From:	Roybal, Julie, NMENV
To:	Mayerson, David, NMENV; Kliphuis, Trais, NMENV; Becker, Kathryn, NMENV; Chavez, William, NMENV; dellinger.philip@epa.gov; susangordon@earthllink.net; ejantz@nmelc.org; Linton, Ron; Lundstrom, Charles, NMENV; Verhines, Scott, OSE
Subject:	[External_Sender] FW: DP-558
Date:	Thursday, October 08, 2015 2:03:04 PM
Attachments:	DP558 Hydro Resources 10-7-15.pdf

Good day to all:

Please excuse the email that was sent to you late yesterday evening as it was the incorrect letter that I attached. Please see the corrected letter sent to you. My apologies for the mistake.

Please see the attached letter regarding **Discharge Permit Renewal, DP-558, Hydro Resources, Inc.'s Section 8 *In Situ* Recovery uranium mine**. If you have any questions please contact David Mayerson at 505-476-3777.

Julie

From: Roybal, Julie, NMENV
Sent: Wednesday, October 07, 2015 5:32 PM
To: 'Mayerson, David, NMENV (David.Mayerson@state.nm.us)'; Kliphuis, Trais, NMENV; Becker, Kathryn, NMENV; Chavez, William, NMENV; 'dellinger.phillip@epa.gov'; 'susangordon@earthllink.net'; 'ejantz@nmelc.org'; 'rcl1@nrc.gov'; 'charles_lundstrom@nmenv.state.nm.us'; Verhines, Scott, OSE
Subject: DP-558

Good evening,

Please see the attached letter regarding **Discharge Permit Renewal, DP-558, Hydro Resources, Inc.'s Section 8 *In Situ* Recovery uranium mine**. If you have any questions please contact David Mayerson at 505-476-3777.

Thanks,

Julie

NEW MEXICO
ENVIRONMENT DEPARTMENT

Harold Runnels Building
1190 South St. Francis Drive (87505)
P.O. Box 5469, Santa Fe, New Mexico 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965
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SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

RYAN FLYNN
Cabinet Secretary

BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL—RETURN RECEIPT REQUESTED

October 7, 2016

Christopher M. Jones, President and CEO
Hydro Resources, Inc.
6950 S. Potomac Street
Suite 300
Centennial, CO 80112

RE: Discharge Permit Renewal, DP-558, Hydro Resources, Inc.'s Section 8 *In-Situ* Recovery uranium mine

Dear Mr. Jones:

The New Mexico Environment Department (NMED) issues the enclosed Discharge Permit Renewal, DP-558, to Hydro Resources, Inc. (permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

The Discharge Permit contains terms and conditions that shall be complied with by the permittee and are enforceable by NMED pursuant to Section 20.6.2.3104 NMAC, WQA, NMSA 1978 §74-6-5 and §74-6-10. Please be aware that this Discharge Permit may contain conditions that require the permittee to implement operational, monitoring, or closure actions by a specified deadline, as detailed in the appropriate sections.

Issuance of this Discharge Permit does not relieve the permittee of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state, and/or local laws and regulations, such as zoning requirements and nuisance ordinances.

Pursuant to Paragraph (4) of Subsection H of 20.6.2.3109 NMAC, the term of the Discharge Permit shall be five years from the effective date. The term of this Discharge Permit will end on October 7, 2020. NMED requests that the permittee submit an application for renewal at least 180 days prior to the date the Discharge Permit term ends.

An invoice for the Discharge Permit Fee of $13,000.00 is being sent under separate cover. Payment of the Discharge Permit Fee must be received by NMED within 30 days of the date that the Discharge Permit is issued.

If you have any questions, please contact David L. Mayerson at (505) 476-3777 or Kurt Vollbrecht at (505) 827-0195. Thank you for your cooperation during this Discharge Permit review.

Sincerely,

Trais Kliphuis, Director
Water Protection Division
New Mexico Environment Department

Enclosures:
Discharge Permit Renewal, DP-558
"*Monitoring well construction and abandonment guidelines*" (March 2011, Rev. 1.1)

Mailed copy:
The Honorable Ben Shelly, Navajo Nation President

Emailed copies:
Kathryn Becker, NMED (kathryn.becker@state.nm.us)
Bill Chavez, District Manager, NMED District #1 (william.chavez@state.nm.us)
Philip Dellinger, EPA (dellinger.philip@epa.gov)
Susan Gordon, MASE (susangordon@earthlink.net)
Eric Jantz, NMELC on behalf of ENDAUM (ejantz@nmelc.org)
Ron Linton, NRC (rcl1@nrc.gov)
Charles Lundstrom, NMED Grants Field Office (charles.lundstrom@state.nm.us)
David L. Mayerson, NMED (david.mayerson@state.nm.us)
Scott Verhines, Office of the State Engineer (scott.verhines@state.nm.us)

TK/dlm

NEW MEXICO ENVIRONMENT DEPARTMENT
GROUND WATER QUALITY BUREAU

GROUND WATER DISCHARGE PERMIT-558 RENEWAL

Permittee: Hydro Resources, Inc.
Facility: Section 8 *In-situ* Recovery Mine (uranium)

I. Introduction

The New Mexico Environment Department (NMED) herein renews Discharge Permit-558 (DP-558) issued to Hydro Resources, Incorporated (Permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§ 74-6-1 through 74-6-17 (2009) and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

The original Discharge Permit was issued on November 2, 1989. A renewal application was submitted to NMED on August 1, 1996, and an updated application was submitted on April 1, 2011. Pursuant to 20.6.2.3106.F NMAC, the original Discharge Permit has continued in force. Prior to future modification of this Discharge Permit to allow operational discharges associated with the Permittee's proposed *in-situ* recovery uranium mining (ISR), the Permittee must submit the required information and demonstration pursuant to the conditions of this Discharge Permit renewal, as well as a revised operational plan that incorporates a proposed engineering design reflective of current industry standards for ISR.

In issuing this Discharge Permit, NMED has determined that the requirements of 20.6.2.3109.C NMAC have been met. Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the Permittee to comply with the terms and conditions of this Discharge Permit; failure may result in enforcement action by NMED. [20.6.2.1220 NMAC]

A. LOCATION OF REGULATED ACTIVITIES

The proposed location of the Section 8 ISR uranium mine (Mine) is in the southeastern quarter of Section 8 of Township 16 North, Range 16 West in McKinley County, New Mexico, at 35 degrees (°), 37 minutes ('), 42 seconds (") north latitude; 108 ° 33' 5" west longitude.

B. FACILITY DESCRIPTION

The Mine is proposed to extract uranium by *in-situ* recovery methods from roll front type deposits that occur within the Westwater Canyon member "A" sand of the Morrison Formation (Westwater Canyon member), the top of which is at depths between 460 to 760 feet below ground surface within the Mine area. Currently, there are seven monitoring wells within the Mine area. Wells CR-3, CR-5, CR-6 and CR-8 are completed in the "A" sand of the Westwater Canyon member; well CR-7 is completed in the "AA" sand of the Westwater Canyon member; well CR-2 is completed in the "B" sand of the Brushy Basin member of the Morrison Formation (Brushy Basin member), which overlies the Westwater Canyon member; and well CR-1 is completed in the Dakota Sandstone, which overlies the Brushy Basin member.

Following the submittal of required information to NMED and if approved through a future modification of this Discharge Permit, uranium will be mobilized from the roll front type deposits through the injection of a lixiviant into wellfields that are comprised of injection wells surrounding production wells. The pregnant lixiviant will be recovered from the production wells and transferred through pipelines to an ion exchange (IX) facility where the uranium will be removed from the lixiviant by loading onto IX resin. The entire area of the Mine, which encompasses approximately 100 acres, will be surrounded by a ring of monitor wells for purposes of detecting any potential production fluid excursions in ground water.

C. DESCRIPTION OF ACTIVITIES

This renewal of DP-558 authorizes at this time only activities that the Permittee will perform to characterize baseline ground water quality within the Mine area, and demonstrate its ability to restore ground water quality in accordance with 20.6.2.5101.C (2) NMAC and the standards promulgated in 20.6.2.3103 NMAC after the completion of ISR. No operational discharges are authorized under this Discharge Permit renewal.

If the Permittee completes the activities described in the conditions of this Discharge Permit to NMED's satisfaction, it may apply to modify this Discharge Permit to permit ISR activities.

D. GROUND WATER CHARACTERISTICS

The shallowest ground water occurs within the Dakota Sandstone at a depth of approximately 275 feet beneath the ground surface in the Mine area. Pre-mining total dissolved solids (TDS) concentration is approximately 835 milligrams per liter (mg/l).

Ground water in the Westwater Canyon member, which contains the economic-grade uranium deposit, flows to the north-northeast and has an average TDS concentration of approximately 370 mg/l.

II. Findings

In issuing this Discharge Permit renewal, NMED finds:

1. The Mine is located at a place of withdrawal of water for present or reasonably foreseeable future use within the meaning of 20.6.2.3101.A NMAC.
2. The Permittee proposes, upon future modification of this Discharge Permit, to discharge effluent or leachate from the facility so that such effluent or leachate may move directly or indirectly into ground water within the meaning of Section 20.6.2.3104 NMAC.
3. The Permittee proposes, upon future modification of this Discharge Permit, to discharge effluent or leachate from the facility so that such effluent or leachate may move into ground water of the State of New Mexico which has an existing concentration of 10,000 mg/L or less of TDS within the meaning of Subsection A of 20.6.2.3101 NMAC.
4. The Permittee's proposed discharge from the facility upon future modification of this Discharge Permit would not be subject to any of the exemptions of Section 20.6.2.3105 NMAC.

III. Discharge Authorizations

This renewal of DP-558 authorizes only activities that the Permittee will perform to establish baseline ground water quality within the Mine area, and demonstrate its ability to restore ground water quality in accordance with 20.6.2.5101.C (2) NMAC and the standards promulgated in 20.6.2.3103 NMAC following cessation of *in-situ* recovery uranium mining. No operational discharges are authorized under this Discharge Permit renewal. [20.6.2.5101.E (2) NMAC]

IV. Permit Conditions

A. AUTHORIZED ACTIVITIES

1. The Permittee shall submit for review and approval by NMED a minimum of 60 days prior to initiation of proposed activities a workplan to establish baseline ground water quality within the Westwater Canyon member occurring within the proposed Mine area. Following NMED approval, the Permittee will be authorized to implement this workplan. [20.6.2.3106, 20.6.2.5101, 20.6.2.5210 NMAC]
2. The Permittee shall submit for review and approval by NMED a minimum of 90 days prior to initiation of proposed activities a workplan to demonstrate its ability to restore ground water quality in accordance with 20.6.2.3103 NMAC within the Mine area within the Westwater Canyon member. Following NMED approval, the Permittee will be authorized to implement this workplan. [20.6.2.5101.C (2) NMAC]

B. SAMPLING AND ANALYSIS

3. Unless otherwise approved in writing by NMED, the Permittee shall conduct sampling and analyses in accordance with the most recent edition of the following documents:
   a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18th, 19th, or current) ; or
   b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste; or
   c) U.S. Geological Survey, Techniques for Water Resource Investigations of the U.S. Geological Survey; or
   d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31, Water; or
   e) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition; or
   f) Latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations, Federal Register. [20.6.2.3107.B NMAC]

C. REPORTING

4. The Permittee shall submit one paper and one electronic copy of a quarterly report to NMED. Each quarterly report shall document all activities that have been undertaken, and compile all data that have been collected by the Permittee to address Conditions 1 and 2. In the event that no activities have occurred during the quarterly monitoring period, the Permittee shall indicate this in writing to NMED. The submittal schedule for these reports shall be as follows:
   a) April 30th, for information collected between January 1st and March 31st;

b) July 31st, for information collected between April 1st and June 30th;
c) October 30th, for information collected between July 1st and September 30th; and
d) January 30th, for information collected between October 1st and December 31st. [20.6.2.3107.A (6) NMAC]

5. The Permittee shall submit one electronic and one paper copy of a comprehensive report to NMED for its review following completion of each of the activities in Conditions 1 or 2. The report shall include, but not be limited to, the following:
a) A description of any deviations from the workplans;
b) Copies of all laboratory analytical reports;
c) Copies of stratigraphic and electrical logs for boreholes and wells installed under the workplans; and
d) A discussion of results and conclusions. [20.6.2.3107.A (6) NMAC]

D. CONTINGENCIES

6. The Permittee shall notify NMED as soon as practical in the event of unintentional well destruction or damage requiring well abandonment, or other proposed well abandonment. The Permittee shall plug and abandon all borings and monitoring wells in accordance with NMED, March 2011 ("*Monitoring well construction and abandonment Conditions*" rev. 1.1) or the most current update to these conditions, and the regulations in 19.27.4 NMAC that have been issued by the New Mexico Office of the State Engineer, unless an alternative method is approved. A report documenting abandonment details, including volumes of materials used, composition of plugging material, and methods shall be submitted to NMED within 30 days of well abandonment completion. [20.6.2.3107.A (8) NMAC]

7. In the event that information available to NMED indicates that a well(s) is not constructed in a manner consistent with NMED, March 2011, or the most current update to these conditions; contains insufficient water to effectively monitor ground water quality; or is not completed in a manner that is protective of ground water quality, the Permittee shall install a replacement well(s) within 120 days following notification from NMED.

The Permittee shall survey the replacement monitoring well(s) within 150 days following notification from NMED.

Replacement well location(s) shall be approved by NMED prior to installation and completed in accordance with NMED, March 2011, or the most current update to these conditions. The Permittee shall submit construction and lithologic logs, survey data, and a ground water elevation contour map to NMED within 60 days following well completion.

Upon completion of the replacement monitoring well(s), the monitoring well(s) requiring replacement shall be properly plugged and abandoned. Well plugging, abandonment, and documentation of the abandonment procedures shall be completed in accordance with NMED, March 2011, or the most current update to these conditions, and all applicable local, state, and federal regulations. The well abandonment documentation shall be submitted to NMED within 60 days of well plugging activities. [20.6.2.3107.A NMAC]

8. In the event that NMED or the Permittee identifies any failures of the discharge plan or this Discharge Permit not specifically noted herein, NMED may require the Permittee to submit a corrective action plan and a schedule for completion of corrective actions to address the failure(s). Additionally, NMED may require a Discharge Permit modification to achieve compliance with 20.6.2 NMAC. [20.6.2.3107.A and 20.6.2.3109.E NMAC]

9. In the event that a release (commonly known as a "spill") occurs that is not authorized under this Discharge Permit, the Permittee shall take measures to mitigate damage from the unauthorized discharge and initiate the notifications and corrective actions required in 20.6.2.1203 NMAC and summarized below:
   a) Within 24 hours following discovery of the unauthorized discharge, the Permittee shall verbally notify NMED and provide the following information:
      1) The name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility;
      2) The name and address of the facility;
      3) The date, time, location, and duration of the unauthorized discharge;
      4) The source and cause of the unauthorized discharge;
      5) A description of the unauthorized discharge, including its estimated chemical composition;
      6) The estimated volume of the unauthorized discharge; and
      7) Any actions taken to mitigate immediate damage from the unauthorized discharge.
   b) Within one week following discovery of the unauthorized discharge, the Permittee shall submit written notification to NMED with the information listed above and providing any appropriate additions or corrections to the information provided in the prior oral notification;
   c) Within 15 days after the discovery of the spill or release, the Permittee shall submit a written report to NMED describing any corrective actions taken and/or to be taken relative to the unauthorized discharge that includes the following:
      1) A description of proposed actions to mitigate damage from the unauthorized discharge;
      2) A description of proposed actions to prevent future unauthorized discharges of this nature; and
      3) A schedule for completion of proposed actions.

   In the event that the unauthorized discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of Section 20.6.2.4103 NMAC, and the water pollution will not be abated within 180 days after notice is required to be given pursuant to Paragraph (1) of Subsection A of 20.6.2.1203 NMAC, the Permittee may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC. Nothing in this condition shall be construed as relieving the Permittee of the obligation to comply with all requirements of Section 20.6.2.1203 NMAC. [20.6.2.1203 NMAC]

E. CLOSURE AND FINANCIAL ASSURANCE

10. Following NMED's approval of workplans required under **Conditions 1** and **2,** the Permittee shall submit for NMED review and approval closure plans that include, but are not limited to, plugging and abandonment of any wells or borings, disposition of

equipment utilized under these workplans, and maintenance and monitoring activities as appropriate (see also **Condition 11**). [20.6.2.3107.A (11) NMAC]

11. Upon NMED's acceptance of closure plans specified under **Conditions 10**, the Permittee shall submit to NMED for approval a financial assurance proposal for associated closure activities. [20.6.2.3107.A (11) NMAC]

F. GENERAL TERMS AND CONDITIONS

Recordkeeping

12. The Permittee shall maintain a written record of the following information:
    a) Information and data used to complete the application for this Discharge Permit;
    b) Records of any releases (commonly known as "spills") not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC;
    c) Records of the operation, maintenance, and repair of all facilities/equipment used to treat, store, or dispose of wastewater;
    d) Copies of monitoring reports completed and/or submitted to NMED pursuant to the Discharge Permit;
    e) The volume of wastewater or other wastes discharged pursuant to this Discharge Permit;
    f) Ground water quality and wastewater quality data collected pursuant to this Discharge Permit;
    g) Copies of construction records (*i.e.,* well logs) for all ground water monitoring wells required to be sampled pursuant to workplans developed under this Discharge Permit;
    h) Records of the maintenance, repair, replacement, or calibration of any monitoring equipment or flow measurement devices required under workplans developed pursuant to this Discharge Permit;
    i) Data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit. The following information shall be recorded and shall be made available to NMED upon request:
        1) The dates, location, and times of sampling or field measurements;
        2) The name and job title of the individuals who performed each sample collection or field measurement;
        3) The sample analysis date of each sample;
        4) The name and address of the laboratory, and the name of the signatory authority for the laboratory analysis;
        5) The analytical technique or method used to analyze each sample or collect each field measurement;
        6) The results of each analysis or field measurement, including raw data;
        7) The results of any split, spiked, duplicate, or repeat sample; and
        8) A copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used.

The written record shall be maintained for a period of at least five years from the date of application, report, collection, or measurement and shall be made available to NMED upon request. [20.6.2.3107.A NMAC]

Inspection and Entry

13. The Permittee shall allow inspection by NMED of the facility and its operations that are subject to this Discharge Permit and the WQCC regulations. NMED may, upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which are located any records required to be maintained by regulations of the federal government or the WQCC. The Permittee shall allow NMED, at reasonable times, to have access to and reproduce for their use any copy of the records, and to perform assessments, sampling, or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of the NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107.D NMAC; NMSA 1978, §§ 74-6-9.B and 74-6-9.E]

Duty to Provide Information

14. The Permittee shall, upon NMED's request, allow for NMED's inspection/duplication at reasonable times of records required by this Discharge Permit, and/or furnish to NMED copies of such records. [20.6.2.3107.D NMAC]

Modifications and/or Amendments

15. In the event that the Permittee proposes a change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated, or discharged by the facility, the Permittee shall notify NMED prior to implementing such changes. The Permittee shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes. [20.6.2.3107.C NMAC; 20.6.2.3109.E and G NMAC]

Civil Penalties

16. Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the Permittee to a civil enforcement action. Pursuant to WQA Section 74-6-10 (A) and (B), such action may include a compliance order requiring compliance immediately or within a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to the WQA Section 74-6-10 (C) and 74-6-10.1, and civil penalties of up to $15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to $10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the Permittee waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. [20.6.2.1220 NMAC; NMSA 1978, §§74-6-10 and 74-6-10.1]

Criminal Penalties

17. No person shall:
    a) make any false material statement, representation, certification, or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA;
    b) falsify, tamper with or render inaccurate any monitoring device, method, or record required to be maintained under the WQA; or
    c) fail to monitor, sample, or report as required by a permit issued pursuant to a state or federal law or regulation.

    Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, §31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, §31-18-15. Any person who knowingly violates the requirements of this condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, §31-18-15. Any person who knowingly violates the requirements of this condition and knows at the time of the violation that he is creating a substantial danger of death or serious bodily injury to any other person is guilty of a second degree felony and shall be sentenced in accordance with the other provisions of NMSA 1978, §31-18-15. [20.6.2.1220 NMAC; NMSA 1978, §§74-6-10.2.A through 74-6-10.2.F]

Compliance with Other Laws

18. Nothing in this Discharge Permit shall be construed in any way as relieving the Permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits, or orders. [NMSA 1978, §74-6-5.L]

Right to Appeal

19. The Permittee may file a petition for review before the WQCC on the conditions of this Discharge Permit. Such petition shall be in writing to the WQCC within 30 days of the receipt of postal notice of this Discharge Permit, and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review. [20.6.2.3112 NMAC; NMSA 1978, §74-6-5.O]

Transfer of Discharge Permit

20. Prior to the transfer of any ownership, control, or possession of this facility or any portion thereof, the Permittee shall:
    a) Notify the proposed Transferee in writing of the existence of this Discharge Permit;
    b) Include a copy of this Discharge Permit with the notice; and

c) Deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed Transferee.

Until both ownership and possession of the facility have been transferred to the Transferee, the Permittee shall continue to be responsible for any discharge from the facility. [20.6.2.3111 NMAC]

Permit Fees

21. Payment of permit fees is due at the time of Discharge Permit approval. Payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date.

Permit fees are associated with issuance of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the Permittee of the obligation to pay all permit fees assessed by NMED. A Permittee that ceases discharging or does not commence discharging from the facility during the term of the Discharge Permit shall pay all permit fees assessed by NMED. An approved Discharge Permit shall be suspended or terminated if the facility fails to remit an installment payment by its due date. [20.6.2.3114.F NMAC; NMSA 1978, §74-6-5.K]

EFFECTIVE DATE October 7, 2015

TERM ENDS October 7, 2020

[20.6.2.3109.H NMAC; NMSA 1978, §74-6-5.I]

Trais Kliphuis, Director
Water Protection Division
New Mexico Environment Department

Under authority delegated by the Secretary of the New Mexico Environment Department

TK/dlm

NEW MEXICO ENVIRONMENT DEPARTMENT
GROUND WATER QUALITY BUREAU
MONITORING WELL CONSTRUCTION AND ABANDONMENT GUIDELINES

Purpose: These guidelines identify minimum construction and abandonment details for installation of water table monitoring wells under ground water Discharge Permits issued by the NMED's Ground Water Quality Bureau (GWQB) and Abatement Plans approved by the GWQB. Proposed locations of monitoring wells required under Discharge Permits and Abatement Plans and requests to use alternate installation and/or construction methods for water table monitoring wells or other types of monitoring wells (e.g., deep monitoring wells for delineation of vertical extent of contaminants) must be submitted to the GWQB for approval prior to drilling and construction.

General Drilling Specifications:

1. All well drilling activities must be performed by an individual with a current and valid well driller license issued by the State of New Mexico in accordance with 19.27.4 NMAC. Use of drillers with environmental well drilling experience and expertise is highly recommended.
2. Drilling methods that allow for accurate determinations of water table locations must be employed. All drill bits, drill rods, and down-hole tools must be thoroughly cleaned immediately prior to the start of drilling. The borehole diameter must be drilled a minimum of 4 inches larger than the casing diameter to allow for the emplacement of sand and sealant.
3. After completion, the well should be allowed to stabilize for a minimum of 12 hours before development is initiated.
4. The well must be developed so that formation water flows freely through the screen and is not turbid, and all sediment and drilling disturbances are removed from the well.

Well Specifications (see attached monitoring well schematic):

5. Schedule 40 (or heavier) polyvinyl chloride (PVC) pipe, stainless steel pipe, carbon steel pipe, or pipe of an alternate appropriate material that has been approved for use by NMED must be used as casing. The casing must have an inside diameter not less than 2 inches. The casing material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. The casing material and thickness selected for use must have sufficient collapse strength to withstand the pressure exerted by grouts used as annular seals and thermal properties sufficient to withstand the heat generated by the hydration of cement-based grouts. Casing sections may be joined using welded, threaded, or mechanically locking joints; the method selected must provide sufficient joint strength for the specific well installation. The casing must extend from the top of the screen to at least one foot above ground surface. The top of the casing must be fitted with a removable cap, and the exposed casing must be protected by a locking steel well shroud. The shroud must be large enough in diameter to allow easy access for removal of the cap. Alternatively, monitoring wells may be completed below grade. In this case, the casing must extend from the top of the screen to 6 to 12 inches below the ground surface; the monitoring wells must be sealed with locking, expandable well plugs; a flush-mount, watertight well vault that is rated to withstand traffic loads must be emplaced around the wellhead; and the cover must be secured with at least one bolt. The vault cover must indicate that the wellhead of a monitoring well is contained within the vault.
6. A 20-foot section (maximum) of continuous-slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED must be installed across the water table. Screens created by cutting slots into solid casing with saws or other tools must not be used. The screen material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. Screen sections may be joined using welded, threaded, or mechanically

locking joints; the method selected must provide sufficient joint strength for the specific well installation and must not introduce constituents that may reasonably be considered contaminants of interest at the facility. A cap must be attached to the bottom of the well screen; sumps (i.e., casing attached to the bottom of a well screen) should not be installed. The bottom of the screen must be installed no more than 15 feet below the water table; the top of the well screen must be positioned not less than 5 feet above the water table. The well screen slots must be appropriately sized for the formation materials and should be selected to retain 90 percent of the filter pack. A slot size of 0.010 inches is generally adequate for most installations.

7. Casing and well screen must be centered in the borehole by placing centralizers near the top and bottom of the well screen.
8. A filter pack must be installed around the screen by filling the annular space from the bottom of the screen to 2 feet above the top of the screen with clean silica sand. The filter pack must be properly sized to prevent fine particles in the formation from entering the well; clean medium to coarse silica sand is generally adequate as filter pack material for 0.010-inch slotted well screen. For wells deeper than 30 feet, the sand must be emplaced by a tremmie pipe. The well should be surged or bailed to settle the filter pack and additional sand added, if necessary, before the bentonite seal is emplaced.
9. A bentonite seal must be constructed immediately above the filter pack by emplacing bentonite chips or pellets (3/8-inch in size or smaller) in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal must be 3 feet in thickness and hydrated with clean water. Adequate time should be allowed for expansion of the bentonite seal before installation of the annular space seal.
10. The annular space above the bentonite seal must be sealed with cement grout or a bentonite-based sealing material acceptable to the State Engineer pursuant to 19.27.4 NMAC. A tremmie pipe must be used when placing sealing materials at depths greater than 20 feet below the ground surface. Annular space seals must extend from the top of the bentonite seal to the ground surface (for wells completed above grade) or to a level 3 to 6 inches below the top of casing (for wells completed below grade).
11. For monitoring wells finished above grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the shroud and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the wellhead. The installation of steel posts around the well shroud and wellhead is recommended for monitoring wells finished above grade to protect the wellhead from damage by vehicles or equipment. For monitoring wells finished below grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the well vault and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the well vault.

Abandonment:

12. Approval for abandonment of monitoring wells used for ground water monitoring in accordance with Discharge Permit and Abatement Plan requirements must be obtained from NMED prior to abandonment.
13. Well abandonment must be accomplished by removing the well casing and placing neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer for wells that encounter water pursuant to 19.27.4 NMAC from the bottom of the borehole to the ground surface using a tremmie pipe. If the casing cannot be removed, neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer must be placed in the well using a tremmie pipe from the bottom of the well to the ground surface.
14. After abandonment, written notification describing the well abandonment must be submitted to the NMED. Written notification of well abandonment must consist of a copy of the well plugging record submitted to the State Engineer in accordance with 19.27.4 NMAC, or alternate documentation containing the information to be provided in a well plugging record required by the State Engineer as specified in 19.27.4 NMAC.

Deviation from Monitoring Well Construction and Abandonment Requirements: Requests to construct water table monitoring wells or other types of monitoring wells for ground water monitoring under ground water Discharge Permits or Abatement Plans in a manner that deviates from the specified requirements must be submitted in writing to the GWQB. Each request must state the rationale for the proposed deviation from these requirements and provide detailed evidence supporting the request. The GWQB will approve or deny requests to deviate from these requirements in writing.

MONITORING WELL SCHEMATIC

(Not to Scale)