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Lahontan Regional Water Quality Control Board

March 1, 2017

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75 Hawthorne Street
San Francisco, CA 94105

COMMENTS ON ATLANTIC RICHFIELD COMPANY'S GROUNDWATER TECHNICAL DATA SUMMARY REPORT VERSION NO. 2, LEVIATHAN MINE SITE, ALPINE COUNTY, CALIFORNIA

Thank you for the opportunity to comment on Atlantic Richfield Company's January 25, 2017 *Groundwater Technical Data Summary Report Version No. 2,* for the Leviathan Mine Site. Atlantic Richfield Company originally submitted a draft Groundwater Technical Data Summary Report on March 21, 2016. Water Board staff provided comments on that draft on May 9, 2016. Atlantic Richfield responded to USEPA and Water Board comments on November 4, 2016. The California Regional Water Quality Control Board, Lahontan Region (Water Board) staff has the following comments on Atlantic Richfield's most recent submittal:

1. General Comment – Water Board staff recommends that Atlantic Richfield implement some method of tracking changes that are implemented in response to comments as well as tracking new information that is added between document versions. It is inefficient for reviewers to search through a document that has undergone extensive revision to determine where, how, and if Atlantic Richfield made changes in response to comments.

2. Page ES-4, fifth bullet (and elsewhere) – It is speculation to assume that the water level decline was limited to "directly beneath the floor of the current Pit…."

3. Page ES-7, first bullet – Please clarify what data are available that excludes the possibility of mine waste having been used as road base north of the California-Nevada border or elsewhere.

4. ES-8, first bullet; Page 56, first full paragraph, last sentence, and Atlantic Richfield's response to Water Board's previous comment – Complete capture and measurement of the Delta Seep has not occurred to date. Contrary to Atlantic Richfield's response, visual observation during Atlantic Richfield's work season shows that a portion of the Delta Seep is not captured. The uncaptured portion of the Delta Seep can easily be seen flowing under the Delta Seep collection tank and into Leviathan Creek.

5. ES-8, last bullet – The wells installed in 2016 should be referred to as **potential** reference wells.

6. Page 12, last bullet – It appears as though there may be a typographical error in this bullet. Please clarify.

7. Page 15, Section 3.4 and comment number 6 from the Water Board's comments dated May 9, 2016 – Atlantic Richfield Company continues to omit information contained in the August 20, 1982 Water Board memorandum in which Water Board personnel interviewed Mr. James R. Wilson, the Anaconda Copper Mining Company geologist whom mapped both surface and underground geology prior to open pit mining and indicated that the upper tunnels were dry at the commencement of open pit mining. The information contained in the 1982 memorandum seems to indicate a change in groundwater elevation between 1933 and 1951 when it is compared to the report titled Property of Leviathan Sulphur Company (Moore, 1933).

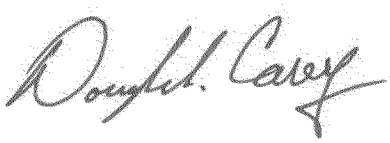
8. Page 24, first paragraph, sixth and seventh sentence – It is worth adding that the Adit is a remnant from past underground mining operations and that the PUD was constructed to drain and allow sufficient compaction for construction of the stormwater conveyance system in the Pit.

9. Page 48, last bullet – the text discusses the deflection of potentiometric surface lines in the area of USGS piezometers PZ-17A, PZ-17B, and PZ17C, on Figure 6-3. Water Board staff previously commented that the potentiometric surface lines appeared to be incorrectly drawn in the vicinity of PZ-17C (previously Figure 4-3). On Figure 6.3 the potentiometric surface lines have been redrawn, however it appears that the lines may still be drawn incorrectly as the 7060 ft-msl potentiometric contour appears to pass directly through PZ-17C which has a groundwater elevation of 7055.89 ft-msl. Please clarify.

10. Page 97, second bullet – The ponds and drains are not mining-related features. These features were installed by the Water Board as part of the Pollution Abatement Project to reduce AMD impacts.

11. Figure 6-11 and 6-16 – Water Board staff believes it would be useful if the landslide head scarp were shown on the cross section as indicated in our May 9, 2016 comments. The head scarp was not added as indicated in Atlantic Richfield's Response to Comments dated November 4, 2016.

If you have any questions regarding these comments, please contact Taylor Zentner, Engineering Geologist, at tzentner@waterboards.ca.gov or (530) 542-5469, or me at douglas.carey@waterboards.ca.gov or (530) 542-5468.



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