

August 10, 2015

VIA ELECTRONIC MAIL

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**Re: July 2015 Monthly Report of Activities
Butte Priority Soils Operable Unit
Unilateral Administrative Order- Docket No. CERCLA 08-2011-0011**

Dear Project Representatives:

Enclosed, please find the Monthly Progress Report for the Silver Bow Creek/Butte Area Superfund Site, as required by the Butte Priority Soils Unilateral Administrative Order.

If you have any questions or comments, please call me at (406) 723-1826.

Sincerely,



Loren Burmeister
Project Manager
Butte Priority Soils Operable Unit

Enclosure (2): Monthly Report of Activities
Attachment A: Problems Encountered

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Scott Bradshaw / TREC - email
Brad Archibald / Pioneer - email
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MONTHLY REPORT OF ACTIVITIES
Butte Priority Soils Operable Unit
Unilateral Administrative Order
July 2015

The United States Environmental Protection Agency (EPA) issued a Unilateral Administrative Order (UAO) for the Butte Priority Soils Operable Unit (BPSOU) on July 21, 2011, with that Order taking effect September 6, 2011. Under this UAO, two groups were identified as jointly and severally liable to perform the work describe therein. The Group 1 Respondents include Atlantic Richfield Company (AR), Butte – Silver Bow County (BSB), Inland Properties (Inland), and RARUS Railroad Company. Group 2 Respondents under the BPSOU UAO include BNSF and Union Pacific Railroads.

The work required under this UAO has been ordered to fill the interim period while all affected parties continue to work with the EPA and Montana Department of Environmental Quality (DEQ) to come to agreement on an all-inclusive Consent Decree (CD) for the BPSOU. The activities described in this report are consistent with those work directives outlined in the UAO and include all technical studies, design, construction, monitoring, and maintenance efforts performed by Atlantic Richfield on behalf of RARUS and the other Group 1 Respondents, for the previous month.

Operations and Maintenance Activities for July 2015

BTL, WCP, & MSD OM&M

During the month of July, the Butte Treatment Lagoons (BTL) operated under Section 3.5 of the Partial Remedy Implementation (PRI) Work Plan of the Unilateral Administrative Order (UAO). Influent flow was directed to Lagoon Cells A1, B1, and C1 with discharge from, Lagoon Cells B3 and C3 being routed to the effluent and Lagoon Cell A1 routed to Cell A2 and Cell A3 for additional treatment prior to discharge at the effluent monitoring station. This treatment sequence is consistent with routine summer operations of the system.

During July, approximately 46 million gallons of water were treated at the BTL. The volume consisted of 16 million gallons being pumped from the Metro Storm Drain (MSD) sub-drain, 6 million gallons from the West Camp Pump Station (WCP-1) and the remainder coming from the ground and surface water capture systems in Lower Area One (LAO). The influent water reaching BTL was treated by addition of 25 tons of lime by gravimetric lime dosing.

Routine Monday and Thursday samples were collected throughout the month. An additional monthly sample suite was collected on Monday, July 13, 2015. Sample results received from Pace Analytical continue to be consistent with normal operating ranges of the treatment system.

The MSD 30 hp Godwin electric pump was operated thru July 23rd in coordination with ongoing construction activities. The dry vault pumps were returned to operation at the MSD vault immediately following shutdown of the 30 hp electric pump.

The water level in the MSD wet vault was maintained at a constant water level below the perforated drain invert level throughout July, except for short periods of heavy rainfall.

The Missoula Gulch Catch Basin (CB)-8 by-pass inlet, fore-bay, and sediment vault and the Kaw Avenue wetlands continue to be checked on a weekly basis with maintenance performed as needed throughout the month.

Hunter Bros. was on site July 8th and 9th to clean the distribution tank within the CAS building, and jet the effluent line from the A3 outlet structure to the discharge point adjacent to Silver Bow Creek. These tasks were scheduled and completed as part of routine maintenance of the BTL system.

Base Flow Monitoring

Baseflow monitoring was conducted July 31 under stable flow conditions; monitoring had been scheduled for weeks prior, but was delayed multiple times due to wet weather events. After drought throughout early summer months, the first week of July saw Blacktail Creek and Silver Bow Creek with flows near seasonal averages. With cooler temperatures and several wet weather events near the end of July, both Blacktail Creek and Silver Bow Creek saw above average flows before normalizing again during the first week of August.

The continuous stage recorders were checked on July 1 for correct time, stage, and file names. The bubbler system at each station was purged and any accumulated debris was removed from the bubbler and staff gages. On the same date, stage data were downloaded from continuous recorders. The precipitation records for BMMA, BTL-LAO, and the Kelley Mine Yard were obtained and entered into the database-compatible spreadsheets. The precipitation records from Atlantic Richfield's (AR) weather stations at the Butte Silver Bow Maintenance shop (BSB Shop) and CB-1 were downloaded August 3.

Wet Weather Monitoring

In response to precipitation events, wet weather monitoring occurred on July 11, 21, 23, and 27. The month of July started and finished warm and dry. Mid-month brought cooler weather with precipitation events; three of four wet weather events captured during July met creek wet weather monitoring criteria.

On July 11, Butte Hill experienced two high-intensity, short-duration precipitation events, the first at 1210 MST and the second at 1730 MST; each lasted 45 minutes and approximately 0.10 inches of precipitation was recorded for each (for a total of 0.21 inches) at the Kelley Mine Weather Station. Weather stations at BTL/LAO reported 0.04 inches, BMMA reported 0.10 inches, BSB Shop reported 0.11 inches, and CB-1 reported 0.21 inches. Both Blacktail Creek and Silver Bow Creek responded with increased flows, but creek sampling criteria was not met.

On July 21, Butte Hill experienced a high-intensity, moderate-duration thunderstorm starting around 1240 MST and lasting for about 1.5 hours. The Kelley Mine Yard Weather Station reported a total of 0.22 inches of precipitation, BTL/LAO reported 0.38 inches, BMMA reported 0.06 inches, BSB Shop reported 0.07 inches, and CB-1 reported 0.32 inches. Flow at SS-07 increased from a baseflow of 19 cfs at 1215 MST to a peak of 42 cfs at 1400 MST. Blacktail Creek did not respond to this event, as precipitation was localized to the Butte Hill Drainage; correspondingly, samples were only collected from 4 samplers located on Silver Bow Creek. Ten (10) of 22 samplers installed in storm drains or historical D-TEC locations collected samples. All samples were prepped and sent to the laboratory for analyses.

On July 23, Butte and Summit Valley experienced a high-intensity, short-duration thunderstorm starting around 1500 MST and lasting for about 0.5 hours. The Kelley Mine Yard Weather Station reported a total of 0.41 inches of precipitation, BTL/LAO reported 0.38 inches, BMMA reported 0.68 inches, BSB Shop reported 0.43 inches, and CB-1 reported 0.35 inches. Flow at SS-07 increased from a baseflow of 19 cfs at 1315 MST to a peak of 49 cfs at 1930 MST; flow at SS-04 increased from a baseflow of 6.5 cfs at 1500 to a peak of 30 cfs at 1815 MST. Seventeen (17) of 22 samplers installed in storm drains or historical D-TEC locations collected samples; the low number of historic and diagnostic samples whose times correspond with the creek wet weather event is due to the samplers capturing the early morning low-intensity, long-duration precipitation event on July 23 from approximately 0030 through 0630 MST. All samples were prepped and sent to the laboratory for analyses.

On July 27, Butte and Summit Valley experienced a low-intensity, long-duration precipitation event starting around 0530 MST and lasting until 1430 MST. The Kelley Mine Yard Weather Station reported a total of 0.77 inches of precipitation, BTL/LAO reported 0.66 inches, BMMA reported 0.76 inches, BSB Shop reported 0.63 inches, and CB-1 reported 0.62 inches. Flow at SS-07 increased from a baseflow of 15 cfs at 0600 MST to a peak of 61 cfs at 1000 MST; flow at SS-04 increased from a baseflow of 9 cfs at 0500 MST to a peak of 35 cfs at 1115 MST. Eighteen (18) of 22 samplers installed in storm drains or historical D-TEC locations collected samples. All samples were prepped and sent to the laboratory for analyses.

Expanded Analyses Wet Weather Sampling

Eight additional samplers were installed at existing creek and storm drain locations for the purpose of acquiring additional data to support future source analysis. Eight sites were equipped with an ISCO 3700 automated sampler, assigned to pull different volumes of storm water. Sediment traps were also installed at each site to ensure ample representation. The goal is to obtain one sample from each site during the 2015 wet weather season. All sites sampled on 07/27/2015, collection times vary from early to late morning due to multiple events on that date. The volumes collected are being stored under 4⁰C at MSE Laboratory until analyses are approved; all sites remain installed but are not operational at this time.

Opportunistic Sampling

Opportunistic sampling sites are identified as areas that appear to be major TSS loaders to storm drains, through identification of areas of sediment buildup near storm drains or evidence of surface runoff. Multiple areas were identified and thirty water samples were collected during the month of July.

Ground Water Monitoring

Site-wide water levels were measured on July 29-30, and level monitoring transducers were downloaded at that time. Stage was measured at surface water sites associated with groundwater monitoring on July 30.

Catch Basin Monitoring

All three catch basins held water at the beginning of July and water levels increased with each rainfall throughout the month. Records and field observations indicate that both catch basin 8 and catch basin 9 discharged, while catch basin 1 did not discharge this month. According to transducer data, CB-8 discharge through the seep hole began July 27 and continued through July 30; CB-9 discharge through the rectangular orifice began 1345 MST through 2215 on July 27. CB-9 discharge was sampled on July 27 by the automatic sampler setup just below the outfall; field observations indicate that CB-9 discharge did not reach Silver Bow Creek.

Construction Activities for July 2015

Wetland Demonstration Area Reclamation

Construction activity for the Wetland Demonstration Area Reclamation was completed in July. The punch list items that were completed included the seeding of small areas of the engineered cover material and fence repair.

MSD Pump Station Upgrade

Construction for the MSD Pump Station Upgraded continued throughout July. Activity performed by Jordan Contracting, Inc. (JCI) included modification of the existing MSD Dry Vault piping, installation of the manifold piping within the newly constructed vault, and continued backfilling of the manifold vault area. JCI concluded localized construction dewatering at the MSD area. The 6-inch HDPE dewatering system and discharge piping to the Kaw Avenue pond was subsequently removed. HDPE piping and ductile iron fittings were placed at the BRW area and connections to the pressure relief system were made. Backfilling of the Flood Control Dike (FCD) area continues.

Non-Construction Efforts for July 2015

Groundwater DSRs and Plans

The 2014 Interim Ground water Monitoring DSR was submitted on May 5, 2015. The final version of the 2012 Ground Water DSR was submitted on May 26, 2015.

Surface Water DSRs and Plans

The 2013 and 2014 Draft DSRs (base flow, wet weather and diagnostic) were submitted on May 11, 2015. Comments from the agencies on the 2008-2012 DSRs were received June 11, 2015. Revisions to these reports are underway.

Mine Waste Repository O&M Plan

Revisions to this plan are underway to clarify certain activities based on verbal comments received by EPA. Resubmittal of this plan is expected in August.

BTL OM&M Plan

The Draft Final Operations Guide for Butte Treatment Lagoons (BTL) Lower Area One (LAO) Groundwater Treatment System received Draft review by AR and is currently being revised prior to submittal for agency review. This document describes routine OM&M requirements to maintain reliable and efficient system operation.

The BTL and MSD Sub-Drain Data Management and Reporting Plan describes the long-term data collection, usage and distribution, and reporting requirements for the BTL treatment system at LAO and MSD Sub-Drain Loading Study. Comments provided by EPA and DEQ, were being incorporated into the document at the end of July.

The BTL Sampling and Analysis Plan (SAP) is being updated, and will be included as an appendix of the Draft Final Operations Guide for Butte Treatment Lagoon (BTL) Lower Area One (LAO) Groundwater Treatment System when it is submitted for Agency review.

Operations Data Historian

The BTL data historian trending capabilities are utilized by system operators to monitor performance trends and enhance system operating efficiency as applicable. Initial operator configuration of data storage and trending features was completed in July.

Lower Area One Surface Enhancements

Preparation of construction bid documents was being completed in late July for the Lower Area One Surface Enhancements.

MSD Sub-Drain Loading Study

Field activities under the MSD Sub-Drain Loading Study included a July 20 data download and inspection of all flow meters along the MSD Sub-Drain prior to the sampling event. The high flow MSD Loading Study sampling event took place on July 21. Precipitate samples were collected in accordance with the sampling event. Data from water level transducers along the MSD Sub-Drain were also downloaded on July 21.

After the transducers were downloaded, the devices were removed and will no longer be downloaded on a monthly basis specific to this effort; however, transducers for GW monitoring in these wells will continue monthly monitoring. The flow meters within the MSD Sub-Drain were also removed because of scheduled jetting.

BRW Evaluation of Capture Effectiveness

Field activities under the BRW Evaluation of Capture Effectiveness included downloading data from water level transducers at the monitoring well and surface water locations by both Pioneer and TREC, respectively, on July 30, 2015.

MSD Sub-Drain Groundwater Management Report

The MSD Sub-Drain Groundwater Management Report and 10 supporting reports evaluate options to optimize the MSD Sub-Drain based on effectiveness, implementability, and cost. As of December 17, 2014, Atlantic Richfield has received EPA comments on all 11 documents and is the process of finalizing each document. The following reports have been submitted as final:

- Final Revised Technical Memorandum Influence of Montana Resources Operational Ponds on Discharge to the Metro Storm Drain (MSD) Sub-Drain – submitted May 26, 2015
- Final 2013 Evaluation of a Diversion from the Metro Storm Drain Sub-Drain to the Berkeley Pit – submitted June 9, 2015
- Final Technical Memorandum Percolation Evaluation for Upper Metro Storm Drain Buried Tailings, Diggings East Tailings, and Northside Tailings Area – submitted June 18, 2015
- Final 2011 Blacktail Creek and Silver Bow Creek Radon Tracing and Thermal Imaging Survey Technical Memorandum – submitted July 6, 2015
- Final 2010 Metro Storm Drain (MSD) Sub-Drain Phase I, II, and III Isolation Test Technical Memorandum – submitted July 31, 2015

GAP Study

Additional comments were received from EPA on March 2, 2015. Revisions to the report to address these comments were conducted during June 2015. Final submittal of this report is anticipated to be in August.

Upcoming Activities for August 2015

BTL Operations

Operation of the BTL is expected to remain consistent with routine summer operating conditions. Dewatered sediment located in the drying beds is tentatively scheduled to be transported to the Mine Waste Repository, dependent on other site activities and water content. Minor site maintenance tasks such as vegetation trimming and road maintenance are also anticipated in August.

BTL OM&M Plan

The Draft Final Operations Guide for Butte Treatment Lagoons (BTL) Lower Area One (LAO) Groundwater Treatment System is expected to be submitted in August.

Wetlands Demonstration Area

A Draft Construction Completion Report addressing the Wetland Demonstration Area Reclamation activities will be prepared for review and approval by AR in August and September. Following initial review and revision, this document will be provided to the agencies for review.

MSD Pump Station Upgrades

JCI will continue construction of the MSD Pump Station Upgrades. Work is scheduled to continue through August of 2015 for the MSD Pump Station Upgrades, upcoming tasks include installation of the manifold vault lid, continued backfill, and removal of the Emergency Service Line (ESL).

LAO Surface Enhancements

LAO Surface Enhancements Request for Proposal will be released in August 2015. Atlantic Richfield expects work on the BTL portion of this work to commence this fall with a significant amount of the work being completed during the 2015 construction season.

Continental Roadside Channel

A project CCR has been initiated with a draft-final submittal planned for mid-August.

Lexington Mine Site

Pre-design activities have begun for the Lexington Mine site and will continue in August.

Groundwater Technical Reports

Agency comments on MSD groundwater technical reports will continue to be addressed during August. The reports remaining to be finalized include the Fingerprinting Tech Memo, Geochemistry Report, MSD Loading Study, and the MSD Groundwater Management Report.

Attachment A: Problems Encountered

No problems were reported in July 2015.