GROUND WATER DISCHARGE PERMITMODIFICATION
Las Uvas Valley Dairies 1 - 5, DP-342

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit Modification (Discharge Permit), DP-342, to Dean Horton (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. This modified Discharge Permit shall supersede the Discharge Permit, DP-342, Las Uvas Valley Dairies, 1 – 5, issued on September 21, 2007.

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 Las Uvas Valley Dairies 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 20.6.2.3109.C 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 as authorized in the Discharge Permit issued September 21, 2007, are briefly described as follows:

Up to 103,000 gallons per day (gpd) of dairy wastewater is discharged from five milking barns (Las Uvas Valley Dairies' Milking Barns 1, 2, 3, 4 and 5) and the fresh/sick barn into two clay-lined solids settling lagoons and then collects in a clay-lined storage lagoon. Wastewater from Milking Barn 3 flows to a concrete-lined sump before entering the clay-lined lagoon system (Central Lagoon System). Also, up to 44,000 gpd is transferred from Las Uvas Valley Dairy 6 (DP-967) for land application under this Discharge Permit (DP-342). Wastewater from the Central Lagoon System, in conjunction with the wastewater transferred from Las Uvas Valley Dairy 6, is land applied by gated-pipe flood irrigation to 434 acres of irrigated cropland under cultivation.

The activities which produce the discharge, the location of the discharge, and the quantity, quality and flow characteristics of the discharge as authorized in this modified Discharge Permit are briefly described below. The changes in this modified Discharge Permit are limited to the conditions of the previous Discharge Permit (September 21, 2007) that are directly related to the installation of a new clay-lined solids settling lagoon, as proposed by the permittee.

Up to 103,000 gpd of dairy wastewater is discharged from five milking barns (Las Uvas Valley Dairies' Milking Barns 1, 2, 3, 4 and 5) and the fresh/sick barn to a clay-lined lagoon system (Central Lagoon System) for storage prior to land application. The Central Lagoon System consists of ***three*** *clay-lined solids settling lagoons and a clay-lined storage lagoon. Wastewater from Milking Barn 3 flows to a concrete-lined sump before entering the Central Lagoon System. Also, up to 44,000 gpd of additional wastewater is transferred from the clay-lined lagoon system of Las Uvas Valley Dairy 6 (DP-967) for land application under this Discharge Permit (DP-342). Wastewater from the Central Lagoon System, in conjunction with the wastewater transferred from Las Uvas Valley Dairy 6, is land applied by gated-pipe flood irrigation to 434*

acres of irrigated cropland under cultivation. ***The modification consists of constructing a new (third) clay-lined lagoon for solids settling.***

The discharge contains water contaminants or toxic pollutants which may be elevated above the standards of 20.6.2.3103 NMAC. The facility is located at State Road 26 and Doña Ana County Road E001, approximately 10 miles west of Hatch, in Sections 5, 6, and 7, T20S, R4W and Sections 1, 12, and 13, T20S, R5W, Doña Ana and Luna Counties. Ground water beneath the site is at a depth of approximately 51 feet and has a total dissolved solids concentration of approximately 400 milligrams per liter.

The original Discharge Permit was issued on September 28, 1984 and subsequently renewed and/or modified on October 3, 1989, June 4, 1999, December 5, 2002, and September 21, 2007. The permittee's application consists of the materials submitted by I. Keith Gordon and Mark Turnbough on behalf of the permittee dated December 30, 2010, and the materials contained in the administrative record prior to issuance of the Discharge Permit. The discharge shall be managed in accordance with the Discharge Plan as conditioned by this Discharge Permit.

Pursuant to 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 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 and/or remediate ground water quality may be required by NMED. These requirements may include: lining/relining lagoons, expanding the land application area, changing waste management practices, expanding monitoring requirements, installing an advanced treatment system, and/or implementing abatement of water pollution.

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 abbreviations may be used in this Discharge Permit:

Abbreviation	Explanation		Abbreviation	Explanation
BOD_5	biochemical oxygen demand (5-day)		NMSA	New Mexico Statutes Annotated
CFR	Code of Federal Regulations		NO_3-N	nitrate-nitrogen
CFU	colony forming units		NTU	nepholometric turbidity units
Cl	chloride		TDS	total dissolved solids
LADS	land application data sheet(s)		TKN	total Kjeldahl nitrogen
mg/L	milligrams per liter		TSS	total suspended solids
ML	milliliters		total nitrogen	TKN+NO_3-N
NMAC	New Mexico Administrative Code		WQCC	Water Quality Control Commission

Abbreviation	Explanation		Abbreviation	Explanation
NMED	New Mexico Environment Department		NM NRCS	New Mexico Natural Resources Conservation Service

II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. The permittee is discharging effluent or leachate from the Las Uvas Valley Dairies so that such effluent or leachate may move directly or indirectly into ground water within the meaning of 20.6.2.3104 NMAC.

2. The permittee is discharging effluent or leachate from the Las Uvas Valley Dairies 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 20.6.2.3101.A NMAC.

3. The discharges from the Las Uvas Valley Dairies are not subject to any of the exemptions of 20.6.2.3105 NMAC.

III. CONDITIONS

The following conditions shall be complied with by the permittee and are enforceable by NMED. The permittee is permitted to discharge water contaminants subject to the following conditions:

OPERATIONAL PLAN

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 20.6.2.3103 NMAC including human health, other domestic water supply and irrigation standards are not violated. [20.6.2.3103 NMAC]

The following condition (italicized) supersedes Condition 3 of the Discharge Permit, DP-342, issued September 21, 2007 (struck):

*3. The permittee is authorized to discharge up to 103,000 gpd of dairy wastewater from five milking barns (Las Uvas Valley Dairies' Milking Barns 1, 2, 3, 4 and 5) and the fresh/sick barn to a clay-lined lagoon system (Central Lagoon System) for storage prior to land application. The Central Lagoon System consists of **three** clay-lined solids settling lagoons and a clay-lined storage lagoon. Wastewater from Milking Barn 3 flows*

to a concrete-lined sump before entering the Central Lagoon System. The permittee is further authorized to accept 44,000 gpd of additional wastewater transferred from the clay-lined lagoon system of Las Uvas Valley Dairy 6 (DP-967) for land application under this Discharge Permit (DP-342). Wastewater from the Central Lagoon System, in conjunction with the wastewater transferred from Las Uvas Valley Dairy 6, is land applied by gated-pipe flood irrigation to 434 acres of irrigated cropland under cultivation. [20.6.2.3104 NMAC]

~~The permittee is authorized to discharge up to 103,000 gpd of dairy wastewater from five milking barns (Las Uvas Valley Dairies' Milking Barns 1, 2, 3, 4 and 5) and the fresh/sick barn. Wastewater from Milking Barn 3 flows to a concrete-lined sump and is then pumped to the clay-lined lagoon system (Central Lagoon System). Wastewater from the other four milking barns and the fresh/sick barn gravity flows directly to the Central Lagoon System. The Central Lagoon System is comprised of three lagoons, two used for solids settling and the third for wastewater storage. The permittee is further authorized to accept under this Discharge Permit (DP-342) the transfer of up to 44,000 gpd from Las Uvas Valley Dairy 6 (DP-967) for land application. Wastewater from the Central Lagoon System, in conjunction with the wastewater transferred from Las Uvas Valley Dairy 6, is then land applied by gated-pipe flood irrigation to 434 acres of irrigated cropland under cultivation. [20.6.2.3104 NMAC]~~

4. The permittee shall remove or land apply manure solids from the facility in a manner and at a frequency necessary to prevent the contamination of ground water. Management practices for manure stored at the facility prior to removal or land application shall minimize generation and infiltration of leachate by diverting stormwater run-on and run-off and by preventing the ponding of water within areas used for manure stockpiling. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]

5. Within 90 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by December 20, 2007), the permittee shall re-submit to NMED the *Maps of Lagoons and Monitoring Wells for the Las Uvas Valley Dairy* dated April 27, 2007, stamped and certified by both the registered New Mexico professional engineer and surveyor (if different individuals). The lagoon and stormwater impoundment capacities shall be certified by a professional engineer. The surveys themselves shall be certified by the professional surveyor. [20.6.2.3109 NMAC]

6. Within 90 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by December 20, 2007), the permittee shall submit a scaled map of the stormwater drainage areas and runoff flow patterns with the associated stormwater impoundments, and the acreages of each drainage area. This information shall be used to verify that the runoff collection and containment needs for the 25-year, 24-hour storm event are being met for the entire dairy complex. [20.6.2.3109 NMAC]

7. Within 150 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by February 18, 2008), the permittee shall complete capacity

expansions of all stormwater impoundments to contain run-off from the respective drainage areas for a 25-year, 24-hour rainfall event while maintaining two feet of freeboard at all times, as proposed in the May 1, 2007 submittal. The capacity of each stormwater impoundment shall be based on the data collected for Condition 5 of this Discharge Permit. [20.6.2.3109 NMAC]

8. Within 210 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by April 18, 2008), the permittee shall submit to NMED an up-to-date survey of the stormwater impoundments including revised impoundment capacities. The survey shall be performed and certified by a New Mexico registered professional surveyor and capacities certified by a New Mexico registered professional engineer. [20.6.2.3109 NMAC]

9. The permittee shall divert stormwater from the corrals and other areas of the facility that contain dairy wastes into stormwater impoundments. The impoundments shall be designed, operated and maintained to contain run-off from a 25-year, 24-hour rainfall event, while maintaining 2 feet of freeboard at all time. The permittee shall maintain operational pumps on-site at all times for the transfer of stormwater to the Central Lagoon System. Stormwater collected in the impoundments shall be pumped to the Central Lagoon System or the designated land application area as soon as practicable, and in no case more than 14 days after the subject storm event. [20.6.2.3109 NMAC]

The following condition (italicized) supersedes Condition 10 of the Discharge Permit, DP-342, issued September 21, 2007 (struck):

10. The permittee is authorized to construct a new (third) clay-lined solids settling lagoon (Lagoon C5). Construction of the new lagoon shall be completed within the term of this Discharge Permit (by September 21, 2012). The new lagoon shall be constructed in accordance with the construction plans and specifications submitted December 30, 2010 and January 31, 2012 bearing the seal and signature of I. Keith Gordon, a licensed New Mexico Professional Engineer. Record drawings and final specifications for the lagoon and liner, as well as final capacity calculations shall be certified by a licensed New Mexico Professional Engineer and submitted to NMED within 60 days of completion of the lagoon. [20.6.2.3109 NMAC]

~~The permittee is **not** authorized to use the unfinished west settling lagoon in the Central Lagoon System (aka Secondary Lagoon or Lagoon #2). Should the permittee decide to incorporate this lagoon into the Central Lagoon System for the management and storage of wastewater, the permittee shall submit a request for NMED approval to utilize this lagoon. The request shall include proposed plans and specifications for the unfinished lagoon. A licensed New Mexico professional engineer must certify the proposed construction plans and specifications, and supporting design calculations. [20.6.2.3109 NMAC]~~

11. The permittee shall operate and maintain the clay-lined Central Lagoon System for the purpose of storing and managing wastewater generated at the facility. The permittee shall maintain the capacity of the lagoon system to store the maximum daily discharge volume allowed by this Discharge Permit for a minimum period of 60 days while maintaining two feet of freeboard at all times. Solids shall be removed from the lagoon system as needed in a manner that is protective of the lagoon liners in order to maintain the required capacity. [20.6.2.3109 NMAC]

12. The permittee shall visually inspect the wastewater lagoons, stormwater impoundments and surrounding berms on a monthly basis to ensure proper maintenance. Any conditions that could damage the lagoon liners or affect the structural integrity of the wastewater lagoons or stormwater impoundments shall be corrected. Such conditions include but are not limited to erosion damage, animal activity/damage, presence of potentially harmful vegetation such as woody shrubs or excessive weeds, evidence of seepage, or the presence of large pieces of debris. The permittee 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 wastewater lagoons or stormwater impoundments to contain contaminants, the permittee shall submit a corrective action plan to NMED for approval. [20.6.2.3107 NMAC]

13. The permittee shall apply dairy wastewater via gated-pipe irrigation to 434 acres of irrigated and cultivated cropland. Wastewater shall be applied with fresh irrigation water. Dairy wastes shall be applied to cropland under cultivation in such a manner that the amount of total nitrogen in the combined application of wastewater, manure solids, and additional fertilizers shall not exceed by more than 25% the amount reasonably expected to be taken up and removed by the harvested crops on an annual basis. Nitrogen content shall not be adjusted to account for volatilization or mineralization processes. Dairy wastes shall be distributed evenly over the entire area of application. Excessive ponding shall be prevented. When applied, manure solids shall also be distributed evenly over the entire area of application. [20.6.2.3109 NMAC]

14. The permittee shall install and implement a backflow prevention method to protect all wells used in the land application distribution system from contamination by wastewater backflow. The backflow prevention method shall be an air gap method, reduced pressure valve assembly or other method acceptable to NMED. Backflow prevention devices or assemblies shall be tested by a certified backflow assembly tester at the time of installation, repair, or relocation, and at least on an annual schedule thereafter. Inspection and maintenance records for the backflow prevention program shall be kept on-site and available for inspection upon request. [20.6.2.3109 NMAC]

ADDITIONAL STUDIES

15. Within 45 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by November 5, 2007), the permittee shall install two new monitoring wells using a dry drilling method (for example hollow stem auger or sonic

drilling) which shall effectively ascertain the underlying geology and when first water is encountered. Soil strata shall be continuously logged during soil boring using the Unified Soil Classification System (USCS). Borings shall be completed in the first water encountered as monitoring wells in accordance with the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 0.0, January 2007. The permittee shall notify NMED at least two weeks prior to drilling to allow NMED personnel to be on-site during drilling.

Soil samples shall also be collected during soil boring at ten-foot intervals until ground water is encountered (10, 20, 30, 40, etc.). Soil samples shall be analyzed for ammonium (NH_4-N), NO_3-N, TKN, and Cl.

Ground water samples shall be collected from the two monitoring wells upon completed installation and development. Samples shall be analyzed for NO_3-N, TKN, Cl, and TDS.

The monitoring wells shall be installed in the following agreed upon locations:

1) One well (MW-T1) is to be located within 20 to 50 feet of the Central Lagoon System, off the northwest corner of Lagoon #1 (aka Storage Lagoon); and
2) One well (MW-T2) is to be located west of and within 20 to 50 feet of the middle lagoon (aka Settling Pond 2 or SE#1) in the Dairy 6 lagoon system (DP-967).

[20.6.2.3107 NMAC]

16. Within 45 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by November 5, 2007), the permittee shall collect and analyze soil samples from beneath the lagoon formerly used by Dairy 3 prior to regrading the lagoon for final closure. Soil samples shall be collected from a soil boring in the center of the lagoon using a split spoon or core-barrel sampler at two-foot intervals to 20 feet (2, 4, 6, 8, 10, etc.). Samples shall be analyzed for NH_4-N, NO_3-N, TKN and Cl. Should the soil analyses indicate NO_3-N levels greater than 10 mg/kg and/or Cl levels greater than 250 mg/kg at a depth of 20 feet, collection of samples shall continue to a minimum depth of 50 feet. Samples collected at depths greater than 20 feet shall be collected at ten-foot intervals to 50 feet (30, 40, and 50 feet) and analyzed for the constituents listed above. [20.6.2.3107 NMAC]

17. Within 60 days of completed monitoring well (MW-T1 and MW-T2) installations and soil sampling, the permittee shall submit, for NMED approval, a ground water assessment report for Las Uvas Valley Dairies 1 - 5 and 6. The assessment report shall include:

1) Construction and lithologic logs (soil boring soil classifications) for monitoring wells MW-T1 and MW-T2.
2) Analytical results for soil samples collected during the installations of MW-T1 and MW-T2.
3) Analytical results for ground water samples collected upon completion of MW-T1 and MW-T2.

4) Analytical results for soil samples collected from beneath the Dairy 3 lagoon and a map showing the sampling location within the lagoon.
5) Recommendations for additional monitoring wells based upon the depth-to-ground water and lithologic information determined from the installation of monitoring wells MW-T1 and MW-T2, water quality data, and soil sampling from the boreholes as well as from beneath the Dairy 3 lagoon. The proposed recommendations for additional wells shall include, as necessary:
    a. Location proposals for additional monitoring wells to provide monitoring coverage for potential sources of ground water contamination typical at this type of facility and include, at a minimum, the following locations:
        - hydrologically downgradient of wastewater storage lagoons;
        - hydrologically downgradient of stormwater impoundments;
        - hydrologically downgradient of land application fields;

        All monitoring well locations shall be approved by NMED prior to installation. The wells shall be completed in accordance with the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 0.0, January 2007.
    b. An implementation schedule for monitoring well installation.

[20.6.2.3107 NMAC]

MONITORING, REPORTING, AND OTHER REQUIREMENTS

18. The permittee shall conduct the following monitoring, reporting, and other requirements listed below. [20.6.2.3107 NMAC]

19. 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:
    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;
    d. American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31.Water;
    e. U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition; and
    f. Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods and Part 2. Chemical and Microbiological Properties, American Society of Agronomy.

    [20.6.2.3107(B) NMAC]

20. The permittee shall submit quarterly monitoring reports to NMED by January 1, April 1, July 1 and October 1 of each year. As detailed in other conditions in this Discharge

Permit, the reports shall include: discharge volumes; LADS; depth-to-water measurements; place of use notice; a log of additional fertilizer applied; and analytical results from wastewater, soil, crop, and ground water sampling. [20.6.2.3107 NMAC]

21. Within 150 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by February 18, 2008), the permittee shall install a totalizing flow meter(s) on the incoming water supply line(s) of the fresh/sick barn to directly measure the volume of all fresh water used, which is then discharged to the Central Lagoon System as wastewater. Confirmation of meter installations, type, calibration and locations shall be submitted to NMED within 30 days of meter installations. [20.6.2.3107.A(1) NMAC, 20.6.2.3109 NMAC]

22. Within 150 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by February 18, 2008), the permittee shall submit written documentation certifying that the totalizing flow meters recently installed on the incoming water supply lines (labeled as "Front of Barn" in photos submitted June 25, 2007) for each of the five milking barns (Milking Barns 1, 2, 3, 4 and 5) directly measures the volume of all fresh water used, which is then discharged to the Central Lagoon System as wastewater. [20.6.2.3107.A(1) NMAC, 20.6.2.3109 NMAC]

23. The permittee shall measure the monthly volumes of fresh supply water used in the five milking barns and the fresh/sick barn to represent the volume of wastewater discharged to the Central Lagoon System. Monthly discharge volumes shall be determined using the totalizing flow meters located on the incoming supply lines for each barn. Monthly meter readings including units of measurement, calculations, and monthly discharge volumes for the previous 6-month period shall be submitted to NMED semi-annually in the monitoring reports due by April 1 and October 1. The flow meters shall be kept operational at all times. [20.6.2.3107.A(1) NMAC, 20.6.2.3109.H NMAC]

24. The permittee shall measure and record all discharges from the Central and Dairy 6 Lagoon Systems to each field in the land application area. The volume of each discharge shall be measured using totalizing flow meters on the transfer lines between the individual lagoon systems and the land application area. The permittee shall maintain a log showing the date and location of each discharge, which lagoon system each discharge is from, meter readings immediately prior to and after each discharge, and the calculated total volume of each discharge. A copy of the log entries including units of measurement for the previous 6-month period shall be submitted to NMED semi-annually in the monitoring reports due by April 1 and October 1. The discharge volumes shall be used to calculate nitrogen loading from each lagoon system on the LADS. The flow meters shall be kept operational at all times. [20.6.2.3107.A(1) NMAC, 20.6.2.3109.H(1) NMAC]

25. The permittee shall measure and record all fresh irrigation water applied to each field in the land application area. The volume of fresh water applied during each irrigation shall be measured using the totalizing flow meter on the transfer line(s) between the supply well(s) and the land application area. The permittee shall maintain a log showing the date

and location of each irrigation, meter readings immediately prior to and after each irrigation, and the calculated total volume of fresh irrigation water applied. A copy of the log entries including units of measurement for the previous 6-month period shall be submitted to NMED semi-annually in the monitoring reports due by April 1 and October 1. The flow meter(s) shall be kept operational at all times. [20.6.2.3107.A(1) NMAC, 20.6.2.3109.H(1) NMAC]

26. The permittee shall survey all appropriately constructed and NMED approved monitoring wells located on the Las Uvas Valley Dairies complex to a U.S. Geological Survey (USGS) or other permanent benchmark. Survey data shall include northing, easting and elevation to the nearest hundredth of a foot or according to 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 New Mexico registered 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 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 60 days of completion of all monitoring wells installed under the approved ground water monitoring program. If ground water flow information determined from the monitoring well survey indicates that the monitoring wells were not installed hydrologically downgradient of the intended discharge locations, well replacement or additional wells may be required. [20.6.2.3107 NMAC]

27. The permittee shall perform quarterly ground water sampling in all monitoring wells. Ground water sampling shall be performed according to the following procedure:
    1) Measure the depth-to-ground water to the nearest hundredth of a foot.
    2) Purge three well volumes of water from the well, or purge the well dry and allow it to recharge, prior to sample collection.
    3) Obtain samples from the well to be analyzed for nitrate-nitrogen (NO_3-N), total Kjeldahl nitrogen (TKN), Chloride (Cl), and total dissolved solids (TDS).

    Depth-to-water measurements, analytical results, and a map showing the dairy layout including the location and number of each monitoring well shall be submitted to NMED in the quarterly monitoring reports. Please refer to the Summary of Required Actions, Monitoring, and Reporting. [20.6.2.3107 NMAC]

28. The permittee shall sample wastewater from the Central Lagoon System on a quarterly basis for NO_3-N, TKN, Cl, and TDS. The sample shall be collected from the Storage (final) Lagoon. Analytical results and a map showing the wastewater sampling location shall be submitted to NMED in the quarterly monitoring reports. Please refer to the Summary of Required Actions, Monitoring, and Reporting. [20.6.2.3107 NMAC]

29. The permittee shall complete Land Application Data Sheets (LADS) semi-annually, which document the amount of nitrogen from wastewater and manure solids, applied to

each field in the land application area. The nitrogen applied from wastewater shall be derived and reported in the LADS for each wastewater stream (Dairy 6 and Central Lagoon Systems) using the associated wastewater nitrogen concentrations and metered discharge volumes. The LADS (copy enclosed) shall reflect the separate nitrogen concentrations for each lagoon system from the most recent wastewater analysis or the average concentration from the last two analyses. The volumes of wastewater used in the LADS calculations shall be those obtained for each lagoon system from meter readings required in this Discharge Permit. The nitrogen concentration of the applied manure solids may be estimated at 13 pounds per ton. The permittee shall also include with the LADS: the crops grown, yields removed, and nitrogen uptake values specific to the crops grown. The LADS or a statement that no land application occurred, as well as a map of the land application fields including each field's designation, shall be submitted to NMED in the monitoring reports due by April 1 and October 1. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]

30. The permittee shall perform annual soil sampling in each field of the land application area. One surface soil sample and a sub-surface soil sample shall be collected from each field. Each surface sample shall consist of a single composite of 15 soil cores collected from a depth of 0 to 12 inches. Each sub-surface soil sample shall consist of a single composite of 6 soil cores collected from a depth of 24 to 36 inches. Surface and sub-surface samples shall be analyzed for NO_3-N and TKN. Soil NO_3-N shall be analyzed by a 2 molar KCl extract, as described in Section 33-3.2 of Methods of Soil Analysis, Part 2, American Society of Agronomy. The analytical results and a map showing sampling locations within the fields shall be submitted to NMED in the monitoring reports due by April 1. [20.6.2.3107 NMAC]

31. The permittee shall determine the total nitrogen concentration of the harvested and removed plant material to verify plant nitrogen removal levels of each crop grown on each field of the land application area. A composite sample of 15 sub-samples of plant material shall be taken from each field during the final harvest of each crop grown per year. Samples shall be analyzed for percent total nitrogen and percent dry matter. Reports of the analyses shall be submitted to NMED the monitoring reports due by April 1 and October 1. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]

32. The permittee shall keep a log of all additional fertilizer applied to each field in the land application area. The log shall contain the date of fertilizer application, the type and nutrient concentration of the fertilizer, and the amount (reported in lbs per acre) of fertilizer applied to each field. A copy of the log entries for the previous 6-month period shall be submitted to NMED in the monitoring reports due by April 1 and October 1. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]

CONTINGENCY PLAN

33. In the event that ground water standards in 20.6.2.3103 NMAC are violated in the newly installed monitoring wells hydrologically downgradient of the Central Lagoon System,

the permittee shall collect a confirmatory sample from the monitoring well within 15 days of receipt of the initial sampling results. Within 90 days of confirmation of ground water contamination, the permittee shall submit to NMED for approval, construction plans and specifications to replace the existing clay-lined lagoons. The new lagoon(s) shall be synthetically lined and designed at a minimum to contain the maximum daily discharge volume allowed by this Discharge Permit for a minimum period of 60 days while maintaining two feet of freeboard at all times. Construction plans and specifications, and supporting design calculations must be certified by a New Mexico registered professional engineer. [20.6.2.3107.A(10) NMAC, 20.6.2.3109 NMAC]

34. Within one year from the date of confirmed ground water contamination in the monitoring wells hydrologically downgradient of the Central Lagoon System, the permittee shall install a synthetically lined lagoon(s) to replace the existing clay-lined lagoons. The lagoon shall be constructed in accordance with approved construction plans and specifications as required by this Discharge Permit and the attachment titled *Ground Water Discharge Permit Conditions for Synthetically Lined Lagoons - Liner Material and Site Preparation*, Revision 0.0, May 2007. The permittee shall notify NMED at least five working days prior to lagoon construction to allow NMED personnel to be on-site for inspection. As-built documentation of the lagoon(s) and lagoon liner(s), and final lagoon capacity calculations, shall be submitted to NMED within 30 days of liner installation. A New Mexico registered professional engineer must certify final lagoon capacity calculations and as-built documents of the lagoon and liner. [20.6.2.3107(A)10 NMAC, 20.6.2.3109 NMAC]

35. In the event that monitoring indicates ground water standards are violated during the term of this Discharge Permit, upon closure of the facility or during post-closure monitoring, the permittee shall collect a confirmatory sample from the monitoring well within 15 days to confirm the initial sampling results. Within 15 days of confirmation of ground water contamination, the permittee shall submit to NMED a corrective action plan that proposes 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 though 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 confirmation of ground water contamination. [20.6.2.1203 NMAC, 20.6.2.4105.A(8) NMAC]

36. 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 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 20.6.2.1203.A(1) NMAC. Wastewater shall be contained, pumped and/or transferred to the concrete sump, lagoon and/or land application area as necessary. 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]

37. In the event NMED or the permittee identify any other failures of the discharge plan 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]

38. In the event that LADS show that the amount of nitrogen applied exceeds by more than 25% the amount reasonably expected to be taken up and removed by the harvested crop(s), the permittee shall submit to NMED for approval a corrective action plan for the reduction of nitrogen loading to the land application area. The corrective action plan shall be implemented within 30 days of NMED approval. [20.6.2.3107.A(10) NMAC, 20.6.2.3109 NMAC]

39. In the event NMED determines, upon review of analytical results from surface and sub-surface soil sampling, that nitrogen may be migrating vertically, the permittee shall, within 30 days of notification, submit for NMED approval a corrective action plan to reduce nitrogen concentrations in soil. The plan shall include source control measures, such as a reduction in the amount of wastewater or solids applied to the land, expansion of the land application area, and/or changes in crop rotation.

    The permittee shall also implement the following deep soil sampling. From each field, the permittee shall collect soil samples at depths of 2, 4, 6, 8 and 10 feet from three separate soil cores. Composite samples for each depth shall be assembled from the three cores and analyzed for NO_3-N and TKN. Soil NO_3-N shall be analyzed by a 2 molar KCl extract, as described in Section 33-3.2 of Methods of Soil Analysis, Part 2, American Society of Agronomy. The analytical results and a map showing the sampling locations within the fields shall be submitted to NMED within 30 days of the sampling date. If initial deep soil sampling results indicate the presence of excessive nitrogen at depths below 36 inches, NMED may require deep soil sampling on an annual basis to verify success of the corrective actions. [20.6.2.3107.A(10) NMAC, 20.6.2.3109 NMAC]

CLOSURE PLAN

40. Within 60 days of the effective date of the Discharge Permit issued September 21, 2007 ~~this Discharge Permit~~ (by November 20, 2007), the permittee shall complete proper closure of the manure-lined lagoon formerly used by Dairy 3. Manure solids shall be removed and the lagoon area regraded to blend with surface topography and prevent ponding. The manure solids shall be disposed of in accordance with all local, state, and federal regulations. Documentation verifying complete closure of the lagoon shall be submitted to NMED within 30 days of lagoon closure completion. [20.6.2.3109 NMAC, 20.6.2.3107 NMAC]

41. Upon closure of the facility, the permittee shall perform the following closure measures:
    1) Remove all manure solids from the facility and apply it to the designated land application area or transfer it offsite for proper disposal.
    2) Empty lagoons and impoundments of all wastewater and manure solids.
    3) Perforate or remove the lagoon liner(s) and re-grade the lagoons with clean fill to blend with surface topography and prevent ponding.
    4) 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 20.6.2.3103 NMAC are being violated, the permittee shall implement the contingency plan required by this Discharge Permit.
    5) 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 *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 0.0, January 2007.

    When all post-closure requirements have been met, the permittee may request to terminate the Discharge Permit. [20.6.2.3107.A(11) NMAC]

GENERAL TERMS AND CONDITIONS

42. RECORD KEEPING - The permittee shall maintain at the facility a written record of all data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit. The following information shall be recorded and shall be made available to NMED upon request:
    1) The dates, exact place and times of sampling or field measurements;
    2) The name and job title of the individuals who performed each sample collection or field measurement;
    3) The date of the analysis of each sample;
    4) The name and address of the laboratory and the name and job title of the person that performed the analysis of each sample;
    5) The analytical technique or method used to analyze each sample or take each field measurement;
    6) The results of each analysis or field measurement, including raw data;
    7) The results of any split sampling, spikes or repeat sampling; and
    8) A description of the quality assurance and quality control procedures used.

    [20.6.2.3107.A NMAC]

43. RECORD KEEPING - The permittee shall maintain a written record of any spills, seeps, and/or leaks of wastewater, leachate and/or process fluids not authorized by this Discharge Permit. [20.6.2.3107.A NMAC]

44. RECORD KEEPING - The permittee shall maintain a written record of the operation, maintenance, and repair of all facilities/equipment used to treat, store or dispose of wastewater; to measure flow rates; to monitor water quality; or to collect other data

required by this Discharge Permit. This record shall include repair, replacement or calibration of any monitoring equipment and repair or replacement of any equipment used in the permittee's waste or wastewater treatment and disposal system. [20.6.2.3107.A NMAC]

45. RECORD KEEPING - The permittee shall maintain a written record of the amount of wastewater, effluent, leachate or other wastes discharged pursuant to this Discharge Permit. [20.6.2.3107.A NMAC]

46. RECORD KEEPING - The permittee shall retain records of all monitoring information, including all calibration and maintenance records, copies of all reports required by this Discharge Permit, and records of all data used to complete the application for this Discharge Permit for a period of at least five years from the date of the sample collection, measurement, report or application. This period may be extended by request of the Secretary at any time. [20.6.2.3107.A NMAC]

47. INSPECTION and ENTRY - The permittee shall allow the Secretary or an authorized representative, upon the presentation of credentials, to:
    1) Enter at regular business hours or at other reasonable times upon the permittee's premises or other location where records must be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
    2) Inspect and copy, during regular business hours or at other reasonable times, any records required to be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
    3) Inspect, at regular business hours or at other reasonable times, any facility, equipment (including monitoring and control equipment or treatment works), practices or operations regulated or required under this Discharge Permit, or under any federal or WQCC regulation.
    4) Sample or monitor, at reasonable times for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the New Mexico WQA, any effluent, water contaminant, or receiving water at any location before or after discharge.

    [20.6.2.3107.D NMAC, 74-6-9.B & E WQA]

48. INSPECTION and ENTRY - 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 applicable law or regulation. [20.6.2.3107 NMAC, 74-6-9.B & E WQA]

49. DUTY to PROVIDE INFORMATION - The permittee shall furnish to NMED, within a reasonable time, any documents or other information which it may request to determine whether cause exists for modifying, terminating and/or renewing this Discharge Permit or to determine compliance with this Discharge Permit. The permittee shall also furnish to NMED, upon request, copies of documents required to be kept by this Discharge Permit. [20.6.2.3107.D NMAC, 74-6-9.B & E WQA]

50. SPILLS, LEAKS, and OTHER UNAUTHORIZED DISCHARGES - This Discharge Permit authorizes only those discharges specified herein. Any unauthorized discharges violate 20.6.2.3104 NMAC and must be reported to NMED and remediated as required by 20.6.2.1203 NMAC. [20.6.2.1203 NMAC]

51. MODIFICATIONS and/or AMENDMENTS - The permittee shall notify NMED of any changes to the permittee's wastewater treatment and disposal system, including any changes in the wastewater flow rate or the volume of wastewater storage, or of any other changes to operations or processes that would result in any significant change in the discharge of water contaminants. The permittee shall obtain NMED's approval, as a modification to this Discharge Permit pursuant to 20.6.2.3109.E, F, or G NMAC, prior to any increase in the quantity discharged, or any increase in the concentration of water contaminants discharged, above those levels approved in this Discharge Permit. [20.6.2.3107.C NMAC]

52. ENFORCEMENT - 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 an 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. For certain violations specified in WQA 74-6-10.2, criminal penalties may also apply. 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. [74-6 WQA]

53. 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. [20.6.2 NMAC]

54. 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 (30) days of the receipt of this Discharge Permit. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review. [74-6-5.O WQA]

55. TRANSFER of DISCHARGE PERMIT - Prior to the transfer of any ownership, control, or possession of this permitted facility or any portion thereof, the permittee shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a

copy of this Discharge Permit with the notice. The permittee shall 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. [20.6.2.3111 NMAC]

56. TERM - Pursuant to the WQA 74-6-5.I and 20.6.2.3109.H NMAC, the term of this modified Discharge Permit Modification ends on September 21, 2012, the same day the term was to end for the Discharge Permit replaced by this modified Discharge Permit. [20.6.2.3109.H NMAC, 74-6-5.I WQA]

DISCHARGE PERMIT EFFECTIVE DATE:	**September 21, 2007**
MODIFICATION EFFECTIVE DATE:	**Effective Date**
EXPIRATION DATE:	**September 21, 2012**

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New Mexico Environment Department