

STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY
WATER QUALITY BOARD
P.O. BOX 144870
SALT LAKE CITY, UTAH 84114-4870

Ground Water Discharge Permit
Permit No. UGW190002

In compliance with the provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended, the Act,

Danish Flats Environmental Services
4775 Larimer Parkway, Suite 200
Johnstown, CO 80534

hereafter referred to as the Permittee, is granted a Ground Water Discharge Permit for a fluids disposal facility for evaporation of wastewater in Grand County, Utah. The evaporation pond facility is located at Latitude 39° 04' 36.44" North, Longitude 109° 17' 28.69" West on the following tracts of land (Salt Lake Base and Meridian):

in Section 8, Township 20 South, Range 24 East in Grand County, Utah

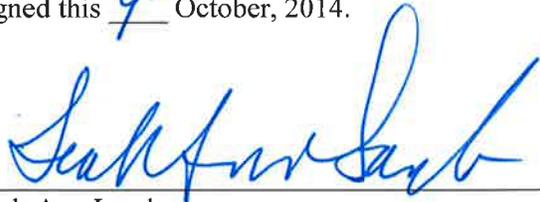
This permit is based on representation made by the Permittee and other information contained in the administrative record. It is the responsibility of the Permittee to read and understand all provisions of this permit.

The facility shall be constructed and operated in accordance with conditions set forth in the permit and the Utah Administrative Rules for Ground Water Quality Protection (UAC R317-6).

This permit shall become effective on October 9, 2014

This permit and authorization to operate shall expire at midnight October 9, 2019

Signed this 9th October, 2014.



Leah Ann Lamb
Acting Director

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PART I SPECIFIC CONDITIONS

A. GROUND WATER CLASSIFICATION

Based on information submitted in the permit application, ground water at the Danish Flats Environmental Services evaporation pond site is defined as Class IV Saline Ground Water.

B. BACKGROUND GROUND WATER QUALITY

There are no shallow, continuous, permeable aquifers in the Mancos Shale underlying the site. The presence of at least 900 feet of Mancos Shale, coupled with the absence or poor quality of shallow ground water beneath the site, indicate a very low vulnerability and low risk to ground water quality.

C. GROUND WATER PROTECTION LEVELS

The site is assigned Class IV Protection Levels based on the lack of a shallow aquifer and the characteristics of the Mancos Shale. In accordance with UAC R317-6-4.7, Class IV ground water protection levels are established to protect human health and the environment.

D. BEST AVAILABLE TECHNOLOGY (BAT) STANDARD

1. Authorized Construction - The Danish Flats Environmental Services site is designed and operated as a non-discharging facility. Six ponds constructed during Phase 2 are authorized by this permit. Each pond is approximately 5.5 acres in size (600ft x 400 ft). Ancillary features permitted by rule: six concrete acceptance pits and one sludge pond.
2. Design and Construction - The composite liner system for each pond consists of a 6-inch clay underliner, a 60-mil HDPE primary synthetic liner, and leak detection sump.

Approved construction elements include:

- a. Subgrade Preparation - the subgrade has been scarified and recompacted to 95% on the Standard Proctor Scale (ASTM D698) prior to clay placement.
- b. Clay underliner - the clay underliner is 6 inches thick and has a compacted permeability of 1×10^{-5} cm/sec.
- c. 60-mil HDPE Primary Liner - a 60-mil high density polyethylene liner is installed immediately above the clay subliner in accordance with the construction quality assurance/quality control manual approved by the Construction Permit.
- d. Leak Detection Sump – The pond bases are slightly sloped at a minimum of 0.4% and a gravel filled leak detection sump is constructed beneath the lowest section of each evaporation pond under the primary HDPE liners and clay underliner. A riser access pipe allows sump water detection measurements and samples to be collected if any leakage is detected in the sump.

- h. Perimeter Berm – a secondary containment berm was constructed above surrounding grade along the low end of the Phase 2 ponds (southeast side) to contain the catastrophic failure of one pond volume (20 acre-feet).
3. BAT Performance Monitoring - Best available technology monitoring will include minimum vertical freeboard, maximum allowable leakage rate, and maximum allowable head monitoring. These performance standards are based on the precedence of previous ground water discharge permits and *Action Leakage Rates for Leak Detection Systems* (EPA, January 1992).
- a. Minimum Vertical Freeboard – a minimum of 36 inches of vertical freeboard shall be maintained to ensure total containment of the evaporation/surge pond and peripheral ditches.
 - b. Maximum Allowable Leakage Rate – the maximum allowable leakage rate through the primary HDPE liner of an evaporation pond is 200 gallons per acre per day. The allowable leakage rate per pond is shown in Table 1.

Table 1: Allowable Leakage Rate (ALR)

Construction Phase	Approximate Liner area (acres) per pond	Allowable Leakage Rate per pond (gallons per day)
2	5.5	1100

Any fluids collected in the leak detection sump will be removed and placed back into the pond.

- c. Maximum Allowable head in any pond sump is 1.0 foot.
4. Spill Containment - The permittee shall maintain all pipelines, delivery pads, storage tanks, and pond facilities with a spill containment system that shall:
- a. Prevent any spills or leakage from any contact with the ground surface or ground water.
 - b. Convey all spills or leakage to an evaporation pond.

Any spill that does come into contact with the ground surface or ground water that causes pollution or has the potential to cause pollution to waters of the state shall be reported in accordance with Part II.I.

5. Monitoring Well Construction - Monitoring wells are not a permit compliance requirement as there is no shallow groundwater underlying the site.

E. Compliance Monitoring Requirements

Non-hazardous low and high salinity fluids will be placed into the ponds and evaporated. Regular pond water sample collection is not a condition of this permit. However, the operator will obtain laboratory analyses of any proposed discharge water of unknown character prior to placement into the ponds. Excepting dissolved metals in water, hazardous or radioactive waste materials cannot be discharged into the Phase 2 ponds without a permit amendment, as these wastes are subject to other Utah Department of Environmental Quality (DEQ) disposal regulations. Storage and evaporation of petroleum E&P wastes is limited to Phase 1 evaporation ponds under the jurisdiction of the Utah Division of Oil, Gas, and Mining (DOG M).

1. Weekly Leak Detection Monitoring

- a. Fluid Measurement – the leak detection sump will be monitored weekly for the presence of fluids.
- b. Sampling if Fluids Present - if fluids are detected in the leak detection sump, the permittee will either collect samples or measure conductivity to determine the source of fluid.

F. NON-COMPLIANCE STATUS

1. Probable Out-of-Compliance Status - The permittee shall evaluate results of each leak detection sampling event to determine any exceedence of the Allowable Leakage Rate found in Table 1 above. Upon determination that an allowable leakage rate has been exceeded at any leak detection sump, the permittee shall:
 - a. Pump fluids from the sump and determine the leakage rate from the pond.
2. Out-of-Compliance Based Upon Failure To Maintain Best Available Technology
 - a. Out of Compliance Status shall be defined as follows:
 - 1) Exceeding the allowable leakage rate (ALR) for a consecutive period of 30 days.
 - b. Notification and Accelerated Monitoring - In the event that BAT monitoring indicates a violation of any of the construction or performance standards outlined in Part I.D of this permit, the permittee shall submit to the Director both verbal and written notification and description of the violation in accordance with Part II.I of this permit.
 - 1) Increase leak detection monitoring frequency of the non-compliant pond/sump until the facility is brought into compliance as determined by the Director.
 - c. Source Assessment Study Plan - within 30 days after the written notice to the Director required in Part I.F.2.b above, the permittee shall submit an assessment study plan and compliance schedule for:

- 1) Assessment of the source or cause of the leakage, and determination of steps necessary to correct the source.
- 2) Assessment of the extent of any potential dispersion in the underlying soil.
- 3) Evaluation of potential remedial actions to restore the pond to compliance.

G. REPORTING REQUIREMENTS

1. Leak Detection Sump Monitoring - monitoring required in Part I.E.2 above shall be reported according to the schedule in Table 2 below, unless modified by the Director:

Table 2: Compliance Monitoring Report Schedule

	Quarter	Report Due Date
1 st	(January, February, March)	April 30 th
2 nd	(April, May, June)	July 31 st
3 rd	(July, August, September)	October 31 st
4 th	(October, November, December)	January 31 st

2. Leak Detection Sump Monitoring- reporting will include:
 - a. Presence or absence of fluid in the leak detection sumps.
 - b. Volume of fluid in a leak detection sump, if present.
 - c. Depth of fluid in a leak detection sump, if present.
 - c. Results of sampling and analysis of fluid collected for compliance or leak assessment purposes.
 - d. The disposition of any fluids in a leak detection sump.
 - e. The volume of fluid remove from the leak detection sumps.
3. Electronic Filing Requirements - In addition to submittal of the hard copy data, above, the permittee will electronically submit the required ground water monitoring data in the electronic format specified by the Director. The data may be submitted by e-mail, compact disc, or other approved transmittal mechanism.

H. COMPLIANCE SCHEDULE

1. Submit a Leak Detection Manual for Phase 2 Ponds that describes the physical features, operation, monitoring, and maintenance of the ponds and leak detection system. This manual is due within 90 days after permit issuance.
2. Final Closure Plan. In the event that the permittee decides to discontinue its operations at the facility the permittee shall notify the Director of such a decision

3. **Duty to Reapply.** 180 days prior to permit expiration, an application for the ground water discharge permit renewal is due. The application notice will include an updated operational plan describing the proposed operational and closure activities expected to occur in the next five-year term of the permit.

PART II MONITORING, RECORDING AND REPORTING REQUIREMENTS

- A. REPRESENTATIVE SAMPLING
Samples taken in compliance with the monitoring requirements established under Part I shall be representative of the monitored activity.
- B. ANALYTICAL PROCEDURES
Water sample analysis must be conducted according to test procedures specified under UAC R317-6-6.3.L, unless other test procedures have been specified in this permit.
- C. PENALTIES FOR TAMPERING
The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- D. REPORTING OF MONITORING RESULTS
Monitoring results obtained during each reporting period specified in the permit, shall be submitted to the Director, Utah Division of Water Quality at the following address no later than the 15th day of the month following the completed reporting period:
- Attention: Ground Water Protection Section
Department of Environmental Quality
Division of Water Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870
- E. COMPLIANCE SCHEDULES
Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- F. ADDITIONAL MONITORING BY THE PERMITTEE
If the permittee monitors any pollutant more frequently than required by this permit, using approved test procedures as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted. Such increased frequency shall also be indicated.
- G. RECORDS CONTENTS
Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements;
 2. The individual(s) who performed the sampling or measurements;
 3. The date(s) and time(s) analyses were performed;
 4. The individual(s) who performed the analyses;
 5. The analytical techniques or methods used; and,
 6. The results of such analyses.
- H. RETENTION OF RECORDS
The permittee shall retain records of all monitoring information, including all calibration and maintenance records and copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years

from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

I. TWENTY-FOUR HOUR NOTICE OF NONCOMPLIANCE REPORTING

1. The permittee shall verbally report any noncompliance which may endanger public health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the Utah Department of Environmental Quality 24 hour number, (801) 536-4123, or to the Division of Water Quality, Ground Water Protection Section at (801) 536-4300, during normal business hours (Monday through Friday 8:00 am - 5:00 pm Mountain Time).
2. A written submission shall also be provided to the Director within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected; and,
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
3. Reports shall be submitted to the addresses in Part II.D, Reporting of Monitoring Results.

J. OTHER NONCOMPLIANCE REPORTING

Instances of noncompliance not required to be reported within 24 hours, shall be reported at the time that monitoring reports for Part II.D are submitted.

K. INSPECTION AND ENTRY

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

PART III COMPLIANCE RESPONSIBILITIES

- A. DUTY TO COMPLY
The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- B. PENALTIES FOR VIOLATIONS OF PERMIT CONDITIONS
The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions is subject to a fine not exceeding \$25,000 per day of violation. Any person convicted under Section 19-5-115(2) of the Act a second time shall be punished by a fine not exceeding \$50,000 per day. Nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.
- C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE
It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- D. DUTY TO MITIGATE
The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- E. PROPER OPERATION AND MAINTENANCE
The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

PART IV GENERAL REQUIREMENTS

- A. PLANNED CHANGES
The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required when the alteration or addition could significantly change the nature of the facility or increase the quantity of pollutants discharged.
- B. ANTICIPATED NONCOMPLIANCE
The permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- C. PERMIT ACTIONS
This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- D. DUTY TO REAPPLY
If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal or extension. The application should be submitted at least 180 days before the expiration date of this permit.
- E. DUTY TO PROVIDE INFORMATION
The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- F. OTHER INFORMATION
When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.
- G. SIGNATORY REQUIREMENTS
All applications, reports or information submitted to the Director shall be signed and certified.
1. All permit applications shall be signed as follows:
 - a. For a corporation: by a responsible corporate officer;
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.
 - c. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Director, and,
 - b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. Changes to Authorization. If an authorization under Part IV.G.2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part IV.G.2 must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. PENALTIES FOR FALSIFICATION OF REPORTS

The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

I. AVAILABILITY OF REPORTS

Except for data determined to be confidential by the permittee, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Director. As required by the Act, permit applications, permits, effluent data, and ground water quality data shall not be considered confidential.

J. PROPERTY RIGHTS

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights; nor any infringement of federal, state or local laws or regulations.

K. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

L. TRANSFERS

This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

M. STATE LAWS

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, penalties established pursuant to any applicable state law or regulation under authority preserved by Section 19-5-117 of the Act.

N. REOPENER PROVISION

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. If new ground water standards are adopted by the Board, the permit may be reopened and modified to extend the terms of the permit or to include pollutants covered by new standards. The permittee may apply for a variance under the conditions outlined in R317-6-6.4.D.
2. If alternative compliance mechanisms are required.
3. If monitoring data reveal the wastewater quality is different from that authorized by this permit.

