



July 13, 2021

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Joseph Murdock, Program Manager
Environment, Safety and Health
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Re: Approval, Amendment 3 to Work Plan #5, Discharge Permit 1793, Inclusion of an Additional Water Source

Dear M. Lee Bishop and Joseph Murdock,

On June 25, 2021, the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) received the U.S. Department of Energy (DOE) and Los Alamos National Security, LLC (LANS), collectively the "Permittees," *Request for Amendment 3 to Discharge Permit 1793, Work Plan #5, for Additional Water Source* (Request). The Permittees' Request is to add groundwater from extended pumping activities at regional groundwater monitoring wells R-28 and R-42 to the existing list of authorized source waters to be treated and land applied under Work Plan #5.

On July 27, 2015, NMED issued Discharge Permit 1793 (DP-1793) to the Permittees. On March 16, 2017, the Permittees submitted the *Multiple Activities Work Plan for the Treatment and Land Application of Groundwater from Mortandad and Sandia Canyons, DP-1793 Work Plan #5* for the continued land application of treated groundwater at Technical Area 05. NMED approved Work Plan #5 with conditions on June 15, 2017.

R-28 and R-42 are two regional groundwater monitoring wells where the Permittees performed a pilot-scale study to determine if the addition of amendments, molasses and sodium dithionite respectively, would be a viable option for remediation of the chromium contamination in the aquifer below Mortandad Canyon. The amendments were added to the two wells under the *July 2017 Pilot-Scale Amendments Testing Work Plan for Chromium in Groundwater Beneath Mortandad Canyon*, approved by NMED on July 31, 2017. As a result of the addition of the amendments, current analytical results at R-42 show that manganese to be above the groundwater standard (0.2 mg/L) per 20.6.2.3103 NMAC. Analytical results at R-28 show that iron and manganese are both above the groundwater standards (1.0 mg/L and 0.2 mg/L, respectively).

Per the Request, the Permittees will treat the water produced from the extended pumping activities near wells R-28 and R-42 using ion exchange vessel/resin that will treat iron and manganese to below 90% of the groundwater standard. After treatment near the well heads the water will be transferred to the existing treatment system used for chromium removal under Work Plan #5, then the treated water will be transferred to the synthetically lined lagoons for storage until ultimate disposition through land application. Prior to land

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application, operational grab samples will be collected twice a week when treated groundwater is being land applied per Work Plan #5.

Upon completion of the land application of the water produced from the extended pumping activities at R-28 and R-42, the Permittees will sample and analyze the soils for iron, manganese, and chromium at the areas where land application occurred. Soil sampling results from the sampling conducted in January 2020 and reported in the *Report for Characterization of Soils in the Land Application Zones Used at the Chromium and RDX Project Areas Under Discharge Permit 1793* will be used as baseline conditions for comparison. There has been no land application in the subject areas since the soil sampling event occurred in January 2020.

Proposed Work Plan #5 Amendment 3 does not suggest a change of the location of the discharge and does not suggest a significant change in the quality of the discharge authorized by the Work Plan. The total volume of water produced from R-28 and R-42 will not exceed 500,000 gallons and will not exceed the DP-1793 authorized maximum daily discharge volume of 350,000 gallons.

The Permittees shall ensure that groundwater discharges associated with the Work Plan #5 are performed in accordance with the amended Work Plan and DP-1793. NMED hereby approves the requested Work Plan amendment to add groundwater from wells R-28 and R-42 to the existing list of authorized source waters.

Approval of this Work Plan amendment does not relieve the Permittees of the responsibility to comply with any other applicable federal, state, and/or local laws and regulations. This approval does not relieve the Permittees of liability should operations associated with this Work Plan result in actual pollution of ground or surface waters.

Thank you for your cooperation.

Sincerely,

Steve Pullen Digitally signed by Steve Pullen
Date: 2021.07.13 07:11:49 -06'00'

Steve Pullen, Manager
Ground Water Quality Bureau

SP:ar

cc: Michelle Hunter, NMED/GWQB
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