



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PAUL MERCER
COMMISSIONER

April 29, 2016

Mr. John Clark
21 Bangor Street, P.O. Box 726
Houlton, Maine 04730
JLC@hwco.org

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #MEU508219
Maine Waste Discharge License Application #W008219-5J-C-R
Houlton Water Company
Proposed Draft License

Dear Mr. Clark:

Enclosed is a proposed draft MEPDES license and Maine WDL (license hereinafter) which the Department proposes to issue as a final document after opportunity for your review and comment. By transmittal of this letter you are provided with an opportunity to comment on the proposed draft license and its conditions (special conditions specific to this permit are enclosed; standard conditions applicable to all permits are available upon request). If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

By copy of this letter, the Department is requesting comments on the proposed draft permit from various state and federal agencies, as required by our new regulations, and from any other parties who have notified the Department of their interest in this matter.

All comments must be received in the Department of Environmental Protection office on or before the close of business **Monday, May 30, 2016**. Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection
Bureau of Water Quality
Division of Water Quality Management
17 State House Station
Augusta, ME 04333.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

If you have any questions regarding the matter, please feel free to call me at 207-446-1875.

Sincerely,

A handwritten signature in black ink, appearing to read "Rodney Robert". The signature is written in a cursive style with a horizontal line underneath.

Rodney Robert
Bureau of Water Quality
Division of Water Quality Management

cc: Sean Bernard
Jim Crowley, DEP/NMRO
Lori Mitchell, DEP/CMRO
Oliver Cox, DMR
Environmental Review, DMR
Environmental Review, DIFW
Kathleen Leyden, DACF
David Webster, USEPA
David Pincumbe, USEPA
Alex Rosenberg, USEPA
Olga Vergara, USEPA
Marelynn Vega, USEPA
Richard Carvalho, USEPA



DEPARTMENT ORDER

IN THE MATTER OF

HOULTON WATER COMPANY)	PROTECTION AND IMPROVEMENT
HOULTON, AROOSTOOK COUNTY, MAINE)	OF WATERS
SURFACE WASTE WATER DISPOSAL SYSTEM)	
PCS TRACKING #MEU508219)	WASTE DISCHARGE LICENSE
WDL #W008219-5J-C-R APPROVAL)	RENEWAL

Pursuant to the provisions of *Conditions of licenses*, 38 M.R.S.A. § 414-A, and applicable regulations, the Department of Environmental Protection (Department hereinafter) has considered the application of the HOULTON WATER COMPANY, (HWC or licensee hereinafter) with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The licensee has applied to the Department for a renewal of Waste Discharge License (WDL) #W008219-5L-B-N, which was issued to Houlton Water Company by the Department on December 2, 2010 for a five year term. The 12/2/10 WDL authorized the seasonal (May1 through November 30) use of a wastewater disposal system using spray irrigation and discharge of treated wastewater to ground water, Class GW-A, on an approximately 50-acre parcel of property where the HWC's wastewater treatment facility is located in Houlton, Maine. The WDL authorized the seasonal discharge of up to a maximum flow rate of 62,500 gallons (2.3") per acre per week. The WDL authorized the discharge of supernatant from a sludge storage lagoon. The HWC utilizes 1.75 subareas for spray irrigation and each subarea is 1.2 acres in size for a total area of 2.1 acres. By using the 2.1-acre area of the approximately 50-acre parcel for spray irrigation area, the facility may discharge up to 75,000 gallons per week per subarea, or 131,250 gallons per week.

LICENSE SUMMARY

This licensing action is carrying forward all the terms and conditions of the December 2, 2010 licensing action:

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated April 29, 2016 and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, 38 M.R.S.A. Section 464(4)(F), will be met, in that:
 - (a) Existing water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
 - (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;
 - (c) Where the standards of classification of the receiving water body are not met the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
 - (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and
 - (e) Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in 38 M.R.S.A. § 414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of HOULTON WATER COMPANY, to operate a surface wastewater disposal (spray irrigation) associated with a sludge storage lagoon system located in Houlton, Maine, and with a maximum flow rate of 62,500 gallons (2.3”) per acre per week and up to 131,250 gallons per week during the period of May 1 through November 30, inclusive, of each year to the soil above ground water resources of the state, Class GW-A, SUBJECT TO THE FOLLOWING CONDITIONS, and all applicable standards and regulations including:

1. “*Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable to All Permits,*” revised July 1, 2002, copy attached.
2. The attached Special Conditions, including any effluent limitations and monitoring requirements.
3. This permit becomes effective upon the date of signature below and expires at midnight five (5) years after that date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the terms and conditions of this permit and all subsequent modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. *Maine Administrative Procedure and Services*, 5 M.R.S.A. § 10002 and Rules Concerning the *Processing of Applications and Other Administrative Matters*, 06-096 CMR 2(21)(A) (amended October 19, 2015).

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

DONE AND DATED AT AUGUSTA, MAINE, THIS ___ DAY OF _____ 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
PAUL MERCER, Commissioner

Date of initial receipt of application July 15, 2015

Date of application acceptance July 20, 2015

Date filed with Board of Environmental Protection _____

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date of this license, the licensee is authorized to operate a surface wastewater treatment and disposal system. The **STORAGE LAGOON EFFLUENT (OUTFALL #001A)**, must be limited and monitored as specified below ⁽¹⁾.

<u>Monitoring Parameters</u>	<u>Daily Maximum</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Biochemical Oxygen Demand	Report mg/L	1/Month ⁽²⁾	Grab
<i>[00310]</i>	<i>[19]</i>	<i>[01/30]</i>	<i>[GR]</i>
Total Suspended Solids	Report mg/L	1/Month ⁽²⁾	Grab
<i>[00530]</i>	<i>[19]</i>	<i>[01/30]</i>	<i>[GR]</i>
Nitrate-Nitrogen	Report mg/L	1/Month ⁽²⁾	Grab
<i>[00620]</i>	<i>[19]</i>	<i>[01/30]</i>	<i>[GR]</i>
pH (Standard Units)	Report S.U.	1/Month ⁽²⁾	Grab
<i>[00400]</i>	<i>[12]</i>	<i>[01/30]</i>	<i>[GR]</i>
<u>Lagoon Effluent Metals (Total): Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc</u>	Report µg/L	1/5 Years ⁽³⁾	Grab
<i>[01002, 01027, 01034, 01042, 01051, 71900, 01067, 01092]</i>	<i>[28]</i>	<i>[01/5Y]</i>	<i>[GR]</i>

The bracketed italicized numeric values in the table above are code numbers that the Department personnel utilize to code the monthly Discharge Monitoring Reports. Footnotes: - See pages 7-8 of this license.

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning the effective date of this license, application of wastewater to the land via a spray irrigation system must be limited to the time period **May 1 through November 30, inclusive, of each calendar year**. The **SPRAY-IRRIGATION FIELD (SF#1)** must be limited and monitored as specified below ⁽¹⁾.

<u>Monitoring Parameters</u>	<u>Monthly Total</u>	<u>Weekly Maximum</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Application Rate <i>[51125]</i>	---	62,500 gal/acre/week ^(4,5) (2.3 in/acre/week) <i>[8B]</i>	1/Week <i>[01/07]</i>	Calculate <i>[CA]</i>
Flow - Total Gallons <i>[82220]</i>	Report (Gallons/Month) ⁽⁴⁾ <i>[80]</i>	---	1/Month <i>[01/30]</i>	Calculate <i>[CA]</i>

The bracketed italicized numeric values in the table above are code numbers that the Department personnel utilize to code the monthly Discharge Monitoring Reports. Footnotes: - See pages 7-8 of this license.

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning the effective date of this license, **GROUND WATER MONITORING WELL (MW-1)** must be limited and monitored as specified below ⁽¹⁾.

<u>Monitoring Parameters</u>	<u>Daily Maximum as specified</u>	<u>Minimum Measurement Frequency as specified</u>	<u>Sample Type as specified</u>
Depth to Water Level Below Land Surface <i>[72019]</i>	Report (feet) ⁽⁶⁾ <i>[27]</i>	3/Year ⁽⁷⁾ [03/YR]	Measure <i>[MS]</i>
Nitrate-Nitrogen <i>[00620]</i>	10 mg/L <i>[19]</i>	2/Year ⁽⁸⁾ [02/YR]	Grab <i>[GR]</i>
Chloride (Total) <i>[00940]</i>	Report (mg/L) <i>[19]</i>	2/Year ⁽⁸⁾ [02/YR]	Grab <i>[GR]</i>
Specific Conductance <i>[00095]</i>	Report (umhos/cm) <i>[11]</i>	2/Year ⁽⁸⁾ [02/YR]	Grab <i>[GR]</i>
Temperature (°F) <i>[00011]</i>	Report (°F) <i>[15]</i>	2/Year ⁽⁸⁾ [02/YR]	Grab <i>[GR]</i>
pH (Standard Units) <i>[00400]</i>	Report (S.U.) <i>[12]</i>	2/Year ⁽⁸⁾ [02/YR]	Grab <i>[GR]</i>
Total Suspended Solids <i>[00530]</i>	Report (mg/L) <i>[19]</i>	2/Year ⁽⁸⁾ [02/YR]	Grab <i>[GR]</i>
Metals (Total): Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc <i>[01002, 01027, 01034, 01042, 01051, 71900, 01067, 01092]</i>	Report µg/L <i>[28]</i>	1/5 Years ⁽³⁾ <i>[01/5Y]</i>	Grab <i>[GR]</i>

The bracketed italicized numeric values in the table above are code numbers that the Department personnel utilize to code the monthly Discharge Monitoring Reports. Footnotes: - See pages 7-8 of this license.

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

1. **Sampling** – Sampling and analysis must be conducted in accordance with; a) methods approved in Title 40 *Code of Federal Regulations* (40 CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis must be analyzed by a laboratory certified by the State of Maine's Department of Human Services. Samples that are sent to another POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 are subject to the provisions and restrictions of the *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (last amended February 13, 2000). Laboratory facilities that analyze compliance samples in-house are subject to the provisions and restrictions of 10-144 CMR 263.

Lagoon Treatment Facilities

2. Lagoon effluent must be sampled at a frequency of once per month during the period of May 1 through November 30, inclusive, of each year. In the event that no wastewater is disposed of via the spray irrigation system for an entire calendar month, the licensee is not required to conduct effluent monitoring as otherwise required in Special Condition A.1 of this license.

Lagoon effluent must be sampled at a point in the lagoon furthest from the lagoon's influent pipe or at a sampling port on the discharge pipe leading to the spray irrigation area and must be representative of what is actually sprayed on the fields. Any change in sampling location must be approved by the Department in writing.

3. **Screening level metals testing** – The licensee must conduct one round of testing for the specified metals **during the fourth calendar quarter of the fourth year of the license**, unless otherwise specified by the Department.

Spray-Irrigation Fields

4. A field's daily or weekly application rate is the total gallons sprayed over the applicable period of time divided by the size of the wetted area of the spray-irrigation field in acres or the wetted areas in acres in acres of that portion of the field utilized. Note: 27,150 gallons is equivalent to one acre-inch. The licensee must measure the flow of waste water to the irrigation area by the use of a flow measuring device that is checked for calibration at least once per calendar year. Weekly is defined as Sunday through Saturday.
5. For Discharge Monitoring Report (DMR) reporting purposes, the licensee must report the highest weekly application rate for the month in the applicable box on the form. Compliance with weekly reporting requirements must be reported for the month in which the calendar week ends.

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

Ground water Monitoring

6. Measured to the nearest one-hundredth (1/10th) of a foot as referenced from the surface of the ground at the base of the monitoring well.
7. Depth to Water Level Below the Land Surface must be conducted in the months of **May, August and October** of each calendar year.
8. Groundwater sampling must be conducted in the months of **May and October** of each year. Sampling, handling and preservation must be conducted in accordance with federally-approved methods (See Footnote #1 above). Specific conductance (calibrated to 25.0° C), temperature, and pH are considered to be “field” parameters, and are to be measured in the field via instrumentation. The licensee is required to test for these parameters whether wastewater was disposed of via the spray-irrigation system or not.

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent must not contain materials in concentrations or combinations which would impair the uses designated by the classification of the ground water.
2. The effluent must not lower the quality of any classified body of water (ground water is a classified body of water under 38 M.R.S.A. § 465-C) below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

C. TREATMENT PLANT OPERATOR

The person who has the management responsibility over the treatment facility must hold a **SITS-I (or higher)** certificate or must be a Maine Registered Professional Engineer pursuant to *Sewerage Treatment Operators*, 32 M.R.S.A., § 4171-4182 and *Regulations for Wastewater Operator Certification*, 06-096 CMR 531 (effective May 8, 2006). All proposed contracts for facility operation by any person must be approved by the Department before the licensee may engage the services of the contract operator.

D. MONITORING AND REPORTING

Monitoring results obtained during the previous month must be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office** such that the DMRs are **received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period.

SPECIAL CONDITIONS

D. MONITORING AND REPORTING (cont'd)

A signed copy of the DMR and all other reports required herein must be submitted to the following address:

Maine Department of Environmental Protection
Northern Maine Regional Office
Bureau of Water Quality
Division of Water Quality Management
1235 Skyway Park
Presque Isle, Maine 04769

Alternatively, if you are submitting an electronic DMR (eDMR), the completed eDMR must be electronically submitted to the Department by a facility authorized DMR Signatory not later than close of business on the **15th day of the month** following the completed reporting period. Hard copy documentation submitted in support of the eDMR must be postmarked on or before the **thirteenth (13th) day of the month or hand-delivered** to the Department's Regional Office such that it is received by the Department on or before the fifteenth (15th) day of the month following the completed reporting period. Electronic documentation in support of the eDMR must be submitted not later than close of business on the 15th day of the month following the completed reporting period.

E. AUTHORIZED DISCHARGES

The licensee is authorized to discharge treated sludge lagoon supernatant effluent only in accordance with: 1) the licensee's General Application for Waste Discharge License, accepted for processing on July 20, 2015; 2) the terms and conditions of this license; and 3) only to spray irrigation field SF#1 from those sources as indicated in the Waste Discharge License application. Discharges of wastewater from any other point source are not authorized under this license, and must be reported in accordance with Standard Condition B(5), *Bypasses*, of this license.

F. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the licensee must notify the Department of:

1. Any introduction of pollutants into the waste water collection and treatment system from an indirect discharger in a primary industrial category discharging process waste water;
2. Any substantial change in the volume or character of pollutants being introduced into the waste water collection and treatment system by a source introducing pollutants into the system at the time of license issuance. For the purposes of this section, notice regarding substantial change must include information on:
 - (a) the quality and quantity of waste water introduced to the waste water collection and treatment system; and

SPECIAL CONDITIONS

F. NOTIFICATION REQUIREMENT (cont'd)

- (b) any anticipated impact caused by the change in the quantity or quality of the waste water to be discharged from the treatment system; and

G. GENERAL OPERATIONAL CONSTRAINTS

1. All wastewater must receive treatment through properly designed, operated and maintained lagoon system prior to land irrigation.
2. The surface wastewater disposal system must be effectively maintained and operated at all times so that there is no discharge to surface waters, nor any contamination of ground water which will render it unsatisfactory for usage as a public drinking water supply.
3. The surface wastewater disposal system must not cause the lowering of the quality of the ground water, as measured in the ground water monitoring wells specified by this license, below the State Primary and Secondary Drinking Water Standards specified in the Maine State Drinking Water Regulations, *Water for Human Consumption*, 22 M.R.S.A. § 2611 *et seq.*

In the event that ground water monitoring results indicate lowering of the existing ground water quality, the licensee may be required to take immediate remedial action(s), which may include but are not limited to, adjustment of the irrigation schedule or application rates, a reduction of the pollutant loading, ground water remediation, or ceasing operation of the system until the ground water attains applicable standards.

4. The licensee must maintain a file on the location of all system components and relevant features. Each component must be mapped and field located sufficiently to allow adequate inspections and monitoring by both the licensee and the Department.
5. System components including collection pipes, tanks, manholes, pumps, pumping stations, spray disposal fields, and monitoring wells must be identified and referenced by a unique identifier (alphabetical, numeric or alpha-numeric) in all logs and reports.
6. Neither manure waste nor septage may be applied to the spray irrigation fields at any time due to the interference the activity may cause in monitoring well results.
7. The licensee must at all times maintain in good working order and operate at maximum efficiency all wastewater collection, treatment and/or control facilities. **Within one hour after start-up of the spray-irrigation systems**, the licensee must inspect the spray-irrigation system or have other means to check the system for leakage in the piping system and determine if individual spray heads and pump(s) are functioning as designed, and verify that application rates are appropriate for the existing site conditions. The procedures used to determine the system is functioning as designed must be described in the facility's O&M manual. Should significant malfunctions or leaks be detected, the licensee must shut down the malfunctioning/leaking sections of the spray system and make necessary repairs before resuming operation.

SPECIAL CONDITIONS

G. GENERAL OPERATIONAL CONSTRAINTS (cont'd)

The licensee must cease irrigation if runoff is observed outside the designated boundaries of the spray area(s). The licensee must field calibrate equipment to ensure proper and uniform spray applications when operating. Calibration involves collecting and measuring application rate at different locations within the application area. A description of the calibration procedures and a log sheet that have been used for calibration results must be included as part of the Operations & Maintenance manual.

H. SPRAY IRRIGATION OPERATIONAL CONSTRAINTS

1. Wastewater may not be applied to areas without sufficient vegetation or ground cover as to prevent erosion or surface water runoff outside the designated boundaries of the spray fields. The licensee must not allow significant runoff or ponding within or out of the spray irrigation area due to the spray irrigation events.
2. There must be at least 10 inches of separation from the ground surface to the ground water table prior to spray irrigation operations.
3. No waste water must be applied to the site following a rainfall accumulation exceeding 1.0 inch within the previous 24-hour period. **A rain gauge must be located on site to monitor daily precipitation.** The licensee must also manage application rates by taking into consideration the forecast for rain events in the 48-hour period in the future.
4. No wastewater must be applied where there is snow present on the surface of the ground.
5. No wastewater must be applied when there is any evidence of frost or frozen ground within the upper 10 inches of the soil profile.
6. Care must be taken when operating equipment in the spray irrigation area in order to minimize disturbance during periods when spray irrigation operations are being conducted.
7. The licensee must not apply wastewater within the setback areas delineated on the aerial facility map included as Attachment A of the Fact Sheet associated with this license.

I. SPRAY IRRIGATION OPERATIONAL PROCEDURES, LOGS AND REPORTS

1. **Prior to the commencement of spray irrigation for the season**, the licensee must notify the Department's compliance inspector that it has verified site conditions are appropriate (frozen ground, soil moisture, etc.) for spray irrigation.
2. The licensee must install the equivalent of one ground water level inspection well to verify that 10 inches of separation from the ground surface to the observed ground water level is present prior to spraying. Depths to ground water must be recorded in accordance with the format of "*Depth to Ground Water*" provided as **Attachment C** of this license.

SPECIAL CONDITIONS

I. SPRAY IRRIGATION OPERATIONAL PROCEDURES, LOGS AND REPORTS (cont'd)

3. The licensee must at all times maintain in good working order and operate at maximum efficiency all waste water collection, treatment and/or control facilities. Should significant malfunctions or leaks be detected, the licensee must shut down the malfunctioning portion of the spray system and make necessary repairs before resuming operation. The licensee must cease irrigation if runoff is observed outside the designated boundaries of the spray field.
4. **The licensee must maintain a daily log** of all spray irrigation operations which records, the date, weather and soil conditions, rainfall, areas irrigated, volume sprayed (gallons), application rates (daily and weekly), and other relevant observations/comments from daily inspections. The log must be in accordance with the format of the “*Monthly Operations Log*” provided as **Attachment A** of this license. Weekly spray application rates must be reported in accordance with the format of the “*Spray Application Report by Week*” provided as **Attachment B** of this license.
The Monthly Operations Log, Spray Application Report by Week, and Depth to Groundwater for each month must be submitted to the Department as an attachment to the monthly Discharge Monitoring Reports (DMRs). Copies will also be maintained on site for Department review and for license operation maintenance purposes.

J. LAGOON MAINTENANCE

1. The integrity of the lagoons must be inspected periodically during the operating season and properly maintained at all times. There must be no overflow through or over the banks. Any signs of leaks or overflow must be repaired or corrected immediately.
2. The licensee must maintain the lagoon freeboard at design levels or at least one (1) foot, whichever is greater. The lagoons must be operated in such a way as to balance the disposal of wastewater via spray irrigation and to ensure that design freeboard levels are maintained.
3. The lagoons must be cleaned of solid materials as necessary to maintain the proper operating depths in both types of tanks that will provide best practicable treatment of the wastewater. All material removed from the tanks and lagoon must be properly disposed of in accordance with all applicable State and Federal rules and regulations.

K. INSPECTIONS AND MAINTENANCE

The licensee must periodically inspect all system components to ensure the facility is being operated and maintained in accordance with the design of the system. Maintenance logs must be maintained for each major system component including pumps, pump stations, storage tanks, spray apparatus, and pipes. At a minimum, the logs must include the unique identifier [alphabetic, numeric or alpha-numeric -see Special Condition G(5)], the date of maintenance, type of maintenance performed, names or person performing the maintenance, and other relevant system observations.

SPECIAL CONDITIONS

L. GROUND WATER MONITORING WELLS AND WATER QUALITY MONITORING PLAN DETAILS

The licensee must maintain an up-to-date ground water quality monitoring plan showing the locations and well construction details of the wells, groundwater flow direction, and well sampling results as well as a comprehensive evaluation of the efficiency of the treatment system and testing methodology. The licensee must refer to guidance for said plan as outlined in Fact Sheet **Attachment B** entitled, "*Water Quality Monitoring Plan Details.*"

All monitoring wells must be equipped and maintained with a cap and lock to limit access and must be maintained in a secured state at all times. The integrity of the monitoring wells must also be verified annually. The Department reserves the right to require increasing the depth and or relocating any of the groundwater monitoring wells if the well is perennially dry or is determined to not provide data representative of groundwater conditions.

M. OPERATIONS AND MAINTENANCE (O&M) PLAN AND SITE PLAN(S)

This facility must have a current written comprehensive Operation & Maintenance (O&M) Plan. The plan must provide a systematic approach by which the licensee must at all times, properly operate and maintain all facilities and the systems of treatment and control (and related appurtenances) which are installed or used by the licensee to achieve compliance with the conditions of this license.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the licensee must evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan must be kept on-site at all times and made available to the Department personnel upon request.

Within 90 days of completion of new and substantial upgrades of the wastewater treatment facility, the licensee must submit the updated O&M Plan to their Department inspector for review and comment.

N. PUBLIC ACCESS TO LAND APPLICATION SITES AND SIGNAGE

Access to the land application sites must be limited during the season of active site use. The licensee must install signs measuring at least 8 ½" x 11", in areas of concern around the perimeter of the lagoon and spray irrigation site that inform the general public that the area is being used to dispose of wastewater. The signs must be constructed of materials that are weather resistant. The licensee must annually inspect and make any necessary repairs to the signage to comply with this condition.

SPECIAL CONDITIONS

O. DISPOSAL OF TRANSPORTED WASTE INTO THE WASTEWATER TREATMENT FACILITY

The licensee is prohibited from accepting transported wastes for disposal into any part or parts of the wastewater disposal system. "Transported wastes" means any liquid non-hazardous waste delivered to a wastewater treatment facility by a truck or other similar conveyance that has different chemical constituents or a greater strength than the influent described on the facility's application for a waste discharge license. Such wastes may include, but are not limited to septage, industrial wastes or other wastes to which chemicals in quantities potentially harmful to the treatment facility or receiving water have been added.

P. VEGETATION MANAGEMENT

1. The licensee must remove grasses and other vegetation such as shrubs and trees if necessary so as not to impair the operation of the spray-irrigation system, ensure uniform distribution of wastewater over the desired application area and to optimize nutrient uptake and removal.
2. The existing vegetative buffer zones along the perimeter of the site must continue to be maintained in a manner consistent with past practices. The goal of this maintenance is to maximize vegetation and forest canopy in order to minimize the potential for off-site drift or spray.

Q. REOPENING OF LICENSE FOR MODIFICATIONS

Upon evaluation of test results required by this license, new site specific information or any other pertinent information gathered during the term of this license, the Department may, at anytime and with notice to the licensee, modify this license to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

R. SEVERABILITY

In the event that any provision, or part thereof, of this license is declared to be unlawful by a reviewing court, the remainder of the license must remain in full force and effect, and must be construed and enforced in all respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

ATTACHMENT A

ATTACHMENT B

Spray Application Report by Week

Attachment B

Facility Name _____;

WDL #W8219-5J-C-R;(Month _____, Year _____) Weekly Application Rate 62,500 gallons/acre 2.3 inches)

Field Name/#	Effective Spray Area (Acres)	Weekly Limit (Gallons/Acre)	Actual Spray Application Rates (Gallons per Acre)					Number of Exceptions to Weekly Limit	Monthly Average
			Week 1	Week 2	Week 3	Week 4	Week 5		
Note: 1 acre-inch is equivalent to 27,150 gallons of liquid 27,150 gallons per acre is equivalent to 1.0 inch						Total Number of Exceptions			

A spray-field's weekly application rate is the total gallons sprayed (Sunday through Saturday) divided by the size of the spray-field in acres or the size in acres of that portion of the spray field utilized.

Signature of Responsible Official: _____, Date _____

ATTACHMENT C

Depth to Groundwater (Tenths of Feet)

Attachment C

(Month _____, Year _____)

Facility Name: Houlton Water Company; WDL #W8219-5J-C-R;

Field Name/#	Monitoring Location	Depth to Groundwater (Measured From Ground Surface in Tenths of Feet)					Number of Exceptions	Monthly Average Depth
		Week 1	Week 2	Week 3	Week 4	Week 5		
Total Number of Exceptions								

Note: Special Condition H of the License requires that a depth of 10 inches from the ground surface to the ground water table must be present prior to spraying.

Signature of Responsible Official: _____, Date _____

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

DATE: April 29, 2016

COMPLIANCE TRACKING NUMBER: MEU508219
WASTE DISCHARGE LICENSE NUMBER: W008219-5J-C-R

NAME AND ADDRESS OF APPLICANT:

**HOULTON WATER COMPANY
P.O. BOX 726
HOULTON, MAINE 04730**

COUNTY: AROOSTOOK COUNTY

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

**135 ACCESS ROAD
HOULTON, MAINE 04730**

RECEIVING WATER/CLASSIFICATION: GROUND WATER/CLASS GW-A

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: MR. JOHN CLARK
GENERAL MANAGER
(207) 532-2350
jlc@hwco.org

1. APPLICATION SUMMARY

- a. Application: The licensee has applied to the Department for a renewal of Waste Discharge License (WDL) #W008219-5L-B-N, which was issued to Houlton Water Company by the Department on December 2, 2010 for a five year term. The 12/2/10 WDL authorized the seasonal (May1 through November 30) use of a wastewater disposal system using spray irrigation and discharge of treated wastewater to ground water, Class GW-A, on an approximately 50-acre parcel of property where the HWC's wastewater treatment facility is located in Houlton, Maine. The WDL authorized the seasonal discharge of up to a maximum flow rate of 62,500 gallons (2.3") per acre per week. The WDL authorized the discharge of supernatant from a sludge storage lagoon. The HWC utilizes 1.75 subareas for spray irrigation and each subarea is 1.2 acres in size for a total area of 2.1 acres. By using the 2.1-acre area of the approximately 50-acre parcel for spray irrigation area, the facility may discharge up to 75,000 gallons per week per subarea, or 131,250 gallons per week.

2. LICENSE SUMMARY

- a. Terms and conditions: **This licensing action is carrying forward all the terms and conditions of the December 2, 2010 licensing action.**
- b. History: The most current relevant regulatory actions and or significant events include the following;

May 20, 2005 – The Department issued initial WDL #W008219-5L-A-N to HWC for the operation of a surface waste water disposal system and resultant discharge to ground waters in Houlton, Maine. The May 20, 2005 WDL was issued for a five-year term.

March 29, 2010 – HWC timely submitted a General Application to the Department for a renewal of the May 20, 2010 WDL. The application was accepted for processing on March 30, 2010 and was assigned WDL #W008219-5J-B-R.

December 2, 2010 – The Department issued initial WDL #W008219-5J-B-R to HWC for the operation of a surface waste water disposal system and resultant discharge to ground waters in Houlton, Maine. The December 2, 2010 WDL was issued for a five-year term.

- c. Source Description: HWC owns and operates a publicly owned treatment works (POTW) that provides a secondary level of treatment for sanitary waste waters generated by a population of approximately 6,500 residential and commercial entities in the Town of Houlton. There are no major commercial or industrial users of the system that contribute more than 10% of the flow or pollutant loading to the waste water treatment facility. HWC's sewer collection system is approximately 37 miles in length, has five pump stations and is completely separated from the storm water collection system and as a result, there are no combined sewer overflow (CSO) points. The waste water treatment facility is currently not permitted to accept transported wastes.
- d. Wastewater Treatment: The waste sludge generated by the waste water treatment facility is pumped to and stored in a large holding lagoon that measures approximately 200 feet long by 75 feet wide by 10 feet deep. The total working capacity of the lagoon is approximately 1.0 million gallons. The licensee seasonally (May 1st – November 30th of each year) applies the supernatant from the lagoon to a 12-acre parcel of land via a surface waste water disposal (spray irrigation) system.

Supernatant from the HWC's sludge storage lagoon is decanted using a submersible pump on a pump crane. The pump can be raised or lowered as necessary to stay above the sludge layer but below the scum layer of the lagoon. Supernatant is pumped to the metering and filtration system. For proper pump setting, initially supernatant is pumped from the lagoon through the recirculation line back to the lagoon until supernatant is visually confirmed to be free of sludge and scum. The recirculation line is then closed and supernatant is pumped through one of the basket filters. The filtered supernatant is delivered through a water meter to feeder pipes that delivers the supernatant to the spray headers for land application.

2. LICENSE SUMMARY (cont'd)

Between May 1st and November 30th of each year, waste water from the lagoon is conveyed to a single spray field, SF#1, which is approximately 12 acres in area. Waste water is applied to the spray field via 8 spray heads. HWC typically pumps water from the lagoon for 4 to 5 hours per sub-application area (1.75 sub- application areas total) each operating day for up to 4 days per week. The maximum operating rate proposed by HWC results in a total of approximately 62,500 gallons of wastewater applied per acre per week, or 2.3 inches/acre/week.

The on-site soils are Conant and Mapleton Series that are generally deep, moderately well drained soils in glacial tills.

3. CONDITIONS OF THE LICENSE

Conditions of licenses, 38 M.R.S.A. § 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System.

4. RECEIVING WATER QUALITY STANDARDS

Classification of ground water, 38 M.R.S.A § 470, indicates the ground water at the point of discharge is classified as Class GW-A receiving waters. *Standards of classification of ground water*, 38 M.R.S.A. § 465-C, describes the standards for Class GW-A waters as the highest classification of ground water and must be of such quality that it can be used for public water supplies. These waters must be free of radioactive matter or any matter that imparts color, turbidity, taste or odor which would impair the usage of these waters, other than occurring from natural phenomena.

5. RECEIVING WATER QUALITY CONDITIONS

The Department has no information as of the date of this licensing action that ground water down gradient from the spray irrigation field does not meet the standards of its assigned classification.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Slow rate land irrigation treatment is an environmentally sound and appropriate technology for best practicable treatment and disposal of sanitary and sanitary like waste waters. The soils and vegetation within the irrigation area will provide adequate filtration and absorption to preserve the integrity of the soil, and both the surface and groundwater quality in the area.

- a. **Spray Irrigation Application Rate:** The previously established weekly average application rate of 62,500 gallons/acre for the Spray Irrigation Field SF1 is carried forward in this licensing action. The weekly average limitation is based on the on the characteristics of in-situ soils and to ensure a margin of safety against hydraulically overloading a spray area on any one given day. This licensing action authorizes the use of the spray irrigation system during the period of May 1 through November 30, inclusive, of each year, provided compliance with the other terms and conditions of this license. The irrigation flow rate must be calculated on a daily basis when the system is in use. This licensing action is carrying forward a monthly total reporting requirement for total gallons of wastewater applied to the spray site consistent with the conditions for other spray irrigation facilities in Maine.

Spray irrigation application rate data submitted to the Department by HWC for the period of May 2011 through May 2015 indicates the following:

Parameter	Limit	Range	Mean	N
Application Rate	62,500	7397 – 42,624	21,862	14

- b. **Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS):** Based on Department best professional judgment (BPJ), this licensing action is carrying forward the previously established, daily maximum concentration reporting requirements for BOD₅ and TSS for lagoon effluent (PCS ID #001A)). BOD₅ is the rate at which organisms use the oxygen in waste water while stabilizing decomposable organic matter under aerobic conditions. BOD₅ measurements indicate the organic strength of wastes in water. TSS consists of both settleable and non-settleable solid materials contained in the wastewater. Monitoring for these parameters yields an indication of the effectiveness of the lagoon treatment process and the condition of the wastewater being applied. This licensing action is carrying forward the minimum monitoring frequency requirement of once per month during the normal operating season of May through November.

Lagoon effluent BOD₅ data submitted to the Department by HWC for the period of May 2011 through May 2015 ranges from 74 mg/L to 268 mg/L with an arithmetic mean of 173 mg/L (N = 14).

Lagoon effluent TSS data submitted to the Department by HWC for the period of May 2011 through May 2015 ranges from 105 mg/L to 392 mg/L with an arithmetic mean of 205 mg/L (N = 14).

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

This licensing action carries forward a daily maximum TSS concentration reporting requirement for the ground water monitoring well and is carrying forward the minimum monitoring frequency requirement of twice per year during the months of May and October of each year.

Monitoring well TSS data submitted to the Department by HWC for the period of May 2011 through May 2015 ranges from 1.0 mg/L to 1.9mg/L with an arithmetic mean of 1.2 mg/L (N = 8).

- c. pH: The daily maximum pH reporting requirement for lagoon effluent and ground water monitoring well is based on a Department BPJ. The licensee is required to report lagoon effluent pH in standard units (SU). pH is considered a “field” parameter meaning that it is measured directly in the field via instrumentation and does not require laboratory analysis. It is considered a surveillance level monitoring parameter that is used as an early-warning indicator of potential ground water contamination. This licensing action is carrying forward the minimum monitoring frequency requirement of once per month during the normal operating season of May through November for lagoon effluent and twice per year in the months of May and October for the ground water monitoring well.

Lagoon effluent pH data submitted to the Department by HWC for the period of May 2011 through May 2015 has ranges from 6.6 SU to 7.6 SU (N=14).

Monitoring well pH data submitted to the Department by HWC for the period of May 2011 through May 2015 ranges from 5.0 SU to 7.2 SU (N = 9).

- d. Lagoon Freeboard: The previous licensing action established revised and this licensing action carries forward the minimum freeboard limit to the design for the lagoon or one foot, whichever is greater, for consistency with the conditions imposed in other licensing actions. See Special Condition J.2 of this license.
- e. Specific Conductance: This licensing action is carrying forward, a daily maximum reporting requirement for specific conductance for the ground water monitoring well. Specific conductance is considered a “field” parameter, meaning that it is measured directly in the field via instrumentation and does not require laboratory analysis. It is considered a surveillance level monitoring parameter that is used as an early-warning indicator of potential ground water or surface water contamination. This licensing action is carrying forward the minimum monitoring frequency requirement of twice per year during the months of May and October of each year for monitoring well specific conductance.

Monitoring well specific conductance data submitted to the Department by HWC for the period of May 2011 through May 2015 ranges from 359 umhos/cm to 928 umhos/cm with an arithmetic mean of 634 umhos/cm (N = 9) and no increasing trend.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

- f. Nitrate-nitrogen: Nitrogen assumes different forms depending upon the oxidation-reduction conditions in the soil and ground water. The presence of a particular form of nitrogen indicates the nutrient attenuation capacity of the spray site. This licensing action is carrying forward, a daily maximum monitoring and reporting requirement for nitrate-nitrogen for lagoon effluent to assist in determining the effectiveness of the treatment process. The monitoring well sampling can also help identify chronic leakage from the lagoon or overloading of the spray sites. Nitrogen compounds can indicate human health concerns if elevated in a drinking water supply. This licensing action is also carrying forward a daily maximum limitation of 10 mg/L for nitrate-nitrogen in the ground water monitoring well, which was based on state and federal drinking water standards.

Monitoring well nitrate-nitrogen data submitted to the Department by HWC for the period of May 2011 through May 2015 ranges from 4.8 mg/L to 25 mg/L with an arithmetic mean of 10.8 mg/L (N = 8). It is noted that exceedances occurred in October during the years 2011, 2012 and 2013 which accounts for the arithmetic mean resulting in an exceedance of the 10mg/L limitation.

Lagoon effluent nitrate-nitrogen data submitted to the Department by HWC for the period of May 2011 through May 2015 ranges from 0.5 mg/L to 2.4 mg/L with an arithmetic mean of 1.9 mg/L (N = 14).

- g. Depth to Water Level Below Land Surface: This licensing action is carrying forward, a daily maximum reporting requirement for depth to water level below land surface for the ground water monitoring wells. This licensing action also carries forward a previously established minimum monitoring frequency requirement of three times per year during the months of May, August and October of each year for consistency with the conditions established in recent licensing actions. Measurements are used to monitor representative ground water conditions.
- h. Temperature: This licensing action is carrying forward, a daily maximum temperature reporting requirement for ground water monitoring wells. Temperature is considered a “field” parameter, meaning that it is measured directly in the field via instrumentation and does not require laboratory analysis. It is considered a surveillance level monitoring parameter that is used as an early-warning indicator of potential ground water contamination. The previous licensing action established a minimum monitoring frequency requirement of twice per year during the months of May and October of each year, and a daily maximum temperature monitoring requirement for lagoon effluent consistent with the monitoring requirements established for other spray irrigation facilities in Maine. Both requirements are carried forward in this licensing action.

Monitoring well temperature data submitted to the Department by HWC for the period of May 2011 through May 2015 ranges from 40 degrees Fahrenheit to 60 degrees Fahrenheit with an arithmetic mean of 48 degrees Fahrenheit (N = 9) .

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

- i. Total Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) – This licensing action carries forward a previously established screening level (one test within the 12-month period prior to license expiration) metals monitoring and reporting requirement for lagoon effluent and ground water monitoring wells. Metals data for lagoon effluent are as follows:

Arsenic :<5 ug/L	Cadmium: <1 ug/L	Chromium: <10 ug/L
Copper: 27 ug/L	Lead: <3 ug/L	Nickel: 9.1 ug/L
Zinc: 48 ug/L	Mercury: 0.2 ug/L	

Metals data (2009) for the ground water monitoring well are as follows:

Arsenic:<1 ppb	Cadmium: <1 ug/L	Chromium: 10 ug/L
Copper: 3 ug/L	Lead: 3 ug/L	Nickel: 5 ug/L
Zinc: 5 ug/L	Mercury: 0.2 ug/L	

To address all metals data are available prior to issuance of the next renewal license for this facility, this licensing action is carrying forward the metals testing requirements in the fourth calendar quarter of the fourth year of the license. The Department reserves the right to reopen this license in accordance with Special Condition Q based on new information provided by the licensee.

7. SYSTEM CALIBRATION

Discharge rates, application rates and uniformity of application change over time as equipment gets older and components wear, or if the system is operated differently from the assumed design. Operating below design pressure greatly reduces the coverage diameter and application uniformity (resulting in increased ponding). For these reasons, the licensee must field calibrate their equipment on a regular basis to ensure proper application and uniformity, and when operating conditions are changed from the assumed design.

Calibration involves collecting and measuring flow at several locations in the application area (typically a grid pattern of containers with uniform diameters). Rain gauges work best because they already have a graduated scale from which to read the application amount without having to perform additional calculations.

8. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As licensed, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the water body to meet standards for Class GW-A classification.

9. PUBLIC COMMENTS

Public notice of this application was made in the Houlton Pioneer Times newspaper on or about March 24, 2010. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft licenses must have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses*, 06-096 CMR 522 (effective January 12, 2001).

10. DEPARTMENT CONTACTS:

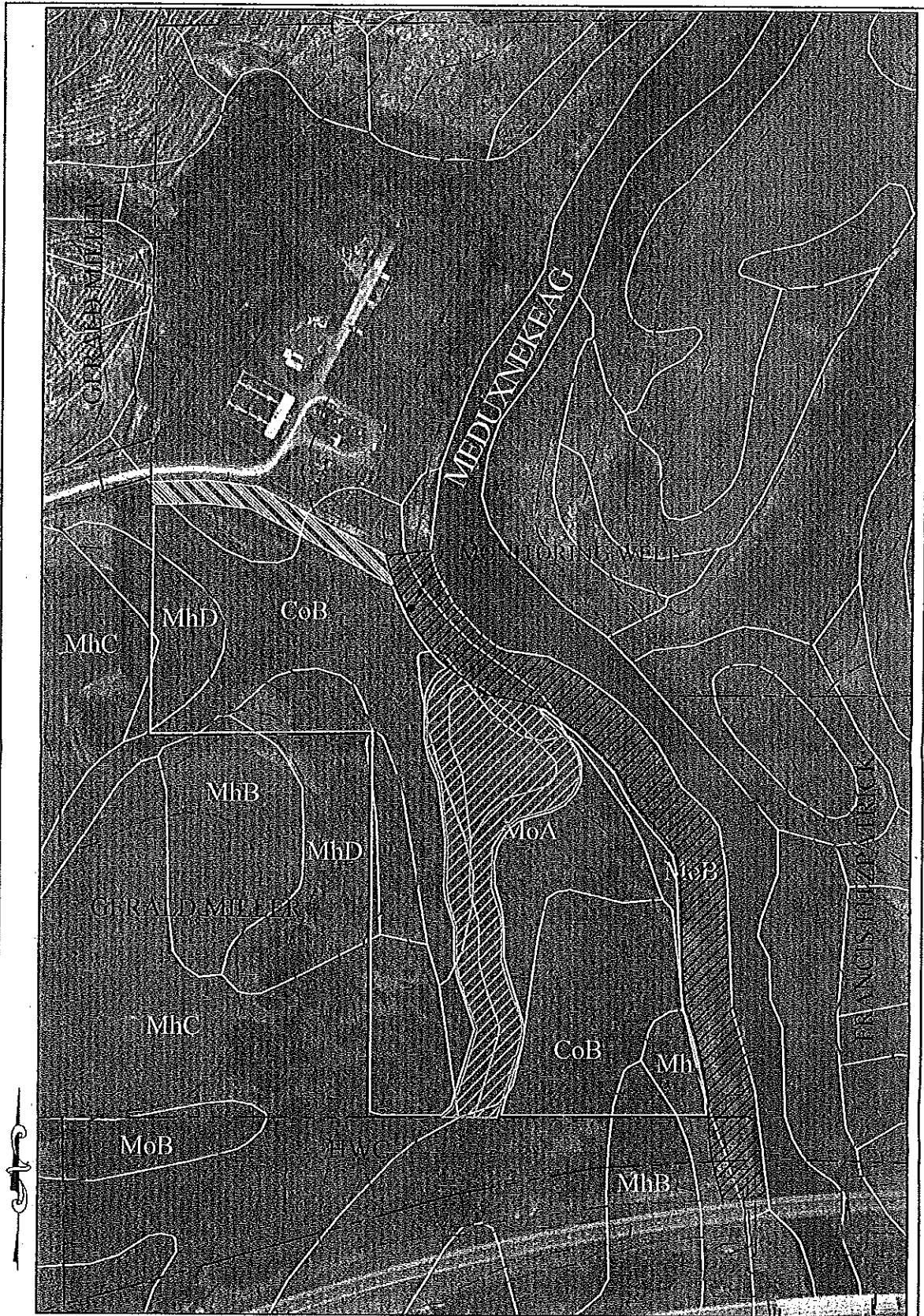
Additional information concerning this licensing action may be obtained from, and written comments sent to:

Rod Robert
Division of Water Quality Management
Bureau of Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 446-1875
rodney.robert@maine.gov

11. RESPONSE TO COMMENTS

Reserved until the end of the formal thirty day comment period.

ATTACHMENT A



LEGEND

- | | | | |
|-----------|------------------------------------|-----|-----------------------|
| --- | PROPERTY LINES | --- | SOIL BOUNDARY |
| ---400--- | CONTOURS | ▨ | SPRAY IRRIGATION AREA |
| ▨ | 100 FT. RIVER SETBACK | | |
| ▨ | 50 FT. DRAINAGE SWALE SETBACK | | |
| ▨ | 50 FT. ACCESS ROAD & DITCH SETBACK | | |

NOTES:
 1. NO BEDROCK OUTCROPS IN AREA.
 2. NO WETLANDS AS DEFINED BY MAINE NATURAL AREAS PROGRAM & MAINE STATE PLANNING OFFICE.

ACHERON ENGINEERING SERVICES
 Engineering, Environmental & Geologic Consultants
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 147 Main St. 34466 Powell Rd.
 Newport, ME 04953 Brooksville, FL 34601
 (207) 568-5108 (352) 775-4236

ATTACHMENT B

STATE OF MAINE

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Land & Water Quality, Division of Environmental Assessment

Water Quality Monitoring Plan Details

For projects required to monitor the quality and/or levels of surfacewater or groundwater, a water quality monitoring plan/protocol document must be provided as a separate manual, for ease-of-reference by the applicant, consultants, and the Department. This manual must be prepared, signed, and dated by a professional qualified in water chemistry interpretation (*and when groundwater flow interpretations and monitoring well selection are conducted to prepare the plan, endorsed by a Certified Geologist*), and must include the following, at a minimum:

1. Identification/summary of all monitoring points (*e.g. monitoring wells, lysimeters, springs, etc.*) to be used for measurement of water levels or for water quality analysis. Monitoring points must have an assigned identification symbol (*alpha/numeric*), and, where appropriate, elevation referenced to an established, permanent benchmark. Include a map showing all monitoring points.
2. Outline of the monitoring frequency at each monitoring point, by the number of sampling/analysis events per year (*e.g. quarterly, etc.*) and by month (*e.g. April, September, etc.*).
3. Provision for obtaining adequate data on background water quality and/or levels, and for using a statistically-valid method for determining a significant increase in parameter concentrations (*e.g. contamination levels, but not necessarily MCL's/MEG's*). At a minimum, determination of background water quality or levels must consist of quarterly sampling/analysis for 1 year.
4. List of parameters to be analyzed, including references to the laboratory analysis methods to be utilized for each parameter, detection limits for each analysis method, and the MCL's/MEG's for all applicable parameters. All monitoring must include field parameters (*conductivity, temperature, pH, and TDS*), in addition to parameters specific to the monitoring program objectives.
5. Identification of the qualified personnel to take water level measurements and water quality analysis samples. These tasks should not be done by the applicant or employee of the applicant, but if proposed, then item 6 below must be addressed.
6. Written certification from a qualified expert that personnel to conduct monitoring are or will be adequately trained to properly collect measurements and/or samples by approved methods and protocols.

7. Description of the equipment and methods to be employed for water level measurement and/or water quality analysis sample-taking.
8. Description of the quality assurance/quality control and chain-of-custody protocols to be followed for water quality sampling, preservation, storage, transport, and laboratory analysis.
9. Provision for a professional qualified in water chemistry or groundwater flow interpretation to summarize, evaluate, and provide recommendations on the monitoring results that is submitted annually to the Department, unless a problem is evident, in which case the Department is to be notified immediately. Annual reports must include historical, as well as the most recent year's monitoring data for each monitoring point, which is presented in a tabular format. Reports must be signed/dated by the professional responsible for their preparation.
10. A provision that, if water levels or water quality monitoring results indicate adverse effects are occurring as a result of the project activity, then an evaluation will be made by a qualified professional and an appropriate remedial action/mitigation plan will be developed and submitted to the Department for re-view and approval.