UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

May 24, 2017

Mr. Anthony R. Brown
Environmental Manager
Atlantic Richfield Company
4 Centerpointe Drive, LPR 4-435
La Palma, California 90623-1066

Re: **Approval of Atlantic Richfield Company's (ARC) Crusher Road Slope Instability Monitoring Plan, Leviathan Mine Alpine County, California, dated May 22, 2017**

Dear Mr. Brown:

EPA has completed its review of the May 22, 2017 ARC memorandum describing a Crusher Road Slope Instability Monitoring Plan, Leviathan Mine Alpine County, California, dated May 22, 2017 (memo). The memo was addressed to Anthony Brown of ARC, and prepared by AMEC.

The described monitoring activities are intended to provide for assessment of site conditions posing potential hazards to site personnel, equipment and property at the Crusher Road Slope Instability. Work to be conducted at the site in 2017 is being conducted in accordance with the *Administrative Settlement Agreement and Order on Consent for Removal Action* (AOC), CERCLA Docket No. 2008-29/2009(a), effective January 21, 2009 (and modified as of July 22, 2013).

Background:

On April 27, 2017, on-site personnel observed evidence of ground surface movement on the slope east of and above Pond 4. On April 28, 2017, ARC visited the site to perform a preliminary condition assessment.

On May 1, 2017 the Lahontan Regional Water Quality Control Board (RWQCB) staff informed EPA that a geotechnical engineer was on site and preparing a report. RWQCB provided an update in the weekly field observations summary reports dated May 2, 2017 and May 10, 2017.

On May 3, 2017, ARC provided a Hazardous Conditions Response Plan to the Crusher Road Slope Instability. The Response Plan identifies measures to moderate the potential risks to site

personnel while the described hazardous conditions persist. ARC noted that they were preparing a slope movement monitoring plan.

On May 9, 2017, Due to the potentially disruptive nature of a significant slope failure at the subject area that could result in sudden release from Pond 4 and/or damage Pond 4, and restrictions posed to routine site operations; EPA directed ARC and the Waterboard to address the slump on the slope between the crusher road below Pond 3 and above Pond.

EPA directed the Responsible Parties to coordinate on technical reports with geotechnical engineers on these matters and provide a report by the end of the week to address the following questions:

> What are the impacts if any to HDS operations (LAS, AWRS, ICT)?
> What are the impacts if any to Pond water treatment operations (RCTS, PWTF)?
> Are there short term mitigations in place to prevent a release?
> What are next steps and long term plan for stabilizing the slope?

On May 12, 2017 the Waterboard provided EPA with an update answering EPA's questions. Water Board staff's intent is to initiate mitigation measures for the soil slump east of Pond 4, as recommended by AECOM in an attached May 9, 2017 technical memorandum. The mitigation measures consist of dressing the slide and slope to fill in depressions and cracks to prevent further intrusion of water into the slide and tension cracks, and placing a rock buttress at the base of the slope for the full length of Pond 4.

On May 12, 2017, ARC provided an update on the instability of the Crusher Road slope; noting that it continues to exhibit significant movement; however, it is not materially affecting LAS HDS Plant operations. ARC commenced capture of the CUD and DS and operation of the HDS Treatment System on May 11, 2017. Construction of the Upper Ponds Conveyance System to support interim combined treatment (ICT) and RI activities in the area have experienced delays.

On May 22, 2017 ARC provided a Crusher Road Slope Instability Monitoring Plan

EPA has completed its review and approves ARC to begin the monitoring activities described in ARC's May 22, 2017 memo. In addition:

- **Coordinate with the Waterboard to address EPAs May 9th Email:** ARC shall continue to assess the impacts if any to water treatment operations (both ARC and Waterboard), identify short term mitigations to prevent a release; and make short and long term plans for stabilizing the slope. Please let EPA know if we can be of assistance in coordinating that response.

- **Sample Nearby Wells.** During yesterday's May 23, 2017 in-person meeting ARC clarified that monitoring will include measurement and assessment of groundwater elevations in monitoring wells near the slope instability area. ARC and the Waterboard discussed nearby wells that were recently sealed and noted that groundwater at the sealed wells appears to be flowing from around the exterior of the well casings, seeping to the

surface and running off to nearby Leviathan Creek. ARC and Waterboard decided it was best to unseal the wells, and discussed the possibility that sealed wells could result in increased pore pressure and additional slope instability. Please ensure your monitoring plan includes gathering information to assess the possible relationships between groundwater elevations at the wells and slope instability. Please include samples of water flowing from each well to help to fully characterize and monitor this area.

- **Expand Scope**. Review of aerial imagery and inspection of the slopes uphill from the Crusher Road slope instability area, shows hummocky topography, and seeps that may indicated that the current slope instability is part of a larger landslide. EPA requests ARC consider the monitoring results within the context of the entire slope and assess if there is potential for larger scale movements at this area beyond the current slope instability.

Please provide updates regarding the Crusher Road Slope Instability as part of ARC's monthly summary report. EPA also requests timely notification of any significant changes to the site.

If you have any questions, please feel free to contact me at (415) 972-3003 or deschambault.lynda@epa.gov

Sincerely,

Lynda Deschambault
Remedial Project Manager

Cc by electronic Email:

Neil Mortimer, Washoe Tribe of Nevada and California
Michelle Hochrein, Washoe Tribe of Nevada and California
Douglas Carey, California Regional Water Quality Control Board, Lahontan Region
David Friedman, Nevada Department of Environmental Protection
Kenneth Maas, United States Forest Service
Tom Maurer, United States Fish and Wildlife Service
Toby McBride, United States Fish and Wildlife Service
Steve Hampton, California Department of Fish and Wildlife
Marc Lombardi, AMEC