



State of Utah

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DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Scott T. Anderson
Director

December 20, 2016

Kathy Weinel, Quality Assurance Manager
Energy Fuels Resources (USA) Inc.
225 Union Blvd., Suite 600
Lakewood, CO 80228

RE: Energy Fuels Resources (USA) Inc. November 17, 2016, Transmittal of Revised Statistical Analysis for Cadmium and Thallium in MW-24, White Mesa Mill Groundwater Discharge Permit No. UGW370004 (Permit)

Dear Ms. Weinel:

The Division of Waste Management and Radiation Control has completed its review of the Energy Fuels Resources (USA) Inc. (EFR), November 17, 2016 document titled "*Transmittal of Revised Statistical Analysis for Cadmium and Thallium in MW-24 White Mesa Mill*" (Revised Analysis). The Revised Analysis includes an assessment of cadmium and thallium in monitoring well MW-24.

The Division notes that EFR conducted a source assessment and statistical analysis for cadmium and thallium, along with other parameters, in an earlier source assessment document dated June 24, 2016. Based on a review of the June 24, 2016 source assessment, it was determined that the source of the cadmium and thallium concentrations in groundwater did not appear to be related to mill activities and that resetting the GWCLs based on statistical review of the data was appropriate.

In accordance with the Division's September 14, 2016 letter to EFR regarding the statistical analysis for cadmium and thallium in monitoring well MW-24 included in the June 24, 2016 source assessment, EFR proposed to set revised GWCLs by a modified approach (highest historical value) since the data sets showed upward trends and were not normally or log-normally distributed. In response, the Division requested specific additional information noted in this excerpt from its letter: "*Per DWMRC review of the cadmium and thallium data sets, it was noted that a large number of non-detects are included in the early time data, and that after 2009, the concentrations begin increasing. EFR attributes these increases as associated with declining pH due to pyrite oxidation in groundwater. For comparison it would be helpful for EFR to provide a separate analysis of the data sets as was provided in the December 9, 2015 SAR (Monitoring Well MW-31) using a divided data set based on an identified point of inflection in the data. Specifically, a data inflection is noted at approximately 2009 for cadmium and*

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thallium in monitoring well MW-24. This comparison test is useful in that it may provide a normalized data set and a comparable and representative determination of mean + 2 α .”

The Revised Analysis provides an adjusted data set which removes data prior to a point of inflection and effectively removes early non-detects in the data set. Based on review of this adjusted data set, it was noted that the data showed normal distribution and, in accordance with the flow chart, would allow the GWCLs to be set according to mean + 2 α . It was discussed with EFR that it would be appropriate to revise the statistical flow chart to include this type of data set analysis (point of inflection), when appropriate, if it is determined that the entire data set does not provide normal or log-normal distribution. Additionally, this type of data set analysis, and adjustment, is in conformance with the 2009 EPA Unified Statistical Guidance.

MW-24 Approved Modified GWCLs

Based on the review of the Revised Analysis and a telephone conference with the Division, EFR and Intera representatives on November 9, 2016, it was agreed that the GWCLs will be modified in the White Mesa Uranium Mill Ground Water Permit for monitoring well MW-24 as summarized in the table below:

Well Number	Parameter	Current GWCL	Modified GWCL	Method of Analysis
MW-24	Cadmium	2.5 ug/L	6.43 ug/L	Mean + 2 α (adjusted data set)
MW-24	Thallium	1 ug/L	2.01 ug/L	Mean + 2 α (adjusted data set)

If you have any questions, please call Tom Rushing at (801) 536-0080.

Sincerely,



Scott T. Anderson, Director
Division of Waste Management and Radiation Control

STA/TR/ka

c: Rick Meyer, Acting, Health Officer/Environmental Health Director, San Juan Public Health
Scott Hacking, P.E., DEQ District Engineer