

Atlantic Richfield Company

January 10, 2013

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CERTIFIED-RETURN RECEIPT REQUESTED

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**Re: December 2012 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) 723-1838.

Sincerely,



Lindy Hanson
Operations Project Manager
Butte Priority Soils Operable Unit

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



A BP affiliated company

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MONTHLY REPORT OF ACTIVITIES
Butte Priority Soils Operable Unit
Unilateral Administrative Order
December 2012

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 December 2012

BTL, WCP, & MSD O&M

The Butte Treatment Lagoons (BTL) continue to operate under construction conditions in accordance with the approved *Butte Treatment Lagoons (BTL) and West Camp Pump Station (WCP-1) Upgrades Phase II Construction Dewatering Plan* and the *Butte Treatment Lagoons (BTL) and West Camp Pump Station (WCP-1) Upgrades Phase II Interim Operations Plan*. The initial phase of Interim Operations began on July 26, 2012 to facilitate completion of ongoing construction upgrades while maintaining effective treatment of influent flow. During this phase of Interim Operations, influent water is being routed to a temporary distribution tank located within the Chemical Addition System (CAS) Building and routed to the lagoon cells through 10-inch C900 PVC pipe. Currently, all influent flow is being directed to Lagoon Cells B1 and C1 only, allowing for construction dewatering within Lagoon Cell A1. Continued operation of the BTL is ordered under Section 3.5 of the PRI in the Unilateral Administrative Order (UAO).

During December approximately 53 million gallons of water were treated at the BTL. The volume consisted of approximately 20 million gallons being pumped from the Metro Storm Drain sub-drain (MSD), 6.5 million gallons being pumped from the West Camp Pump Station (WCP), and the remainder coming from the capture systems in Lower Area One (LAO). The influent water was treated with 28 tons of lime.

The lagoon cells were noted as being ice covered on November 10, 2012 and continue to be so. Carbon Dioxide (CO₂) addition at the A2 lagoon cell outlet structure commenced on November 14, 2012 according to the *Final BTL CO₂ Influent Addition &*

Effluent/Silver Bow Creek Monitoring Work Plan (Atlantic Richfield, November 2012). CO₂ addition and monitoring will continue for the remainder of the winter months and is scheduled to be discontinued as the weather warms and the treatment lagoons are ice free.

The MSD “Dry Vault” pumps located at the MSD vault and the submersible pump located at the West Camp Pump Station were operated throughout the month of December without interruption.

The Catch Basin (CB)-8 by-pass inlet, forebay and sediment vault continue to be checked weekly by Pioneer Technical Services (Pioneer) personnel. The Kaw Avenue wetlands have also been checked on a weekly basis with accumulated debris removed from the outlet as needed.

Routine Monday and Thursday samples were collected throughout the month. An additional monthly sample suite was collected on Monday December 17, 2012. Sample results received from Pace Analytical continue to be consistent with normal operating ranges of the treatment system.

Base flow surface water monitoring was conducted on December 5, 2012. Fourth quarter monitoring of wells constructed since November 2011 took place between December 6 and 12. No wet weather events occurred in December. Table 1 summarizes December surface and ground water sampling performed by TREC.

Table 1. Sample Collection and Flow Measurement Summary

DATE	EVENT	MANUAL SAMPLE COLLECTION	MANUAL FLOW MEASUREMENT/ VERIFICATION
12/5/2012	Base Flow	SS-01, SS-04, SS-05, SS-05.7, SS-05.9, SS-05A, SS-06A, SS-06F, SS-06G, SS-06H, SS-07	SS-01, SS-04, SS-05, SS-05.7, SS-05.9, SS-05A, SS-06A, SS-06F, SS-06G, SS-06H, SS-07
12/6/12	Ground Water	BPS11-15, BPS11-16, BPS11-09, BPS11-12, BPS11-04, AMW-13B2, BPS11-19A2, BPS11-19B, BPS11-11A1, BPS11-11A2	
12/7/12	Ground Water	BPS11-11C, BPS11-11B, BPS11-14B, BPS11-14A, BPS11-13, BPS11-10C, BPS11-10B, BPS11-10A	
12/10/12	Ground Water	BPS11-05A1, BPS11-05A2, BPS11-06, BPS07-13B, FP98-1B, BPS11-07, BPS11-08, BPS11-01	
12/11/12	Ground Water	BPS07-22R, BPS07-22C, BPS07-22B, BPS11-03, GS-08R, GS-09R	
12/12/12	Ground Water	GS-11R, BPS11-17C, BPS11-18C, BPS11-18B, BPS11-20, AMC-23B	

Base Flow

During base flow monitoring on December 5, rain and snow had fallen intermittently the previous few days. However, monitoring was conducted under stable flow conditions in the stream. October, November and early December precipitation was near average, compared to the much drier conditions that persisted the previous few months.

The continuous stage recorders were checked on December 3 and 4, for correct time, correct stage, correct file names, and to assure that they were recording stage to three decimal places. The bubbler system at each station was purged and any accumulated debris was removed from the bubbler and staff gages. On the same dates, November stage data were downloaded from the continuous recorders. The precipitation record for Bert Mooney Municipal Airport (BMMA) was obtained and entered into the database compatible spreadsheet. The precipitation record from Atlantic Richfield's (AR) weather station at the Butte Silver Bow Maintenance shop was downloaded on November 4. The AR weather station at CB-1 was downloaded on December 3, yet that record was found to have no new data since the November 1 download.

Wet Weather

There were no wet weather events in December 2012.

Ground Water

In keeping with the Agency's Revised Interim Ground Water Monitoring Plan (USEPA, July 1, 2011), new wells (installed since November 2011) were sampled in early December. The Agency Monitoring Plan specifies that these wells are to be sampled on a quarterly basis for the initial year following drilling. The wells were sampled in the first quarter of 2012 by Pioneer Technical Services (PTS), and TREC sampled the wells in the second and third quarters as part of semi-annual monitoring. Thirty-nine wells were to be sampled in the fourth quarter, but one of these wells was inaccessible due to a parking lot being paved over. This well has been located and will be uncovered in 2013. During this event, 38 ground water well samples were collected December.

Site wide water levels were measured from December 19 through December 21, and ground water monitoring transducers were downloaded at this time. Stage measurements at surface water sites associated with ground water monitoring were recorded on December 20.

Catch Basins

Catch basins 1 and 8 held minimal water at the beginning of December, and that water froze early in the month. Catch basin 9 appeared to be dry the entire month. No catch basin samples were collected in December 2012. Continual stage data were retrieved from CB-1, CB-8, and CB-9 on roughly a weekly basis throughout December.

Construction Activities for December 2012

BTL & WCP-1 Upgrades – Phase I and Phase II

BTL and Butte Reduction Works (BRW) construction dewatering continued throughout the month of December. The temporary influent pumping system continues to operate to transfer influent water from the Hydraulic Control Channel (HCC) to the CAS.

Operation of the temporary influent pumping system promotes dewatering efforts within Lagoon Cell D4 as work progresses on Phase II construction.

Water and sewer line installation continued beyond the HCC to the east edge of the CAS Building parking lot area. The emergency service line hydrant and valves were installed to complete the emergency service line work. The sewer line was completed and backfilled to STA 4+50. Excavation and backfill work were performed simultaneously throughout the water and sewer line installation process to minimize exposure of personnel and equipment to open excavations.

Outlet Structure 8 (OS-8) was completed with the exception of final grading and revegetation. The concrete lid, inclusive of access hatch, was installed and backfill was placed up to just below the lid surface. Work began on OS-6 with dewatering and excavation.

JLC continued construction on the new operations building by completing the south footer stem wall. The CAS building west addition progress consisted of four steel beam columns and the horizontal cross beams being installed. The overhead beam for the 14ft door on the north side of the building was also installed.

The BRW concrete drying bed work was completed. Foundation footers and wall are complete for a total of 1790 linear feet of concrete installed. Backfill and compaction operations will continue throughout the winter months.

Simultaneous operations during construction consisted of daily water treatment operations, operation of the CO₂ addition equipment, and routine lime delivery.

Granite Mountain

No construction activities were performed at the Granite Mountain Memorial Area during the month of December.

Hydrodynamic Devices

Construction activities for the Texas Avenue HD continued during December, 2012. Fiberglass separation cylinder extensions were installed in the CDS units and the precast concrete lids were set in place with a crane. Permanent access ladders were installed in the diversion structure. A walkthrough was conducted with the EPA on December 14th, 2012 and a punch list was provided to BSB for the construction items to complete. BSB crews finished construction on the punch list items and the HD was brought online December 28, 2012.

Phase II Additional Source Controls

Phase II Additional Source Controls construction began in mid-September. Phase II consists of 7 different sites in the Butte area;

- 4S-Alley Near Copper and Alaska Streets,
- 6S-Franklin Street,
- 9S-Nevada Avenue,
- 12S-MSD North of Shields Avenue,
- 8S- Idaho Drainage,
- 15S-Civic Center Parking Lot, and
- New and Mahoney.

Franklin Street, Alley near Alaska and Copper, New and Mahoney and Civic Center Parking Lot construction has been completed and received agency approval. Additional reclamation areas have been identified on Idaho Drainage and New and Mahoney. The additional reclamation has been completed on Idaho Drainage with the exception of seeding operations which will be completed in the spring. The additional reclamation area on New and Mahoney has been designed with agency submittal expected in early January. Construction on MSD North of Shields is expected to begin as weather permits. Nevada Avenue work began on October 31st. During the initial excavation, a large concrete section was discovered. Design modifications were completed and work is continuing as weather permits.

Design Efforts for December 2012

BTL Upgrades - Instrumentation and Controls

The *Final Butte Treatment Lagoons (BTL) and West Camp Pump Station (WCP-1) Upgrades Design Report/Work Plan Addendum II – Instrumentation, Controls, and Monitoring Upgrades Design* document was submitted to the Agencies by Atlantic Richfield on July 30, 2012. MSE/Tetragenics are continuing to fabricate Phase II SCADA panels and a radio study has been completed in order to determine the frequency range of the proposed Federal Communications Commission (FCC) licensed data radios. Atlantic Richfield is working with telecommunications engineers to finalize regulatory compliance and FCC license management. Atlantic Richfield anticipates installation of these systems to begin during the second quarter of 2013.

BTL Water Management Contingency Operations Technical Report

Revisions are currently being made to the *Draft Final Butte Treatment Lagoons Water Management Contingency Operations Technical Report* (Atlantic Richfield, August 2011) to address system modifications resulting from Phase I and Phase II construction activities as well as to address previously received Agency comments. A draft final revision will be issued to the Agencies upon completion.

MSD Redundant Discharge Line

The preferred remedial alternative for the MSD Redundant Discharge Line involves a directionally drilled pipeline extending from the MSD Vault to the Hydraulic Control Channel installed at a depth of up to 25 feet below the ground surface. A draft design is being developed and will be submitted to the Agencies for review upon completion.

MSD Underdrain Jetting and Discharge Pipeline Pigging Summary

A project summary report for the October pressure jetting of the MSD Underdrain and scale removal of the MSD Discharge Pipeline was developed and issued for review to Atlantic Richfield.

Dredge Storage Building

A draft design report/work plan is currently being reviewed by Atlantic Richfield prior to Agency submittal. This building will house the SRS Crissafulli dredge, DSS 1500 Supersacker redundant lime feed system, and miscellaneous valves, fittings, and other equipment.

Influent Pump Station Shakedown Plan

A shakedown plan is being developed detailing the work necessary to start up operations at the Influent Pump Station. The shakedown plan will be submitted to Atlantic Richfield for review and executed when Phase II construction activities are complete.

Hydrodynamic Devices

A draft workplan for the Montana Street HD was completed and submitted to the Agencies on October 31. Agency comments on the workplan were received on December 12, 2012. The design for the Montana Street HD is being updated to address Agency comments. The final workplan is anticipated to be completed and submitted to the Agencies in January, 2013.

Phase II Additional Source Controls

Additional reclamation design was completed on the New and Mahoney site. Work is expected to proceed following agency approval and as weather permits.

Site 18S - Anderson Shaft design is scheduled to be modified following land owner input and will be submitted to the agencies after modifications are completed.

Storm Water Control Sites

Storm water control sites under design are;

- South Parrot Slope,
- Buffalo and Main, and
- Walkerville Playground.

Internal design reviews have begun and submittal to the agencies is scheduled for January.

Catch Basins

Data from the Third Cycle BMP Groundwater and Geotechnical Investigations has been summarized into the Draft Final Third Cycle BMP Groundwater and Geotechnical Investigations Data Summary Report and the Draft Final Third Cycle BMP Groundwater Investigation Pumping Test Report and submitted to Agencies for review and comment. Design of the Buffalo Gulch catch basin (s) has been halted until an alternatives analysis can be completed.

Technical Studies & Reports for December 2012

Geochemistry Work Plan Analyses

In December of 2012, work has continued on the analysis of data collected under the 2012 Geochemistry Work Plan (WP) for phases II, III, and IV. The 2012 Monitoring Well Construction Completion Report (CCR) was submitted for Agency review on December 12, 2012.

MSD Loading Studies

Agency comments have been received on the UAO-required Draft Final 2011 MSD Sub-Drain Interim Loading Study (June 29, 2012), and this report is being finalized. In addition, fall sampling of the MSD Sub-drain was completed on November 19, 2012 and work has started on the 2012 report.

MSD Sub-drain Groundwater Management Report

In December of 2012, work was continued on the investigations that will feed into the MSD Sub-drain Groundwater Management Report, including the 2012 Monitoring Well CCR, the geochemistry investigation, baseflow surface water sampling results, radon and thermal imaging studies, MSD flow and loading study, the MSD Sub-drain Isolation test report, the fingerprinting effort, and others. As indicated in the UAO, the MSD Sub-drain Groundwater Management Report will evaluate options to optimize the MSD Sub-drain.

BRW Capture Effectiveness

From late 2010 to April 2012, data has been collected to evaluate the capture effectiveness of the BRW-00 Pond Regrading (completed in January of 2011) and monitor the effect of the East End Culvert Removal (completed in April of 2012). These data have been evaluated and compiled into a technical memorandum that was provided to the Agencies for review on December 10, 2012.

Surface Water Monitoring

During October, the Interim Monitoring Plan was further discussed with the agencies. Agency comments on the IMP summary letter were received on July 17, 2012. AR is looking to continue discussions regarding surface water monitoring locations and plan changes which were submitted to the agencies during May 2012. Addendums to the IMP were worked on during December and include HD sampling protocol and Diagnostic monitoring of storm drains located further up the Butte Hill.

SBC Sediment Removal

Work on evaluating the feasibility of sediment removal began during June 2012. The evaluation of the removal of streambed sediments was completed in December 2012.

Ground Water Monitoring

The Ground Water Study Plan for the Area between Capture Zones was submitted to agencies in April 2012. Agency comments on the Ground Water Study Plan were received on July 16, 2012.

Institutional Controls

Atlantic Richfield continues to work with BSB on the Institutional Controls (ICs) for the BPSOU. A draft ICs plan was submitted to the agencies in early 2010. Comments from the agencies are still pending.

Upcoming Activities for January 2013

Operation of the BTL will continue throughout January according to the Interim Operation Plan Configurations 1 and 2, as well as the Phase II Construction Dewatering Plan. Flows are expected to vary due to altered routing within BTL and dewatering flows resulting from construction activities.

Atlantic Richfield intends to operate the temporary CO₂ system throughout the winter of 2012-2013 to help determine whether pH adjustment of the treated water may be beneficial to the BTL operations.

Jordan Contracting continues the upgrades of the BRW Multi-Cell Drying Beds, the Sludge Management Slurry Line, the New Operations Building, and the Chemical Addition System building and water treatment system components. Utility upgrades will continue for installation of the water line and sanitary sewer line servicing the New Operations Building.

Installation of outlet structure OS-6 is anticipated to be completed by mid-to-late January, with installation of OS-1 commencing thereafter. Delivery of the remaining outlet structures will occur as they are needed.

The BTL Access Crossings and North Road Improvements work has been suspended due to site congestion. Following recommencement of activities, work will include reconstruction of the HCC south bank, installation of underground utility upgrades, and resurfacing of site access roads.

For January of 2013, no field work is scheduled in support of the technical studies and reports, and it is anticipated that the following documents will be provided to the Agencies:

- Final Loading Study Tech Memo; and
- Infiltration Study Tech Memo.

During January, base flow monitoring, including flow measurement and sample collection will be conducted under stable conditions. Towards the end of the month, site wide ground water levels, along with associated surface water levels, will be measured. Wet weather monitoring is not anticipated during January, but manual sampling will be conducted at limited sites, if snow melt conditions occur.

Activities for December at the Granite Mountain Memorial Area may include installation of the remaining historical signs within the area and installation of one sign at the Granite Mountain Memorial.

Phase II Additional Source Controls construction will continue as weather permits.

Storm Water Control Sites draft design is expected to be completed and internal review will proceed prior to submittal to the agencies.

Contractor selection for Phase II Curb and Gutter is expected to be completed and the project awarded for construction in the spring of 2013.

Initial work is expected to begin on Clearwater Ditch and The Lexington Mine Yard.

The design for the Montana Street HD is anticipated to be finalized and submitted to the Agencies in January, 2013. As-built survey data will be collected for the Texas Avenue HD for use in the construction completion report (CCR).

Attachment A: Problems Encountered

It was not possible to obtain a water level measurement at BPS11-02 in December. This flush mount well is located in a parking lot, and that parking lot was paved on October 30. Unfortunately, the well was paved over. Pat Sampson of Pioneer Technical Services is coordinating with a contractor to expose this well, and raise the surface completion to ground level.

There is a data loss in the SS-06G stage record between December 1 and December 3, because the external battery powering the flow meter died.

It appears that the CB-1 weather station quit logging when it was downloaded on November 1. Efforts to reset the data recorder in December failed, thus there is no December data for this site. Problems with this weather station will be further investigated in January.