



January 23, 2016

Div of Waste Management  
and Radiation Control

Mr. Scott T. Anderson, Director  
Utah Department of Environmental Quality  
Division of Waste Management and Radiation Control  
P.O. Box 144880  
Salt Lake City, UT 84114-4880

JAN 20 2017

DSHW-2017-000544

**Re: Group 10 RCRA Facility Investigation (RFI) Report  
Response to Comments  
DSHW-2015-014101  
UTD001705029 ✓**

Dear Mr. Anderson:

Attached to this cover letter are responses to the Divisions comments dated November 14, 2016. We hope these responses provide adequate clarification. Upon review and approval, ATK will amend the RFI Report, if necessary.

Should there be any questions or comments concerning this Submittal, please contact Ron Bowlin at 801.251.4865.

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Sincerely,

George E Gooch  
Manager, Environmental Services

cc: Brad Maulding, DWMRC  
David Larsen, DWMRC  
Eric Baiden, DWMRC

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**Report Comments**

1. Please modify the risk evaluation and summary recommendations section in the report dated October 28, 2016 and address ground water protection. It does not appear any of the SWMUs represent a source of groundwater contamination, but the requirements of R315-101-3 need to be briefly addressed.

**Response:** The report will be modified to address groundwater protection to meet the requirements of R315-101-3.

2. SP-29 was a wastewater tank that was removed in 2011. Wastewater in the tank contained HMX and VOCs and soil under the tank was sampled for energetics and metals. Sample results indicate the HMX contamination (0.45 mg/kg) in soil under the tank. Since VOCs were present in the tank waste and soil under the tank shows HMX contamination (a release), please indicate why the soil sample was not analyzed for VOCs, and gas samples were not collected in this area. Also, why was one sample considered representative of possible contamination in soil on the side walls and under the tank?

**Response:** A further discussion on the history of SP-29 is necessary. The RCRA Facility Assessment (RFA) was generated in 1988. At that time, Building 2216 discharged into an earthen sump, referred to in the RFA as SWMU S-12. The sump was discontinued in about 1989 and a wastewater tank installed. In 2005, while demolition of Building 2216 was taking place, the top of the tank was torn open. The contents were sampled in 2007, and added as a SWMU to Table B-7 when the 2003 RCRA work plan was revised in 2010. However, the SWMU map was not updated.

An RFI conducted in 2010 included additional samples being collected at SWMU S-12. SWMU S-12 was given a No Further Action designation by the Division on August 31, 2012 (DSHW-2012-009845). In 2011, when ATK was cleaning and removing other tanks throughout the facility, the tank at 2216 was re-identified. A review of the active SWMU map did not identify it as a SWMU. The tank solids and soils, upon removal, were therefore not sampled following the protocol of the Bacchus RFI Work Plan. Samples were not collected for VOCs or soil gas based on the extremely low concentrations noted in the 2007 wastewater sample. One "confirmation" sample beneath the tank was collected based on the error that the unit had not been classified as a SWMU.

It was not until the Group 10 SWMU Sampling and Analysis Plan (SAP) was being developed that SP-29 was identified to be associated with the removed tank. It was

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briefly discussed in Section 5.2.10 of the approved Group 10 SAP that no additional sampling was planned.

Reviewing the soil data collected from the earthen sump (S-12) during the RFI indicates that if the sump, receiving thousands of gallons of wastewater, reported concentrations low enough for a NFA determination, SWMU SP-29 would not exceed concentrations that would be harmful to human health or the environment. ATK does acknowledge that the sampling protocol for a RFI was not followed, but requests for concurrence from the Division that in this case, the unit is protective of human health and the environment and that no further sampling is required.

3. Please explain why arsenic was not a parameter of concern for the soil sample collected under the tank at SP-29 (sample delivery group (SDG) 1112008 in Attachment A).

**Response:** As discussed in Response #2, the soil samples from the tank removal location in 2011 were not collected in protocol with the RCRA Work Plan. Review of the analytical data for soils in the S-12 sump, which received thousands of gallons of wastewater, did not report arsenic at concentrations greater than the method detection limit (MDL) of 2.2 mg/kg.

4. Please explain why the data quality for the sample collected in 2011 at SP-29 was not evaluated by AQS.

**Response:** As discussed in Response #2, the soil sample was not collected using the RCRA Work Plan protocol. The sample was collected for a tank closure confirmation and not a confirmation for a SWMU.

5. The Division notes arsenic was detected above the calculated site background value of 10 mg/kg and industrial RSL of 3 mg/kg, at maximum concentrations of 19 mg/kg and 20 mg/kg at SP-12 and 28, respectively. The Division concurs that the arsenic concentrations are likely within the range of natural background in ATK soils, but other lines of evidence related to lack of detections of other metals and site history of arsenic disposal should also be added as applicable for each SWMU and to Section 5. If arsenic is a possible contaminant at a SWMU and arsenic was detected at that SWMU above background, arsenic should be considered a site contaminant unless other lines of evidence indicate otherwise.

**Response:** ATK notes the Divisions comment and concern. At SWMU SP-12, the next greatest concentration of reported arsenic from the eleven remaining samples is 3.12 mg/kg. All well below the BTV for arsenic at the Bacchus facility. The average

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concentration for arsenic at SWMU SP-12, including the 18.8 mg/kg sample, is 2.9 mg/kg. This value is well within the range of the facility BTV. The 18.8 mg/kg sample was collected at a depth of four feet. The other three samples at the same depth were reported as 2.06, 0.84, and 0.82 mg/kg.

SWMU SP-28 is located on the Bacchus West portion of the facility, up on the mountain slope. The soils were below a used oil storage shed. The other three samples collected reported arsenic concentration of 7.5 mg/kg (immediately below the maximum value of 19.8 mg/kg), 15.2 mg/kg, and 11.1 mg/kg. An average concentration for these four samples is 13.4 mg/kg.

ATK does not believe that these values reflect any additional lines of evidence that arsenic concentrations are caused by any production activities at the facility.

The arsenic concentrations at SWMU SP-14 were also reviewed. The maximum concentration and average values (from 12 samples) is 1.55 and 1.14 mg/kg.

6. For all SWMUs with spills of low pH waste and where pH was the only sample parameter, please indicate why metals samples were not collected. Acids may mobilize metals. The division understands the acid spills were low volume and the soils at ATK are generally alkaline, but this issue should be briefly addressed.

**Response:** SWMUs SP-11 and SP-18 were the only other SWMUs where a low pH potential existed. The product that spilled at SWMU SP-11 was Stoddard Solvent, about 25 gallons. The soils were analyzed for VOCs. MSDSs indicated that pH is not applicable to Stoddard Solvent. Based on this premise and the very low volume associated with the spill, metals were not evaluated.

At SWMU SP-18, only 30 gallons of spent acid were spilled in an earthen containment. It was not deemed a significant enough volume to mobilize enough metals to cause a risk concern to human health or the environment. The approved SAP indicated that metals would not be part of the analyses for these units.

7. Hexavalent chromium was not a sample parameter. Was hexavalent chromium related waste disposed at any of the Group 10 SWMUs? Please modify appropriate parts of both reports as needed.

**Response:** None of the spills would have been associated with hexavalent chromium.

8. Section 3.6.2 of the October 4, 2016 report indicates the ATK lab director reviewed the data and concluded the data is considered usable, but a data validation report and case

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narratives are not provided. Did this review include all the lab data or just the ATK lab data? Please provide a data validation report. The soil gas data for SP-21 and SP-22 is of particular interest, as large amounts of Freon may have been disposed and Freon is a groundwater contaminant. However, Freon was not identified as a parameter for a J&E risk evaluation.

**Response:** Case narratives and data validation reports were presented in the addendum report of October 28, 2016. Case narratives are presented for all SDGs. Level III data validation was conducted on at least 20% of the total samples collected. A data validation report for the soil gas at SWMUs SP-21/22 is in the back of that addendum report. Vapor intrusion screening models were evaluated for 1,2,4-trimethylbenzene, 1,3-butadiene, and benzene at SP-21/22.

Freon 11, Freon 12, and Freon 113 were identified in the soil gas screening samples. They were not included as a parameter for J&E because of the extremely low soil gas concentrations. Freon 11 does not have a residential indoor air screening concentration. The reported soil gas concentrations, related indoor air concentrations, and regional screening concentrations for the remaining two analytes are 2.2J/0.0018/100 ug/m<sup>3</sup> (Freon 12) and 860/0.41/31,000 ug/m<sup>3</sup> (Freon 113). As addressed in the report, groundwater is approximately 150 feet below the release area. Freon has been reported in the groundwater and is being addressed in the Groundwater Management Unit of the ATK permit.

**Data Validation Report for the October 28, 2016 submittal**

1. The reports for each sample delivery group (SDG) indicate the initial calibration information was not provided to AQS. Please note that initial calibration is part of a Level III validation.

**Response:** “Level III” is not a clearly defined term. The initial calibration data is not something ATK has included in the past several years for the “Level III” data validation process. ATK does include Initial Calibration Verification data for those tests where calibration is performed on a daily basis (e.g., Ion Chromatography, Metals Analysis), but for organic analyses the method allows the continuing calibration verification to show that the initial calibration is still valid and is not required. In those cases, only continuing calibration data is included with the analysis.

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2. The AQS report for SDG 1506005 and other SDGs indicates the field duplicate information was not provided. What was the frequency of collection for duplicate samples and how was field precision evaluated without duplicate data?

**Response:** The field duplicate was included separately in the report from the data validation. The duplicate quality control information can be found in Table B-1 of the September 2016 report. Four duplicate samples were collected out of 52 samples-of-record. In the addendum report, one duplicate sample was collected SP-19, out of 12 samples-of-record. No samples were collected at SA-5, or from the units that only required pH. Miscommunication with the subcontractor led to no duplicate samples or equipment blanks being collected at the soil gas locations. Duplicate sample information will be included with the data validation packages to the third-party validator in future submittals.

3. The AQS report for SDG 156005 indicates surrogate recovery data was not provided for explosives and VOCs. How was accuracy evaluated without this data?

**Response:** The surrogate recovery data was included in the EDD sent to AQS. It is included below for your review.

**Explosives**

Lab ID	Field ID	Analyte	Recovery	
1506005-01A1	1S15090A	3-NT_SURR_RECOV	113	%
1506005-02A1	1S15090B	3-NT_SURR_RECOV	111	%
1506005-03A1	1S15090C	3-NT_SURR_RECOV	113	%
1506005-04A1	1S15091A	3-NT_SURR_RECOV	109	%
1506005-05A1	1S15091B	3-NT_SURR_RECOV	110	%
1506005-06A1	1S15091C	3-NT_SURR_RECOV	112	%
1506005-07A1	1S15092A	3-NT_SURR_RECOV	113	%
1506005-08A1	1S15092B	3-NT_SURR_RECOV	114	%
1506005-09A1	1S15092C	3-NT_SURR_RECOV	109	%
1506005-10A1	1S15093A	3-NT_SURR_RECOV	108	%
1506005-11A1	1S15093B	3-NT_SURR_RECOV	111	%
1506005-12A1	1S15093C	3-NT_SURR_RECOV	111	%
1506005-13A1	1S15093D	3-NT_SURR_RECOV	109	%

**Volatiles**

1506005-01A2	1S15090A	1,2-dichloroethane-d4	111	%
1506005-01A2	1S15090A	bromofluorobenzene	109	%
1506005-01A2	1S15090A	dibromofluoromethane	103	%

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1506005-01A2	1S15090A	toluene-d8	98.4	%
1506005-02A2	1S15090B	1,2-dichloroethane-d4	122	%
1506005-02A2	1S15090B	bromofluorobenzene	106	%
1506005-02A2	1S15090B	dibromofluoromethane	112	%
1506005-02A2	1S15090B	toluene-d8	96	%
1506005-03A2	1S15090C	1,2-dichloroethane-d4	110	%
1506005-03A2	1S15090C	bromofluorobenzene	101	%
1506005-03A2	1S15090C	dibromofluoromethane	105	%
1506005-03A2	1S15090C	toluene-d8	97.4	%
1506005-04A2	1S15091A	1,2-dichloroethane-d4	115	%
1506005-04A2	1S15091A	bromofluorobenzene	111	%
1506005-04A2	1S15091A	dibromofluoromethane	105	%
1506005-04A2	1S15091A	toluene-d8	102	%
1506005-05A2	1S15091B	1,2-dichloroethane-d4	109	%
1506005-05A2	1S15091B	bromofluorobenzene	102	%
1506005-05A2	1S15091B	dibromofluoromethane	105	%
1506005-05A2	1S15091B	toluene-d8	96.6	%
1506005-06A2	1S15091C	1,2-dichloroethane-d4	112	%
1506005-06A2	1S15091C	bromofluorobenzene	99.7	%
1506005-06A2	1S15091C	dibromofluoromethane	104	%
1506005-06A2	1S15091C	toluene-d8	97.3	%
1506005-07A2	1S15092A	1,2-dichloroethane-d4	120	%
1506005-07A2	1S15092A	bromofluorobenzene	106	%
1506005-07A2	1S15092A	dibromofluoromethane	107	%
1506005-07A2	1S15092A	toluene-d8	97.5	%
1506005-08A2	1S15092B	1,2-dichloroethane-d4	111	%
1506005-08A2	1S15092B	bromofluorobenzene	101	%
1506005-08A2	1S15092B	dibromofluoromethane	104	%
1506005-08A2	1S15092B	toluene-d8	98.4	%
1506005-09A2	1S15092C	1,2-dichloroethane-d4	114	%
1506005-09A2	1S15092C	bromofluorobenzene	102	%
1506005-09A2	1S15092C	dibromofluoromethane	106	%
1506005-09A2	1S15092C	toluene-d8	98.1	%
1506005-10A2	1S15093A	1,2-dichloroethane-d4	112	%
1506005-10A2	1S15093A	bromofluorobenzene	112	%
1506005-10A2	1S15093A	dibromofluoromethane	105	%
1506005-10A2	1S15093A	toluene-d8	101	%
1506005-11A2	1S15093B	1,2-dichloroethane-d4	116	%
1506005-11A2	1S15093B	bromofluorobenzene	106	%

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1506005-11A2	1S15093B	dibromofluoromethane	106	%
1506005-11A2	1S15093B	toluene-d8	98.7	%
1506005-12A2	1S15093C	1,2-dichloroethane-d4	111	%
1506005-12A2	1S15093C	bromofluorobenzene	102	%
1506005-12A2	1S15093C	dibromofluoromethane	106	%
1506005-12A2	1S15093C	toluene-d8	95.8	%
1506005-13A2	1S15093D	1,2-dichloroethane-d4	107	%
1506005-13A2	1S15093D	bromofluorobenzene	101	%
1506005-13A2	1S15093D	dibromofluoromethane	103	%
1506005-13A2	1S15093D	toluene-d8	100	%

4. The AQS report for SDG 156005 indicates dichlorodifluoromethane (Freon 12) soil results should be rejected. This is a possible site related compound. This appears to be a data gap.

**Response:** SDG 156005 covers samples collected at SP-14, near the facility wastewater treatment plant. Approximately 500 gallons was released from a split valve. ATK does not dispute that the data validation results may indicate a “data gap,” however, ATK did not reject the data from inclusion in the report based on the following: 1) even though the continuing calibration recovery was low, the reported MDL and EQL were at an acceptable value (5 ug/kg and 8 ug/kg, respectively), 2) the residential screening limit for Freon (12) is 87 mg/kg (a factor of 10,000 greater than the EQL), 3) even if the calibration recovery were within a more acceptable range the Freon 12 would not have been shown to be a threat to human health, and 4) soil gas values from the same area that did detect Freon 12 indicated an indoor air equivalent of 0.0023 ug/m<sup>3</sup>, where the residential screening limit is 100 ug/m<sup>3</sup>.

5. The AQS report for several SDGs indicates chain-of-custody information was not provided. The Division notes chain-of-custody forms in Attachment A, but for future submittals please provide chain-of-custody information for future validation reviews.

**Response:** Copies of the COCs will be included in the data package submitted for validation.