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Certified Mail - Return Receipt Requested

January 6, 2023

Daryl Hauck
Manager
U.S. Department of Energy
NNSA/Sandia Field Office
P.O. Box 5400
Albuquerque, NM 87185-5400

Paul Shoemaker
Senior Manager
Sandia National Laboratories
P.O. Box 5800, MS-0792
Albuquerque, NM 87185-0792

**RE: APPROVAL
FINAL REMEDY DECISION AND RESPONSE TO PUBLIC COMMENT ON CLASS 3 PERMIT
MODIFICATION FOR CORRECTIVE MEASURES FOR TIJERAS ARROYO GROUNDWATER
AREA OF CONCERN
SANDIA NATIONAL LABORATORIES
EPA ID# NM5890110518
HWB-SNL-16-020**

Dear Messrs. Hauck and Shoemaker:

The New Mexico Environment Department (NMED) received the *Revised Tijeras Arroyo Groundwater Current Conceptual Model and Corrective Measures Evaluation Report, February 2018* (Report) with cover letter dated April 24, 2018, submitted by the U.S. Department of Energy (DOE) on behalf of itself and National Technology & Engineering Solutions of Sandia, LLC (collectively, the Permittees) on June 12, 2018. The Report evaluated potential remedial alternatives for the remediation of groundwater beneath Tijeras Arroyo and recommended a preferred remedy. NMED has reviewed the Report and hereby issues this Approval.

On August 5, 2022, NMED issued a public notice announcing a 60-day public comment period and also provided a fact sheet and statement of basis for the selected remedy to the public and stakeholders for review. The public comment period ended on October 4, 2022. One comment was received from the Albuquerque Bernalillo County Water Utility Authority during the public comment period. The comment and NMED's response are included in this letter.

Under the authority of the New Mexico Hazardous Waste Act, NMSA 1978 §§ 74-4-1 to 74-4-17, the New Mexico Hazardous Waste Regulations, 20.4.1 NMAC, and under the terms of the 2004 Compliance Order on Consent (Consent Order), NMED hereby selects Alternative 5 – Monitored Natural Attenuation as the final remedy. In accordance with 20.4.1.900 and 901.A(9) NMAC,

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Hazardous Waste Bureau - 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505-6313
Telephone (505) 476-6000 - www.env.nm.gov

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NMED's responses to public comment are available for public viewing at the NMED web page <https://www.env.nm.gov/hazardous-waste/sandia-national-laboratories> under Tijeras Arroyo Groundwater (TAG).

Pursuant to Section VII.D.2 of the Consent Order, the Permittees must submit a Corrective Measures Implementation (CMI) Plan to NMED for review and approval that must meet the general requirements for closure of the TAG AOC. The CMI Plan must include the specific design of the selected remedy including applicable construction specifications, operation and maintenance plans, performance monitoring for the selected remedy, and an implementation schedule. The CMI Plan must be submitted to NMED no later than **June 30, 2023**.

If you have any questions regarding this letter, please contact Dave Cobrain at (505) 690-5802.

Sincerely,

Rick Shean

Digitally signed by
Rick Shean
Date: 2023.01.06
10:08:22 -07'00'

Rick Shean
Acting Director
Resource Protection Division

Attachment

cc: D. Cobrain, NMED HWB
B. Wear, NMED HWB
N. Davidson, NMED HWB
L. King, EPA Region 6 (6LCRRC)
C. Valencia, DOE/NNSA/SFO, MS-0184
A. Bodour, DOE/NNSA/SFO, MS-0184
M. Nagy, SNL/NM, MS-1103
D. Jesus, SNL/NM, MS-1512

File: SNL 2022 and Reading

NMED Response to Public Comments on the Sandia National Laboratories Tijeras Arroyo Groundwater (TAG) Permit Modification for Corrective Measures December 13, 2022

Commenter: Albuquerque Bernalillo County Water Utility Authority

Comment: The Water Authority has concerns with the selection of MNA as a remedy for groundwater contamination at the TAG AOC. Per the FS/SOB, SNL, the Respondents, acknowledge that MNA will not reduce “toxicity, mobility, or volume of nitrate” in groundwater at the site. As stated in the FS/SOB, concentrations of nitrate will not reduce below the maximum contaminant level (MCL) for approximately 38 years. During this time, nitrate could potentially migrate into the regional aquifer, increasing the volume of impacted groundwater. The MNA remedy for nitrate in the perched aquifer at this site is almost entirely dependent on declining groundwater levels and SNL anticipates that water levels in the perched aquifer will eventually decline to the point of being dewatered. There are existing recharge sources for this perched aquifer including subsurface flow within the ancestral channel of the Tijeras Arroyo, surface water recharge from Tijeras Arroyo and Arroyo del Coyote, irrigation from the Tijeras Arroyo Golf Course, and infiltration from the Tijeras Arroyo Golf Course main pond. Therefore, it is possible that the shallow aquifer will never be dewatered and that the TAG AOC will continue to be a threat to groundwater quality.

Contamination from this site is a continuing threat to groundwater quality and the selected MNA remedy does not treat or reduce contaminant concentrations. A feasible groundwater treatment alternative should be considered for the corrective action remedy at this site. Water quality issues directly impact water quantity and the Water Authority is invested in supporting timely remediation of groundwater contamination to ensure the availability of groundwater for our community. The Water Authority maintains that no amount of contamination in groundwater is acceptable and the aquifer should be restored to pre-impacted conditions.

NMED Response: The TAG AOC is a perched aquifer that is a thin, dissipating water bearing unit that formed as a result of historical anthropogenic discharges of wastewater and septic system water discharges. All anthropogenic sources of water, with the exception of the ABCWUA interceptor line located southeast of the AOC, ceased three decades ago. The perched aquifer is not used for any type of water supply in the TAG AOC, nor is any production from this unit feasible.

As shown in the TAG Conceptual Site Model in Figure 1 of the SOB, the perched aquifer slopes to the southeast, thus groundwater flow is to the southeast. The merging zone starts near the Tijeras arroyo. The ancestral Rio Grande deposits are beneath the confining layer that forms the base of the perched aquifer and are not a source of water to the perched aquifer.

The Tijeras Arroyo is located in the southeast portion of the TAG AOC. The perched aquifer is a decreasing and relatively minor source of water to the regional aquifer. Recharge from the

perched aquifer to the regional aquifer is located in the merging zone to the regional aquifer. Since the perched aquifer currently receives only infiltration of rainwater as ongoing recharge because the anthropogenic sources were eliminated, nitrate concentrations in the perched aquifer will not increase and will not contribute any additional anthropogenic nitrate beyond the diminishing amount present in the declining perched aquifer. The Tijeras Arroyo Golf Course (with main pond) and Arroyo del Coyote are approximately 0.4 miles or greater downgradient from the southeast border of the TAG AOC, in the merging zone, and unlikely to be a continuing source of nitrate as they currently receive a mix of potable and KAFB BFFS remediation water and rainwater, respectively.

NMED agrees it is not ideal for nitrate contamination of this groundwater unit to remain until the perched aquifer ceases to exist due to lack of recharge. Two groundwater treatment remedies were considered, but ultimately not selected because the difference in the estimated timeframes for remedy completion is not sufficient to justify the selection of an active remedy, given the lack of potential for use and declining water levels in the perched aquifer.