



MICHELLE LUJAN GRISHAM
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CABINET SECRETARY

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

March 11, 2024

Domonic Lees, Manager, Environmental Operations
Burlington Northern Santa Fe Belen Railyard
1624 1st Street NW
Albuquerque, New Mexico 87102

RE: Draft Discharge Permit Renewal, DP-278, BNSF Belen Railyard

Dear Domonic Lees:

The New Mexico Environment Department (NMED) hereby provides notice to BNSF Railway Company of the proposed approval of Ground Water Discharge Permit Renewal, DP-278, (copy enclosed), pursuant to Subsection H of 20.6.2.3108 NMAC. NMED will publish notice of the availability of the draft Discharge Permit in the near future for public review and comment and will forward a copy of that notice to you.

Prior to making a final ruling on the proposed Discharge Permit, NMED will allow 30 days from the date the public notice is published in the newspaper for any interested party, including the Discharge Permit applicant, i.e., yourself, to submit written comments and/or a request a public hearing. A hearing request shall set forth the reasons why a hearing is requested. NMED will hold a hearing in response to a timely hearing request if the NMED Secretary determines there is substantial public interest in the proposed Discharge Permit.

Please review the enclosed draft Discharge Permit carefully. 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.

Please submit written comments or a request for hearing to my attention at the address below, via email to kambray.townsend@env.nm.gov or to pps.general@env.nm.gov, or directly into the NMED Public Comment Portal at <https://nmed.commentinput.com/comment/search>. If NMED does not receive written comments or a request for hearing during the public comment period, the draft Discharge Permit will become final.

Thank you for your cooperation during the review process. Feel free to contact me with any questions at (505) 538-0497.

Sincerely,

Kambray Townsend, Water Resources Professional

SCIENCE | INNOVATION | COLLABORATION | COMPLIANCE

Ground Water Quality Bureau | 1190 Saint Francis Drive, PO Box 5469, Santa Fe, New Mexico 87502-5469
Telephone (505) 827-2900 | www.env.nm.gov/gwqb/

Domonic Lees

March 11, 2024

Page 2 of 2

Encl: Draft Discharge Permit Renewal, DP-278

cc: Robert Stewart, ERM-West, Inc., robert.stewart@erm.com
Kate Herrell, State Cleanup Program, GWQB, kate.herrell@env.nm.gov



NEW MEXICO
ENVIRONMENT DEPARTMENT
 Ground Water Quality Bureau
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 Phone (505) 827-2900 Fax (505) 827-2965
www.env.nm.gov



Draft: March 11, 2024

GROUND WATER QUALITY BUREAU
DISCHARGE PERMIT
Issued under 20.6.2 NMAC

Facility Name: Burlington Northern Santa Fe (BNSF) Belen Railyard
Discharge Permit Number: DP-278
Facility Location: 106 North First Street
 Belen, New Mexico 87002

County: Valencia

Permittee: BNSF Railway Company
Mailing Address: Domonic Lees, Manager Environmental Operations
 1624 1st Street NW
 Albuquerque, NM 87102

Facility Contact: Domonic Lees, Manager Environmental Operations
Telephone Number/Email: 505-767-6908 / domonic.lees@bnsf.com

Permitting Action: Renewal
Permit Issuance Date: DATE
Permit Expiration Date: DATE

NMED Permit Contact: Kambray Townsend
Telephone Number/Email: (505) 538-0497 / kambray.townsend@env.nm.gov or
 505-827-2900 / pps.general@env.nm.gov

JUSTIN D. BALL
 Chief, Ground Water Quality Bureau
 New Mexico Environment Department

Date

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ATTACHMENTS

- Discharge Permit Summary
- Groundwater Discharge Permit Guidance for Synthetically Lined Lagoons – Liner Material and Site Preparation, Revision 0.0, May 2007
- New Mexico Environment Department Ground Water Quality Bureau Monitoring Well Construction and Abandonment Guidelines, Revision 1.1, March 2011 (Monitoring Well Guidance)

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this groundwater discharge permit Renewal (Discharge Permit or DP-278) to the BNSF Railway Company (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) Ground and Surface Water Protection Regulations, 20.6.2 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants from the BNSF Belen Railyard (Facility) in order to protect groundwater and those segments of surface water gaining from groundwater inflow for present and potential future use as domestic and agricultural water supply and other uses, and to protect public health. It is NMED's determination in issuing this Discharge Permit that the Permittee has met the requirements of Subsection C of 20.6.2.3109 NMAC. The Permittee is responsible for complying with the terms and conditions of this Discharge Permit pursuant to Section 20.6.2.3104 NMAC; failure to do so may result in enforcement action by NMED (20.6.2.1220 NMAC).

Described below are the activities that produce the discharge, the location of the discharge, and the quantity, quality, and flow characteristics.

The Facility processes up to 8,992 gallons per day (gpd) of spilled grease, diesel fuel, wash-down water, and precipitation runoff from three locomotive fueling platforms and the rail tank car fuel offloading area collects in track pans and transfers to oil/water separators for processing. The Facility places hydrocarbon-contaminated sediment that accumulates in the track pans and oil/water separators in concrete sludge drying beds prior to off-site disposal at a permitted facility. The Facility transfers liquid drained from the sludge drying beds to an oil/water separator for processing that discharges to two synthetically lined evaporative impoundments. The Facility pumps any recovered used oil to storage tanks and transfers it to rail tank cars or trucks for recycling.

Data collected from an on-site monitoring well document groundwater contamination attributed to one or more sources at this Facility. The on-site monitoring well has exceedances of groundwater quality standards for LNAPL and manganese, according to the criteria of Sections 20.6.2.3101 and 20.6.2.3103 NMAC. The Permittee is subject to the requirements of an NMED approved abatement plan at this site pursuant to 20.6.2.4104.A NMAC.

Discharge Permit Location Information:

Physical Address	106 North First Street
Nearest Town/City	Belen
Section, Township, Range	Sections 18 and 19, T05N, R02E
County	Valencia

Depth to Groundwater	4-6 feet
Pre-Discharge TDS	560

Discharge Permit Issuance History:

Original Permit Issuance	October 12, 1983
Permit Modification	December 10, 1985
Permit Renewal	March 6, 1989
Permit Modification	March 5, 1991
Permit Modification	September 18, 1992
Permit Renewal	March 31, 1993
Permit Modification	September 5, 1996
Permit Renewal	November 28, 2001
Permit Renewal	February 9, 2007
Permit Renewal	April 27, 2012
Permit Renewal	March 20, 2018

The application (i.e., discharge plan) associated with this Discharge Permit consists of the materials submitted by the Permittee dated September 22, 2022, and materials contained in the administrative record prior to issuance of this Discharge Permit.

The Permittee shall manage the discharge in accordance with all conditions and requirements of this Discharge Permit.

NMED reserves the right to require a Discharge Permit modification in the event NMED determines that the Permittee is or may be violating, or is likely to violate in the future, the requirements of 20.6.2 NMAC or the standards of Section 20.6.2.3103 NMAC. NMED reserves this right pursuant to Section 20.6.2.3109 NMAC. An NMED requirement to modify the Discharge Permit may result from a determination by the department that structural controls and/or management practices approved under this Discharge Permit are insufficiently protective of groundwater quality and human health. NMED reserves the right to require the Permittee to implement abatement of water pollution and remediate groundwater quality.

NMED 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.

This Discharge Permit may use the following acronyms and abbreviations.

Abbreviation	Explanation	Abbreviation	Explanation
BOD ₅	biochemical oxygen demand (5-day)	NMED	New Mexico Environment Department

Abbreviation	Explanation	Abbreviation	Explanation
CAP	Corrective Action Plan	NMSA	New Mexico Statutes Annotated
CFR	Code of Federal Regulations	NO ₃ -N	nitrate-nitrogen
CFU	colony forming unit	NTU	nephelometric turbidity units
Cl	chloride	QA/QC	Quality Assurance/Quality Control
EPA	United States Environmental Protection Agency	TDS	total dissolved solids
Gpd	gallons per day	TKN	total Kjeldahl nitrogen
LAA	land application area	total nitrogen	= TKN + NO ₃ -N
LADS	Land Application Data Sheet(s)	TRC	total residual chlorine
mg/L	milligrams per liter	TSS	total suspended solids
mL	milliliters	WQA	New Mexico Water Quality Act
MPN	most probable number	WQCC	Water Quality Control Commission
NMAC	New Mexico Administrative Code	WWTF	Wastewater Treatment Facility

II. FINDINGS

In issuing this Discharge Permit, NMED finds the following.

1. The Permittee is discharging effluent or leachate from the Facility so that such effluent or leachate may move into groundwater of the State of New Mexico that 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, without exceeding standards of 20.6.2.3103 NMAC for any water contaminant.
2. The Permittee is discharging effluent or leachate from the Facility directly or indirectly into groundwater pursuant to this Discharge Permit and Sections 20.6.2.3000 through 20.6.2.3114 NMAC.
3. The discharge from this Facility has the potential to contain water contaminants or toxic pollutants elevated above the standards of Section 20.6.2.3103 NMAC and is not subject to the exemption at Subsection 20.6.2.3105 NMAC.

III. AUTHORIZATION TO DISCHARGE

The Permittee is responsible for ensuring that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein pursuant to 20.6.2.3104 NMAC.

This Discharge Permit authorizes the Permittee to receive and process up to 8,992 gpd of spilled grease, diesel fuel, wash-down water, and precipitation runoff from three locomotive fueling platforms and the rail tank car fuel offloading area collects in track pans and transfers to oil/water separators for processing. This Discharge Permit authorizes the Facility to place hydrocarbon-contaminated sediment that accumulates in the track pans and oil/water separators in concrete sludge drying beds prior to off-site disposal at a permitted facility. This Discharge Permit authorizes the Facility to transfer liquid drained from the sludge drying beds to an oil/water separator for processing that discharges to two synthetically lined evaporative impoundments. This Discharge Permit authorizes the Facility to pump any recovered used oil to storage tanks and transfer it to rail tank cars or trucks for recycling.

[20.6.2.3104 NMAC, Subsection C of 20.6.2.3106 NMAC, Subsection D of 20.6.2.3109 NMAC]

IV. CONDITIONS

NMED issues this Discharge Permit for the discharge of water contaminants subject to the following conditions.

A. OPERATIONAL PLAN

#	Terms and Conditions
1.	The Permittee shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 2 and 4 NMAC. [Subsection C of 20.6.2.3109 NMAC]
2.	The Permittee shall operate in a manner that does not violate standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC. [20.6.2.3101 NMAC, 20.6.2.3103 NMAC, Subsection C of 20.6.2.3109 NMAC]

Operating Conditions

#	Terms and Conditions
3.	The Permittee shall maintain fences around the synthetically lined evaporative impoundments and sludge drying beds to restrict access by the general public and animals. The fences shall consist of a minimum of six-foot chain link or field fencing and locking gates. The Permittee shall maintain the fences to serve the stated purpose throughout the term of this Discharge Permit.

#	Terms and Conditions
	[Subsections B and C of 20.6.2.3109 NMAC, NMSA 1978, § 74-6-5.D]
4.	<p>The Permittee shall maintain signs indicating that the wastewater at the Facility is not potable. The Permittee shall post signs at the Facility entrance and other areas where there is potential for public contact with wastewater. The Permittee shall print signs in English and Spanish and shall ensure the signs remain visible and legible for the term of this Discharge Permit.</p> <p>[Subsections B and C of 20.6.2.3109 NMAC, NMSA 1978, § 74-6-5.D]</p>
5.	<p>Hydrocarbon-impacted solids removed from the track pans and oil-water separators shall be stored on the concrete sludge drying beds for dewatering. The sludge drying beds shall be maintained in accordance with the approved Operation and Maintenance Plan (approved on April 26, 2022) to prevent stormwater run-on and runoff from a storm event. The Permittee shall dispose of hydrocarbon-impacted solids from the sludge drying beds at an off-site permitted facility in a manner consistent with all local, state, and federal regulations.</p> <p>[20.6.2.3109 NMAC]</p>
6.	<p>The Permittee shall transfer all wastewater generated by the oil/water separation process to one of the two synthetically lined evaporation impoundments for disposal.</p> <p>[20.6.2.3109 NMAC]</p>
7.	<p>The Permittee shall maintain secure locking lids on the oil/water separators to restrict unauthorized access by the general public and animals throughout the term of this Discharge Permit.</p> <p>[Subsections B and C of 20.6.2.3109 NMAC, NMSA 1978, § 74-6-5.D]</p>
8.	<p>The Permittee shall inspect the oil/water separators on a monthly basis and remove accumulated oil and settled solids as needed to prevent them from exiting the units.</p> <p>The Permittee shall create and maintain a log of all oil/water separator inspections which describes all findings, repairs, removals, the date of the inspection, and the name of the person responsible for the inspection. The Permittee shall make the log available to NMED upon request.</p> <p>The Permittee shall maintain a record of oil/solids removal and disposal, including the date, the volume of oil/solids removed, disposal method, and disposal location.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>

#	Terms and Conditions
9.	<p>The Permittee shall inspect the sludge drying beds on a monthly basis. The Permittee shall correct any condition that could damage the structural integrity of the beds or result in stormwater run-on or runoff, in accordance with the approved Operation and Maintenance Plan dated March 18, 2022. Characterization of such conditions may include the following:</p> <ul style="list-style-type: none">• Presence of debris which may deter proper drainage;• Evidence of seepage outside of the concrete liner;• Excessive ponding of liquids/stormwater;• Large cracks or if concrete has been compromised; or• The presence of vegetation or invasive roots. <p>The Permittee shall keep a log of inspections and repairs made. The Permittee shall make the log available to NMED upon request.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>
10.	<p>The Permittee shall maintain the impoundment liners to avoid conditions that could affect the liner or the structural integrity of the impoundments. Characterization of such conditions may include the following:</p> <ul style="list-style-type: none">• erosion damage;• animal burrows or other damage;• the presence of vegetation including aquatic plants, weeds, woody shrubs, or trees growing within five feet of the top inside edge of a sub-grade impoundment, within five feet of the toe of the outside berm of an above-grade impoundment, or within the impoundment itself;• the presence of large debris or large quantities of debris in the impoundment;• evidence of seepage; or• evidence of berm subsidence. <p>The Permittee shall routinely control vegetation growing around the impoundments by mechanical removal that is protective of the impoundment liner.</p> <p>The Permittee shall visually inspect the impoundments and surrounding berms on a monthly basis to ensure proper maintenance. In the event that an inspection reveals any evidence of damage that threatens the structural integrity of an impoundment berm or liner, or that may result in an unauthorized discharge, the Permittee shall implement the Contingency Plan set forth in this Discharge Permit.</p> <p>The Permittee shall create and maintain a log of all impoundment inspections which describes the date of the inspection, any findings and repairs and the name of the person</p>

#	Terms and Conditions
	<p>responsible for the inspection. The Permittee shall make the log available to NMED upon request.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>
11.	<p>The Permittee shall preserve a minimum of two feet of freeboard, i.e., the distance between the highest calculated liquid level in the impoundments and the liquid level which would result in the release of stored liquid from the impoundments.</p> <p>In the event that the Permittee determines that it cannot preserve two feet of freeboard in the impoundment, the Permittee shall implement the Contingency Plan set forth in this Discharge Permit.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>

B. MONITORING AND REPORTING

#	Terms and Conditions
12.	<p>The Permittee shall conduct the monitoring, reporting, and other requirements listed below in accordance with the monitoring requirements of this Discharge Permit.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>
13.	<p>METHODOLOGY – Unless otherwise specified by this Discharge Permit, or approved in writing by NMED, the Permittee shall use sampling and analytical techniques that conform with the references listed in Subsection B of 20.6.2.3107 NMAC.</p> <p>[Subsection B of 20.6.2.3107 NMAC]</p>

Due Dates for Monitoring Reports

#	Terms and Conditions
14.	<p>Semi-annual monitoring - The Permittee shall perform monitoring and other Permit required actions during the following periods and shall submit semi-annual reports to NMED by the following due dates:</p> <ul style="list-style-type: none"> • August 1st through March 31st – due by May 1st; and • April 1st through September 30th – due by November 1st. <p>[Subsection A of 20.6.2.3107 NMAC]</p>

Groundwater Monitoring Conditions

#	Terms and Conditions
15.	<p>The Permittee shall perform semi-annual groundwater sampling in the following groundwater monitoring wells and analyze the samples for all constituents listed in Condition 18.</p> <ul style="list-style-type: none">a) MW-90, located hydrologically downgradient of Impoundment 003 East and 65 feet south of the top of Impoundment 003 East berm (34.645281, -106.767228).b) MW-91, located hydrologically downgradient of Impoundment 003 West and 65 feet south of the top of Impoundment 003 West berm (34.645375, -106.767764). <p>The Permittee shall perform groundwater sample collection, preservation, transport, and analysis according to the following procedures.</p> <ul style="list-style-type: none">a) Measure the depth-to-most-shallow groundwater from the top of the well casing to the nearest one-hundredth of a foot.b) Purge three well volumes of water from the well prior to sample collection.c) Obtain samples from the well for analysis.d) Properly prepare, preserve, and transport samples.e) Analyze samples in accordance with the methods authorized in this Discharge Permit. <p>The Permittee shall submit the depth-to-most-shallow groundwater measurements and the laboratory analytical data results including the laboratory QA/QC summary report and Chain of Custody for each well, and a Facility layout map showing the location and number of each well to NMED in the semi-annual monitoring reports.</p> <p>[Subsection A of 20.6.2.3107 NMAC]</p>
16.	<p>NMED shall have the option to perform downhole inspections of all groundwater monitoring wells identified in this Discharge Permit. NMED shall establish the inspection date and notify the Permittee. The Permittee shall remove any existing dedicated pumps at least 48 hours prior to NMED inspection to allow adequate settling time of sediment agitated from pump removal.</p> <p>Should the Permittee decide to install a pump in a monitoring well without a dedicated pump, the Permittee shall notify NMED at least 90 days prior to pump installation so that NMED can schedule a downhole well inspection prior to pump placement.</p> <p>[Subsections A and D of 20.6.2.3107 NMAC]</p>

Facility Monitoring Conditions

#	Terms and Conditions
17.	<p>The Permittee shall on a monthly basis estimate the total monthly volume of wastewater discharged to the evaporative impoundments by measuring the level of the wastewater and calculating the change in storage. The Permittee shall submit the calculated wastewater discharge volumes to NMED in the semi-annual monitoring reports.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsections C and H of 20.6.2.3109 NMAC]</p>
18.	<p>The Permittee shall collect a composite wastewater sample on a semi-annual basis (once every six months) from each of the evaporative impoundments. The composite sample shall consist of a minimum of six equal aliquots collected equidistantly around the entire perimeter of the evaporative impoundment and thoroughly mixed. The Permittee shall analyze the composite sample for:</p> <ul style="list-style-type: none"> • benzene (CAS 71-43-2) • toluene (CAS 108-88-3) • ethylbenzene (CAS 100-41-4) • total xylenes (CAS 1330-20-7) • anthracene (CAS 120-12-7) • acenaphthene (CAS 83-32-9) • acenaphthylene (CAS 208-96-8) • benzo(a)anthracene (CAS 56-55-3) • benzo(b)fluoranthene (CAS 205-99-2) • benzo(g,h,i)perylene (CAS 191-24-2) • benzo(k)fluoranthene (CAS 207-08-9) • dissolved iron (CAS-7439-89-6) • chrysene (CAS 218-01-9) • dibenzo(a,h)anthracene (CAS 53-70-3) • fluoranthene (CAS 206-44-0) • indeno(1,2,3-cd)pyrene (CAS 193-39-5) • phenanthrene (CAS 85-01-8) • pyrene (CAS 129-00-0) • 1-methylnaphthalene (CAS 90-12-0) • 2-methylnaphthalene (CAS 91-57-6) • naphthalene (CAS 91-20-3) • 2-chloronaphthalene (CAS 91-58-7) • <u>PAHs</u>: total naphthalene (CAS 91-20-3) plus monomethylnaphthalenes • toluene (CAS 108-88-3) • total xylenes (CAS 1330-20-7) • manganese (CAS 7439-96-5) <p>The Permittee shall ensure the sample is properly prepared, preserved, transported, and analyzed in accordance with the methods authorized in this Discharge Permit. The</p>

#	Terms and Conditions
	<p>Permittee shall submit the laboratory analytical data results, including the QA/QC summary and Chain of Custody, to NMED in the semi-annual monitoring reports.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsections C and H of 20.6.2.3109 NMAC]</p>
19.	<p>The Permittee shall submit all records of solids and oil removal and disposal to NMED in the semi-annual monitoring reports.</p> <p>[Subsection A of 20.6.2.3107 NMAC]</p>

C. CONTINGENCY PLAN

#	Terms and Conditions
20.	<p>In the event that groundwater monitoring indicates that groundwater exceeds a standard identified in Section 20.6.2.3103 NMAC in a monitoring well with no previous exceedances of the chemical constituent at the date of issuance of this Discharge Permit, the Permittee shall collect a confirmatory sample from the monitoring well within 15 days of receipt of the initial sampling results to confirm the initial sampling results.</p> <p>Within 60 days of confirmation of groundwater contamination, the Permittee shall submit to NMED a Corrective Action Plan (CAP) that proposes, at a minimum, contaminant source control measures and an implementation schedule. The Permittee shall implement the CAP as approved by NMED.</p> <p>This condition shall apply until the Permittee completes groundwater monitoring for a minimum of eight (8) consecutive quarterly samples demonstrating groundwater does not exceed the standards of Section 20.6.2.3103 NMAC.</p> <p>Violation of the groundwater standard beyond 180 days after the confirmation of groundwater contamination may cause NMED to require the Permittee to abate water pollution consistent with the requirements and provisions of Section 20.6.2.4101, Section 20.6.2.4103, Subsections C and E of 20.6.2.4106, Section 20.6.2.4107, Section 20.6.2.4108 and Section 20.6.2.4112 NMAC.</p> <p>[20.6.2.3103 NMAC, Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]</p>
21.	<p>In the event that information available to NMED indicates that a well is not constructed in a manner consistent with the attached Monitoring Well Guidance, contains insufficient water to effectively monitor groundwater quality, or is otherwise not</p>

#	Terms and Conditions
	<p>completed in a manner that is protective of groundwater quality, the Permittee shall install a replacement well(s) within 120 days following notification from NMED.</p> <p>The Permittee shall install replacement well(s) at locations approved by NMED prior to installation and shall complete replacement well(s) in accordance with the attached Monitoring Well Guidance. The Permittee shall submit well construction and lithologic logs, survey data and a groundwater elevation contour map to NMED within 60 days following well completion.</p> <p>The Permittee shall properly plug and abandon monitoring well(s) requiring replacement upon completion of the replacement monitoring well(s). The Permittee shall complete the well plugging and abandonment, and shall document the abandonment procedures, in accordance with the attached Monitoring Well Guidance and all applicable local, state, and federal regulations. The Permittee shall submit a copy of the well abandonment documentation to NMED within 60 days following the replacement well(s) completion.</p> <p>[Subsection A of 20.6.2.3107 NMAC]</p>
22.	<p>In the event that the Facility exceeds the authorized discharge volume set in this Discharge Permit, the Permittee shall initiate the following Contingency Plan.</p> <p><u>Contingency Plan</u></p> <ul style="list-style-type: none">a) Notify NMED within seven days of the discovery of the discharge volume exceedance that the Facility exceeded the authorized discharge volume.b) The Permittee shall conduct a physical inspection of the discharge system, i.e., inflow and infiltration issues, collection system failures, etc., and the [discharge meter(s)/volume measuring device/method] to detect abnormalities and report the findings to NMED within 30 days of the discovery of the discharge volume exceedance. The Permittee shall correct any abnormalities detected with NMED's concurrence.c) If the Permittee does not detect any abnormalities and with NMED's concurrence, the Permittee shall submit a discharge permit modification for the increase in discharge quantity to NMED within 90 days of the discovery of the discharge volume exceedance. The discharge permit modification must include demonstration that the volume increase is sufficient for the design capacity or plans and specifications to upgrade the system to accommodate the discharge volume increase. <p>[Subsection A of 20.6.2.3107 NMAC]</p>

#	Terms and Conditions
23.	<p>In the event that an inspection reveals significant damage has occurred or is likely to affect the structural integrity of an oil water separator, sludge drying bed or an impoundment or liner or their ability to contain contaminants, the Permittee shall propose the repair or replacement by submitting a CAP to NMED for approval. The Permittee shall submit the CAP to NMED within 30 days after discovery of the damage or following notification from NMED that significant damage is evident. The Permittee shall ensure the CAP includes a schedule for completion of corrective actions. The Permittee shall initiate implementation of the CAP following approval by NMED.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>
24.	<p>In the event that an impoundment cannot preserve a minimum of two feet of freeboard, the Permittee shall take actions to restore the required freeboard as authorized by this Discharge Permit and all applicable local, state, and federal regulations.</p> <p>In the event that two feet of freeboard cannot be restored within a period of 72 hours following discovery, the Permittee shall propose actions to restore two feet of freeboard by submitting a short-term CAP to NMED for approval. Examples of short-term corrective actions include the pumping and hauling of excess wastewater from the impoundment or reducing the volume of wastewater discharged to the impoundment. The Permittee shall ensure the CAP includes a schedule for completion of corrective actions. The Permittee shall submit the CAP within 15 days following the date the Permittee or the NMED discover the exceedance. The Permittee shall implement the CAP following NMED approval.</p> <p>In the event that the short-term corrective actions fail to restore two feet of freeboard, the Permittee shall submit to NMED a proposal for permanent corrective actions in a long-term CAP. The Permittee shall submit the long-term CAP within 90 days following failure of the short-term CAP. Examples of corrective actions include the installation of an additional storage impoundment or a significant and permanent reduction in the volume of wastewater discharged to the impoundment. The Permittee shall ensure the long-term CAP includes a schedule for completion of corrective actions. The Permittee shall implement the CAP following NMED approval.</p> <p>[Subsection A of 20.6.2.3107 NMAC]</p>
25.	<p>In the event that a release occurs that is not authorized under this Discharge Permit (commonly known as a “spill”), the Permittee shall take measures to mitigate damage from the unauthorized discharge and initiate the notifications and corrective actions required in Section 20.6.2.1203 NMAC and summarized below. A release is defined as such quantity as may with reasonable probability injure or be detrimental to human</p>

#	Terms and Conditions
	<p>health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property.</p> <p>Within <u>24 hours</u> following discovery of the unauthorized discharge, the Permittee shall verbally notify NMED and provide the following information.</p> <ul style="list-style-type: none">a) 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.b) The name and address of the Facility.c) The date, time, location, and duration of the unauthorized discharge.d) The source and cause of unauthorized discharge.e) A description of the unauthorized discharge, including its estimated chemical composition.f) The estimated volume of the unauthorized discharge.g) Any actions taken to mitigate immediate damage from the unauthorized discharge. <p>Within <u>one week</u> following discovery of the unauthorized discharge, the Permittee shall submit written notification to NMED providing the information listed above and any pertinent updates.</p> <p>Within <u>15 days</u> following discovery of the unauthorized discharge, the Permittee shall submit a CAP to NMED describing any corrective actions previously taken and corrective actions to be taken relative to the unauthorized discharge. The CAP shall include the following information.</p> <ul style="list-style-type: none">a) A description of proposed actions to mitigate damage from the unauthorized discharge.b) A description of proposed actions to prevent future unauthorized discharges of this nature.c) A schedule for completion of proposed actions. <p>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, NMED may require the Permittee to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC.</p> <p>The Permittee shall not construe anything in this condition as relieving them of the obligation to comply with all requirements of Section 20.6.2.1203 NMAC.</p> <p>[20.6.2.1203 NMAC]</p>

#	Terms and Conditions
26.	<p>In the event that NMED or the Permittee identifies any failures of the discharge plan, i.e., the application, or this Discharge Permit not specifically noted herein, NMED may require the Permittee to submit a CAP 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.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]</p>

D. CLOSURE PLAN

Permanent Facility Closure Conditions

#	Terms and Conditions
27.	<p>The Permittee shall perform the following closure measures in the event the Facility, or a component thereof, is proposed to be permanently closed.</p> <p>Within <u>60 days</u> of ceasing to discharge to the impoundments, the Permittee shall plug the impoundment influent lines so that a discharge can no longer occur.</p> <p>Within <u>60 days</u> of ceasing to discharge to the impoundments, the Permittee shall evaporate or drain all wastewater from the impoundment and any other wastewater system component and disposed of it in accordance with all local, state, and federal regulations.</p> <p>Within <u>90 days</u> of ceasing to discharge to the impoundments, the Permittee shall submit a sludge removal and disposal plan to NMED for approval. The Permittee shall implement the plan within 30 days following approval by NMED. The sludge removal and disposal plan shall include the following information.</p> <ol style="list-style-type: none"> a) The estimated volume and dry weight of sludge planned for removal and disposal, including measurements and calculations. b) Analytical results for samples of the sludge taken from the impoundment for the constituents listed in Condition 18 of this Discharge Permit (reported in mg/kg, dry weight basis). c) The method of sludge <i>removal</i> from the impoundments. d) The method of <i>disposal</i> for all the sludge (and its contents) removed from the impoundment(s). The method shall comply with all local, state and federal regulations. <i>Note: A proposal that includes the surface disposal of sludge may be subject to Groundwater Discharge Permitting requirements pursuant to 20.6.2.3104 NMAC that are separate from the requirements of this Discharge Permit.</i>

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	<p>e) A schedule for completion of sludge removal and disposal not to exceed two years from the date discharge to the impoundments ceased.</p> <p>Within <u>one year</u> following completion of the sludge removal and disposal, the Permittee shall complete the following closure measures.</p> <ul style="list-style-type: none">a) Remove all lines leading to and from the impoundments, or permanently plug and abandon the lines in place.b) Remove or demolish any other wastewater system components and re-grade area with suitable fill to blend with surface topography, promote positive drainage and prevent ponding.c) Characterize, remove, and dispose of all solids from the impoundments in accordance with local, state, and federal regulations, and maintain a record of solids transported for off-site disposal, including the volume of solids transported and the disposal location.d) Remove and dispose of the impoundment liners at a solid waste facility. If there is evidence of contaminated soil below the liners, assess the impact, report that assessment to NMED, and mitigate the impacts following NMED approval.e) Fill the impoundment(s) with suitable fill.f) Re-grade the impoundment site and the locations of ancillary equipment, e.g., influent piping, to blend with surface topography, promote positive drainage and prevent ponding. <p>The Permittee shall continue groundwater monitoring until the Permittee meets the requirements of this condition met and groundwater monitoring confirms for a minimum of eight consecutive quarterly groundwater sampling events that groundwater does not exceed the standards of Section 20.6.2.3103 NMAC. This period is referred to as "post-closure."</p> <p>If at any time monitoring results show an exceedance of a groundwater quality standard in Section 20.6.2.3103 NMAC, the Permittee shall implement the Contingency Plan required by this Discharge Permit.</p> <p>Following notification from NMED that the Permittee may cease post-closure monitoring, the Permittee shall plug and abandon the monitoring well(s) in accordance with the attached Monitoring Well Guidance.</p> <p>When the Permittee has met all closure and post-closure requirements and verified appropriate actions with date stamped photographic evidence or an associated NMED inspection, the Permittee may submit to NMED a written request, including photographic evidence, for termination of the Discharge Permit.</p>

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	[Subsection A of 20.6.2.3107 NMAC, Subsection D of 20.6.2.4103 NMAC, 40 CFR Part 503]

E. GENERAL TERMS AND CONDITIONS

#	Terms and Conditions
28.	<p>RECORD KEEPING - The Permittee shall maintain a written record of the following:</p> <ul style="list-style-type: none"> • Information and data used to complete the application for this Discharge Permit; • Information, data, and documents demonstrating completion of closure activities; • Any releases (commonly known as “spills”) not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC; • The operation, maintenance, and repair of all facilities/equipment used to treat, store or dispose of wastewater; • Facility record drawings (plans and specifications) showing the actual construction of the Facility and bear the seal and signature of a licensed New Mexico professional engineer; • Copies of logs, inspection reports, and monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit; • The volume of wastewater or other wastes discharged pursuant to this Discharge Permit; • Groundwater quality and wastewater quality data collected pursuant to this Discharge Permit; • Copies of construction records (well log) for all sampled groundwater monitoring wells pursuant to this Discharge Permit; • The maintenance, repair, replacement or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit; and • Data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit, including: <ul style="list-style-type: none"> ○ the dates, location and times of sampling or field measurements; ○ the name and job title of the individuals who performed each sample collection or field measurement; ○ the sample analysis date of each sample; ○ the name and address of the laboratory, and the name of the signatory authority for the laboratory analysis; ○ the analytical technique or method used to analyze each sample or collect each field measurement; ○ the results of each analysis or field measurement, including raw data; ○ the results of any split, spiked, duplicate or repeat sample; and

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	<ul style="list-style-type: none"> ○ a copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used. <p>The Permittee shall maintain the written record at a location accessible to NMED during a Facility inspection for a minimum of five years. The Permittee shall make the record available to NMED upon request.</p> <p>[Subsections A and D of 20.6.2.3107 NMAC]</p>
29.	<p>SUBMITTALS – The Permittee shall submit both a paper copy and an electronic copy of all notification and reporting documents required by this Discharge Permit, e.g., monitoring reports. The Permittee shall submit paper and electronic documents to the NMED Permit Contact identified on the Permit cover page.</p> <p>[Subsection A of 20.6.2.3107 NMAC]</p>
30.	<p>INSPECTION and ENTRY – The Permittee shall allow NMED to inspect 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 any maintained records required by this Discharge Permit, the regulations of the federal government, or the WQCC are located.</p> <p>The Permittee shall allow NMED 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.</p> <p>No person shall construe anything in this Discharge Permit as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other local, state or federal regulations.</p> <p>[Subsection D of 20.6.2.3107 NMAC, NMSA 1978, §§ 74-6-9.B and 74-6-9.E]</p>
31.	<p>DUTY to PROVIDE INFORMATION - The Permittee shall, upon NMED’s request, allow for NMED’s inspection/duplication of records required by this Discharge Permit and/or furnish to NMED copies of such records.</p> <p>[Subsection D of 20.6.2.3107 NMAC]</p>
32.	<p>MODIFICATIONS and/or AMENDMENTS – In the event the Permittee proposes a change to the Facility or the Facility’s discharge that would result in a change in the volume</p>

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	<p>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 NMED’s approval (which may require modification of this Discharge Permit) prior to implementing such changes.</p> <p>[Subsection C of 20.6.2.3107 NMAC, Subsections E and G of 20.6.2.3109 NMAC]</p>
33.	<p>PLANS and SPECIFICATIONS – In the event the Permittee proposes to construct a wastewater system or change a process unit of an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the Permittee shall submit construction plans and specifications of the proposed system or process unit to NMED for approval prior to the commencement of construction.</p> <p>In the event the Permittee implements changes to the wastewater system authorized by this Discharge Permit that result in only a minor effect on the character of the discharge, the Permittee shall report such changes (including the submission of record drawings where applicable) to NMED prior to implementation.</p> <p>[Subsections A and C of 20.6.2.1202 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]</p>
34.	<p>CIVIL PENALTIES - 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 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in 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 WQA 74-6-10(C) and 74-6-10.1, 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.</p> <p>[20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10 and 74-6-10.1]</p>
35.	<p>CRIMINAL PENALTIES – No person shall:</p>

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	<ul style="list-style-type: none"> • Make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or maintained under the WQA; • Falsify, tamper with or render inaccurate any monitoring device, method or record maintained under the WQA; or • Fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation. <p>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 provisions of NMSA 1978, § 31-18-15.</p> <p>[20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10.2.A through 74-6-10.2.F]</p>
36.	<p>COMPLIANCE with OTHER LAWS - Nothing in this Discharge Permit shall be construed in any way as relieving the Permittee of the obligation to comply with any other applicable federal, state, and/or local laws, regulations, zoning requirements, nuisance ordinances, permits or orders.</p> <p>[NMSA 1978, § 74-6-5.L]</p>
37.	<p>RIGHT to APPEAL - The Permittee may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC within thirty days of the receipt of postal notice of this Discharge Permit and shall include a statement of the issues raised and the relief sought. Unless the Permittee files a timely petition for review, the decision of NMED shall be final and not subject to judicial review.</p> <p>[20.6.2.3112 NMAC, NMSA 1978, § 74-6-5.O]</p>
38.	<p>TRANSFER of DISCHARGE PERMIT - Prior to the transfer of any ownership, control, or possession of this Facility or any portion thereof, the Permittee shall:</p>

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	<ul style="list-style-type: none">• Notify the proposed transferee in writing of the existence of this Discharge Permit;• Include a copy of this Discharge Permit with the notice; and• Deliver or send by certified mail to NMED a copy of the notification and proof that the proposed transferee has received such notification. <p>The Permittee shall continue to be responsible for any discharge from the Facility, until both ownership and possession of the Facility have been transferred to the transferee.</p> <p>[20.6.2.3111 NMAC]</p>
39.	<p>PERMIT FEES – The Permittee shall be aware that the payment of permit fees is due at the time of Discharge Permit approval. The Permittee may pay the permit fees in a single payment or they may pay the fee in equal installments on a yearly basis over the term of the Discharge Permit. The Permittee shall remit single payments to NMED no later than 30 days after the Discharge Permit issuance date. The Permittee shall remit initial installment payments to NMED no later than 30 days after the Discharge Permit issuance date; with subsequent installment payments remitted to NMED no later than the anniversary of the Discharge Permit issuance date.</p> <p>Permit fees are associated with <u>issuance</u> of this Discharge Permit. No person shall construe anything in this Discharge Permit 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. NMED shall suspend or terminate an approved Discharge Permit if the Permittee fails to remit an installment payment by its due date.</p> <p>[Subsection F of 20.6.2.3114 NMAC, NMSA 1978, § 74-6-5.K]</p>



New Mexico Environment Department Ground Water Quality Bureau Discharge Permit Summary

Facility Information

Facility Name BNSF Railway Company, Belen Railyard
Discharge Permit Number DP-278

Legally Responsible Party Domonic Lees, Manager, Environmental Operations
 BNSF Railway Company
 1624 1st Street NW
 Albuquerque, NM 87102
 (505) 767-6908

Treatment, Disposal, and Site Information

Primary Waste Type Industrial – Surface Disposal
Facility Type Railyard

Treatment Methods

Type	Designation	Description & Comments
Oil/Water Separator	Westbound Mainline Fueling	Approximately 10,000-gallon capacity oil/water separator.
Oil/Water Separator	Roundhouse Fueling	Approximately 10,000-gallon capacity oil/water separator.
Oil/Water Separator	Eastbound Mainline Fueling	Approximately 10,000-gallon capacity oil/water separator.
Oil/Water Separator	Sludge Drying Beds	Approximately 10,000-gallon capacity oil/water separator.

Discharge Locations

Type	Designation	Description & Comments
Impoundment	Impoundment 003 West	60-mil high-density polyethylene liner. The capacity for both impoundments is 4,000,000 gallons.
Impoundment	Impoundment 003 East	60-mil high-density polyethylene liner. The capacity for both impoundments is 4,000,000 gallons.

Ground Water Monitoring Locations

Type	Designation	Description & Comments
Monitoring Well	MW-91	Located 65 feet south of the top of Impoundment 003 East berm and hydrologically downgradient from Impoundment 003 West
Monitoring Well	MW-90	Located 65 feet south of the top of Impoundment 003 East berm and hydrologically downgradient of Impoundment 003 East.

Depth-to-Ground Water 4 to 6 feet
Total Dissolved Solids (TDS) 560 mg/L



New Mexico Environment Department Ground Water Quality Bureau Discharge Permit Summary

Permit Information

Original Permit Issued	October 12, 1983
Permit Modification	December 10, 1985
Permit Renewal	March 6, 1989
Permit Modification	March 5, 1991
Permit Modification	September 18, 1992
Permit Renewal	March 31, 1993
Permit Modification	September 5, 1996
Permit Renewal	November 28, 2001
Permit Renewal	February 9, 2007
Permit Renewal	April 27, 2012
Permit Renewal	March 20, 2018

Current Action	Renewal
Application Received	September 22, 2022
Public Notice Published	[to be determined]
Permit Issued (Issuance Date)	[issuance date]
Permitted Discharge Volume	8,992 gallons per day

NMED Contact Information

Mailing Address	Ground Water Quality Bureau P.O. Box 5469 Santa Fe, New Mexico 87502-5469
GWQB Telephone Number	(505) 827-2900
NMED Lead Staff	Kambray Townsend
Lead Staff Telephone Number	(505) 538-0497
Lead Staff Email	kambray.townsend@env.nm.gov or pps.general@env.nm.gov

Groundwater Discharge Permit Guidance for Synthetically Lined Lagoons – Liner Material and Site Preparation

This guidance document represents minimum liner material and site preparation requirements for wastewater treatment, storage and evaporation lagoons. These requirements do not apply to lagoons storing hazardous wastes or high strength waste. The Ground Water Quality Bureau may impose additional requirements (e.g., double-lined lagoons with leak detection) for facilities discharging hazardous or high strength waste to lagoons through the development of specific Discharge Permit conditions for such facilities.

Liner Material Requirements:

1. The liner shall be chemically compatible with any material that will contact the liner.
2. The liner material shall be resistant to deterioration by sunlight if any portion of the liner will be exposed.
3. Synthetic liner material shall be of sufficient thickness to have adequate tensile strength and tear and puncture resistance. Under no circumstances shall a synthetic liner material less than 40 mils in thickness be accepted. Any liner material shall be certified by a licensed New Mexico professional engineer and approved by the New Mexico Environment Department (NMED) prior to its installation.

Lagoon Design and Site Preparation Requirements:

1. The system shall be certified by a licensed New Mexico professional engineer and approved by NMED prior to installation.
2. Inside slopes shall be a maximum of 3 (horizontal): 1 (vertical), and a minimum of 4 (horizontal); 1 (vertical).
3. Lagoon volume shall be designed to allow for a minimum of 24 inches of freeboard.
4. The liner shall be installed with sufficient liner material to accommodate shrinkage due to temperature changes. Folds in the liner are not acceptable.
5. To a depth of at least six inches below the liner, the sub-grade shall be free of sharp rocks, vegetation and stubble. In addition, liners shall be placed on a sub-grade of sand or fine soil. The surface in contact with the liner shall be smooth to allow for good contact between liner and sub-grade. The surface shall be dry during liner installation.
6. Sub-grade shall be compacted to a minimum of 90% of standard proctor density.
7. The minimum dike width shall be eight feet to allow vehicle traffic for maintenance.
8. The base of the pond shall be as uniform as possible and shall not vary more than three inches from the average finished elevation.
9. Synthetic liners shall be anchored in an anchor trench in the top of the berm. The trench shall be a minimum of 12 inches wide, 12 inches deep and shall be set back at least 24 inches from the inside edge of the berm.
10. If the lagoon is installed over areas of decomposing organic materials or shallow groundwater, a liner vent system shall be installed.
11. Any opening in the liner through which a pipe or other fixture protrudes shall be properly sealed. Liner penetrations shall be detailed in the construction plans and record drawings.
12. A synthetic liner shall not be installed in temperatures below freezing.
13. The liner shall be installed or supervised by an individual that has the necessary training and experience as required by the liner manufacturer.
14. All manufacturer's installation and field seaming guidelines shall be followed.
15. All synthetic liner seams shall be field tested by the installer and verification of the adequacy of the seams shall be submitted to NMED along with the record drawings.
16. Concrete slabs installed on top of the synthetic liner for operational purposes shall be completed in accordance with manufacturer and installer recommendations to ensure liner integrity.

**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 groundwater 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 groundwater 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 groundwater monitoring under groundwater 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)

