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Department of Energy
National Nuclear Security Administration
Sandia Field Office
P.O. Box 5400
Albuquerque, NM 87185



JUL 20 2022

Mr. Rick Shean
Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505

Subject: Formal Request to Decommission Injection Well TAV-INJ1 and Revert Groundwater Well TAV-MW6 to the Technical Area-V Groundwater Area of Concern Monitoring Network at Sandia National Laboratories, New Mexico, Environmental Protection Agency Identification Number NM5890110518

Dear Mr. Shean:

The Department of Energy, National Nuclear Security Administration, Sandia Field Office (DOE/NNSA SFO), and National Technology & Engineering Solutions of Sandia, LLC, the management and operating contractor for Sandia National Laboratories, New Mexico (SNL/NM), hereby formally request to decommission (plug and abandon) injection well TAV-INJ1 and revert groundwater well TAV-MW6 to the Technical Area-V Groundwater (TAVG) Area of Concern (AOC) monitoring network at SNL/NM. This request was initially discussed among personnel from the DOE/NNSA SFO, SNL/NM, and the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) in a virtual meeting held on June 30, 2022.

DOE/NNSA SFO and SNL/NM personnel have completed one-year of quarterly monitoring at wells TAV-INJ1 and TAV-MW6 in accordance with NMED HWB letter dated August 23, 2021 and its NMED HWB approval letter dated October 12, 2021 (Enclosure 1). The monitoring results for this one-year of quarterly monitoring are incorporated within the Environmental Restoration Consolidated Quarterly Reports.

A work plan for decommissioning injection well TAV-INJ1 will be submitted to the NMED HWB upon approval of this formal request. Groundwater well TAV-MW6 will resume its sampling frequency and analytical suite as part of the TAVG AOC monitoring network. Monitoring results of groundwater well TAV-MW6 will be provided in the Annual Groundwater Monitoring Reports.

If you should have any questions, please contact me at (505) 845-6036 or Dr. Adria Bodour of our staff at (505) 845-6930, or adria.bodour@nnsa.doe.gov.

Sincerely,

Daryl J. Hauck, Ph.D.
Manager

Enclosure:

1. Letter from DOE/NNSA SFO and SNL/NM to NMED HWB dated August 23, 2021; Subject: Transition of Five Groundwater Monitoring Wells as Condition to Terminate Discharge Permit (DP)-1845 under New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) to NMED Hazardous Waste Bureau (HWB).

Letter from NMED HWB to DOE/NNSA SFO and SNL/NM dated October 12, 2021; RE: Approval with Modification, Transition of Five Groundwater Monitoring Wells as Condition to Terminate Discharge Permit (DP)-1845 under the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) to NMED Hazardous Waste Bureau (HWB), Sandia National Laboratories, New Mexico, EPA ID#NM5890110518, HWB-SNL-21-MISC.

cc w/enclosure:

Beau Masse, Chief

NMED DOE Oversight Bureau

121 Tijeras Avenue, NE, Suite 1000, Albuquerque, New Mexico 87102

Naomi Davidson

NMED/HWB

121 Tijeras Avenue, NE, Suite 1000, Albuquerque, New Mexico 87102

Laurie King

Environmental Protection Agency Region 6

1201 Elm Street, Suite 500, Dallas, Texas 75270-2102

Zimmerman Library

University of New Mexico

1 University of New Mexico, MSC05 3020, Albuquerque, New Mexico 87101-0001

cc w/o enclosure:

David Cobrain, NMED/HWB

Amy Blumberg, SNL/NM

Paul Shoemaker, SNL/NM

Michael Nagy, SNL/NM

Michael Barthel, SNL/NM

Jun Li, SNL/NM

M. Anna Gallegos, SNL/NM

Elizabeth Lisann, DOE/EM-31

Robert Siefert, DOE/EM-31

Wilhelm Wilborn, DOE/EM-EM

Richard Dasher, NNSA/NA-533

Jessica Arcidiacono, NNSA/NA-533

Dori Richards, SFO/Legal

Adria Bodour, SFO/ENG

Conrad Valencia, SFO/ENG

NNSA-2022-005312

Enclosure 1



**Department of Energy
National Nuclear Security Administration
Sandia Field Office
P.O. Box 5400
Albuquerque, NM 87185**



AUG 23 2021

Mr. Ricardo Maestas
Acting Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505

Subject: Transition of Five Groundwater Monitoring Wells as Condition to Terminate Discharge Permit (DP)-1845 under New Mexico Environment Department (NMED) Ground Water Quality Bureau (GQWB) to NMED Hazardous Waste Bureau (HWB)

Dear Mr. Maestas:

On June 29, 2021, the Department of Energy, National Nuclear Security Administration (DOE/NNSA), Sandia Field Office (SFO) convened a virtual meeting with personnel from the Sandia National Laboratories, New Mexico (SNL/NM) and the NMED GQWB to discuss a proposal for terminating DP-1845. NMED GWQB agreed with the DOE/NNSA SFO proposal to submit a termination request for DP-1845 with the condition that regulatory oversight of the five groundwater wells monitored under DP-1845 will be transitioned to NMED HWB. DOE/NNSA SFO and SNL/NM personnel hereby request that NMED HWB provide regulatory oversight of the five groundwater monitoring wells, for reasons contained herein.

NMED GWQB issued DP-1845 to DOE/NNSA SFO for discharges via up to three Class V underground injection control wells in a phased In-Situ Bioremediation (ISB) Treatability Study at the SNL/NM Technical Area-V (TA-V) Groundwater (TAVG) Area of Concern (AOC). The term of DP-1845 is from May 30, 2017, to May 29, 2022.

SNL/NM personnel have completed Phase I of the Treatability Study using injection well TAV-INJ1. Based on the Phase I Treatability Study results, DOE/NNSA SFO, SNL/NM, and NMED HWB personnel have jointly agreed that continuing to Phase II of the Treatability Study is not warranted. Consequently, the ISB Treatability Study at TAVG AOC concluded in May 2021.

The five groundwater wells monitored under DP-1845 are: TAV-INJ1, TAV-MW6, TAV-MW7, TAV-MW10, and LWDS-MW1. Injection well TAV-INJ1 was installed to deliver bioremediation treatment solution to the aquifer during the Phase I Treatability Study. The other four wells were preexisting wells in the TAVG monitoring network. Figure I shows the locations of the five wells monitored under DP-1845 and the other TAVG AOC monitoring wells. Injection well TAV-INJ1 and monitoring wells TAV-MW6 and TAV-MW7 represent the Phase I treatment zone. The well screens of both TAV-INJ1 and TAV-MW6 are across the water table, whereas the midpoint of TAV-MW7 well screen is 90 feet below the water table. Wells TAV-MW10 and LWDS-MW1 were the nearest monitoring points outside the Phase I treatment zone and were the planned locations for the proposed Phase II treatment zones.

In the Phase I Treatability Study, discharges of the treatment solution were completed in April 2019 and the five wells were monitored for two years from May 2019 to May 2021. DP-1845 requires only quarterly sampling of these wells. However, per the monitoring requirements of the Revised Treatability Study Work Plan approved by NMED HWB, from May 2019 to May 2021, wells TAV-INJ1 and TAV-MW6 were sampled monthly for three months followed by quarterly sampling, totaling ten sampling events per well; and wells TAV-MW7, TAV-MW10, and LWDS-MW1 were sampled quarterly, totaling nine sampling events per well. Groundwater monitoring results at these five wells have been provided in the DP-1845 Quarterly Reports to NMED GWQB as well as in Section III of the Environmental Restoration Consolidated Quarterly Reports to NMED HWB.

As the Phase I Treatability Study has concluded and the decision has been made not to conduct the Phase II Treatability Study, DOE/NNSA SFO and SNL/NM personnel request that NMED HWB provide regulatory oversight of the five wells monitored under DP-1845 with the following sampling plan.

- Groundwater monitoring results at wells TAV-MW7, TAV-MW10, and LWDS-MW1 have been consistent with historical values, indicating no impact on groundwater chemistry at these wells during the Phase I Treatability Study. Therefore, these three wells can be reverted to the TAVG monitoring network. They will be monitored for the same parameters as the other TAVG wells and on the same schedule as before the Treatability Study. Specifically, well TA-MW7 will resume the semiannual monitoring schedule and wells TAV-MW10 and LWDS-MW1 will resume the quarterly monitoring schedule. Results of all TAVG wells will be provided in the Annual Groundwater Monitoring Reports.
- DOE/NNSA SFO and SNL/NM personnel propose continued quarterly monitoring of the Phase I treatment wells TAV-INJ1 and TAV-MW6 for one year ending June 2022. The parameters proposed for this one-year monitoring will be the same as those for the Phase I Treatability Study, except for discontinuing monitoring for *Dehalococcoides*. The parameter list includes volatile organic compounds, ammonia, total organic carbon, anions (bromide, chloride, and sulfate), nitrate plus nitrite, alkalinity, dissolved metals (arsenic, iron, and manganese), methane, ethane, and ethene. The discontinuation of *Dehalococcoides* analysis is based on non-detection since October 2019 in well TAV-INJ1 and non-detection in well TAV-MW6 for the entire Phase I Treatability Study. The new monitoring data will be incorporated into the forthcoming Corrective Measures Evaluation Report and further support the NMED HWB selection of a final remedy for the TAVG AOC Corrective Action. Results of wells TAV-INJ1 and TAV-MW6 will continue to be provided in Section III of the Environmental Restoration Consolidated Quarterly Reports.

In summary, DOE/NNSA SFO and SNL/NM personnel request that NMED HWB provide regulatory oversight of the five wells monitored under DP-1845 (TAV-INJ1, TAV-MW6, TAV-MW7, TAV-MW10, and LWDS-MW1) with the proposed sampling plan, as described above. DOE/NNSA SFO will follow the NMED GWQB requirements to terminate DP-1845 and will continue to update NMED HWB on the progress of the termination process.

AUG 23 2021

Mr. Ricardo Maestas

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If you have any questions, please contact me at (505) 845-6036, or have your staff contact Dr. Adria Bodour of our staff at (505) 845-6930 or adria.bodour@nnsa.doe.gov.

Sincerely,



Daryl J. Hauck, Ph.D.
Manager

cc w/enclosure:

Christopher (Chris) Catechis

NMED DOE OB

121 Tijeras Avenue, NE, Suite 1000, Albuquerque, New Mexico 87102

Naomi Davidson

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David Cobrain, NMED HWB

Amy Blumberg, SNL/NM

Paul Shoemaker, SNL/NM

Christi Leigh, SNL/NM

Michael (Mike) Barthel, SNL/NM

Jun Li, SNL/NM

M. Anna Gallegos, SNL/NM

Melanie Pearson-Hurley, EM-31

Wilhelm (Bill) Wilborn, EMCBC

Douglas Tonkay, EM-31

Richard Dasher, NA-533

Jessica Arcidiacono, NA-533

Cynthia Wimberly, SFO/Legal

Dori Richards, SFO/Legal

William Wechsler, SFO/ENG

Adria Bodour, SFO/ENG

Sarah (Saj) Zappitello, SFO/ENG

NNSA-2021-003763

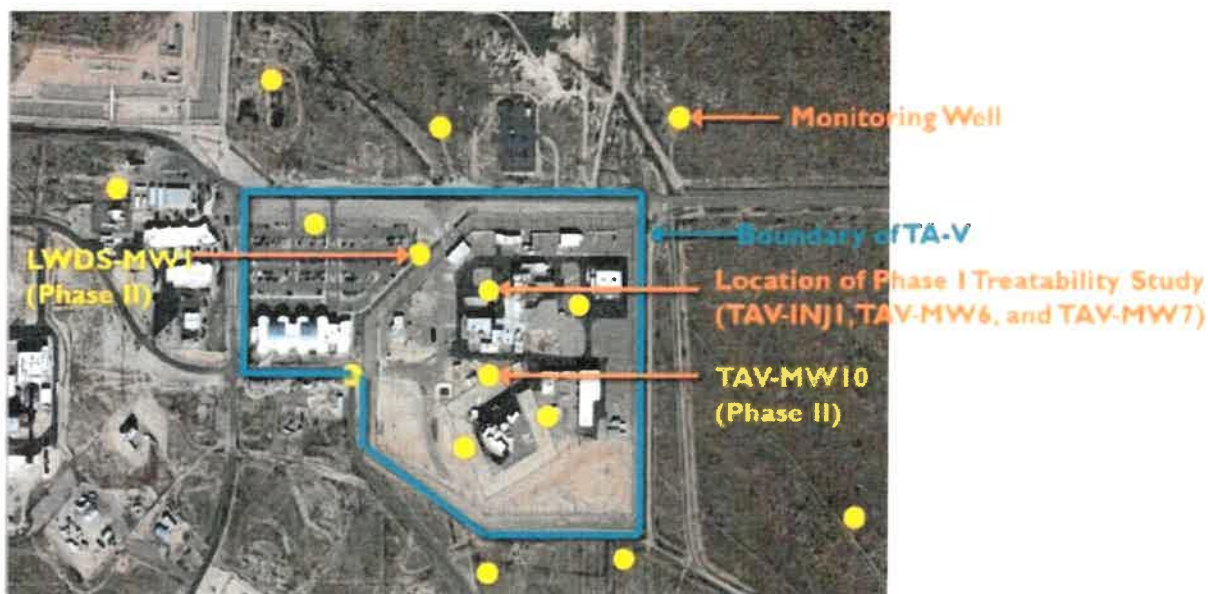


Figure 1. Locations of the Five Wells Monitored under DP-1845. Yellow dots represent the approximately locations of the wells in the TAVG monitoring network.



MICHELLE LUJAN GRISHAM
GOVERNOR

JAMES C. KENNEY
CABINET SECRETARY

Certified Mail - Return Receipt Requested

October 12, 2021

Daryl Hauck
Manager
U.S. Department of Energy
NNSA/Sandia Field Office
P.O. Box 5400, MS 0184
Albuquerque, NM 87185-5400

Paul Shoemaker
Director
Sandia National Laboratories/NM
P.O. Box 5800, MS 1512
Albuquerque, NM 87185

**RE: APPROVAL WITH MODIFICATION
TRANSITION OF FIVE GROUNDWATER MONITORING WELLS AS CONDITION TO
TERMINATE DISCHARGE PERMIT (DP)-1845 UNDER THE NEW MEXICO ENVIRONMENT
DEPARTMENT (NMED) GROUND WATER QUALITY BUREAU (GWQB) TO NMED
HAZARDOUS WASTE BUREAU (HWB)
SANDIA NATIONAL LABORATORIES, NEW MEXICO
EPA ID#NM5890110518
HWB-SNL-21-MISC**

Dear Messrs. Hauck and Shoemaker,

The New Mexico Environment Department (NMED) received the August 23, 2021 dated letter titled *Transition of Five Groundwater Monitoring Wells as Condition to Terminate Discharge Permit (DP)-1845 under the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) to NMED Hazardous Waste Bureau (HWB)*, submitted by the U.S. Department of Energy on behalf of itself and National Technology & Engineering Solutions of Sandia, LLC (collectively, the Permittees), on August 25, 2021.

NMED has reviewed the letter and hereby issues this Approval with the following modification:

1. Addition Of Annual Sampling Parameters

NMED Comment: The Permittees must continue to include the annual sampling parameters of alkalinity, anions (bromide, chloride, fluoride, and sulfate), gamma spectroscopy, gross alpha/beta activity, tritium, and TAL metals plus total uranium for the five groundwater monitoring wells.

SCIENCE | INNOVATION | COLLABORATION | COMPLIANCE

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

Messrs. Hauck and Shoemaker

October 12, 2021

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If you have any questions regarding this letter, please contact Naomi Davidson at (505) 222-9504.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ricardo Maestas".

Ricardo Maestas, Acting Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
B. Wear, NMED HWB
N. Davidson, NMED HWB
L. King, EPA Region 6 (6LCRRC)
B. Wechsler, DOE/NNSA/SFO, MS-0184
A. Bodour, DOE/NNSA/SFO, MS-0184
C. Leigh, SNL/NM, MS-0737

File: SNL 2021 and Reading