Atlantic Richfield Company

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Anthony R. Brown
Project Manager, Mining

March 3, 2017

Lynda Deschambault
Remedial Project Manager, Superfund Division
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street, 10th Floor (SFD 7-1)
San Francisco, California 94105

Subject: Follow Up to January 17, 2017 Management Meeting
Remedial Investigation / Feasibility Study Schedule
Leviathan Mine Site
Alpine County, California

Dear Ms. Deschambault:

Atlantic Richfield Company (Atlantic Richfield) has prepared this letter (i) as follow up to our January 17, 2017 management meeting regarding the Leviathan Mine site Remedial Investigation / Feasibility Study (RI/FS) schedule, and (ii) to memorialize subsequent discussions on this topic between Ron Halsey, Caleb Shaffer, and Dana Barton.

RI REPORTING

A great amount of RI data analysis and other RI work needs to occur in 2017 before the site characterization component of the Draft RI Report can be completed. Over 2,500 samples were collected in 2016. We are waiting on laboratory results for a large portion of these samples. Much of the reported data still needs to undergo data quality review. In addition, the remaining interpretative analyses required to evaluate the nature and extent of releases of hazardous substances will be complex and time consuming.

For U.S. EPA's and Atlantic Richfield's schedule objectives for the RI/FS to be realized, two key changes need to occur. First, the number and scope of any additional interim deliverables submitted in advance of the Draft RI Report must be scaled back. Second, the Draft RI Report, which U.S. EPA believes must include the Baseline Human Health Risk Assessment (BHHRA) and Baseline Ecological Risk Assessment (BERA), should be submitted in June 2018 and preceded by the submission of a "Draft Site Characterization Report" at the end of 2017. Reducing the number of interim deliverables will allow us to focus on data evaluation. Submitting the Draft Site Characterization Report as a preliminary step will allow Atlantic Richfield and U.S. EPA to reach consensus on the adequacy of the RI dataset, completeness of the site characterization, and the development of Exposure Point Concentrations (EPCs) before the BHHRA and BERA advance too far.

To date, Atlantic Richfield has submitted detailed Technical Data Summary Reports (TDSRs) describing preliminary RI sampling results for mine waste, surface water, and groundwater investigations. Except as noted below, other TDSRs will be submitted with the Draft Site

Characterization Report in December 2017, but not before. They will follow a similar format to that used in the prior TDSRs and account for comments and technical input received from U.S. EPA thus far. The media-specific TDSRs will be attached as appendices to the Draft Site Characterization Report and provide detailed backup for the analyses and conclusions presented in the body of that report. Additional sampling data collected during the 2017 field season will not be included in the TDSRs or the Draft Site Characterization Report.

Additional details regarding RI reporting are outlined below:

1. Interim reports (requested 90-days after the completion of field sampling) will not be submitted for the River Ranch, Leviathan Mine Road, Geotechnical Focused Feasibility Study (FFS), and Fish investigations. Because sampling results are or will not be available within the 90-day period, these interim reports would serve little or no purpose.
2. Groundwater TDSR – A revised Groundwater TDSR was submitted on January 25, 2017. Additional groundwater data collected in 2016 will be integrated into an updated version of the TDSR submitted with the Draft Site Characterization Report. In the meantime, Atlantic Richfield will prepare an abbreviated groundwater technical memorandum focusing on the adequacy of the wells installed at LOC-39 and LOC-40 for characterizing groundwater near the northeastern boundary of the site.
3. Stream Sediment TDSR – Atlantic Richfield will submit a Stream Sediment TDSR by the end of June 2017, which will be based on data collected in 2013 and 2015.
4. Floodplain Soil TDSR – Most floodplain soil sampling (including reference sampling) occurred in 2016. The complete and validated data set will not be available until second quarter 2017. Atlantic Richfield will submit this TDSR at the end of June 2017.
5. Reference Area Data TDSR – Reference sampling data will be reported in media-specific TDSRs and the respective chapters of the Draft Site Characterization Report and Draft RI Report, rather than in a separate Reference Area TDSR. This will allow for media-specific comparisons between reference areas and impacted areas. Atlantic Richfield will also prepare an abbreviated Technical Memorandum for Reference Areas by the end of June 2017, which will be limited to sample location maps, raw data tables (based on non-validated data), and tables of preliminary threshold reference concentrations.
6. Mine Waste TDSR – Many of U.S. EPA's comments on the Mine Waste TDSR (December 29, 2016) related to the use of proxy reference concentrations as surrogates for reference data that were not available at the time of report preparation. Reference data should be available late in the second quarter of 2017. We will submit a revised Mine Waste TDSR, including addressing U.S. EPA's comments, with the Draft Site Characterization Report in December 2017.
7. Surface Water TDSR – Atlantic Richfield will submit a revised Surface Water TDSR, including addressing U.S. EPA's and LRWQCB's February 8, 2017 comments, and

including supplemental analysis of data collected in 2015 and 2016 with the Draft Site Characterization Report at the end of 2017. We do not anticipate that the conclusions in this report will substantially change with the addition of these data.

8. Other TDSRs for the River Ranch soil investigation, Leviathan Mine Road investigation, Ore Pile investigation, water budget analysis, and fish and plant tissue sampling are also subject to data availability constraints associated with the collection of a significant number of samples during the 2016 field season. These TDSRs will be submitted with the Draft Site Characterization Report in December 2017.
9. Atlantic Richfield will submit annual database updates for 2016 and 2017, consistent with Paragraph 64 of the UAO. These annual updates will not include field data collection summary and interpretative components, which will instead be presented in the Draft Site Characterization Report and supporting TDSRs.
10. U.S. EPA will need to provide comments on the Draft Site Characterization Report within 60 days after submittal. This will allow us time to address any issues regarding the adequacy of datasets and make necessary revisions to the calculations of EPCs prior to the completion of the BHHRA and BERA in the Draft RI Report.

MILESTONES AND SUPPORTING ASSUMPTIONS FOR THE COMPLETION OF THE RI/FS

If we can adhere to the approach outlined above, and subject to changes caused by unanticipated circumstances, the Draft Site Characterization Report will be submitted at the end of 2017, followed by the Draft RI Report in June 2018. The BHHRA and BERA will be included in the Draft RI Report and submitted in June 2018. The Draft Feasibility Study (FS) report will be submitted by the end of December 2018. The combined Final RI/FS report will be completed by the end of June 2019.

Proposed milestones for RI/FS reports including the Draft Site Characterization Report, Draft RI Report (inclusive of baseline risk assessments), the Draft FS Report, and the combined Final RI/FS Report are shown in Attachment A. Key scheduling assumptions used in the development of the RI/FS reporting milestones are also described in Attachment A. Most of these assumptions are consistent with those described with previous RI/FS schedule submittals, but in some cases they have been updated in response to U.S. EPA requests or other changes in reporting requirements. Generalized Tables of Contents for the Draft Site Characterization Report, RI Report, and FS Reports are provided in Attachment B.

A number of uncertainties remain related to the adequacy of datasets to be used for the completion of site characterization and baseline risk assessments. Consequently, it is possible that some data gaps will be identified during the preparation of the TDSRs and Draft Site Characterization Report. Should these data gaps be material to the site characterization, baseline risk assessments, and the evaluation of remedial alternatives, the RI/FS schedule presented in this letter may need to be revised to accommodate additional data collection.

If you have any questions or comments, please feel free to contact me at (657) 529-4537 or anthony.brown@bp.com.

Sincerely,

Anthony R. Brown
Project Manager, Mining

Attachment A – Milestones and Supporting Assumptions for Completion of RI/FS

Attachment B – Preliminary Table of Contents for Site Characterization Report, RI Report, and FS Report

cc: Caleb Shaffer, U.S. Environmental Protection Agency, Region 9 – via electronic copy
Dana Barton, U.S. Environmental Protection Agency, Region 9 – via electronic copy
Josh Wirtschafter, U.S. Environmental Protection Agency, Region 9 – via electronic copy
Gary Riley, U.S. Environmental Protection Agency, Region 9 – via electronic copy
John Hillenbrand, U.S. Environmental Protection Agency, Region 9 – via electronic copy
Douglas Carey, Lahontan Regional Water Quality Control Board – via electronic copy
Nathan Block, Esq., BP – via electronic copy
Adam Cohen, Esq., Davis Graham & Stubbs, LLP – via electronic copy
Sandy Riese, EnSci, Inc. – via electronic copy
Marc Lombardi, Amec Foster Wheeler – via electronic copy
Grant Ohland, Ohland HydroGeo, LLC – via electronic copy
Dave McCarthy, Copper Environmental Consulting – via electronic copy
Cory Koger, U.S. Army Corps of Engineers – via electronic copy
Greg Reller, Burleson Consulting – via electronic copy
Ken Maas, U.S. Forest Service – via electronic copy and hard copy
Michelle Hochrein, Washoe Tribe of California and Nevada – via electronic copy
Fred Kirschner, AESE, Inc. – via electronic copy on CD

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ATTACHMENT A

Milestones and Supporting Assumptions for RI/FS Reporting

ATTACHMENT A
MILESTONES AND SUPPORTING ASSUMPTIONS FOR RI/FS REPORTING
(Updated March 3, 2017)
Leviathan Mine Site
Alpine County, California

Document	Submittal Date
Interim RI Reports	
Surface Water TDSR (data through 2013)	Completed (March 14, 2016)
Groundwater TDSR (data through 2015)	Completed (January 25, 2016)
Mine Waste TDSR	Completed (April 23, 2016)
2015 Annual Summary Report	March 31, 2017
Technical Memorandum: Preliminary Evaluation of Select New 2016 Wells	April 30, 2017
Stream Sediment TDSR (data through 2016)	June 30, 2017
Floodplain Soil TDSR (data through 2016)	June 30, 2017
Reference Area Technical Memorandum (data through 2016)	June 30, 2017
Draft Site Characterization Report (data through 2016)	December 31, 2017
RI/FS Reports	
Draft RI Report (includes draft baseline risk assessments)	June 30, 2018
Draft FS Report	December 31, 2018
Final RI/FS Report (includes final baseline risk assessments)	June 30, 2019

TDSR – Technical Data Summary Report
RI – Remedial Investigation
FS – Feasibility Study

Supporting Assumptions for the Completion of the RI/FS

Proposed milestones for RI/FS reports including the Draft Site Characterization Report, Draft RI Report (inclusive of baseline risk assessments), the Draft FS Report, and the combined Final RI/FS Report are shown above. Consistent with previous schedule submittals, this schedule was developed for the purpose of project planning in consideration of the status of various completed and yet-to-be completed RI/FS activities.

Key scheduling assumptions used in the development of the RI/FS reporting milestones are summarized below. Most of these assumptions are consistent with those described with previous RI/FS schedule submittals, but in some cases they have been updated in response to U.S. EPA requests or other changes in reporting requirements.

1. No major additions to the scope of planned activities for the completion of the RI/FS will be necessary, including no addition of new study areas and/or the expansion of the known extent of identified study areas, chemicals of potential concern (COPCs), and media of interest.

2. The schedule for the Draft Site Characterization Report and the Draft RI Report (including baseline risk assessments) precludes the incorporation of any data obtained after December 2016. However, if additional sampling is performed, any new data will be presented in an appendix or supplement to the Draft Site Characterization and/or Draft RI Report, or in the Final RI/FS Report IF the data materially changes the findings of the RI/FS. Otherwise, the additional data can

be submitted in a simple 2017 or 2018 "database update," consistent with Paragraph 64 of the UAO.

3. The U.S. EPA will review and provide comments on work plans and technical reports in a timely and responsive manner (e.g., 60 days after receipt). U.S. EPA will solicit comments from other project stakeholders (e.g., USFWS, USFS, NDEP, and the Washoe Tribe) and synthesize stakeholders' input so that all relevant comments are integrated into one comment letter from U.S. EPA, which will minimize potential delays to the project schedule. The proposed submittal dates shown above are dependent on expedited review times (60 days or less) by the U.S. EPA.

4. TDSRs have been previously submitted for the mine waste, surface water, and groundwater media. Additional TDSRs will be completed for stream sediment and floodplain soil in the second quarter of 2017. Other media-specific TDSRs will be provided as appendices to the Draft Site Characterization Report at the end of 2017. In addition, a Technical Memorandum evaluating the adequacy of the wells installed at LOC-39 and LOC-40 will be prepared in Second Quarter 2017. A Technical Memorandum will also be prepared for the Reference Area data. This Technical Memorandum will be limited to maps showing sample locations, raw data tables (based on un-validated data), and tables presenting preliminary threshold reference concentrations to be calculated using the methodology described in the approved Reference Area Work Plan.

5. TSDRs and 90-day field investigation reports for other RI and FS tasks will not be submitted as interim deliverables. Consistent with the elimination of this 90-day reporting requirement, a report summarizing the results of the FFS Geotechnical Evaluation will not be submitted.

6. The Draft Baseline Human Health Risk Assessment (BHHRA) and Draft Baseline Ecological Risk Assessment (BERA) will proceed contemporaneously with the completion of the Draft Site Characterization Report and will be incorporated into the Draft RI Report scheduled for completion by June 30, 2018. This will allow for U.S. EPA to review of the Draft Site Characterization Report and to evaluate the adequacy of the datasets and EPCs prior to the submittal of the baseline risk assessments in the Draft RI Report. This schedule is contingent upon receiving U.S. EPA comments and acceptance of the Draft Site Characterization Report within 60 days from the date of submittal.

7. It is assumed that the U.S. EPA agrees with the FS approach as outlined in Atlantic Richfield's August 27, 2014 letter. Where possible, Atlantic Richfield will consider conducting certain FS activities in parallel with the RI. The level of effort to conduct the FS will be similar to that presented in the letter, including conducting supporting studies (i.e., several white paper evaluations, with limited data gap studies and treatability studies) to provide information about site specific conditions and performance data relating to the various remedial

technologies under evaluation. The supporting studies are not intended to provide all of the data needed for detailed design of the remedy.

8. The FS will be conducted and reported consistent with U.S. EPA guidance and requirements and include identifying remedial action objectives, identifying and screening remedial technologies, developing remedial alternatives, evaluating them using criteria identified in the National Contingency Plan (NCP), comparing remedial alternatives against each other, recommending a remedial alternative for implementation, and documenting the evaluation in a FS report.

9. Depending on the scope of the supporting studies, focused work plans will be prepared as necessary for field data collection tasks necessary for the FS, which the U.S. EPA will review in a timely manner.

ATTACHMENT B

Preliminary Table of Contents for Site Characterization Report RI Report, and FS Report

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Preliminary Table of Contents for Site Characterization Report

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