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Los Alamos
NATIONAL LABORATORY
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Environmental Protection & Compliance Division
Los Alamos National Laboratory
PO Box 1663, K491
Los Alamos, New Mexico 87545
(505) 667-2211

Environmental Management
Los Alamos Field Office
3747 West Jemez Road, A316
Los Alamos, New Mexico 87544
(505) 665-5820/Fax (505) 665-5903

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Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Subject: **Path Forward in Response to NMED's September 1, 2017 Notification to Temporarily Limit Injection into CrIN-1 and CrIN-6, Discharge Permit DP-1835**

Dear Ms. Hunter:

In July 2017, injection well CrIN-6 was installed under Discharge Permit (DP)-1835 and the Chromium Plume Control Interim Measure, approved by the New Mexico Environment Department (NMED) with modification October 15, 2015 and Drilling Work Plan for Groundwater Injection Well CrIN-6 approved by NMED January 4, 2017. Groundwater samples collected from CrIN-6 indicate chromium concentrations around 270 parts per billion. Following receipt of the CrIN-6 chromium data, a technical meeting was held on August 21, 2017 with your staff and staff from the NMED Hazardous Waste Bureau during which a path forward for evaluating CrIN-6 was discussed. Department of Energy and Los Alamos National Security (DOE/LANS) staff committed in that meeting that no injection would occur in CrIN-6 until additional information had been collected, evaluated, and discussed with NMED.

On September 1, 2017, DOE/LANS received a letter from the NMED, *LANL, DP-1835, Notification to Temporarily Limit Injection into CrIN-1 and CrIN-6* (Enclosure 1). Subsequently, on September 13, 2017, DOE/LANS staff met with NMED staff to discuss content of the above-referenced letter and propose a path forward. As expressed in this meeting, as well as the August 21st meeting, DOE/LANS fully understand and agree that prior to full-scale injection of treated water into CrIN-6, the Laboratory will conduct a thorough technical evaluation and present the findings to NMED for review. The evaluation will help address whether the standards and requirements of DP-1835 and the objectives of the Interim Measure

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for plume control will be met and ensure that groundwater will be protected. A similar evaluation was conducted by the Laboratory and approved by NMED for CrIN-4 and CrIN-5 prior to their operation.

On September 25, 2017, the NMED GWB approved DOE/LANS' September 22, 2017 startup notification under DP-1835 for 72-hr functional testing in CrIN-6. The notification and approval allow limited injection of no greater than 230,000 gal into CrIN-6 as part of functional testing that will also include injection into CrIN-1, 2, 3, 4, and 5. In addition to the functional testing, DOE/LANS intend to conduct an aquifer test involving continuous extraction and sampling at CrIN-6. This aquifer test at CrIN-6 will occur for 7-10 days. Treated water from the aquifer test will be dispositioned in accordance with Work Plan #5 under DP-1793. The goal is to conduct both the functional testing and the extraction testing in the late October or early November timeframe. Restrictions under DP-1793 could dictate fewer days of extraction because land application is prohibited during freezing temperatures.

As discussed in the August 21, 2017 meeting and in several meetings with NMED staff since that time, following the aquifer test involving extraction at CrIN-6, DOE/LANS will then begin operational and hydraulic testing on the full extraction and injection system, including CrIN-6. The operational and hydraulic testing is of limited duration and is not expected to exceed 10 days of injection into any injection well. The test will be configured in a manner that provides information on injection hydraulics of individual wells for future operational purposes, and hydraulic information for the aquifer surrounding injection locations for the purpose of optimizing full-scale operational approaches for plume control.

Data from these tests will be used to improve site groundwater models, particularly in the vicinity of CrIN-6. The models would then be used to support the evaluation required in NMED's September 1, 2017 letter of whether full-scale injection into CrIN-6 and CrIN-1 will have an adverse impact on the vertical and downgradient horizontal extent of chromium contamination. Similar to functional testing, the short-term operational and hydraulic testing described above does not constitute full-scale injection into CrIN-6 and CrIN-1 and is, therefore, acceptable under the terms of NMED's September 1, 2017 letter.

DOE/LANS also emphasized in the September 13th meeting, and subsequent September 28, 2017 meeting, the priority and need to continue operation of the interim measure at the Laboratory boundary with the Pueblo de San Ildefonso using CrIN-3, CrIN-4, and CrIN-5. All parties agreed that the interim measure is a priority and that NMED's September 1st letter did not have implications on operation of CrIN-3, CrIN-4, and CrIN-5 for the interim measure.

DOE/LANS anticipate having a recommendation on the path forward for CrIN-6 and CrIN-1 as well as the need for additional delineation of the extent of chromium contamination by February 28, 2018. No full-scale injection will occur in CrIN-6 and CrIN-1 following the short-term operational and hydraulic testing, and is unlikely to occur in CrIN-2, until NMED GWQB has approved the recommendation.

Please contact William J. Foley by telephone at (505) 665-8423 or by email at bfoley@lanl.gov, or Cheryl Rodriguez by telephone (505) 665-5330 or by email at cheryl.rodriguez@em.doe.gov if you have questions.

Sincerely,

John C. Bretzke
Division Leader

Sincerely,

Cheryl L. Rodriguez
Program Manager, FPD-II

JCB/CLR/MTS/WJF:am

Copy: Shelly Lemon, NMED/SWQB, Santa Fe, NM, (E-File)
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)
Stephen M. Yanicak, NMED/DOE/OB, (E-File)
Steve Pullen, NMED/GWQB, Santa Fe, NM, (E-File)
Douglas E. Hintze, EM-LA, (E-File)
David S. Rhodes, EM-LA, (E-File)
Dave Nickless, EM-LA, (E-File)
Cheryl L. Rodriguez, EM-LA, (E-File)
Paul B. Underwood, EM-LA, (E-File)
Annette E. Russell, EM-LA, (E-File)
Craig S. Leasure, PADOPS, (E-File)
William R. Mairson, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
John C. Bretzke, EPC-DO, (E-File)
Taunia S. Van Valkenburg, EPC-CP, (E-File)
John C. Bretzke, EPC-DO, (E-File)
Taunia S. Van Valkenburg, EPC-CP, (E-File)
Randall Mark Erickson, ADEM, (E-File)
Enrique Torres, ADEM, (E-File)
Bruce Robinson, ADEM-PO, (E-File)
Stephani F. Swickley, ADEM-PO, (E-File)
Danny Katzman, ADEM-PO, (E-File)
G. Fordham, ER-ES, (E-File)
Michael T. Saladen, EPC-CP, (E-File)
Robert S. Beers, EPC-CP, (E-File)
William J. Foley, EPC-CP, (E-File)
Ellena I. Martinez, EPC-CP, (E-File)
lasomailbox@nnsa.doe.gov, (E-File)
emla.docs@em.doe.gov, (E-File)
locateteam@lanl.gov, (E-File)
epc-correspondence@lanl.gov, (E-File)
adesh-records@lanl.gov, (E-File)