

EPWM - 007

**NMED
Temporary
Permission
DP-1781**

2011 - 2015



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

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DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

January 16, 2013

Paul Laur, CEO
Eldorado Biofuels, LLC
7 Avenida Vista Grande #454
Santa Fe, NM 87508

RE: Discharge Permit Modification, DP-1781, Eldorado Biofuels, LLC

Dear Mr. Laur:

The New Mexico Environment Department (NMED) issues the enclosed Discharge Permit Modification, DP-1781, to Eldorado Biofuels, LLC (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. Such conditions are listed at the beginning of the operational, monitoring and closure plans of this Discharge Permit.

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 Modification will end on November 14, 2016.

Paul Laur, DP-1781
January 16, 2013
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NMED requests that the permittee submit an application for renewal (or renewal and modification) at least 180 days prior to the date the Discharge Permit term ends.

An invoice for the Discharge Permit Modification Fee of \$2,300.00 is being sent under separate cover. Payment of the Discharge Permit Fee must be received by NMED within 30 days of the date the Discharge Permit is issued.

If you have any questions, please contact Rebecca Cook at (505) 827-2778. Thank you for your cooperation during this Discharge Permit review.

Sincerely,



Jerry Schöppner, Chief
Ground Water Quality Bureau

JS:RC/rc

Encs: Discharge Permit Modification, DP-1781

cc: Mike Kessler, District Manager, NMED District III (permit – electronic copy)
NMED Hobbs Field Office (permit)
John Romero, Office of the State Engineer (permit – electronic copy)

GROUND WATER DISCHARGE PERMIT MODIFICATION
Eldorado Biofuels Jal Facility, DP-1781

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit Modification (Discharge Permit), DP-1781, to Eldorado Biofuels, LLC (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.

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 Eldorado Biofuels Jal Facility (facility) into ground and surface water, so as to protect ground and surface water for present and potential future use as domestic and agricultural water supply and other uses and protect public health. In issuing this Discharge Permit, NMED has determined that the requirements of Subsection C of 20.6.2.3109 NMAC have been met.

The activities which produce the discharge, the location of the discharge, and the quantity, quality and flow characteristics of the discharge are briefly described as follows:

Up to 19,395,000 gallons of algae propagation water is contained in up to 150 impoundments and three incubation tubes. Up to 216,000 gallons per day (gpd) of water from all permitted sources may be discharged into the impoundments. The permitted supply water may be enriched with sodium nitrate, sodium phosphate, sodium silicate, trace metals in solution, vitamin B₁₂, biotin vitamin solution, and thiamine vitamin solution. The permittee may also enrich the algae propagation water using up to 1,000 gpd of slurry obtained from dairy wastewater impoundments. The nutrient-enriched water will be contained in four impoundments approximately 18 inches deep with double, 60-mil, reinforced, LLDPE synthetic liners and leak detection, or in new impoundments which will be lined with 45-mil Ethylene Propylene Diene Monomer (EPDM) liner without leak detection. New impoundments shall have an operating depth of one foot and shall not exceed three acres in size. The impoundments will typically be flushed out on a rotating basis of approximately half of the impoundments every two weeks. The discharge will be reinjected through salt water disposal well Brown No. 5 under a temporary permit from the New Mexico Oil Conservation Division (OCD), EPWM-007.

The modification consists of an increase in the maximum volume of contained algae propagation water from 4,400 gallons to 19,395,000 gallons; a daily discharge limit to the impoundments of 216,000 gallons; and an increase from four impoundments to three incubator tubes and up to 150 impoundments on 160 acres. The permitted supply water may come from the following sources: treated produced water from wells operated by Fulfer Oil & Cattle Company, up to 100,000 gpd of treated municipal effluent from the Town of Jal Wastewater Treatment Facility, or fresh water.

The discharge contains water contaminants which may be elevated above the standards of Section 20.6.2.3103 NMAC and/or the presence of toxic pollutants as defined in Subsection WW of 20.6.2.7 NMAC.

The facility is located at Fulfer Oil & Cattle Co. Brown No. 5 SWD (API 30-025-09807) Unit N, approximately 1.5 miles west of Jal in Section 24, Township 25S, Range 36E, Lea County. Ground water most likely to be affected is at a depth of approximately 250 feet and has a total dissolved solids concentration of approximately 434 milligrams per liter.

The original Discharge Permit was issued on November 14, 2011. The application (i.e., discharge plan) consists of the materials submitted by Paul Laur dated March 20, 2012, and materials contained in the administrative record prior to issuance of this Discharge Permit. The discharge shall be managed in accordance with all conditions and requirements of this Discharge Permit.

Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of ground water quality, and that more stringent requirements to protect ground water quality may be required by NMED. The permittee may be required to implement abatement of water pollution and remediate ground water quality. 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.

The following acronyms and abbreviations may be used in this Discharge Permit:

Abbreviation	Explanation	Abbreviation	Explanation
BOD ₅	biochemical oxygen demand (5-day)	NTU	nephelometric turbidity units
CFR	Code of Federal Regulations	Org	organisms
Cl	chloride	TDS	total dissolved solids
LADS	land application data sheet(s)	TKN	total Kjeldahl nitrogen
mg/L	milligrams per liter	total nitrogen	TKN+NO ₃ -N
mL	milliliters	TRC	Total Residual Chlorine
NMAC	New Mexico Administrative Code	TSS	total suspended solids
NMED	New Mexico Environment Department	WQA	New Mexico Water Quality Act
NMSA	New Mexico Statutes Annotated	WQCC	Water Quality Control Commission
NO ₃ -N	nitrate-nitrogen		

II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. The permittee is discharging 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.
2. The permittee is discharging 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 milligrams per liter or less of total dissolved solids within the meaning of Subsection A of 20.6.2.3101 NMAC.
3. The discharge from the facility is not subject to any of the exemptions of Section 20.6.2.3105 NMAC.

III. AUTHORIZATION TO DISCHARGE

Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the permittee to ensure that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein.

The permittee is authorized to contain up to 19,395,000 gallons of water for algae propagation in three incubator tubes and up to 150 impoundments. Up to 216,000 gpd of water from all permitted sources may be discharged into the impoundments. Water may come from the following sources: treated produced water, up to 100,000 gpd of treated municipal effluent, or fresh water. Algae propagation water may be enriched with sodium nitrate, sodium phosphate, sodium silicate, trace metals in solution, vitamin B₁₂, biotin vitamin solution, and thiamine vitamin solution, or the permittee may use up to 1,000 gpd of slurry obtained from dairy wastewater impoundments. The algae propagation impoundments will typically be flushed out on a rotating basis of approximately half of the impoundments every two weeks. The algae propagation wastewater will be reinjected through salt water disposal well Brown No. 5 under a permit from the New Mexico Oil Conservation Division (OCD), EPWM-007. [20.6.2.3104 NMAC, Subsection C of 20.6.2.3106 NMAC, Subsection C 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 1 and 2 NMAC. [20.6.2.3106.C NMAC, 20.6.2.3107 NMAC]
2.	The permittee shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated. [20.6.2.3101 NMAC, 20.6.2.3103 NMAC]
3.	The original four algae propagation impoundments are constructed with double, 60-mil, reinforced, LLDPE synthetic liners and leak detection. In 2012 the following tubes and

	impoundments were constructed: three incubator tubes 7.0' by 3.0' with 740 gallon capacity each, three impoundments 23.5' by 22.0', three impoundments 73.0' by 22.0', and three impoundments 149.0' by 22.0'. All nine of these impoundments are constructed with 45-mil Ethylene Propylene Diene Monomer (EPDM) synthetic liners without leak detection. Subsequent impoundments are proposed to be lined with 45-mil (EPDM) liner without leak detection. Impoundments shall have an operating depth of approximately one foot and shall not exceed three acres in size. [20.6.2.3104 NMAC]
4.	The permittee shall construct all proposed impoundments according to NMED approved final construction plans and specifications. The permittee shall notify NMED at the commencement of construction to allow NMED personnel to be onsite for inspection during the construction phase. Record drawings of the finished impoundments shall be submitted to NMED within 30 days of completion. A licensed New Mexico professional engineer shall certify all construction plans and specifications, supporting design calculations, and record drawings of the impoundments. [20.6.2.3109 NMAC]
5.	<p>Following completion of any additions or changes to the facility which affect the following elements, the permittee shall update and resubmit the scaled map of the entire facility to NMED within 120 days of the additions or changes. The map shall be clear and legible, and drawn to a scale such that all necessary information is plainly shown and identified. The map shall show the scale in feet or metric measure, a graphical scale, a north arrow, and the effective date of the map. Documentation identifying the means used to locate the mapped elements (i.e., GPS, land survey, digital map interpolation, etc.) and the relative accuracy of the data (i.e., +/- XX feet or meters) shall be included with the map.</p> <p>The map shall include the following elements:</p> <ul style="list-style-type: none"> a) overall facility layout; b) location of all algae impoundments; c) location of ground water monitoring wells; d) location of wastewater disposal well(s); e) all domestic and public water supply wells within 1,000 feet of the discharge site f) all flow measurement devices g) location of septic tank/leachfield systems. <p>Any elements that cannot be directly shown, due to its location inside of existing structures, or because it is buried without surface identification, shall be identified on the map in a schematic format and identified as such. [20.6.2.3106 NMAC, 20.6.2.3109 NMAC]</p>
6.	The permittee shall maintain a minimum of twelve inches of freeboard in the impoundments at all times. In the event that the permittee determines that twelve inches of freeboard cannot be preserved in the impoundment, the permittee shall enact the contingency plan set forth in this Discharge Permit. [Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]
7.	The permittee shall have the option to make a demonstration to NMED that a minimum of six inches of freeboard in the impoundments provides adequate protection against wave action and water surface elevation changes due to wind overtopping the impoundments,

	and maintains the structural integrity of the impoundments. The demonstration shall bear the seal and signature of a licensed New Mexico professional engineer. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
8.	Any residual solids from the dairy wastewater slurry that are temporarily stored at the facility prior to disposal shall be contained on an impervious surface. The permittee shall store and dispose of the residual solids in accordance with all local, state and federal regulations. [20.6.2.3109 NMAC]
9.	The permittee shall maintain signs indicating that the impounded water at the facility is not potable. Signs shall be posted at the facility entrance and other areas where there is potential for public contact with impounded water. All signs shall be printed in English and Spanish. They shall remain visible and legible for the term of this Discharge Permit. [Subsections B and C of 20.6.2.3109 NMAC, NMSA 1978, § 74-6-5.D]
10.	The impoundments shall be maintained in such a manner as to avoid conditions which could affect the structural integrity of the impoundments and/or the associated liners. Such conditions include, but are not limited to: <ul style="list-style-type: none"> • Erosion damage; • Animal activity/damage; • The presence of vegetation such as: aquatic plants, weeds, woody shrubs or trees growing within five feet of the impoundment edge or within the pond or impoundment itself; • Evidence of seepage; • Evidence of berm subsidence; and/or • The presence of large pieces or large quantities of debris in the pond or impoundment. The permittee shall visually inspect the impoundments and surrounding berms on a monthly basis to ensure proper maintenance. Vegetation growing around the impoundments shall be routinely controlled by mechanical removal in a manner that is protective of liners. Any evidence of damage to the berm of a pond or impoundment or to a liner shall be reported to NMED immediately upon discovery. [20.6.2.3107 NMAC]

B. MONITORING AND REPORTING

#	Terms and Conditions
11.	The permittee shall conduct the following monitoring, reporting, and other requirements listed below in accordance with the monitoring requirements of this Discharge Permit. [Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]
12.	METHODOLOGY – Unless otherwise approved in writing by NMED, the permittee shall conduct sampling and analysis in accordance with the most recent edition of the following documents: <ul style="list-style-type: none"> a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18th, 19th or current) b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste c) U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey

	<p>d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water</p> <p>e) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition</p> <p>f) Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations</p> <p>g) Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy</p> <p>[Subsection B of 20.6.2.3107 NMAC]</p>
13.	<p>The permittee shall submit semi-annual monitoring reports to NMED for the most recently completed semi-annual period by the 1st of February and August each year.</p> <p>Semi-annual monitoring shall be performed during the following periods and submitted as follows:</p> <ul style="list-style-type: none"> January 1st through June 30th (first half) – due by August 1st July 1st through December 31st (second half) – due by February 1st <p>[Subsection A of 20.6.2.3107 NMAC]</p>
14.	<p>The permittee shall measure the monthly volume of fresh water and the monthly volume of treated produced water discharged to the impoundments using totalizing flow meters. Monthly meter readings including units of measurement, calculations, and monthly discharge volumes for the previous six-month period shall be submitted to NMED in the semi-annual monitoring reports. The flow meters shall be kept operational at all times.</p> <p>[20.6.2.3107.A(1) NMAC, 20.6.2.3109.H NMAC]</p>
15.	<p>The permittee shall measure the monthly volume of treated domestic wastewater and dairy slurry wastewater discharged to impoundments. The permittee shall obtain readings from a totalizing flow meter, or estimate volumes based on the volume of the transport containers, on a monthly basis and calculate the monthly volume discharged to the impoundments. The monthly meter readings, transport container volumes, and calculated monthly discharge volumes for the previous six-month period shall be submitted 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>
16.	<p>The permittee shall measure the monthly volume of wastewater discharged from the impoundments to the salt water disposal well. The permittee shall obtain readings from a totalizing flow meter connected to the disposal well on a monthly basis and report the monthly discharge volume. The monthly meter readings and monthly discharge volumes for the previous six-month period shall be submitted 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>
17.	<p>All flow meters shall be capable of having their accuracy ascertained under actual working (field) conditions. A field calibration method shall be developed for each flow meter and that method shall be used to check the accuracy of each respective meter. Field calibrations shall be performed upon repair or replacement of a flow measurement device and, at a minimum, within 90 days of the effective date of this Discharge Permit (by April 16,</p>

	<p>2013), and then every other year thereafter.</p> <p>Flow meters shall be calibrated to within plus or minus 10 percent of actual flow, as measured under field conditions. Field calibrations shall be performed by an individual knowledgeable in flow measurement and in the installation/operation of the particular device in use. A flow meter calibration report shall be prepared for each flow measurement device at the frequency calibration is required. The flow meter calibration report shall include the following information:</p> <ol style="list-style-type: none">a) The location and meter identification.b) The method of flow meter field calibration employed.c) The measured accuracy of each flow meter prior to adjustment indicating the positive or negative offset as a percentage of actual flow as determined by an in-field calibration check.d) The measured accuracy of each flow meter following adjustment, if necessary, indicating the positive or negative offset as a percentage of actual flow of the meter.e) Any flow meter repairs made during the previous year or during field calibration. <p>The permittee shall maintain records of flow meter calibration(s) at a location accessible for review by NMED during facility inspections.</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 visually inspect flow meters on a monthly basis for evidence of malfunction. If a visual inspection indicates a flow meter is not functioning as required by this Discharge Permit, the permittee shall repair or replace the meter within 30 days of discovery. For <i>repaired</i> meters, the permittee shall submit a report to NMED with the next monitoring report following the repair that includes a description of the malfunction; a statement verifying the repair; and a flow meter field calibration report completed in accordance with the requirements of this Discharge Permit. For <i>replacement</i> meters, the permittee shall submit a report to NMED with the next monitoring report following the replacement that includes a design schematic for the device and a flow meter field calibration report completed in accordance with the requirements of this Discharge Permit.</p> <p>[Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]</p>
19.	<p>The permittee shall analyze water samples collected from the algae propagation impoundment system on a semi-annual basis for NO₃-N, TKN, Cl, and TDS. Samples shall be collected from one impoundment containing each type of propagation water. The impoundments sampled shall be representative of the mixtures and concentrations of the nutrients in use at the facility. Analytical results and a map showing the water sampling locations shall be submitted to NMED in the semi-annual monitoring reports.</p> <p>[20.6.2.3107 NMAC]</p>
20.	<p>Once prior to the expiration date of this Discharge Permit, NMED shall have the option to perform downhole inspections of all monitoring wells identified in this Discharge Permit. NMED shall establish the inspection date and provide at least 60 days notice to the permittee by certified mail. The permittee shall have any existing dedicated pumps removed at least 48 hours prior to NMED inspection to allow adequate settling time of sediment agitated from pump removal.</p>

	<p>Should a facility not have existing dedicated pumps, but decide to install pumps in any of the monitoring wells, NMED shall be notified at least 90 days prior to pump installation so that a downhole well inspection(s) can be scheduled prior to pump placement.</p> <p>[20.6.2.3107 NMAC]</p>
21.	<p>Prior to containing or discharging water to any impoundments constructed after September 15, 2012 the permittee shall install the following two new monitoring wells:</p> <ul style="list-style-type: none"> • One monitoring well (MW-1) hydrologically upgradient of the entire facility. • One monitoring well (MW-2) located 20 to 50 feet hydrologically downgradient of any impoundments constructed after September 15, 2012, including, but not limited to, the next phase of proposed EPDM lined impoundments. <p>The permittee shall install the following one additional monitoring well prior to containing or discharging water to any new impoundments that result in the facility expanding beyond a fifty acre footprint:</p> <ul style="list-style-type: none"> • One monitoring well (MW-3) 20 to 50 feet hydrologically downgradient of any new impoundments that result in the facility expanding beyond a fifty acre footprint. <p>All monitoring well locations shall be approved by NMED prior to installation. The wells shall be completed in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i>, Revision 1.1, March 2011. Construction and lithologic logs shall be submitted to NMED within 30 days of well completion]. [20.6.2.3107 NMAC]</p>
22.	<p>Following installation of the new monitoring wells required by this Discharge Permit, the permittee shall sample ground water in the new wells and analyze the samples for NO₃-N, TKN, Cl, and TDS. The permittee shall sample the following wells:</p> <ul style="list-style-type: none"> • One monitoring well (MW-1) hydrologically upgradient of the entire facility. • One monitoring well (MW-2) located 20 to 50 feet hydrologically downgradient of any impoundments constructed after September 15, 2012, including, but not limited to, the next phase of proposed EPDM lined impoundments. <p>Ground water sample collection, preservation, transport and analysis shall be performed according to the following procedure:</p> <ol style="list-style-type: none"> a) Measure the depth-to-ground water from the top of well casing to the nearest 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>Depth-to-water measurements, analytical results, including laboratory QA/QC summary report, and a facility layout map showing the location and number of each well shall be submitted to NMED within 60 days of the installation of the monitoring wells.</p> <p>[20.6.2.3107 NMAC]</p>
23.	<p>Within 120 days of the completion of the third monitoring well, the permittee shall survey all wells approved by NMED for Discharge Permit monitoring purposes to a U.S.</p>

	<p>Geological Survey (USGS) or other permanent benchmark. Survey data shall include northing, easting and elevation to the nearest hundredth of a foot or in accordance with the "Minimum Standards for Surveying in New Mexico" (12.8.2 NMAC). A survey elevation shall be established at the top-of-casing, with a permanent marking indicating the point of survey. The survey shall be completed and certified by a licensed New Mexico professional surveyor. Depth-to-water shall be measured to the nearest hundredth of a foot in all surveyed wells, and the data shall be used to develop a map showing the location of all monitoring wells and the direction and gradient of ground water flow at the facility. The data and map of ground water flow direction at the facility shall be submitted to NMED within 30 days of survey completion. [20.6.2.3107 NMAC]</p>
24.	<p>The permittee shall perform semi-annually ground water sampling in two monitoring wells and analyze the samples for NO₃-N, TKN, Cl, and TDS. The permittee shall sample the following wells:</p> <ul style="list-style-type: none"> • MW-1, intended to be located hydrologically upgradient of the facility: location to be proposed. • MW-2, intended to be located hydrologically downgradient of any impoundments constructed after September 15, 2012, including, but not limited to, the next phase of proposed EPDM lined impoundments; location to be proposed. <p>Ground water sample collection, preservation, transport and analysis shall be performed according to the following procedure:</p> <ol style="list-style-type: none"> a) Measure the depth-to-ground water from the top of well casing to the nearest 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>Depth-to-water measurements, analytical results, including laboratory QA/QC summary report, and a facility layout map showing the location and number of each well shall be submitted to NMED in the semi-annually monitoring reports. [20.6.2.3107 NMAC]</p>
25.	<p>Following the installation of the third monitoring well, the permittee shall develop a ground water elevation contour map on a semi-annually basis using the monitoring well survey data and quarterly depth-to-water measurements as required by this Discharge Permit. The ground water elevation contour map shall depict the ground water flow direction based on the ground water elevation contours. The data and ground water elevation contour maps shall be submitted to NMED in the semi-annually monitoring reports. [20.6.2.3107 NMAC]</p>

C. CONTINGENCY PLAN

#	Terms and Conditions
26.	In the event that ground water monitoring indicates that one or more of the ground water standards of Section 20.6.2.3103 NMAC are violated during the term of this Discharge

	<p>Permit, upon closure of the facility or during post-closure monitoring, the permittee shall perform the following actions:</p> <ul style="list-style-type: none"> a) Collect a second sample from the monitoring well(s) within 30 days of the initial sample analysis date to verify the initial results. b) Submit the analytical results for both the initial and second ground water samples to NMED within 30 days of the analysis date of the second ground water sample. <p>In the event that analytical results of the second ground water sample verify the exceedance of one or more of the ground water standards of Section 20.6.2.3103 NMAC, within 60 days of the second sample analysis date the permittee shall submit a corrective action plan to NMED and implement the plan upon NMED approval. The corrective action plan shall propose measures to mitigate damage from the discharge including, at a minimum, source control measures and an implementation schedule. The permittee may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC, if the corrective action plan will not result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC within 180 days of confirmed ground water contamination. [20.6.2.1203 NMAC, 20.6.2.4105.A(8) NMAC]</p>
27.	<p>In the event that information available to NMED indicates that a well(s) is not appropriately constructed to effectively monitor ground water quality, contains insufficient water to allow the collection of representative ground water samples, or is not completed in a manner that is protective of ground water quality, the permittee shall install a replacement well(s) within 90 days of notification from NMED. The replacement well location(s) shall be approved by NMED prior to installation and completed in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i>, Revision 1.1, March 2011. Construction and lithologic logs shall be submitted to NMED within 60 days of well completion.</p> <p>Upon completion of the replacement monitoring well(s), the monitoring well(s) requiring replacement shall be properly plugged and abandoned. The well(s) shall be plugged and abandoned in accordance with the abandonment details in the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i>, Revision 1.1, March 2011, and any applicable local, state, and federal regulations. Documentation describing the plugging and abandonment procedures, including photographic documentation, shall be submitted to NMED within 60 days of completed well abandonment. [20.6.2.3107 NMAC]</p>
28.	<p>In the event that information on the direction of ground water flow obtained pursuant to this Discharge Permit indicates that a monitoring well(s) is not located hydrologically downgradient of the discharge location(s) the well(s) is intended to monitor, the permittee shall propose a location(s) for a replacement monitoring well(s) within 30 days of notification from NMED. The permittee shall propose a replacement monitoring well location(s) that is anticipated to be hydrologically downgradient of the discharge location(s) to be monitored. The permittee shall install the replacement monitoring well(s) within 90 days of NMED approval of the proposed replacement monitoring well location(s). The replacement monitoring well(s) shall be completed in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and</i></p>

	<i>Abandonment Conditions</i> , Revision 1.1, March 2011. Construction and lithologic logs shall be submitted to NMED within 60 days of well completion. [20.6.2.3107 NMAC]
29.	In the event that a minimum of six inches of freeboard cannot be maintained in the impoundments at all times, the permittee shall submit a corrective action plan for NMED approval within 30 days of the date when the six inches of freeboard limit was initially exceeded. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
30.	In the event of a spill or release that is not authorized under this Discharge Permit, the permittee shall initiate the notifications and corrective actions as required in Section 20.6.2.1203 NMAC. The permittee shall take immediate corrective action to contain and remove or mitigate the damage caused by the discharge. Within 24 hours after discovery of the discharge, the permittee shall verbally notify NMED and provide the information required by Paragraph (1) of Subsection A of 20.6.2.1203 NMAC. Wastewater shall be pumped to a lined impoundment and disposed of in accordance with all local, state, and federal regulations. Failed components shall be repaired or replaced within 48 hours from the time of failure or as soon as possible. Within seven days of discovering the discharge, the permittee shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. The permittee shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]
31.	In the event NMED or the permittee identifies any other failures of the Discharge Permit or system not specifically noted herein, NMED may require the permittee to develop for NMED approval contingency plans and schedules to cope with the failures. [20.6.2.3107.A(10) NMAC]

D. CLOSURE PLAN

#	Terms and Conditions
32.	<p>Upon closure of the facility, the permittee shall perform the following closure measures:</p> <ul style="list-style-type: none"> a) Empty impoundments and dispose of algae growth media and any other wastes stored on site in a manner that is protective of ground water quality and is in accordance with all local, state and federal regulations. b) Perforate or remove the impoundment liner(s) and re-grade the impoundment(s) with clean fill to blend with surface topography and prevent ponding. c) Complete the installation of all monitoring wells as required by this Discharge Permit. d) Continue ground water monitoring as required by this Discharge Permit for two years after closure to confirm the absence of ground water contamination. If monitoring results show that the ground water standards in Section 20.6.2.3103 NMAC are being violated, the permittee shall implement the contingency plan required by this Discharge Permit. e) Following notification from NMED that post-closure monitoring may cease, the permittee shall plug and abandon the monitoring well(s) in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i>, Revision 1.1, March 2011. <p>When all post-closure requirements have been met, the permittee may request to terminate the Discharge Permit. [20.6.2.3107.A(11) NMAC]</p>

E. GENERAL TERMS AND CONDITIONS

#	Terms and Conditions
33.	<p>RECORD KEEPING - The permittee shall maintain a written record of the following information:</p> <ul style="list-style-type: none"> 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) 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. e) Copies of monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit. f) The volume of wastewater or other wastes discharged pursuant to this Discharge Permit. g) Ground water quality and wastewater quality data collected pursuant to this Discharge Permit. h) Copies of construction records (well log) for all ground water monitoring wells required to be sampled pursuant to this Discharge Permit. i) Records of the maintenance, repair, replacement or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit. j) 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: <ul style="list-style-type: none"> i) The dates, location and times of sampling or field measurements; ii) The name and job title of the individuals who performed each sample collection or field measurement; iii) The sample analysis date of each sample; iv) The name and address of the laboratory, and the name of the signatory authority for the laboratory analysis; v) The analytical technique or method used to analyze each sample or collect each field measurement; vi) The results of each analysis or field measurement, including raw data; vii) The results of any split, spiked, duplicate or repeat sample; and viii) 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 written record shall be maintained by the permittee at a location accessible during a facility inspection by NMED for a period of at least five years from the date of application, report, collection or measurement and shall be made available to the department upon request. [NMSA 1978, § 74-6-5.D, 20.6.2.3109.B NMAC, 20.6.2.3107.A NMAC]</p>

34.	<p>INSPECTION and ENTRY – The permittee shall allow inspection by NMED of the facility and its operations which 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.</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>Nothing in this Discharge Permit shall be construed 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. [20.6.2.3107.D NMAC, NMSA 1978, §§ 74-6-9.B and 74-6-9.E]</p>
35.	<p>DUTY to PROVIDE INFORMATION - The permittee shall, upon NMED's request, allow NMED's inspection/duplication of records required by this Discharge Permit and/or furnish to NMED copies of such records. [NMSA 1978, § 74-6-5.D, 20.6.2.3109.B NMAC 20.6.2.3107.D NMAC, NMSA 1978, §§ 74-6-9.B and 74-6-9.E]</p>
36.	<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 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. [NMSA 1978, § 74-6-5.D, 20.6.2.3109.E NMAC, 20.6.2.3107.C NMAC]</p>
37.	<p>PLANS and SPECIFICATIONS – In the event the permittee is proposing 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 to NMED for the proposed system or process unit prior to the commencement of construction.</p> <p>In the event the permittee implements changes to the wastewater system authorized by this Discharge Permit which 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) as of January 1 and June 30 of each year to NMED. [NMSA 1978, § 74-6-5.D, 20.6.2.3109.B NMAC, 20.6.2.1202 NMAC]</p>
38.	<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</p>

	<p>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>[NMSA 1978, §§ 74-6-10 and 74-6-10.1,]</p>
39.	<p>CRIMINAL PENALTIES – No person shall:</p> <ol style="list-style-type: none"> 1) 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; 2) falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or 3) 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>[NMSA 1978, §§ 74-6-10.2.A through 74-6-10.2.F]</p>
40.	<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 all applicable federal, state, and local laws, regulations, permits or orders.</p> <p>[20.6.2 NMAC]</p>
41.	<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 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.</p> <p>[NMSA 1978, § 74-6-5.O]</p>
42.	<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> <ol style="list-style-type: none"> 1) notify the proposed transferee in writing of the existence of this Discharge Permit;

	<p>2) include a copy of this Discharge Permit with the notice; and</p> <p>3) 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.</p> <p>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]</p>
43.	<p>PERMIT FEES - Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Single payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date. Initial installment payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date; subsequent installment payments shall be remitted to NMED no later than the anniversary of the Discharge Permit effective date.</p> <p>Permit fees are associated with <u>issuance</u> 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]</p>

V. PERMIT TERM & SIGNATURE

DISCHARGE PERMIT EFFECTIVE DATE: November 11, 2011
MODIFICATION EFFECTIVE DATE: January 16, 2013
TERM ENDS: November 14, 2016

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



JERRY SCHOEPPNER
Chief, Ground Water Quality Bureau
New Mexico Environment Department



New Mexico Environment Department Ground Water Quality Bureau Discharge Permit Summary

Facility Information

Facility Name Eldorado Biofuels Jal Facility
Discharge Permit Number DP-1781
Legally Responsible Party Paul Laur, CEO
Eldorado Biofuels, LLC
7 Avenida Vista Grande #454
Santa Fe, NM 87508
505-670-8490

Treatment, Disposal and Site Information

Primary Waste Type Agricultural
Facility Type Algae Propagation Impoundments

Discharge Locations

Type	Designation	Description & Comments
Incubation tubes	Tube #1	7.0' by 3.0' with 740 gallon capacity
Incubation tubes	Tube #2	7.0' by 3.0' with 740 gallon capacity
Incubation tubes	Tube #3	7.0' by 3.0' with 740 gallon capacity
Impoundment	Raceway #1	10' by 20'; double, 60-mil, reinforced LLDPE liner with leak detection
Impoundment	Raceway #2	10' by 25'; double, 60-mil, reinforced LLDPE liner with leak detection
Impoundment	Raceway #3	10' by 20'; double, 60-mil, reinforced LLDPE liner with leak detection
Impoundment	Raceway #4	10' by 25'; double, 60-mil, reinforced LLDPE liner with leak detection
Impoundment	Raceway #5	23.5' by 22.0' with 3,520 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection
Impoundment	Raceway #6	23.5' by 22.0' with 3,520 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection
Impoundment	Raceway #7	23.5' by 22.0' with 3,520 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection
Impoundment	Raceway #8	73.0' by 22.0' with 9,940 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection
Impoundment	Raceway #9	73.0' by 22.0' with 9,940 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection
Impoundment	Raceway #10	73.0' by 22.0' with 9,940 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection
Impoundment	Raceway #11	149.0' by 22.0' with 24,740 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection



New Mexico Environment Department Ground Water Quality Bureau Discharge Permit Summary

Impoundment	Raceway #12	149.0' by 22.0' with 24,740 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection
Impoundment	Raceway #13	149.0' by 22.0' with 24,740 gallon capacity each when operated at a depth of one foot; 45-mil Ethylene Propylene Diene Monomer (EPDM) without leak detection
Impoundments	Raceway #14 - #150	To be constructed

Flow Metering Locations

Type	Designation	Description & Comments
Totalizing Flow Meter	Treated Produced Water Meter	Meters volume of treated produced water discharged to the propagation impoundments
Totalizing Flow Meter	Fresh Water Meter	Meters volume of fresh water discharged to the propagation impoundments
Totalizing Flow Meter	Treated Domestic Wastewater Meter	Meters volume of treated domestic water from the Jal WWTP discharged to the propagation impoundments
Totalizing Flow Meter	Algae Propagation Wastewater Disposal Meter	Meters algae propagation wastewater discharged to the disposal well
Meter or Container Volume	Dairy Slurry	Meters or estimates volume of dairy wastewater discharged to the propagation impoundments

Ground Water Monitoring Locations

Type	Designation	Description & Comments
Monitoring Well	MW-1	Upgradient; to be proposed
Monitoring Well	MW-2	Down gradient of any impoundments constructed after September 15, 2012; to be proposed
Monitoring Well	MW-3	Down gradient of new impoundments that result in the facility expanding beyond fifty acres; to be proposed

Depth-to-Ground Water 250 feet
Total Dissolved Solids (TDS) 434 mg/L

Permit Information

Application Received March 20, 2012
Public Notice Published November 30, 2012
Discharge Permit Modification Issued January 16, 2013
Discharge Permit Term Ends November 14, 2016
Permitted Volumes 19,395,000 gallons contained; 216,000 gpd discharged

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 Rebecca Cook
Lead Staff Telephone Number (505) 827-2778
Lead Staff Email Rebecca.Cook@state.nm.us



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

Harold Runnels Building
1190 St. Francis Drive
PO Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2918 Fax (505) 827-2965
www.nmenv.state.nm.us



REC
2012 OCT -9 P 12:42

DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

September 24, 2012

Paul Laur, CEO
Eldorado Biofuels, LLC
7 Avenida Vista Grande #454
Santa Fe, NM 87508

RE: Extension of Temporary Permission to Discharge, Eldorado Biofuels, LLC, DP-1781

Dear Mr. Laur:

On April 16, 2012, the New Mexico Environment Department (NMED) issued temporary permission to Eldorado Biofuels, LLC, for an increase in the containment of agricultural water to no more than 121,220 gallons per day (gpd). The temporary permission expired on September 14, 2012. On September 12, 2012 NMED received your email request for an extension of the temporary permission because the Discharge Permit Modification has not yet been issued.

In addition to the four synthetically lined algae propagation impoundments currently permitted by DP-1781, the permittee may construct up to three incubator tubes and nine additional impoundments on one acre. The incubation tubes and propagation impoundments are described as follows: three incubator tubes 7.0' by 3.0' with 740 gallon capacity each; three impoundments 23.5' by 22.0' with 3,520 gallon capacity each when operated at a depth of one foot; three impoundments 73.0' by 22.0' with 9,940 gallon capacity each when operated at a depth of one foot; and three impoundments 149.0' by 22.0' with 24,740 gallon capacity each when operated at a depth of one foot. All nine impoundments shall be synthetically lined with 45-mil Ethylene Propylene Diene Monomer (EPDM) and have leak detection. Treated

produced water from Fulfer Oil & Cattle Co. Brown No. 5 SWD (API 30-025-09807) will be discharged into the propagation impoundments. Expected or known contaminants of the produced water include chloride, copper, zinc, iron and arsenic. Sodium nitrate, sodium phosphate, sodium silicate along with lesser amounts of vitamin solutions and trace metals may also be introduced and contained within the algae propagation impoundments. The impoundments will be emptied every two weeks on a rotating basis. The discharge will be reinjected through salt water disposal wells under a temporary permit from the New Mexico Oil Conservation Division (OCD), EPWM-007. The containment and discharge is located approximately 1.5 miles west of Jal in Unit N, Section 24, Township 25S, Range 36E, Lea County.

Temporary permission to discharge is hereby extended for up to 120 days (until January 24, 2013) pursuant to Subsection B of 20.6.2.3106 NMAC of the New Mexico Water Quality Control Commission Regulations. This approval is contingent on your containing and discharging as described in your September 12, 2012 request and upon the following conditions:


1. Once prior to the expiration of this Temporary Permission, Eldorado Biofuels shall sample the algae propagation wastewater and analyze the samples for chloride, copper, zinc, iron, arsenic, bicarbonate, total Kjeldahl nitrogen (TKN), nitrate-nitrogen ($\text{NO}_3\text{-N}$), and total dissolved solids (TDS). Samples shall be properly prepared, preserved, transported and analyzed in accordance with Environmental Protection Agency (EPA) approved methods. Analytical results shall be submitted to NMED within 30 days. [20.6.2.3107 NMAC]
2. Eldorado Biofuels shall maintain a minimum of six inches of freeboard in the raceway ponds at all times. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
3. Eldorado Biofuels shall visually inspect the raceway ponds and surrounding berms on a monthly basis to ensure proper maintenance. Any conditions that could damage the pond liners or affect the structural integrity of the raceway ponds shall be corrected. Such conditions include but are not limited to erosion damage, animal activity/damage, the presence of potentially harmful vegetation such as woody shrubs or uncontrolled weeds, evidence of seepage, or the presence of large pieces or quantities of debris. Eldorado Biofuels shall keep a log of the inspection findings and repairs made. In the event that inspection findings reveal significant damage likely to affect the ability of the lined ponds to contain contaminants, Eldorado Biofuels shall submit a corrective action plan to NMED for approval. [20.6.2.3107 NMAC]

Please be advised that this approval does not relieve you of the responsibility to comply with any other applicable federal, state, and/or local laws and regulations, such as zoning requirements and nuisance ordinances. Also, this approval does not relieve you of liability should your operation result in actual pollution of surface or ground waters.

Paul Laur, DP-1781
September 24, 2012
Page 3

If you have any questions, please contact Rebecca Cook of the Ground Water Pollution Prevention Section at 505-827-2778.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jerry Schoeppner', with a stylized, cursive script.

Jerry Schoeppner,
Chief, Ground Water Quality Bureau

WO:RC

cc: ~~Frank Fiore~~, NMED District III
NMED Hobbs Field Office
Jami Bailey, Director, NMOCD



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

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Phone (505) 827-2918 Fax (505) 827-2965
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DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

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2012 MAY 17 A 10:31

May 17, 2012

Paul Laur, CEO
Eldorado Biofuels, LLC
7 Avenida Vista Grande #454
Santa Fe, NM 87508

RE: Temporary Permission to Discharge, Eldorado Biofuels, LLC, DP-1781

Dear Mr. Laur:

The New Mexico Environment Department has reviewed your request, dated April 20, 2012, for temporary permission to increase the containment of agricultural wastewater to no more than 121,220 gallons per day (gpd). In addition to the four synthetically lined algae propagation impoundments currently permitted, the permittee may construct up to three incubator tubes and nine additional impoundments on one acre. The incubation tubes and propagation impoundments are described as follows: three incubator tubes 7.0' by 3.0' with 740 gallon capacity each; three impoundments 23.5' by 22.0' with 3,520 gallon capacity each when operated at a depth of one foot; three impoundments 73.0' by 22.0' with 9,940 gallon capacity each when operated at a depth of one foot; and three impoundments 149.0' by 22.0' with 24,740 gallon capacity each when operated at a depth of one foot. All nine impoundments shall be synthetically lined with 45-mil Ethylene Propylene Diene Monomer (EPDM) and have leak detection. Treated produced water from Fulfer Oil & Cattle Company-operated wells will be discharged into the propagation impoundments. Expected or known contaminants of the produced water include chloride, copper, zinc, iron and arsenic. Sodium nitrate, sodium phosphate, sodium silicate along with lesser amounts of vitamin solutions and trace metals may also be introduced and contained within the algae propagation impoundments. The impoundments will be emptied every two weeks on a rotating basis. The discharge will be reinjected through salt water disposal wells under a temporary permit from the New Mexico Oil Conservation Division (OCD), EPWM-007. The discharge is located at Fulfer Oil & Cattle Co. Brown No. 5 SWD (API 30-025-09807) Unit N, approximately 1.5 miles west of Jal in Section 24, Township 25S, Range 36E, Lea County.

Temporary permission to discharge is hereby granted until September 14, 2012, pursuant to Subsection B of 20.6.2.3106 NMAC of the New Mexico Water Quality Control Commission Regulations. This approval is contingent on your discharging as described in your June 1, 2011 request and upon the following conditions:

1. Within 30 days of the date of this letter, (by June 16, 2012), Eldorado Biofuels shall submit record drawings detailing the construction of the synthetically lined raceway impoundments and the leak detection system. A licensed New Mexico professional engineer shall certify all supporting design calculations and record drawings of the raceway impoundments. [20.6.2.3109 NMAC]
2. Eldorado Biofuels shall maintain a minimum of six inches of freeboard in the raceway impoundments at all times. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
3. Eldorado Biofuels shall visually inspect the raceway impoundments and surrounding berms on a monthly basis to ensure proper maintenance. Any conditions that could damage the pond liners or affect the structural integrity of the impoundments shall be corrected. Such conditions include but are not limited to erosion damage, animal activity/damage, the presence of potentially harmful vegetation such as woody shrubs or uncontrolled weeds, evidence of seepage, or the presence of large pieces or quantities of debris. Eldorado Biofuels shall keep a log of the inspection findings and repairs made. In the event that inspection findings reveal significant damage likely to affect the ability of the lined ponds to contain contaminants, Eldorado Biofuels shall submit a corrective action plan to NMED for approval. [20.6.2.3107 NMAC]

Please be advised that this approval does not relieve you of the responsibility to comply with any other applicable federal, state, and/or local laws and regulations, such as zoning requirements and nuisance ordinances. Also, this approval does not relieve you of liability should your operation result in actual pollution of surface or ground waters.

If you have any questions, please contact Rebecca Cook of the Ground Water Pollution Prevention Section at 505-827-2778.

Sincerely,



Jerry Schoeppner, Acting Chief
Ground Water Quality Bureau

WO:RC

cc: District Manager, NMED District IV
NMED Hobbs Field Office
Jami Bailey, Director, NMOCD



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

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www.nmenv.state.nm.us



RECEIVED OCD
DAVE MARTIN

Secretary
2011 JUN 23 11:49
RAJ SOLOMON, P.E.
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 22, 2011

Paul Laur, CEO
Eldorado Biofuels, LLC
7 Avenida Vista Grande #454
Santa Fe, NM 87508

RE: Temporary Permission to Discharge, Eldorado Biofuels, LLC, DP-1781.

Dear Mr. Laur:

The New Mexico Environment Department has reviewed your request, dated June 1, 2011, for temporary permission to discharge no more than 4,400 gallons per day of agricultural wastewater. Four algae propagation raceway ponds have been constructed of compacted caliche, cinder blocks and sand, and lined with a 60-mil reinforced linear low density polyethylene (LLDPE) liner. Two of the raceway ponds are 20'x 10'x1' and hold approximately 1000 gallons. Two of the raceway ponds are 25'x 10'x1' and hold approximately 1200 gallons. Treated produced water from Fulfer Oil & Cattle Company-operated wells will be discharged into the propagation ponds. Expected or known contaminants of the produced water include chloride, copper, zinc, iron and arsenic. Sodium nitrate, sodium phosphate, sodium silicate along with lesser amounts of vitamin solutions and trace metals may also be introduced and contained within the algae propagation raceway ponds. The four ponds will be emptied every two weeks on a rotating basis. The discharge will be reinjected through salt water disposal wells under a temporary permit from the New Mexico Oil Conservation Division (OCD), EPWM-007. The discharge is located at Fulfer Oil & Cattle Co. Brown No. 5 SWD (API 30-025-09807) Unit N, approximately 1.5 miles west of Jal in Section 24, Township 25S, Range 36E, Lea County.

Temporary permission to discharge is hereby granted until October 20, 2011, pursuant to Subsection B of 20.6.2.3106 NMAC of the New Mexico Water Quality Control Commission Regulations. This approval is contingent on your discharging as described in your June 1, 2011 request and upon the following conditions:

1. Within 30 days of the date of this letter, (by July 22, 2011), the Eldorado Biofuels shall submit record drawings detailing the construction of the raceway ponds, the leak detection system, and specifications of the 60-mil reinforced LLDPE liner. A licensed New Mexico professional engineer shall certify all supporting design calculations and record drawings of the raceway ponds. [20.6.2.3109 NMAC]
2. Once prior to the expiration of this Temporary Permission, Eldorado Biofuels shall sample the algae propagation wastewater and analyze the samples for chloride, copper, zinc, iron, arsenic, bicarbonate, total Kjeldahl nitrogen (TKN), nitrate-nitrogen (NO₃-N), and total dissolved solids (TDS). Samples shall be properly prepared, preserved, transported and analyzed in accordance with Environmental Protection Agency (EPA) approved methods. Analytical results shall be submitted to NMED within 30 days. [20.6.2.3107 NMAC]
3. Eldorado Biofuels shall maintain a minimum of six inches of freeboard in the raceway ponds at all times. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
4. Eldorado Biofuels shall visually inspect the raceway ponds and surrounding berms on a monthly basis to ensure proper maintenance. Any conditions that could damage the pond liners or affect the structural integrity of the raceway ponds shall be corrected. Such conditions include but are not limited to erosion damage, animal activity/damage, the presence of potentially harmful vegetation such as woody shrubs or uncontrolled weeds, evidence of seepage, or the presence of large pieces or quantities of debris. Eldorado Biofuels shall keep a log of the inspection findings and repairs made. In the event that inspection findings reveal significant damage likely to affect the ability of the lined ponds to contain contaminants, Eldorado Biofuels shall submit a corrective action plan to NMED for approval. [20.6.2.3107 NMAC]

Please be advised that this approval does not relieve you of the responsibility to comply with any other applicable federal, state, and/or local laws and regulations, such as zoning requirements and nuisance ordinances. Also, this approval does not relieve you of liability should your operation result in actual pollution of surface or ground waters.

If you have any questions, please contact Rebecca Cook of the Ground Water Pollution Prevention Section at 505-827-2778.

Sincerely,



William C. Olson, Chief
Ground Water Quality Bureau

WO:RC

cc: District Manager, NMED District IV
NMED Hobbs Field Office
Jami Bailey, Director, NMOCD