA	**Report DB ID:**	9M2QVV10					
Th-228	**1.18E-08**	U	2.1E-08	2.1E-08	4.16E-08	uCi/Sample	80%	*0.28*	1/16/14 07:53 p	1.0	0.985	ALP115
						1.09E-08		*(1.1)*		Sample	Sample	
Th-230	**9.56E-07**		1.7E-07	2.3E-07	2.87E-08	uCi/Sample	80%	*(33.3)*	1/16/14 07:53 p	1.0	0.985	ALP115
						6.68E-09	3.00E-15	*(8.1)*		Sample	Sample	
Th-232	**4.23E-08**		3.5E-08	3.6E-08	2.87E-08	uCi/Sample	80%	*(1.5)*	1/16/14 07:53 p	1.0	0.985	ALP115
						6.68E-09		*(2.4)*		Sample	Sample	
Batch: 4002024	RL-RA-001			**Work Order:**	M2QVV1AC	**Report DB ID:**	9M2QVV10					
RA-226	**1.61E-07**		2.6E-08	5.0E-08	3.55E-08	uCi/sample	70%	*(4.5)*	1/22/14 05:36 p	1.0	0.985	ASCJUA
						1.72E-08	9.00E-14	*(6.5)*		Sample	Sample	
Batch: 4002025	RICHRC5011			**Work Order:**	M2QVV1AD	**Report DB ID:**	9M2QVV10					
Pb-210	**1.13E-06**		2.3E-07	3.0E-07	3.40E-07	uCi/Sample	87%	*(3.3)*	1/23/14 11:08 a	1.0	0.985	GPC31D
						1.66E-07	6.00E-14	*(7.5)*		Sample	Sample	

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No U or < qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
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: 28-Jan-14

Lab Name:	TestAmerica Inc	**SDG:**	47656	**Collection Date:**	12/17/2013 11:00:00 AM
Lot-Sample No.:	J3L300411-3	**Report No. :**	58563	**Received Date:**	12/24/2013 2:00:00 PM
Client Sample ID:	R2 SYC Scrubber filter(6098) a	**COC No. :**		**Matrix:**	FILTER

Energy Fuels 2013 4th 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

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.
J Qual - No U or < qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.
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

BLANK RESULTS

Date: 28-Jan-14

Lab Name: TestAmerica Inc **SDG:** 47656

Matrix: FILTER **Report No. :** 58563

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: 4002025	RICHRC5011			**Work Order:**	M2Q561AA	**Report DB ID:**	M2Q561AB					
Pb-210	2.28E-07	U	2.1E-07	2.1E-07	3.43E-07	uCi/Sample	88%	0.67	1/23/14 11:08 a	1.0	1.0	GPC32A
					1.67E-07	6.00E-14		(2.1)		Sample	Sample	
Batch: 4002024	RL-RA-001			**Work Order:**	M2Q551AA	**Report DB ID:**	M2Q551AB					
RA-226	2.27E-08	U	1.5E-08	1.7E-08	2.47E-08	uCi/sample	89%	0.92	1/22/14 05:36 p	1.0	1.0	ASCLMA
					1.19E-08	9.00E-14		(2.7)		Sample	Sample	
Batch: 4002022	FFSR			**Work Order:**	M2Q531AA	**Report DB ID:**	M2Q531AB					
U-234	9.91E-08	U	1.4E-07	1.4E-07	2.52E-07	uCi/Sample	93%	0.39	1/10/14 07:09 p	1.0	0.15	ALP5
					6.82E-08	9.00E-15		(1.4)		Sample	Sample	
U-235	-1.95E-08	U	8.3E-08	8.3E-08	2.41E-07	uCi/Sample	93%	-0.08	1/10/14 07:09 p	1.0	0.15	ALP5
					6.44E-08	9.00E-15		-0.47		Sample	Sample	
U-238	3.74E-08	U	1.4E-07	1.4E-07	3.83E-07	uCi/Sample	93%	0.1	1/10/14 07:09 p	1.0	0.15	ALP5
					1.16E-07	9.00E-15		0.52		Sample	Sample	
								Ratio U-234/238 = 2.7				
Batch: 4002023	RICHRC5011			**Work Order:**	M2Q542AA	**Report DB ID:**	M2Q542AB					
Th-228	-9.87E-11	U	2.8E-10	2.8E-10	9.12E-10	uCi/Sample	54%	-0.11	1/22/14 10:01 a	1.0	99.26	ALP401
					2.53E-10			-0.7		Sample	Sample	
Th-230	-1.06E-11	U	2.7E-10	2.7E-10	5.33E-10	uCi/Sample	54%	-0.02	1/22/14 10:01 a	1.0	99.26	ALP401
					1.24E-10	1.00E+00		-0.08		Sample	Sample	
Th-232	0.00E+00	U	0.0E+00	2.7E-10	3.59E-10	uCi/Sample	54%	0.	1/22/14 10:01 a	1.0	99.26	ALP401
					8.84E-11			0.		Sample	Sample	

No. of Results: 8 **Comments:**

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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: 28-Jan-14

Lab Name: TestAmerica Inc **SDG:** 47656

Matrix: FILTER **Report No. :** 58563

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: 4002025	RICHRC5011			**Work Order:** M2Q561AC			**Report DB ID:**	M2Q561CS					
Pb-210	9.38E-06		3.8E-07	1.6E-06	3.20E-07	uCi/Sample	92%	9.01E-06	1.53E-07	104%	1/23/14 11:08 a	1.0	GPC32B
							Rec Limits:	20	115	0.0		Sample	
Batch: 4002024	RL-RA-001			**Work Order:** M2Q551AC			**Report DB ID:**	M2Q551CS					
RA-226	9.73E-06		1.1E-07	1.9E-06	2.38E-08	uCi/sample	100%	1.01E-05	1.03E-07	96%	1/22/14 05:38 p	1.0	ASCNMD
							Rec Limits:	70	130	0.0		Sample	
Batch: 4002022	FFSR			**Work Order:** M2Q531AC			**Report DB ID:**	M2Q531CS					
U-234	5.70E-06		9.2E-07	1.3E-06	1.97E-07	uCi/Sample	86%	5.73E-06	1.77E-07	99%	1/10/14 07:09 p	0.17	ALP6
							Rec Limits:	70	130	0.0		Sample	
U-238	5.02E-06		8.6E-07	1.2E-06	2.45E-07	uCi/Sample	86%	6.00E-06	1.85E-07	84%	1/10/14 07:09 p	0.17	ALP6
							Rec Limits:	70	130	-0.2		Sample	
Batch: 4002023	RICHRC5011			**Work Order:** M2Q541AC			**Report DB ID:**	M2Q541CS					
Th-230	2.38E-08		2.8E-09	5.1E-09	3.22E-10	uCi/Sample	86%	2.26E-08	2.34E-10	106%	1/16/14 07:53 p	99.59	ALP23
							Rec Limits:	70	130	0.1		Sample	

No. of Results: 5 **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 ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Tetco	Dean Kitchen	12/18/2013	
Address 391 East 620 South	**Telephone Number (Area Code)/Fax Number** 801-492-9106	**Lab Number**	Page 1 of 1
City American Fork	**State** Ut	**Zip Code** 84003	**Site Contact** Scott Christensen, Garren Palmer	**Lab Contact**
Project Name and Location (State) Energy Fuels 2013 4th 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 Dryer BH filter (6099) and beaker	12/17/13	14:00	X										X	X	X	X	MaQVR
R1 SYC Scrubber filter (6097) and beaker	12/16/13	10:00	X										X	X	X	X	MaQVT
R2 SYC Scrubber filter (6098) and beaker	12/17/13	11:00	X										X	X	X	X	MaQVV

J3L300411
SDG-47656
Due 1-21-13

J3L300411

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	12/19/13	12:00pm	1. Received By David Hardman	12-24-13	14:15
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: 12-24-2013 / 14:00 Container GM Screen Result: (Airlock) 20 cpm Initials[DH]
Sample GM Screen Result (Sample Receiving) 80 cpm Initials[DH]

Client: TETCO (DEN) SDG #: 47656 SAF #: _____ NA [JB]

Lot Number: J3L300411

Chain of Custody # _____

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

Samples received inside shipping container/cooler/box Yes [DH] 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 [DH]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [DH]
3. Cooler temperature: _____ °C NA [DH]
4. Vermiculite/packing materials is NA [DH] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [DH] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 3
7. Containers received: 3X BEAKER, 3X FILTER
8. Sample holding times exceeded? NA [DH] Yes [ ] No [ ]
9. Samples have: ____tape ____hazard labels ____custody seals DH appropriate sample labels
10. Matrix: DH A (FLT, Wipe, Solid, Soil) ____I (Water) ____S (Air, Niosh 7400) JB T (Biological, Ni-63)
11. Samples: JB 12-30-13
DH 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 [DH]
(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 [DH]
14. Description of anomalies (include sample numbers): NA [JB] _____
15. Sample Location, Sample Collector Listed on COC? * Yes [DH] No [ ]
*For documentation only. No corrective action needed.
16. Additional Information: _____

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

Sample Check-in List completed by Sample Custodian:
Signature: [signature] Date: 12-24-13

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

[X] No action necessary; process as is

Project Manager [signature] Date 12-31-13

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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

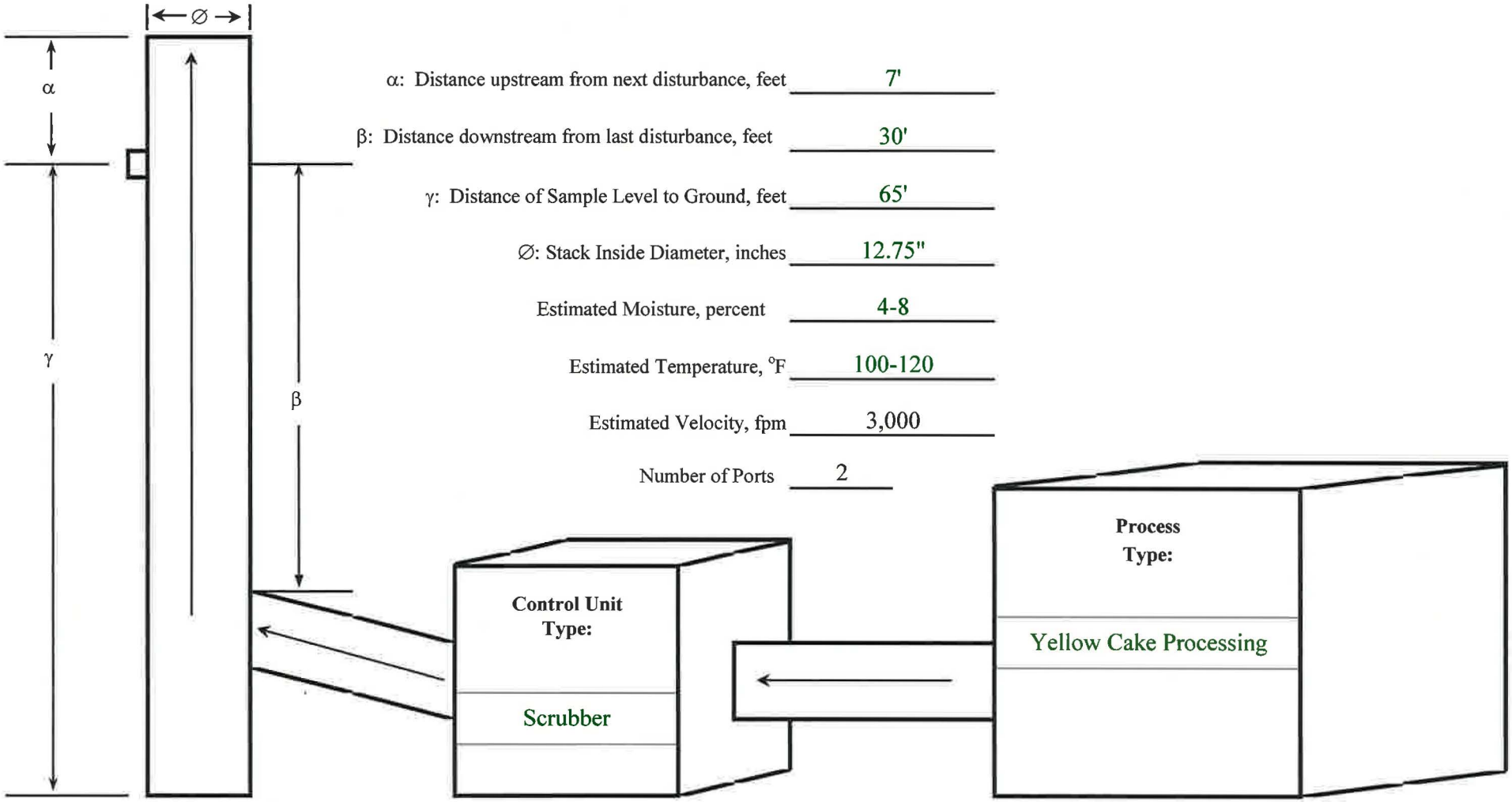


Figure 1. Facility Schematic Representation

Facility: Energy Fuels Resources

Stack Identification: Yellow Cake Dryer Baghouse

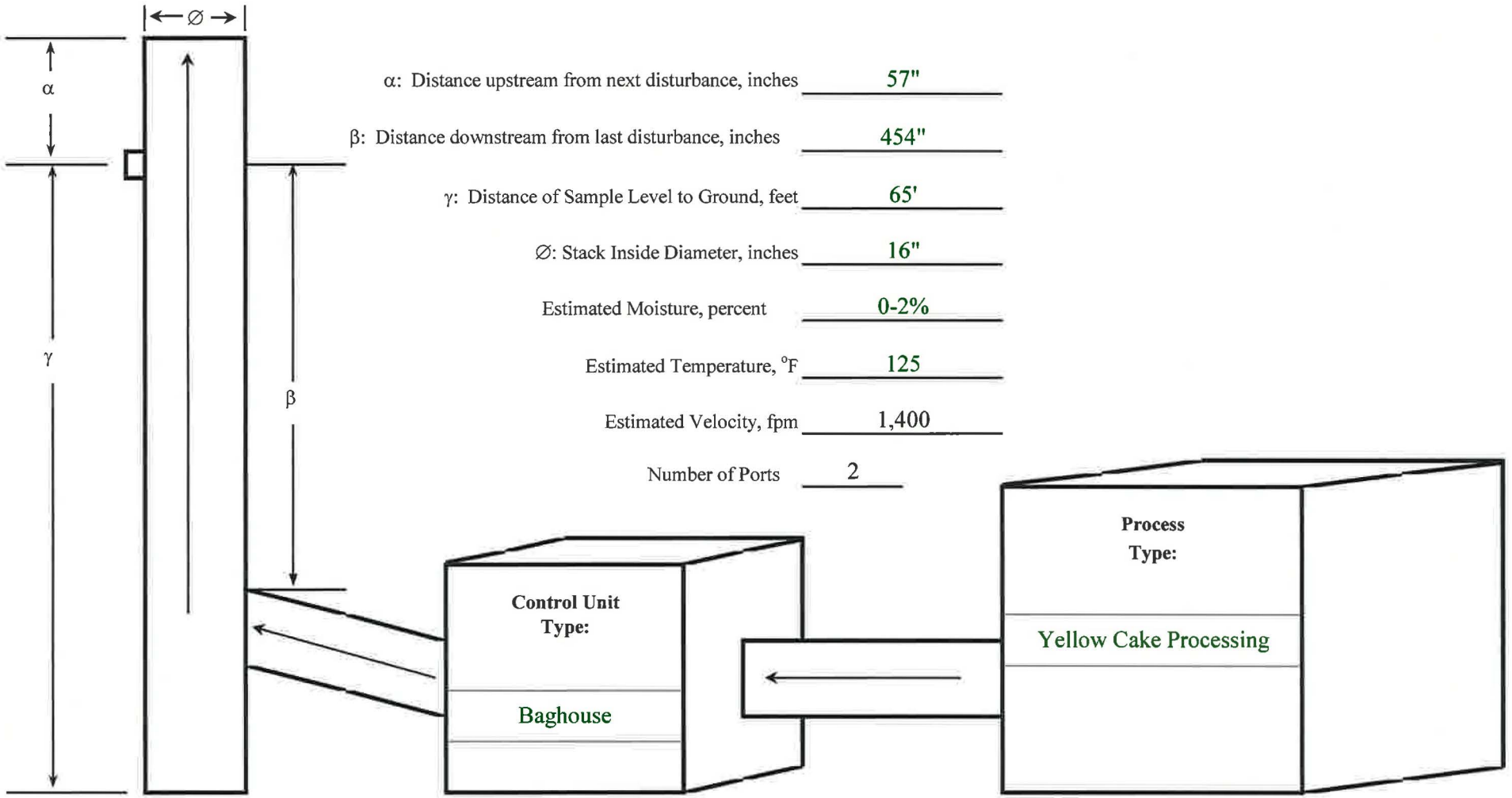


Figure 2. Facility Schematic Representation

Energy Fuels Resources, Blanding, UT Process Data

Source: South Yellow Cake		Date: 12-16-13	
	Scrubber Flow GPM		
Time	#1	#2	ΔP
9:30	16.3	30.7	10.7
10:00	16.4	30.7	10.7
10:30	16.5	30.7	10.7
11:00	16.5	30.7	10.7
11:30	16.5	30.7	10.7
12:00	16.4	30.7	10.7
12:30	16.8	30.8	10.7
13:00	17.0	30.8	10.7
13:30	17.0	30.7	10.7
14:00	17.1	30.8	10.7
14:30	17.1	30.8	10.7
15:00	17.1	30.8	10.7
15:30	17.1	30.7	10.7
16:00	17.0	30.7	10.7
16:30	17.1	30.7	10.7
17:00	17.1	30.7	10.7
17:30	17.1	30.8	10.7

Energy Fuels Resources, Blanding, UT Process Data

Source: South Yellow Cake		Date: 12 12 13	
Time	Scrubber Flow GPM		
	#1	#2	ΔP
11:00	16.6	30.8	10.7
11:30	16.6	30.7	10.7
12:00	16.6	30.5	10.7
12:30	16.7	30.9	10.7
13:00	16.8	30.8	10.7
13:30	16.8	30.8	10.7
14:00	16.8	30.8	10.7
14:30	16.8	30.8	10.7
15:00	16.9	30.7	10.7
15:30	16.8	30.8	16.7
16:00	16.9	30.8	10.7
16:30	16.7	30.8	10.7
17:00	16.8	30.8	10.7
17:30	16.7	30.8	10.7
18:00	16.6	30.8	10.7
18:30	16.6	30.8	10.7
19:00	16.5	30.8	10.7
19:30	16.5	30.7	10.7
20:00			

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

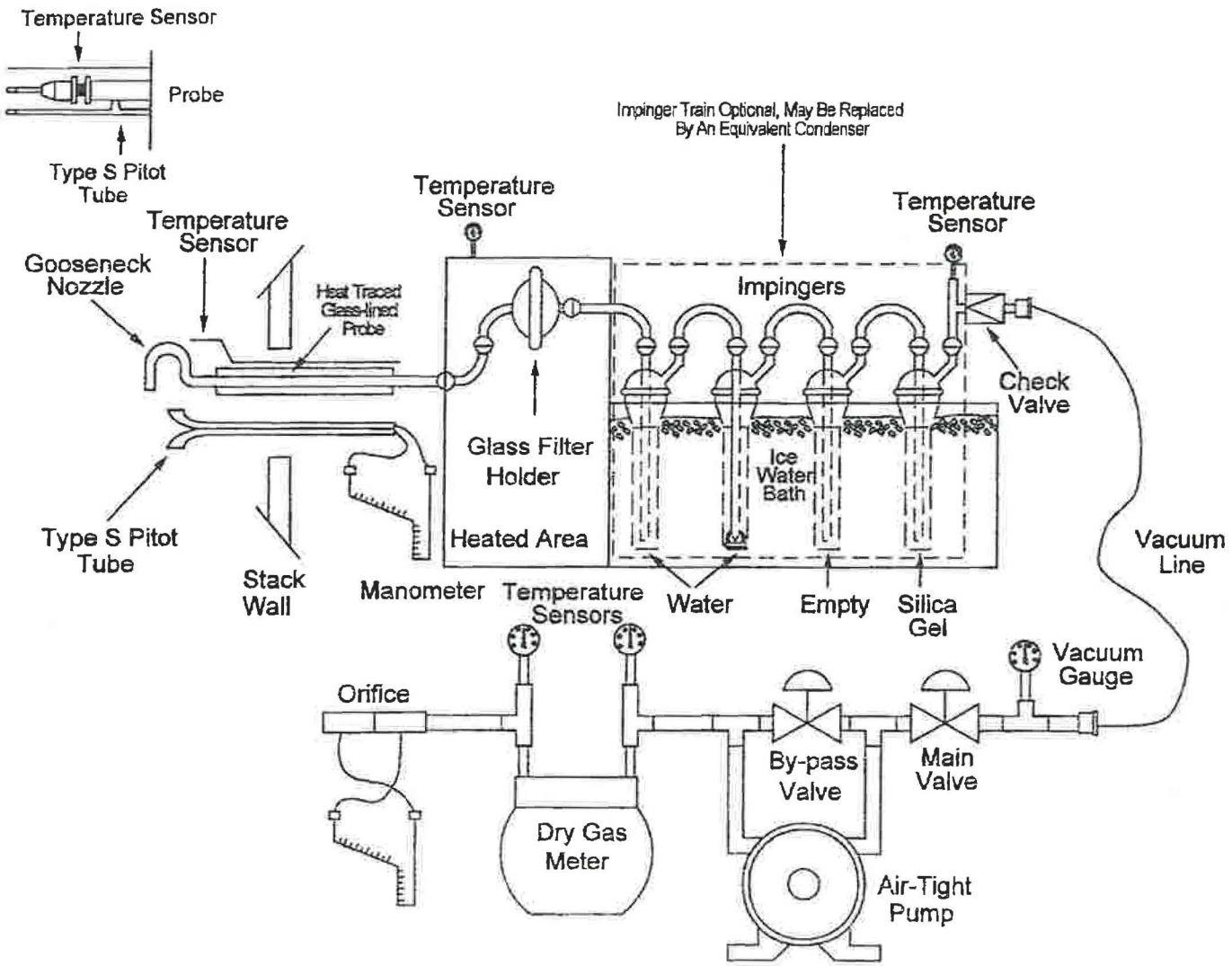


Figure 3 Schematic of Method 5/114 Sampling Train

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

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: 12/11/2013 | METER SERIAL #: 26144 | BAROMETRIC PRESSURE (in Hg): INITIAL 25.80, FINAL 25.80, AVG (P_{bar}) 25.40

METER PART #: Console 6 | CRITICAL ORIFICE SET SERIAL #: 1453S | EQUIPMENT ID #: Console #6

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	728.375	737.588	9.213	71	74	81	75	86	79	8.50	2.90	7.7273	7.6260	0.987		1.700
	2	0.8137	12	737.588	750.681	13.093	71	75	86	80	92	83.25	12.00	2.90	10.8956	10.7661	0.988		1.686
	3	0.8137	12	750.681	768.774	18.093	71	80	92	80	90	85.5	16.50	2.90	14.9943	14.8034	0.987		1.680
																AVG =	0.987	0.02	
19	1	0.5317	12	707.497	714.208	6.711	71	73	73	73	79	74.50	9.50	1.20	5.6485	5.5693	0.986		1.653
	2	0.5317	12	714.208	720.235	6.027	71	73	79	74	81	76.75	8.50	1.20	5.0515	4.9831	0.986		1.646
	3	0.5317	12	720.235	728.375	8.140	71	74	81	74	81	77.50	11.50	1.20	6.8129	6.7418	0.990		1.644
																AVG =	0.987	0.01	
12	1	0.3307	12	689.425	694.924	5.499	71	73	75	75	80	75.75	12.50	0.43	4.6073	4.5578	0.989		1.524
	2	0.3307	12	694.924	701.978	7.054	71	75	80	73	76	76.00	16.00	0.43	5.9074	5.8340	0.988		1.524
	3	0.3307	12	701.978	707.497	5.519	71	73	76	72	78	74.75	12.50	0.43	4.6327	4.5578	0.984		1.527
																AVG =	0.987	-0.03	

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 = 0.987

AVERAGE $\Delta H_@$ = 1.620

(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	33	33
66	67	68
202	202	202

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

2013 Pre-Calibration Console 7

							INITIAL	FINAL	AVG (P_{bar})
DATE:	12/13/2012	METER SERIAL #:	68092	BAROMETRIC PRESSURE (in Hg):			25.20	25.20	25.20
METER PART #:	Console 7	CRITICAL ORIFICE SET SERIAL #:	1453S	EQUIPMENT ID #:	Console #7				

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	911.2310	919.529	8.298	69	85	88	92	95	90	7.50	3.20	6.7732	6.6885	0.987		1.847
	2	0.8137	13	919.529	926.157	6.628	69	88	89	96	97	92.25	6.00	3.20	5.3880	5.3508	0.993		1.840
	3	0.8137	13	926.157	932.829	6.672	68	89	92	97	99	94.25	6.00	3.20	5.4042	5.3558	0.991		1.830
																AVG =	0.991	-0.36	
19	1	0.5317	13	870.880	876.522	5.642	69	75	76	75	80	76.50	8.00	1.25	4.6946	4.6618	0.993		1.723
	2	0.5317	13	876.522	882.542	6.020	69	76	78	80	85	79.75	8.50	1.25	4.9789	4.9532	0.995		1.713
	3	0.5317	13	882.542	888.232	5.690	69	78	78	85	89	82.50	8.00	1.25	4.6821	4.6618	0.996		1.704
																AVG =	0.995	0.04	
12	1	0.3307	13	888.7010	893.990	5.289	69	78	79	81	85	80.75	12.00	0.47	4.3563	4.3493	0.998		1.658
	2	0.3307	13	893.990	899.307	5.317	69	79	82	85	87	83.25	12.00	0.47	4.3592	4.3493	0.998		1.650
	3	0.3307	13	899.307	904.649	5.342	69	82	83	87	87	84.75	12.00	0.47	4.3677	4.3493	0.996		1.645
																AVG =	0.997	0.32	

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 = **0.994**

AVERAGE $\Delta H_@$ = **1.734**

(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.

Denison Mines

DATE: 1/29/2014 | METER SERIAL #: 26144 | BAROMETRIC PRESSURE (in Hg): INITIAL 25.45, FINAL 25.45, AVG (P_{bar}) 25.45

METER PART #: Console 6 | CRITICAL ORIFICE SET SERIAL #: 1453S | EQUIPMENT ID #: Console #6

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	16	432.310	437.640	5.330	60	71	71	71	77	72.5	7.50	1.20	4.5118	4.4519	0.987		1.622
	2	0.5317	16	437.640	443.316	5.676	60	71	77	73	82	75.75	8.00	1.20	4.7755	4.7487	0.994		1.612
	3	0.5317	16	443.316	455.065	11.749	60	73	82	77	86	79.5	16.50	1.20	9.8153	9.7841	0.998		1.601
																AVG =	0.993	0.00	
25	1	0.6808	11			.0						0.00		2.10					#######
	2	0.6808	11			.0						0.00		2.10					#######
	3	0.6808	11			.0						0.00		2.10					#######
																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 = 0.993

AVERAGE $\Delta H_@$ = #VALUE!

(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	66	66
121	120	120

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.

Quality - Service - Reliability

Facility simplot 400

DATE:	1/29/2014	METER SERIAL #:	68092	BAROMETRIC PRESSURE (in Hg):	INITIAL 25.45	FINAL 25.45	AVG (P_{bar}) 25.45	IF Y VARIATION EXCEEDS 2.00%,
METER PART #:	Console 7	CRITICAL ORIFICE SET SERIAL #:	1453S	EQUIPMENT ID #:	Console #7			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 (%)	$\Delta H_@$
25	1	0.6808	13	783.151	789.608	6.457	60	70	77	75	82	76	7.00	2.10	5.4442	5.3203	0.977		1.72
	2	0.6808	13	789.608	796.115	6.507	60	75	82	78	86	80.25	7.00	2.10	5.4431	5.3203	0.977		1.71
	3	0.6808	13	796.115	803.116	7.001	60	78	86	78	86	82	7.50	2.10	5.8374	5.7003	0.977		1.71
																AVG =	0.977	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 = 0.977

AVERAGE $\Delta H_@$ = 1.71

(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

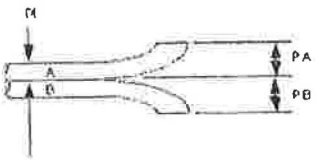
$$\Delta H_@ = \left(\frac{0.75\,\theta}{V_{cr(std)}}\right)^2 \Delta H \left(\frac{V_{m(std)}}{V_m}\right)$$

Type S Pitot Tube Inspection Data

Date: 12/12/13

Pitot Tube Identification: 18 - 6

Technician: M. McNamara



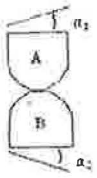
D_t = .375 in.

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

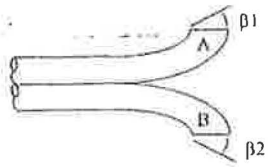
P_A = .496 in.

P_B = .496 in.



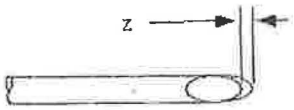
$\alpha_1 < 10°$ α_1 = 1 °

$\alpha_2 < 10°$ α_2 = 1 °



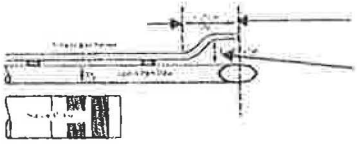
$\beta_1 < 5°$ β_1 = 2 °

$\beta_2 < 5°$ β_2 = 2 °



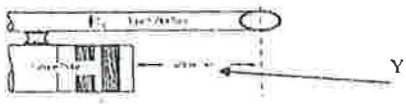
$Z \le 0.125$ in. Z = .001 in.

$W \le 0.03125$ 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:

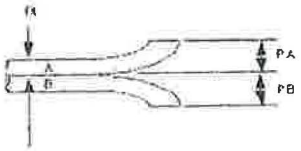
	Temperature Source (Medium)	Temperature Reference (°F)	Temperature Sensor (°F)	Temperature Difference (°F)
Probe	AIR	72	72	0
	Continuity			Yes
	Heat Check 248		Yes	250
Stack	AIR	72	72	0
	ICE WATER	33	34	1
	BOIL WATER	202	202	0
	SILICONE OIL			

Type S Pitot Tube Inspection Data

Date: 12-13-13

Pitot Tube Identification: 27-G

Technician: M. McNamara



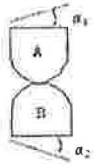
Dt= .375 in

Is $P_A = P_B$? Yes

Is $1.05 \cdot D_t \le D_t \le 1.50 \cdot D_t$? Yes

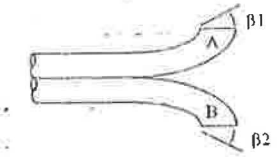
P_A = .452 in.

P_B = .452 in.



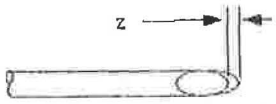
$\alpha_1 < 10°$ α_1 = 0 °

$\alpha_2 < 10°$ α_2 = 0 °

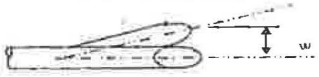


$\beta_1 < 5°$ β_1 = 1 °

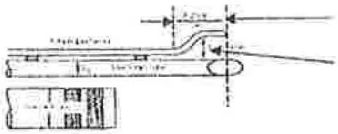
$\beta_2 < 5°$ β_2 = 1 °



$Z \le 0.125$ in. Z = .016 in

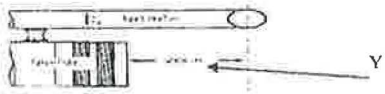


$W \le 0.03125$ in. W = .008 in.



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		Temperature Difference (°F)
			Reference (°F)	Sensor (°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

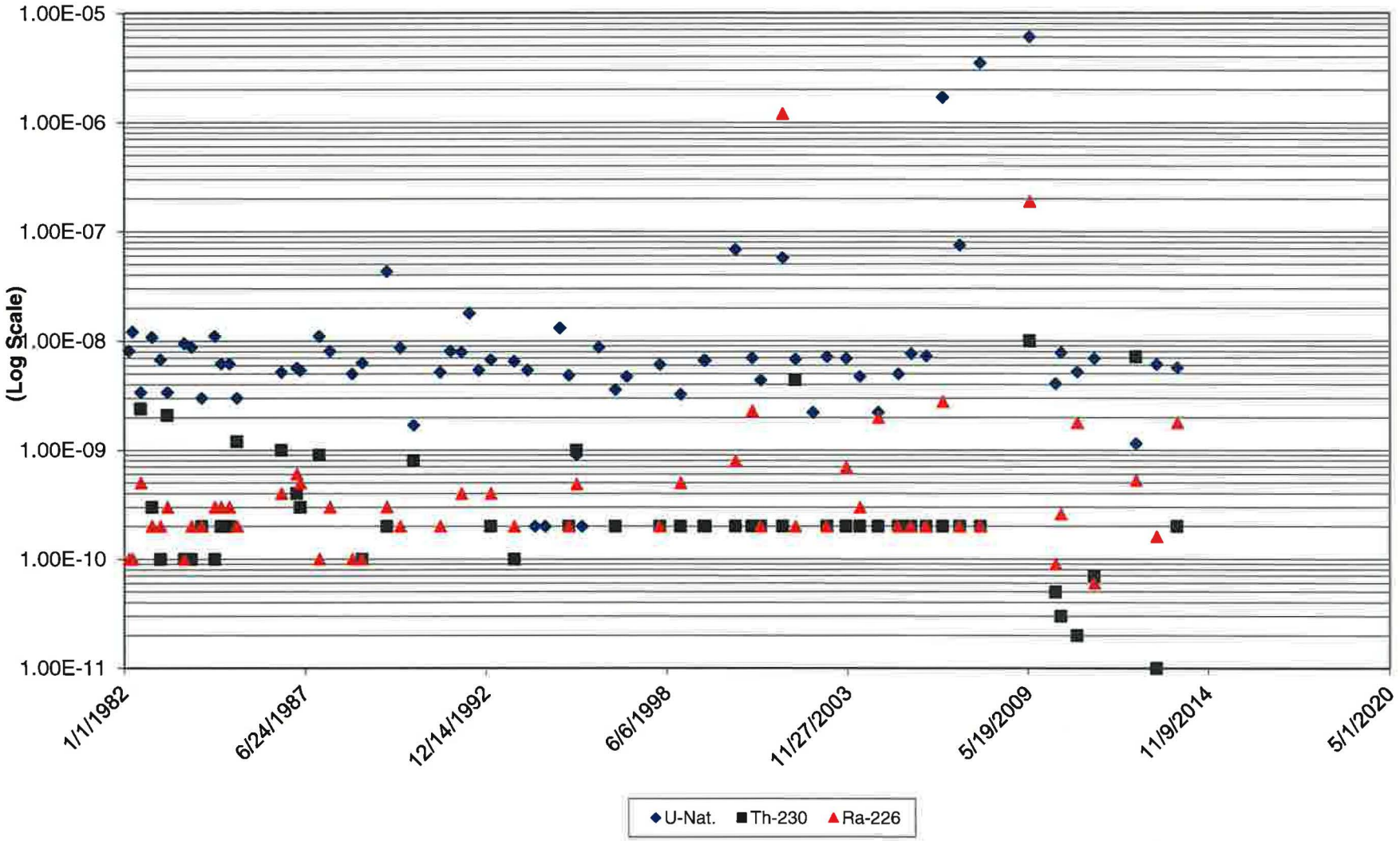
APPENDIX F

The testing followed the same procedures as outlined in previous protocols and tests at this facility.

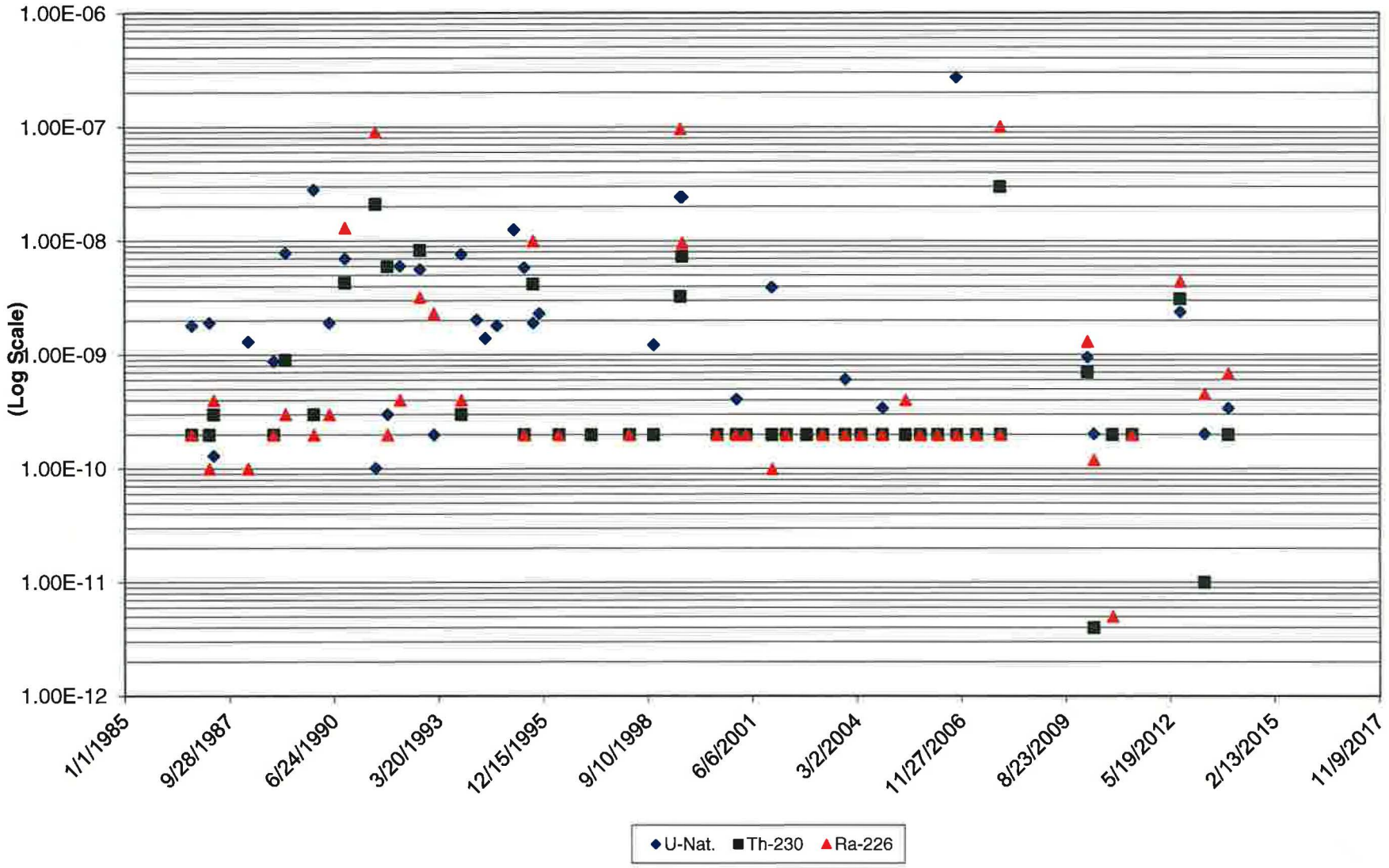
ATTACHMENT H

SURFACE WATER GRAPHS AND FIELD DATA SHEETS

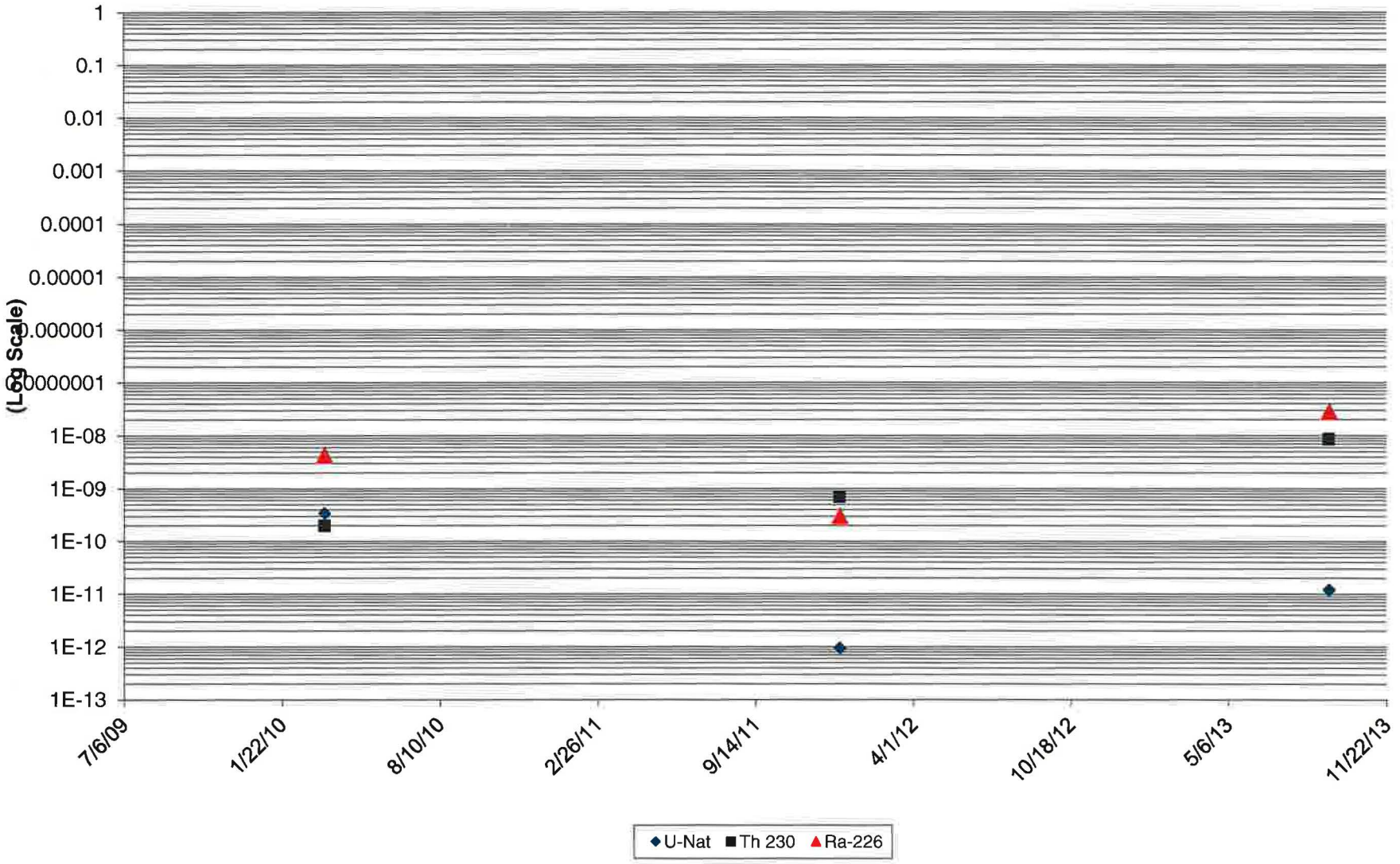
Cottonwood Creek Dissolved Radionuclide Concentrations (uCi/ml)



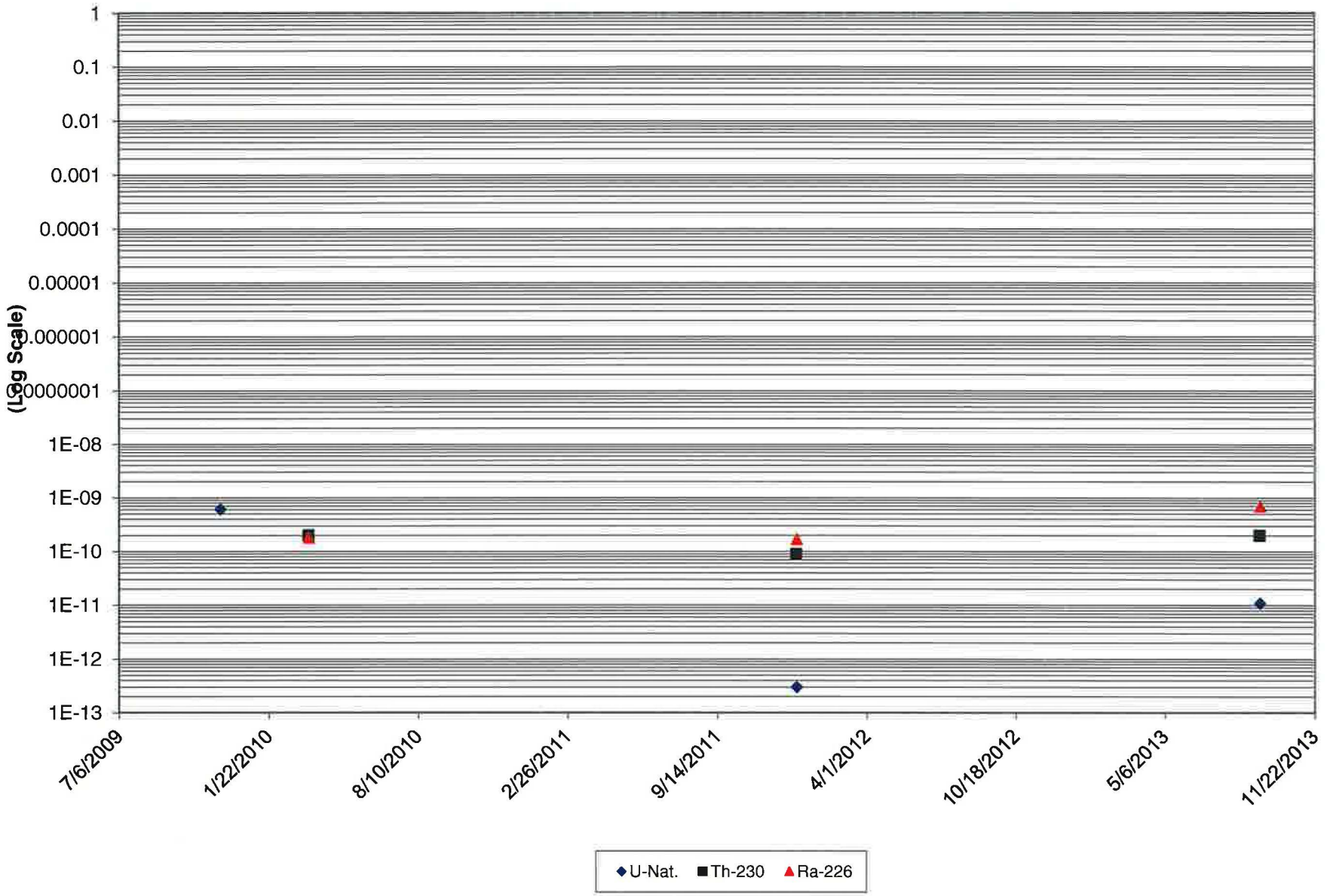
Cottonwood Creek Suspended Radionuclide Concentrations (uCi/ml)



Westwater Creek Suspended Radionuclide Concentrations (uCi/ml)



Westwater Creek Dissolved Radionuclide Concentrations (uCi/ml)



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ANALYTICAL SUMMARY REPORT

January 30, 2014

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

Workorder No.: C13090424

Project Name: 3rd Quarter Surface Water 2013 Resample

Energy Laboratories, Inc. Casper WY received the following 4 samples for Energy Fuels Resources (USA) Inc on 9/12/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C13090424-001	Cottonwood Creek	09/10/13 12:15	09/12/13	Aqueous	Solids, Total Dissolved Solids, Total Suspended
C13090424-002	Cottonwood 65	09/10/13 12:15	09/12/13	Aqueous	Same As Above
C13090424-003	Westwater Canyon	09/10/13 12:35	09/12/13	Aqueous	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
C13090424-004	Temp Blank		09/12/13	Aqueous	Temperature

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:

Stephanie D Waldrop
Reporting Supervisor

Digitally signed by
Stephanie Waldrop
Date: 2014.01.30 12:20:08 -07:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample
Sample Delivery Group: C13090424

Revised Date: 01/30/14
Report Date: 10/10/13

CASE NARRATIVE

TDS ANALYSIS COMMENTS
The TDS result for sample -003 (Westwater Canyon) was analyzed past the recommended hold time due to reanalysis. The original analysis was done within hold, however, due to sample matrix effects, insufficient volume was used causing an increased reporting limit. This original analysis was done on 9/13/13 with a result of ND at an RL of 200. The sample was reanalyzed 6 more times in an effort to achieve a result above the RL. Unfortunatelty, when a reportable result was achieved the holding time had already expired. Despite the analysis being past hold time, the laboratory is confident in the result and has duplicate analysis to support the reported result (230 mg/L, 317 mg/L, 205 mg/L).

REVISED/SUPPLEMENTAL REPORT
The attached analytical report has been revised from a previously submitted report due to the request by Kathy Weinel on January 30, 2014 to add an explanation concerning the TDS analysis on sample -003. The report has been revised and replaces any previously issued report in its entirety.

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: 3rd Quarter Surface Water 2013 Resample
Lab ID: C13090424-001
Client Sample ID: Cottonwood Creek

Revised Date: 01/30/14
Report Date: 10/10/13
Collection Date: 09/10/13 12:15
DateReceived: 09/12/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	320	mg/L		200		A2540 C	09/16/13 14:26 / tmm
Solids, Total Suspended TSS @ 105 C	16500	mg/L	D	300		A2540 D	09/13/13 14:31 / tmm

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.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample
Lab ID: C13090424-002
Client Sample ID: Cottonwood 65

Revised Date: 01/30/14
Report Date: 10/10/13
Collection Date: 09/10/13 12:15
DateReceived: 09/12/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	300	mg/L		200		A2540 C	09/16/13 14:26 / tmm
Solids, Total Suspended TSS @ 105 C	21800	mg/L	D	300		A2540 D	09/13/13 14:31 / tmm

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.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample
Lab ID: C13090424-003
Client Sample ID: Westwater Canyon

Revised Date: 01/30/14
Report Date: 10/10/13
Collection Date: 09/10/13 12:35
DateReceived: 09/12/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	260	mg/L	H	200		A2540 C	09/17/13 14:56 / alp
Solids, Total Suspended TSS @ 105 C	16700	mg/L	D	300		A2540 D	09/13/13 14:31 / tmm
- See Case Narrative for TDS analysis comments.							
METALS - DISSOLVED							
Uranium	0.0108	mg/L		0.0003		E200.8	09/16/13 17:38 / clm
METALS - SUSPENDED							
Uranium	0.0176	mg/L	D	0.0009		E200.8	09/20/13 15:58 / clm
RADIONUCLIDES - DISSOLVED							
Gross Alpha	20.4	pCi/L				E900.0	09/19/13 18:19 / lbb
Gross Alpha precision (±)	1.9	pCi/L				E900.0	09/19/13 18:19 / lbb
Gross Alpha MDC	2.0	pCi/L				E900.0	09/19/13 18:19 / lbb
Radium 226	0.68	pCi/L				E903.0	09/30/13 18:57 / lmc
Radium 226 precision (±)	0.19	pCi/L				E903.0	09/30/13 18:57 / lmc
Radium 226 MDC	0.19	pCi/L				E903.0	09/30/13 18:57 / lmc
Thorium 230	0.2	pCi/L				E908.0	09/19/13 17:17 / dmf
Thorium 230 precision (±)	0.1	pCi/L				E908.0	09/19/13 17:17 / dmf
Thorium 230 MDC	0.2	pCi/L				E908.0	09/19/13 17:17 / dmf
RADIONUCLIDES - SUSPENDED							
Radium 226	28	pCi/L				E903.0	09/24/13 23:36 / lmc
Radium 226 precision (±)	1.2	pCi/L				E903.0	09/24/13 23:36 / lmc
Radium 226 MDC	0.21	pCi/L				E903.0	09/24/13 23:36 / lmc
Thorium 230	8.7	pCi/L				E908.0	09/30/13 09:09 / dmf
Thorium 230 precision (±)	2.2	pCi/L				E908.0	09/30/13 09:09 / dmf
Thorium 230 MDC	1.1	pCi/L				E908.0	09/30/13 09:09 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample
Lab ID: C13090424-004
Client Sample ID: Temp Blank

Revised Date: 01/30/14
Report Date: 10/10/13
Collection Date: Not Provided
DateReceived: 09/12/13
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Temperature	3.4	°C				E170.1	09/12/13 12:30 / kbh

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Revised Date: 01/30/14
Report Date: 10/10/13
Work Order: C13090424

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: TDS130916A
Sample ID: MB-1_130916A		Method Blank				Run: BAL-19_130916B				09/16/13 14:24
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS-2_130916A		Laboratory Control Sample				Run: BAL-19_130916B				09/16/13 14:24
Solids, Total Dissolved TDS @ 180 C		1980	mg/L	20	99	90	110			
Sample ID: C13090418-013A DUP		Sample Duplicate				Run: BAL-19_130916B				09/16/13 14:25
Solids, Total Dissolved TDS @ 180 C		41400	mg/L	500				1.9	5	
Sample ID: C13090498-001A MS		Sample Matrix Spike				Run: BAL-19_130916B				09/16/13 14:27
Solids, Total Dissolved TDS @ 180 C		48400	mg/L	200	103	90	110			
Method: A2540 C										Batch: TDS130917A
Sample ID: MB-1_130917A		Method Blank				Run: BAL-19_130917A				09/17/13 14:53
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS-2_130917A		Laboratory Control Sample				Run: BAL-19_130917A				09/17/13 14:54
Solids, Total Dissolved TDS @ 180 C		1980	mg/L	20	99	90	110			
Sample ID: C13090424-001A DUP		Sample Duplicate				Run: BAL-19_130917A				09/17/13 14:54
Solids, Total Dissolved TDS @ 180 C		340	mg/L	200				0.0	5	
Sample ID: C13090504-001B MS		Sample Matrix Spike				Run: BAL-19_130917A				09/17/13 14:58
Solids, Total Dissolved TDS @ 180 C		2210	mg/L	11	100	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

Revised Date: 01/30/14
Report Date: 10/10/13
Work Order: C13090424

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 D									Batch: 130913_1_SLDS-TSS-W	
Sample ID: MBLK1_130913		Method Blank				Run: BAL-19_130913B			09/13/13 14:28	
Solids, Total Suspended TSS @ 105 C		ND	mg/L	2						
Sample ID: LCS1_130913		Laboratory Control Sample				Run: BAL-19_130913B			09/13/13 14:29	
Solids, Total Suspended TSS @ 105 C		199	mg/L	10	99	80	120			
Sample ID: C13090508-003ADUP		Sample Duplicate				Run: BAL-19_130913B			09/13/13 14:33	
Solids, Total Suspended TSS @ 105 C		ND	mg/L	10					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

Revised Date: 01/30/14
Report Date: 10/10/13
Work Order: C13090424

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS2-C_130916A	
Sample ID: ICV		Initial Calibration Verification Standard							09/16/13 14:40	
Uranium		0.0517	mg/L	0.00030	103	90	110			
Method: E200.8									Batch: R178350	
Sample ID: LRB		Method Blank				Run: ICPMS2-C_130916A			09/16/13 15:06	
Uranium		ND	mg/L	1E-05						
Sample ID: LFB		Laboratory Fortified Blank				Run: ICPMS2-C_130916A			09/16/13 15:09	
Uranium		0.0528	mg/L	0.00030	106	85	115			
Sample ID: C13090332-003BMS4		Sample Matrix Spike				Run: ICPMS2-C_130916A			09/16/13 19:02	
Uranium		0.0596	mg/L	0.00030	119	70	130			
Sample ID: C13090332-003BMSD4		Sample Matrix Spike Duplicate				Run: ICPMS2-C_130916A			09/16/13 19:05	
Uranium		0.0592	mg/L	0.00030	118	70	130	0.7	20	
Method: E200.8									Analytical Run: ICPMS2-C_130920A	
Sample ID: ICV		Initial Calibration Verification Standard							09/20/13 22:41	
Uranium		0.0515	mg/L	0.00030	103	90	110			
Method: E200.8									Batch: 39040	
Sample ID: MB-39040		Method Blank				Run: ICPMS2-C_130920A			09/20/13 15:36	
Uranium		ND	mg/L	6E-05						
Sample ID: LCS2-39040		Laboratory Control Sample				Run: ICPMS2-C_130920A			09/20/13 15:39	
Uranium		0.0569	mg/L	0.00030	114	85	115			
Sample ID: C13090424-003DMS		Sample Matrix Spike				Run: ICPMS2-C_130920A			09/20/13 16:09	
Uranium		0.771	mg/L	0.00090	97	70	130			
Sample ID: C13090424-003DMSD		Sample Matrix Spike Duplicate				Run: ICPMS2-C_130920A			09/20/13 16:12	
Uranium		0.771	mg/L	0.00090	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

Revised Date: 01/30/14
Report Date: 10/10/13
Work Order: C13090424

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.0										Batch: GrAB-1623
Sample ID: Th230-GrAB-1623		Laboratory Control Sample				Run: G542M_130918A				09/19/13 18:19
Gross Alpha		124	pCi/L		117	80	120			
Sample ID: MB-GrAB-1623	3	Method Blank				Run: G542M_130918A				09/19/13 18:19
Gross Alpha		1	pCi/L							U
Gross Alpha precision (±)		0.7	pCi/L							
Gross Alpha MDC		1	pCi/L							
Sample ID: C13090424-003CMS		Sample Matrix Spike				Run: G542M_130918A				09/19/13 18:19
Gross Alpha		142	pCi/L		115	70	130			
Sample ID: C13090424-003CMSD		Sample Matrix Spike Duplicate				Run: G542M_130918A				09/19/13 18:19
Gross Alpha		129	pCi/L		103	70	130	9.3	16	
Sample ID: C13090472-001EDUP	3	Sample Duplicate				Run: G542M_130918A				09/20/13 08:08
Gross Alpha		27800	pCi/L					7.6	10.5	
Gross Alpha precision (±)		65.7	pCi/L							
Gross Alpha MDC		3.12	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

Revised Date: 01/30/14
Report Date: 10/10/13
Work Order: C13090424

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 39040
Sample ID: C13090424-003DDUP	3	Sample Duplicate				Run: BERTHOLD 770-1_130918B				09/24/13 23:36
Radium 226		25	pCi/L					11	18.9	
Radium 226 precision (±)		1.1	pCi/L							
Radium 226 MDC		0.20	pCi/L							
Sample ID: C13090472-001HMS		Sample Matrix Spike				Run: BERTHOLD 770-1_130918B				09/24/13 23:36
Radium 226		16	pCi/L		60	70	130			S
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the RPD for the Duplicate are acceptable the batch is approved.										
Sample ID: LCS-39040		Laboratory Control Sample				Run: BERTHOLD 770-1_130918B				09/24/13 23:36
Radium 226		21	pCi/L		97	80	120			
Sample ID: MB-39040	3	Method Blank				Run: BERTHOLD 770-1_130918B				09/24/13 23:36
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.2	pCi/L							
Radium 226 MDC		0.3	pCi/L							
Method: E903.0										Batch: RA226-6857
Sample ID: C13090702-001CMS		Sample Matrix Spike				Run: BERTHOLD 770-2_130924A				09/30/13 15:23
Radium 226		40	pCi/L		87	70	130			
Sample ID: C13090702-001CMSD		Sample Matrix Spike Duplicate				Run: BERTHOLD 770-2_130924A				09/30/13 15:23
Radium 226		41	pCi/L		89	70	130	2.2	18.8	
Sample ID: MB-RA226-6857	3	Method Blank				Run: BERTHOLD 770-2_130924A				09/30/13 18:57
Radium 226		0.002	pCi/L							U
Radium 226 precision (±)		0.06	pCi/L							
Radium 226 MDC		0.1	pCi/L							
Sample ID: LCS-RA226-6857		Laboratory Control Sample				Run: BERTHOLD 770-2_130924A				09/30/13 18:57
Radium 226		10	pCi/L		92	80	120			

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

Revised Date: 01/30/14
Report Date: 10/10/13
Work Order: C13090424

Client: Energy Fuels Resources (USA) Inc
Project: 3rd Quarter Surface Water 2013 Resample

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-1911
Sample ID: LCS-RA-TH-ISO-1911		Laboratory Control Sample				Run: ALPHANALYST_130917A				09/19/13 17:17
Thorium 230		5.7	pCi/L		87	80	120			
Sample ID: C13090078-003EMS		Sample Matrix Spike				Run: ALPHANALYST_130917A				09/19/13 17:17
Thorium 230		13	pCi/L		99	70	130			
Sample ID: C13090078-003EMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_130917A				09/19/13 17:17
Thorium 230		13	pCi/L		99	70	130	0.1	41.5	
Sample ID: MB-RA-TH-ISO-1911	3	Method Blank				Run: ALPHANALYST_130917A				09/19/13 17:17
Thorium 230		0.1	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.2	pCi/L							
Method: E908.0										Batch: R178953
Sample ID: MB-39040	3	Method Blank				Run: ALPHANALYST_130925A				09/30/13 09:09
Thorium 230		0.5	pCi/L							U
Thorium 230 precision (±)		0.4	pCi/L							
Thorium 230 MDC		0.5	pCi/L							
Sample ID: LCS-39040		Laboratory Control Sample				Run: ALPHANALYST_130925A				09/30/13 09:09
Thorium 230		19	pCi/L		103	80	120			
Sample ID: C13090765-001CMS		Sample Matrix Spike				Run: ALPHANALYST_130925A				09/30/13 09:09
Thorium 230		12	pCi/L		100	70	130			
Sample ID: C13090765-001CMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_130925A				09/30/13 09:09
Thorium 230		11	pCi/L		96	70	130	4.6	42.4	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

Workorder Receipt Checklist

Energy Fuels Resources (USA) Inc

C13090424

Login completed by: Corinne Wagner
Date Received: 9/12/2013

Reviewed by: Kathy Hamre
Received by: cav

Reviewed Date: 9/13/2013
Carrier name: Ground

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:	3.4°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

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 2108
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
3rd Quarter Surface Water 2013 Re Sample	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
Cottonwood Creek	9/10/2013	1215	Total Dissolved Solids, Total Suspended Solids
Cottonwood 65	9/10/2013	1215	Total Dissolved Solids, Total Suspended Solids
Westwater Canyon	9/10/2013	1235	Total Dissolved Solids, Total Suspended Solids
			Grosh Alpha
			Suspended U-nat, Dissolved U-nat
			Suspended Ra-226, Dissolved Ra-226
			Suspended Th-230, Dissolved Th-230
			Samples were NOT field filtered or preserved.
			Temp Blanks included

Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer	9/11/2013 1300		
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
		[signature] 9-12-13	9:35

ENERGY LABORATORIES
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Helena, MT 877-472-0711 • Billings, MT 800-735-4489 • Casper, WY 888-235-0515
Gillette, WY 866-686-7175 • Rapid City, SD 888-672-1225 • College Station, TX 888-690-2218

ANALYTICAL SUMMARY REPORT

December 20, 2013

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

Workorder No.: C13111072

Project Name: 4th Quarter Surface Water 2013

Energy Laboratories, Inc. Casper WY received the following 1 sample for Energy Fuels Resources (USA) Inc on 11/27/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C13111072-001	Cottonwood Creek	11/25/13 12:25	11/27/13	Surface Water	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:

Report Proofing Specialist

Digitally signed by
Sheri M. Mead
Date: 2013.12.20 13:34:55 -07:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: 4th Quarter Surface Water 2013
Sample Delivery Group: C13111072

Report Date: 12/20/13

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: 4th Quarter Surface Water 2013
Lab ID: C13111072-001
Client Sample ID: Cottonwood Creek

Report Date: 12/20/13
Collection Date: 11/25/13 12:25
DateReceived: 11/27/13
Matrix: Surface Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	287	mg/L		10		A2540 C	11/27/13 15:48 / tmm
Solids, Total Suspended TSS @ 105 C	410	mg/L	D	10		A2540 D	11/27/13 12:40 / alp
METALS - DISSOLVED							
Uranium	0.0084	mg/L		0.0003		E200.8	12/02/13 17:59 / clm
METALS - SUSPENDED							
Uranium	0.0005	mg/L		0.0003		E200.8	12/03/13 22:58 / clm
RADIONUCLIDES - DISSOLVED							
Gross Alpha	10.8	pCi/L				E900.0	12/11/13 07:43 / lbb
Gross Alpha precision (±)	1.6	pCi/L				E900.0	12/11/13 07:43 / lbb
Gross Alpha MDC	2.1	pCi/L				E900.0	12/11/13 07:43 / lbb
Radium 226	1.8	pCi/L				E903.0	12/16/13 11:46 / lmc
Radium 226 precision (±)	0.23	pCi/L				E903.0	12/16/13 11:46 / lmc
Radium 226 MDC	0.12	pCi/L				E903.0	12/16/13 11:46 / lmc
Thorium 230	0.2	pCi/L	U			E908.0	12/17/13 09:49 / dmf
Thorium 230 precision (±)	0.1	pCi/L				E908.0	12/17/13 09:49 / dmf
Thorium 230 MDC	0.2	pCi/L				E908.0	12/17/13 09:49 / dmf
RADIONUCLIDES - SUSPENDED							
Radium 226	0.68	pCi/L				E903.0	12/16/13 10:12 / lmc
Radium 226 precision (±)	0.24	pCi/L				E903.0	12/16/13 10:12 / lmc
Radium 226 MDC	0.26	pCi/L				E903.0	12/16/13 10:12 / lmc
Thorium 230	0.2	pCi/L				E908.0	12/17/13 14:35 / dmf
Thorium 230 precision (±)	0.1	pCi/L				E908.0	12/17/13 14:35 / dmf
Thorium 230 MDC	0.2	pCi/L				E908.0	12/17/13 14:35 / 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
Report Date: 12/20/13
Project: 4th Quarter Surface Water 2013
Work Order: C13111072

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: TDS131127A
Sample ID: MB-1_131127A		Method Blank				Run: BAL-19_131127B				11/27/13 15:43
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS-2_131127A		Laboratory Control Sample				Run: BAL-19_131127B				11/27/13 15:43
Solids, Total Dissolved TDS @ 180 C		2020	mg/L	20	101	90	110			
Sample ID: C13111074-008A MS		Sample Matrix Spike				Run: BAL-19_131127B				11/27/13 15:53
Solids, Total Dissolved TDS @ 180 C		20900	mg/L	100	104	90	110			
Sample ID: C13111079-006A DUP		Sample Duplicate				Run: BAL-19_131127B				11/27/13 15:57
Solids, Total Dissolved TDS @ 180 C		439	mg/L	10				1.4	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
Report Date: 12/20/13
Project: 4th Quarter Surface Water 2013
Work Order: C13111072

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 D									Batch: 131127_1_SLDS-TSS-W	
Sample ID: MBLK1_131127		Method Blank				Run: BAL-19_131127A			11/27/13 12:37	
Solids, Total Suspended TSS @ 105 C		ND	mg/L	2						
Sample ID: LCS1_131127		Laboratory Control Sample				Run: BAL-19_131127A			11/27/13 12:38	
Solids, Total Suspended TSS @ 105 C		191	mg/L	10	95	80	120			
Sample ID: C13111027-001CDUP		Sample Duplicate				Run: BAL-19_131127A			11/27/13 12:38	
Solids, Total Suspended TSS @ 105 C		74.0	mg/L	12					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
Report Date: 12/20/13
Project: 4th Quarter Surface Water 2013
Work Order: C13111072

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS2-C_131202A	
Sample ID: ICV		Initial Calibration Verification Standard							12/02/13 17:24	
Uranium		0.0477	mg/L	0.00030	95	90	110			
Method: E200.8									Batch: R181375	
Sample ID: LRB		Method Blank				Run: ICPMS2-C_131202A			12/02/13 15:06	
Uranium		ND	mg/L	1E-05						
Sample ID: LFB		Laboratory Fortified Blank				Run: ICPMS2-C_131202A			12/02/13 15:09	
Uranium		0.0492	mg/L	0.00030	99	85	115			
Sample ID: C13111072-001BMS		Sample Matrix Spike				Run: ICPMS2-C_131202A			12/02/13 18:02	
Uranium		0.0624	mg/L	0.00030	108	70	130			
Sample ID: C13111072-001BMSD		Sample Matrix Spike Duplicate				Run: ICPMS2-C_131202A			12/02/13 18:06	
Uranium		0.0612	mg/L	0.00030	106	70	130	1.9	20	
Method: E200.8									Analytical Run: ICPMS2-C_131203A	
Sample ID: ICV		Initial Calibration Verification Standard							12/03/13 19:37	
Uranium		0.0473	mg/L	0.00030	95	90	110			
Method: E200.8									Batch: 39923	
Sample ID: MB-39923		Method Blank				Run: ICPMS2-C_131203A			12/03/13 22:48	
Uranium		ND	mg/L	0.0003						
Sample ID: LCS2-39923		Laboratory Control Sample				Run: ICPMS2-C_131203A			12/03/13 22:51	
Uranium		0.0918	mg/L	0.00030	92	85	115			
Sample ID: C13111072-001DMS		Sample Matrix Spike				Run: ICPMS2-C_131203A			12/03/13 23:04	
Uranium		0.0367	mg/L	0.00030	96	70	130			
Sample ID: C13111072-001DMSD		Sample Matrix Spike Duplicate				Run: ICPMS2-C_131203A			12/03/13 23:08	
Uranium		0.0371	mg/L	0.00030	96	70	130	0.9	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 **Report Date:** 12/20/13

Project: 4th Quarter Surface Water 2013 **Work Order:** C13111072

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.0										Batch: GrAB-1671
Sample ID: Th230-GrAB-1671		Laboratory Control Sample				Run: G5000W_131209A				12/10/13 18:46
Gross Alpha		105	pCi/L		92	80	120			
Sample ID: MB-GrAB-1671	3	Method Blank				Run: G5000W_131209A				12/10/13 18:46
Gross Alpha		-1	pCi/L							U
Gross Alpha precision (±)		0.7	pCi/L							
Gross Alpha MDC		1	pCi/L							
Sample ID: C13111031-001FDUP	3	Sample Duplicate				Run: G5000W_131209A				12/10/13 18:46
Gross Alpha		2610	pCi/L					3.3	11.6	
Gross Alpha precision (±)		20.6	pCi/L							
Gross Alpha MDC		2.57	pCi/L							
Sample ID: C13111072-001CMS		Sample Matrix Spike				Run: G5000W_131209A				12/11/13 07:43
Gross Alpha		108	pCi/L		85	70	130			
Sample ID: C13111072-001CMSD		Sample Matrix Spike Duplicate				Run: G5000W_131209A				12/11/13 07:43
Gross Alpha		110	pCi/L		87	70	130	2.2	16.2	

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
Report Date: 12/20/13
Project: 4th Quarter Surface Water 2013
Work Order: C13111072

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-6992
Sample ID: C13120116-001GMS		Sample Matrix Spike				Run: G5000W_131209B				12/16/13 11:46
Radium 226		22	pCi/L		94	70	130			
Sample ID: C13120116-001GMSD		Sample Matrix Spike Duplicate				Run: G5000W_131209B				12/16/13 13:18
Radium 226		20	pCi/L		88	70	130	6.3	21.1	
Sample ID: MB-RA226-6992	3	Method Blank				Run: G5000W_131209B				12/16/13 13:18
Radium 226		0.06	pCi/L							U
Radium 226 precision (±)		0.09	pCi/L							
Radium 226 MDC		0.1	pCi/L							
Sample ID: LCS-RA226-6992		Laboratory Control Sample				Run: G5000W_131209B				12/16/13 13:18
Radium 226		11	pCi/L		93	80	120			
Method: E903.0										Batch: 39923
Sample ID: C13111072-001DMS		Sample Matrix Spike				Run: G542M_131209A				12/16/13 10:12
Radium 226		18	pCi/L		106	70	130			
Sample ID: C13111072-001DMSD		Sample Matrix Spike Duplicate				Run: G542M_131209A				12/16/13 10:12
Radium 226		19	pCi/L		113	70	130	6.1	20.8	
Sample ID: LCS-39923		Laboratory Control Sample				Run: G542M_131209A				12/16/13 10:12
Radium 226		24	pCi/L		113	80	120			
Sample ID: MB-39923	3	Method Blank				Run: G542M_131209A				12/16/13 10:12
Radium 226		-0.10	pCi/L							U
Radium 226 precision (±)		0.2	pCi/L							
Radium 226 MDC		0.4	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
Report Date: 12/20/13
Project: 4th Quarter Surface Water 2013
Work Order: C13111072

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-1969
Sample ID: LCS-RA-TH-ISO-1969		Laboratory Control Sample				Run: ALPHANALYST_131212B				12/17/13 09:48
Thorium 230		6.6	pCi/L		99	80	120			
Sample ID: C13111072-001CMS		Sample Matrix Spike				Run: ALPHANALYST_131212B				12/17/13 09:49
Thorium 230		13	pCi/L		97	70	130			
Sample ID: C13111072-001CMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_131212B				12/17/13 09:49
Thorium 230		13	pCi/L		102	70	130	4.9	45.6	
Sample ID: MB-RA-TH-ISO-1969	3	Method Blank				Run: ALPHANALYST_131212B				12/17/13 09:49
Thorium 230		0.1	pCi/L							U
Thorium 230 precision (±)		0.10	pCi/L							
Thorium 230 MDC		0.2	pCi/L							
Method: E908.0										Batch: 39923
Sample ID: C13111072-001DMS		Sample Matrix Spike				Run: ALPHANALYST_131212C				12/17/13 14:35
Thorium 230		14	pCi/L		84	70	130			
Sample ID: C13111072-001DMSD		Sample Matrix Spike Duplicate				Run: ALPHANALYST_131212C				12/17/13 14:35
Thorium 230		15	pCi/L		91	70	130	7.1	39.9	
Sample ID: MB-39923	3	Method Blank				Run: ALPHANALYST_131212C				12/17/13 14:35
Thorium 230		0.3	pCi/L							U
Thorium 230 precision (±)		0.3	pCi/L							
Thorium 230 MDC		0.5	pCi/L							
Sample ID: LCS-39923		Laboratory Control Sample				Run: ALPHANALYST_131212C				12/17/13 14:35
Thorium 230		17	pCi/L		96	80	120			

Qualifiers:

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

Workorder Receipt Checklist

Energy Fuels Resources (USA) Inc C13111072

Login completed by: Cori A. Velasquez
Date Received: 11/27/2013
Reviewed by: BL2000\khelm
Received by: wc
Reviewed Date: 12/2/2013
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:	1.6°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

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
4th Quarter Surface Water 2013	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
CottonWood Creek	11/25/2013	1225	TDS
			TSS
			Dissolved Gross Alpha
			Suspended U-nat
			Dissolved U-nat
			Suspended Ra-226
			Dissolved Ra-226
			Suspended Th-230
			Dissolved Th-230
			* Samples are NOT Filtered or preserved GP

Comments: C13111072

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer	11/26/13 1200		
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
		W Carsten on ice 1.6c	11/27/13 OK

Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one) (Cottonwood Creek) Westwater Canyon Other (describe) Re-sample

DATE: 9/10/13

BY: Garrin Palmer
(Sampler's initials)

pH BUFFER 7.0 7.0

pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 999 µMHOs

STEAM DEPTH: 1 1/2 ft

pH of WATER 8.74

TEMP 15°C

COND µmhos 140	COND µmhos 140.3
pH Units 8.74	pH units 8.74
Temp °C 16.90	Temp °C 16.90
COND µmhos 140	COND µmhos 140
pH units 8.75	pH units 8.73
Temp °C 16.89	Temp °C 16.89

Comments:

Arrived on site at 1200. Tanner and Garrin present for sampling. Parameters were taken and samples were collected at 1215. Left site at 1218.

Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): Cottonwood Creek Westwater Canyon Other (describe) Cottonwood 65 Re-Sample

DATE: 9/10/13

BY: Garrin Palmer
(Sampler's initials)

pH BUFFER 7.0 7.0

pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 999 µMHOs

STEAM DEPTH: 1½ FT

pH of WATER 8.74

TEMP 15°C

COND µmhos 140

pH Units 8.74

Temp °C 16.90

COND µmhos 140

pH units 8.75

Temp °C 16.89

COND µmhos 140.3

pH units 8.74

Temp °C 16.90

COND µmhos 140

pH units 8.73

Temp °C 16.89

Comments:

Duplicate of Cottonwood Creek

9/10/13 1200

Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): Cottonwood Creek (Westwater Canyon) Other (describe)_____

DATE: 8/21/13

BY: Garrin Palmer
(Sampler's initials)

pH BUFFER 7.0 7.0

pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 999 µMHOs

STEAM DEPTH: ~~not~~ SD 1"

pH of WATER 7.45

TEMP 15°C

COND µmhos 290	COND µmhos 278
pH Units 7.44	pH units 7.47
Temp °C 21.25	Temp °C 21.08
COND µmhos 280	COND µmhos 283
pH units 7.46	pH units 7.46
Temp °C 21.18	Temp °C 21.11

Comments:

8/21/13 Arrived on site at 0945. Garrin and Tanner present. Creek was dry (see photo).

8/26/13 - Arrived on site at 0950. Creek was dry. See photo.

9/10/13 - Arrived on site at 1230. Samples were collected at 1235. Left site at 1240.

8/21/13
0945

8/26/ES
0950

9/10/13 1230

Attachment A

FIELD WATER ANALYSIS SURFACE WATER
WHITE MESA MILL

LOCATION (Circle one): (Cottonwood Creek) Westwater Canyon Other (describe)_____

DATE: 11/25/2013 BY: G.P. (Sampler's initials)

pH BUFFER 7.0 7.0 pH BUFFER 4.0 4.0

SPECIFIC CONDUCTIVITY 995 µMHOs

STEAM DEPTH: 9"

pH of WATER 7.95 TEMP 6.67

COND µmhos 403.3	COND µmhos 407.8
pH Units 7.98	pH units 7.91
Temp °C 6.68	Temp °C 6.67
COND µmhos 405.1	COND µmhos 404.6
pH units 7.98	pH units 7.94
Temp °C 6.67	Temp °C 6.66

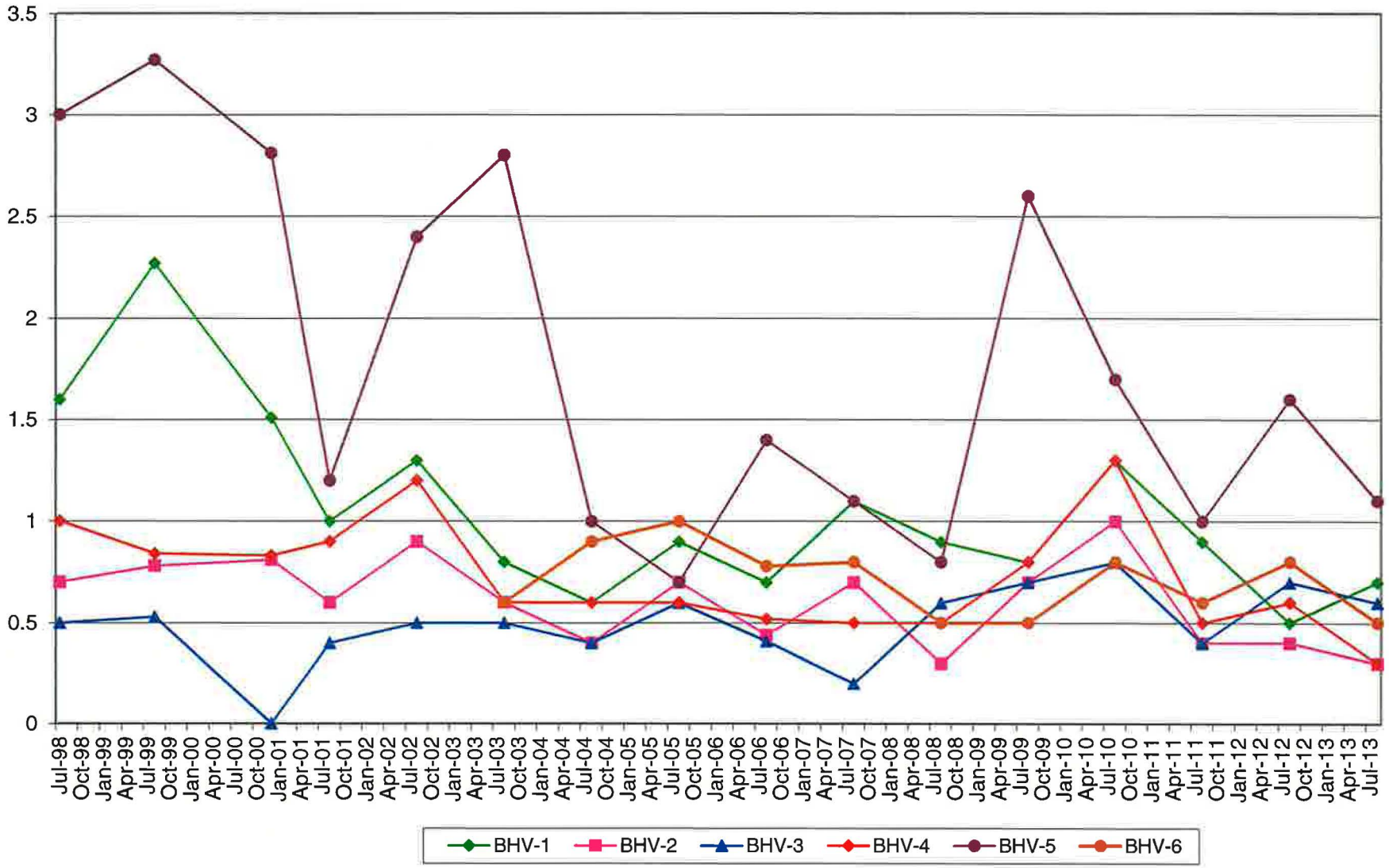
Comments:

Weather conditions are clear and freezing. Tanner Holliday, Logan Palmer and David Turk are present. Arrived on site at 1220 and left at 1227 hours. MW samples were collected at 1225.

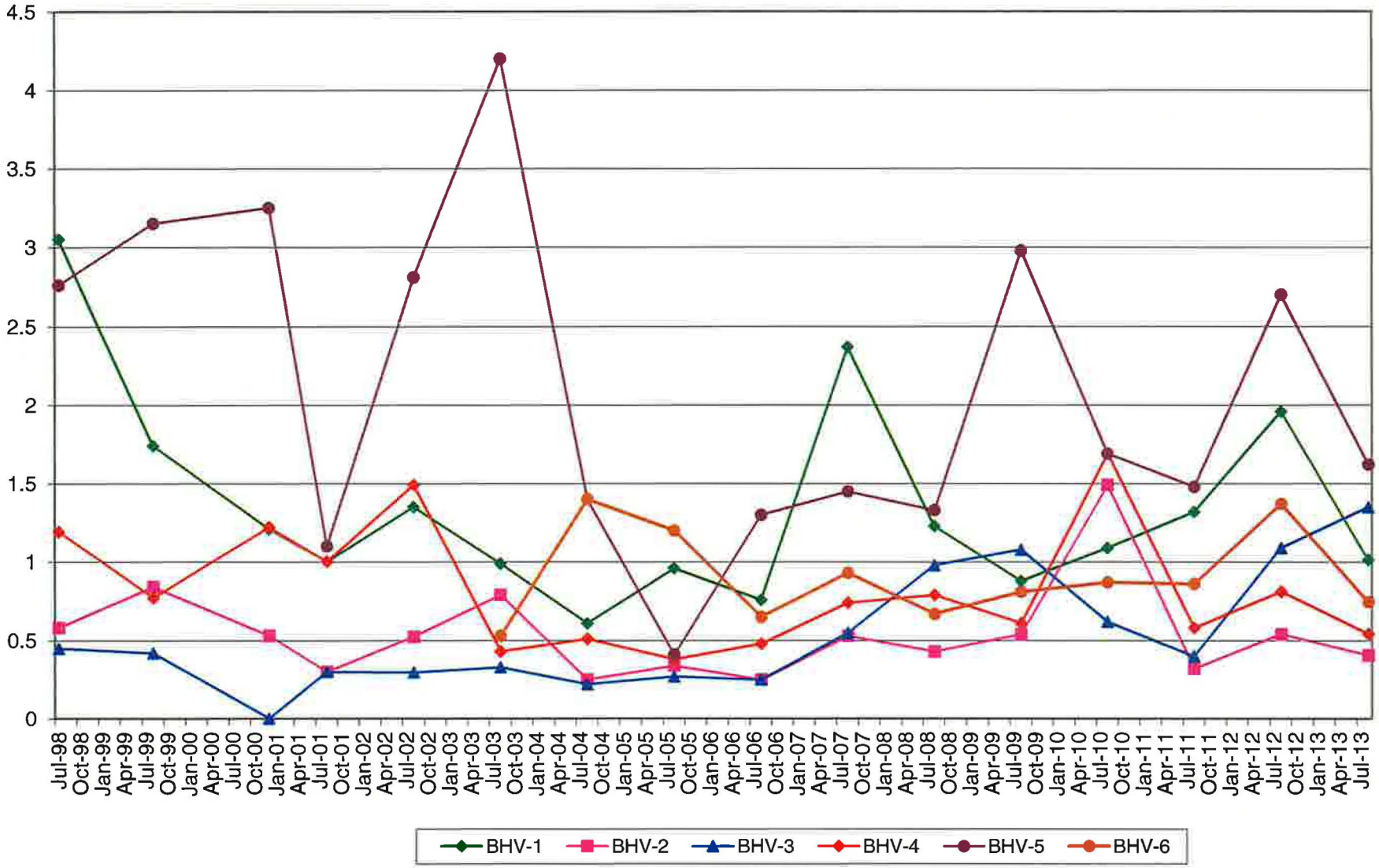
ATTACHMENT I

SOIL SAMPLE GRAPHS, DATA TABLE, LABORATORY RESULTS AND QA/QC

Radium-226 Concentrations In Soil (pCi/g)



Uranium-Nat. Concentrations In Soil (pCi/g)



WHITE MESA MILL
Soil Sampling Results
(pCi/g)

Date	BHV-1		BHV-2		BHV-3		BHV-4		BHV-5		BHV-6	
	Ra-226	U-Nat	Ra-226	U-Nat	Ra-226	U-Nat	Ra-226	U-Nat	Ra-226	U-Nat	Ra-226	U-Nat
9/7/80	0.650	0.420	0.340	0.420	0.420	0.420	0.410	12.194	0.230	14.89	-	-
9/8/81	0.400	1.800	0.300	0.600	0.300	0.600	0.200	3.000	0.300	0.600	-	-
12/3/81	0.790	0.770	0.440	0.560	0.890	0.420	0.750	0.630	0.550	0.420	-	-
6/30/82	0.423	0.384	0.412	0.180	0.265	0.207	0.478	0.260	0.449	0.216	-	-
5/5/83	0.471	0.410	0.569	0.550	0.461	0.340	0.643	0.340	0.147	0.140	-	-
6/4/84	0.713	0.866	0.618	0.683	0.489	0.471	0.124	0.324	0.132	0.310	-	-
10/12/84	2.960	0.886	2.330	0.069	2.880	0.721	3.490	0.804	2.550	0.817	-	-
8/28/85	1.630	0.800	2.190	0.424	2.270	0.424	4.330	0.294	1.280	0.577	-	-
8/1/86	0.369	0.654	0.466	0.866	0.382	0.694	0.396	0.826	0.728	0.836	-	-
8/17/87	0.600	0.800	1.500	0.900	0.800	0.600	1.200	0.700	1.500	1.300	-	-
8/28/88	1.500	1.600	1.300	0.700	0.600	0.900	1.000	1.300	3.800	5.000	-	-
8/25/88	1.200	1.600	1.100	3.000	0.800	1.000	1.100	1.400	2.900	5.700	-	-
8/1/90	2.900	5.800	1.000	1.400	0.800	1.400	1.800	1.300	3.700	3.200	-	-
8/5/91	3.900	8.800	1.700	2.600	2.600	5.700	1.800	2.600	2.500	4.400	-	-
8/13/92	1.200	2.200	0.900	1.400	0.800	1.200	0.900	0.900	1.100	1.800	-	-
8/13/93	2.000	1.700	1.400	1.700	1.100	1.900	0.800	1.600	4.800	3.500	-	-
8/3/94	1.000	1.600	0.700	0.800	0.700	0.900	0.700	1.100	3.000	3.800	-	-
8/28/95	2.810	4.700	0.680	0.200	0.880	0.650	0.580	0.240	2.800	1.600	-	-
8/13/96	1.700	2.150	0.600	0.460	0.300	0.210	0.500	0.520	1.900	2.010	-	-
8/1/97	0.540	0.310	0.560	0.160	0.410	0.270	0.410	0.260	1.700	1.500	-	-
7/1/98	1.600	3.050	0.700	0.580	0.500	0.450	1.000	1.190	3.000	2.760	-	-
8/24/99	2.270	1.740	0.780	0.840	0.530	0.420	0.840	0.770	3.270	3.150	-	-
12/1/00	1.510	1.210	0.810	0.530	*	*	0.830	1.220	2.810	3.250	-	-
8/23/01	1.000	1.000	0.600	0.300	0.400	0.300	0.900	1.000	1.200	1.100	-	-
8/1/02	1.300	1.350	0.900	0.524	0.500	0.297	1.200	1.490	2.400	2.810	60.00	0.550
8/5/03	0.800	0.990	0.600	0.790	0.500	0.330	0.600	0.4300	0.280	0.420	0.600	0.530
8/9/04	0.600	0.610	0.400	0.250	0.400	0.220	0.600	0.5100	1.000	1.400	0.900	1.400
8/3/05	0.900	0.960	0.700	0.340	0.600	0.270	0.600	0.3800	0.700	0.410	1.000	1.200
8/7/06	0.700	0.760	0.440	0.250	0.410	0.250	0.520	0.480	1.400	1.300	0.780	0.650
8/8/07	1.100	2.370	0.700	0.530	0.200	0.550	0.500	0.740	1.100	1.450	0.800	0.930
8/20/08	0.900	1.230	0.300	0.430	0.600	0.980	0.500	0.790	0.800	1.330	0.500	0.670
8/10/09	0.800	0.880	0.700	0.540	0.700	1.080	0.800	0.610	2.600	2.980	0.500	0.810
8/2/10	1.3	1.090	1.0	1.490	0.8	0.62	1.3	1.69	1.7	1.69	0.8	0.87
8/23/11	0.9	1.320	0.4	0.320	0.4	0.4	0.5	0.58	1.0	1.48	0.6	0.86
8/20/12	0.5	1.960	0.4	0.540	0.7	1.09	0.6	0.81	1.6	2.70	0.8	1.37
8/21/13	0.7	1.013	0.3	0.405	0.6	1.35	0.3	0.54	1.1	1.62	0.5	0.743

*Data not available.

ANALYTICAL SUMMARY REPORT

September 13, 2013

Energy Fuels Resources (USA) Inc
6425 S Hwy 191
Blanding, UT 84511

Workorder No.: C13081040

Project Name: Annual Soil 2013

Energy Laboratories, Inc. Casper WY received the following 8 samples for Energy Fuels Resources (USA) Inc on 8/27/2013 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C13081040-001	BHV-1	08/21/13 9:40	08/27/13	Soil	Uranium, Total Digestion, Total Metals Digestion For RadioChemistry Radium 226
C13081040-002	BHV-2	08/21/13 9:50	08/27/13	Soil	Same As Above
C13081040-003	BHV-3/Black Mesa	08/21/13 10:30	08/27/13	Soil	Same As Above
C13081040-004	BHV-4	08/21/13 9:30	08/27/13	Soil	Same As Above
C13081040-005	BHV-5	08/21/13 9:10	08/27/13	Soil	Same As Above
C13081040-006	BHV-6	08/21/13 9:00	08/27/13	Soil	Same As Above
C13081040-007	Westwater	08/21/13 10:45	08/27/13	Soil	Same As Above
C13081040-008	BHV-65	08/21/13 10:30	08/27/13	Soil	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:

Report Proofing Specialist

Digitally signed by
Sheri M. Mead
Date: 2013.09.13 16:40:13 -06:00

CLIENT: Energy Fuels Resources (USA) Inc
Project: Annual Soil 2013
Sample Delivery Group: C13081040

Report Date: 09/13/13

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: Annual Soil 2013
Lab ID: C13081040-001
Client Sample ID BHV-1

Report Date: 09/13/13
Collection Date: 08/21/13 09:40
DateReceived: 08/27/13
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	1.5	mg/kg-dry	D	0.1		SW6020	08/31/13 01:02 / cp
RADIONUCLIDES							
Radium 226	0.7	pCi/g-dry				E903.0	09/11/13 22:04 / trs
Radium 226 precision (±)	0.06	pCi/g-dry				E903.0	09/11/13 22:04 / trs
Radium 226 MDC	0.02	pCi/g-dry				E903.0	09/11/13 22:04 / trs

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.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soil 2013
Lab ID: C13081040-002
Client Sample ID BHV-2

Report Date: 09/13/13
Collection Date: 08/21/13 09:50
DateReceived: 08/27/13
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.6	mg/kg-dry	D	0.1		SW6020	08/31/13 01:11 / cp
RADIONUCLIDES							
Radium 226	0.3	pCi/g-dry				E903.0	09/11/13 22:04 / trs
Radium 226 precision (±)	0.04	pCi/g-dry				E903.0	09/11/13 22:04 / trs
Radium 226 MDC	0.03	pCi/g-dry				E903.0	09/11/13 22:04 / trs

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.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soil 2013
Lab ID: C13081040-003
Client Sample ID BHV-3/Black Mesa

Report Date: 09/13/13
Collection Date: 08/21/13 10:30
DateReceived: 08/27/13
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	2.0	mg/kg-dry	D	0.1		SW6020	08/31/13 01:15 / cp
RADIONUCLIDES							
Radium 226	0.6	pCi/g-dry				E903.0	09/11/13 22:04 / trs
Radium 226 precision (±)	0.06	pCi/g-dry				E903.0	09/11/13 22:04 / trs
Radium 226 MDC	0.03	pCi/g-dry				E903.0	09/11/13 22:04 / trs

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.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soil 2013
Lab ID: C13081040-004
Client Sample ID BHV-4

Report Date: 09/13/13
Collection Date: 08/21/13 09:30
DateReceived: 08/27/13
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.8	mg/kg-dry	D	0.1		SW6020	08/31/13 01:19 / cp
RADIONUCLIDES							
Radium 226	0.3	pCi/g-dry				E903.0	09/11/13 22:04 / trs
Radium 226 precision (±)	0.05	pCi/g-dry				E903.0	09/11/13 22:04 / trs
Radium 226 MDC	0.03	pCi/g-dry				E903.0	09/11/13 22:04 / trs

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.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soil 2013
Lab ID: C13081040-005
Client Sample ID BHV-5

Report Date: 09/13/13
Collection Date: 08/21/13 09:10
DateReceived: 08/27/13
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	2.4	mg/kg-dry	D	0.1		SW6020	08/31/13 01:54 / cp
RADIONUCLIDES							
Radium 226	1.1	pCi/g-dry				E903.0	09/11/13 23:40 / trs
Radium 226 precision (±)	0.09	pCi/g-dry				E903.0	09/11/13 23:40 / trs
Radium 226 MDC	0.03	pCi/g-dry				E903.0	09/11/13 23:40 / trs

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.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soil 2013
Lab ID: C13081040-006
Client Sample ID BHV-6

Report Date: 09/13/13
Collection Date: 08/21/13 09:00
DateReceived: 08/27/13
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	1.1	mg/kg-dry	D	0.1		SW6020	08/31/13 01:24 / cp
RADIONUCLIDES							
Radium 226	0.5	pCi/g-dry				E903.0	09/11/13 23:40 / trs
Radium 226 precision (±)	0.05	pCi/g-dry				E903.0	09/11/13 23:40 / trs
Radium 226 MDC	0.02	pCi/g-dry				E903.0	09/11/13 23:40 / trs

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.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soil 2013
Lab ID: C13081040-007
Client Sample ID Westwater

Report Date: 09/13/13
Collection Date: 08/21/13 10:45
DateReceived: 08/27/13
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg-dry	D	0.1		SW6020	08/31/13 01:46 / cp
RADIONUCLIDES							
Radium 226	0.07	pCi/g-dry				E903.0	09/11/13 23:40 / trs
Radium 226 precision (±)	0.02	pCi/g-dry				E903.0	09/11/13 23:40 / trs
Radium 226 MDC	0.02	pCi/g-dry				E903.0	09/11/13 23:40 / trs

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.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Project: Annual Soil 2013
Lab ID: C13081040-008
Client Sample ID BHV-65

Report Date: 09/13/13
Collection Date: 08/21/13 10:30
DateReceived: 08/27/13
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	1.3	mg/kg-dry	D	0.1		SW6020	08/31/13 01:50 / cp
RADIONUCLIDES							
Radium 226	0.7	pCi/g-dry				E903.0	09/11/13 23:40 / trs
Radium 226 precision (±)	0.06	pCi/g-dry				E903.0	09/11/13 23:40 / trs
Radium 226 MDC	0.02	pCi/g-dry				E903.0	09/11/13 23:40 / trs

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.
D - RL increased due to sample matrix.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Energy Fuels Resources (USA) Inc
Report Date: 09/13/13
Project: Annual Soil 2013
Work Order: C13081040

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: 38833
Sample ID: C13081039-002AMS		Sample Matrix Spike				Run: BERTHOLD 770-2_130830B				09/11/13 22:04
Radium 226		4.8	pCi/g-dry		128	70	130			
Sample ID: C13081039-002AMSD		Sample Matrix Spike Duplicate				Run: BERTHOLD 770-2_130830B				09/11/13 22:04
Radium 226		4.4	pCi/g-dry		116	70	130	8.4	19.7	
Sample ID: LCS-38833		Laboratory Control Sample				Run: BERTHOLD 770-2_130830B				09/11/13 23:40
Radium 226		0.6	pCi/g-dry		118	80	120			
Sample ID: MB-38833	3	Method Blank				Run: BERTHOLD 770-2_130830B				09/11/13 23:40
Radium 226		0.0	pCi/g-dry							U
Radium 226 precision (±)		0.0	pCi/g-dry							
Radium 226 MDC		0.0	pCi/g-dry							

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: 09/13/13
Project: Annual Soil 2013
Work Order: C13081040

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Analytical Run: ICPMS4-C_130830A	
Sample ID: ICV		Initial Calibration Verification Standard								08/30/13 14:19
Uranium		0.0491	mg/L	0.00030	98	90	110			
Sample ID: ICSA		Interference Check Sample A								08/30/13 14:23
Uranium		5.08E-05	mg/L	0.00030						
Sample ID: ICSAB		Interference Check Sample AB								08/30/13 14:27
Uranium		1.15E-05	mg/L	0.00030						
Method: SW6020									Batch: 38856	
Sample ID: MB-38856		Method Blank				Run: ICPMS4-C_130830A				08/31/13 00:02
Uranium		ND	mg/kg-dry	0.10						
Sample ID: LFB-38856		Laboratory Fortified Blank				Run: ICPMS4-C_130830A				08/31/13 00:06
Uranium		25.9	mg/kg-dry	0.15	104	75	125			
Sample ID: LCS3-38856		Laboratory Control Sample				Run: ICPMS4-C_130830A				08/31/13 00:10
Uranium		116	mg/kg-dry	0.37	113	75	125			
Sample ID: C13081040-001ADIL		Serial Dilution				Run: ICPMS4-C_130830A				08/31/13 01:06
Uranium		1.40	mg/kg-dry	0.75				7.1	10	
Sample ID: C13081040-005AMS3		Sample Matrix Spike				Run: ICPMS4-C_130830A				08/31/13 01:59
Uranium		29.3	mg/kg-dry	0.15	108	75	125			
Sample ID: C13081040-005AMSD3		Sample Matrix Spike Duplicate				Run: ICPMS4-C_130830A				08/31/13 02:03
Uranium		28.7	mg/kg-dry	0.15	105	75	125	2.0	20	

Qualifiers:

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

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.

Workorder Receipt Checklist

Energy Fuels Resources (USA) Inc C13081040

Login completed by: Tessa Parke
Date Received: 8/27/2013
Reviewed by: BL2000\kmiller
Received by: cav
Reviewed Date: 8/28/2013
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:	25.8°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Contact and Corrective Action Comments:

None

Sheet 1 of 1

CHAIN OF CUSTODY

Samples Shipped to: Energy Laboratories
2393 South Creek HWY
Casper, WY 82601

Contact: Garrin Palmer
Ph: 435 678 2108
gpalmer@energyfuels.com

Chain of Custody/Sampling Analysis Request

Project	Samplers Name	Samplers Signature
Annual Soils 2013	Garrin Palmer	Garrin Palmer

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
BHV-1	8/21/2013	940	Ra-226, U-Nat
BHV-2	8/21/2013	950	Ra-226, U-Nat
BHV-3/Black Mesa	8/21/2013	1030	Ra-226, U-Nat
BHV-4	8/21/2013	930	Ra-226, U-Nat
BHV-5	8/21/2013	910	Ra-226, U-Nat
BHV-6	8/21/2013	900	Ra-226, U-Nat
Westwater	8/21/2013	1045	Ra-226, U-Nat
BHV-65	8/21/2013	1030	Ra-226, U-Nat

Comments:

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
Garrin Palmer	8/22/2013 1200		
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
		8-27-13	9:40

C1308 1040