March 11, 2008

Roderick Dyer
P.O. Box 436
Harrison, ME 04040

RE: Permit Compliance System Tracking Number #MEU508124
Maine Waste Discharge License (WDL) Application #W008124-5J-C-M
**Final License Modification**

Dear Mr. Dyer:

Enclosed please find a copy of your **final** Maine WDL **modification** which has been approved by the Department of Environmental Protection. Please read the license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State Law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision*."

Should you have any questions regarding this matter, feel free to call me at 287-7693.

Sincerely,

Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality

Enc.
cc: Fred Gallant, DEP/SMRO
Sandy Lao, USEPA

**IN THE MATTER OF**

| | | |
|---|---|---|
| RODERICK DYER | ) | PROTECTION AND IMPROVEMENT |
| HARRISON, CUMBERLAND COUNTY, MAINE | ) | OF WATERS |
| SUB-SURFACE WASTE WATER DISPOSAL | ) | WASTE DISCHARGE LICENSE |
| MEU508124 | ) | |
| W008124-5J-C-M **APPROVAL** | ) | **MODIFICATION** |

Pursuant to the provisions of Maine Law 38 M.R.S.A., Section 414-A et seq., and applicable regulations**,** the Department of Environmental Protection (Department hereinafter) has considered the application of RODERICK DYER, with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

## APPLICATION SUMMARY

Roderick Dyer has applied for a modification of Waste Discharge License (WDL) #W008124-5J-B-R which was issued by the Department on February 28, 2007 and is due to expire on February 28, 2012. The 2/28/07 WDL authorized the use of a sub-surface waste water disposal system that is designed to treat septage leachate generated from a commercial septic tank pumping operation located on a 38.6-acre parcel northerly of Route 117. The operation removes septage and waste water from septic tanks serving area residences with pumps mounted on tank-truck vehicles. Septage and waste water pumped from septic tanks has a high biochemical oxygen demand (BOD), total suspended solids (TSS), and other pollutant concentrations and requires adequate treatment before disposal. The treatment system includes bar racks and screens to separate solids from the waste water, storage tanks, a polymer mixing tank, two sand filters, and a sub-surface waste water disposal area (often referred to as a leachfield) to dispose of the liquid fraction of the treated septage leachate.

## MODIFICATIONS REQUESTED

The licensee has requested the following modifications to the 2/28/07 WDL;

1) Increase the daily maximum flow limitation from 2,000 gallons per day (gpd) to 6,500 gpd for Outfall #002 based on an expansion of the area of the sub-surface waste water disposal system.

2) Eliminate the monitoring requirements for specific conductance, nitrates, total kjeldhal nitrogen (TKN), temperature and pH and reduce the monitoring frequency for biochemical oxygen demand (BOD) and total suspended solids (TSS) from 1/Month to 1/Year for the effluent from the treatment system (Outfall #002) prior to disposal via the sub-surface waste water disposal system.

## LICENSE MODIFICATION SUMMARY

This licensing action;

1) Increases the daily maximum flow limitation from 2,000 gpd to 6,500 gpd.

2) Eliminates the limitations and/or monitoring requirements for specific conductance, TKN and temperature and reduces the monitoring frequency for BOD, TSS, nitrates and pH from 1/Month to 1/Quarter.

## CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated February 11, 2008, 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 existing groundwater quality.

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 MRSA Section 464(4)(F), will be satisfied, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain water quality 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) The standards of classification of the receiving water body are met or, 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.

**ACTION**

THEREFORE, the Department APPROVES the above noted application of RODERICK DYER to discharge up to daily maximum of 6,500 gallons of treated septage leachate waste water per day to the ground water, Class GW-A via a sub-surface waste water disposal system, SUBJECT TO THE FOLLOWING CONDITIONS, and all applicable standards and regulations including:

1. Standard Conditions of Industrial Waste Discharge Licenses copy attached to WDL #W008124-5J-B-R issued on February 28, 2007.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. All other terms and condition of WDL #W008124-5J-B-R not modified by this license modification remain in effect and enforceable.

4. **This modification expires on February 28, 2012**, concurrent with WDL #W008124-5J-B-R.

DONE AND DATED AT AUGUSTA, MAINE, THIS _____DAY OF _____, 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
David P. Littell, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application February 27, 2007 .

Date of application acceptance: February 28, 2007 .

Date filed with Board of Environmental Protection _____.

This Order prepared by GREGG WOOD, BUREAU OF LAND & WATER QUALITY

## SPECIAL CONDITIONS

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The licensee is authorized to discharge treated waste water from the sand filters and septic tanks via **Outfall #002**. Outfall #002 is defined as the pump station/effluent pipe from the last septic tank leading to the leachfield area. Such discharges shall be limited and monitored by the licensee as specified below:

| Effluent Characteristic | Discharge Limitations | | Monitoring Requirements | |
|---|---|---|---|---|
| | Monthly Average | Daily Maximum | Measurement Frequency | Sample Type |
| Flow *[50050]* | Report, gpd[(1)] *[07]* | 6,500 gpd *[07]* | 1/Week *[01/07]* | Calculate *[CA]* |
| Biochemical Oxygen Demand *[00310]* | --- | 250 mg/L *[19]* | 1/Quarter[(2)] *[01/90]* | Grab *[GR]* |
| Total Suspended Solids *[00530]* | --- | 250 mg/L *[19]* | 1/Quarter[(2)] *[01/90]* | Grab *[GR]* |
| Nitrates *[00621]* | --- | 10 mg/L *[19]* | 1/Quarte[(2)] *[01/90]* | Grab *[GR]* |
| pH *[00400]* | --- | 6.0-9.0 S.U *[19]* | 1/Quarter[(2)] *[01/90]* | Grab *[GR]* |

**The system typically operates only during the winter months when land application is not permitted (November—April). Sampling at outfall #002 is only required when there is any actual flow at any time during the monthly reporting period.**

Footnotes:

(1) Flow shall be calculated as follows: The total discharge by liquid (gallons) measure during the calendar month divided by the number of days in the month that the facility was operating.

(2) There shall be at least 45 days between routine sampling events.

**MAINE WASTE DISCHARGE LICENSE**

**FACT SHEET**

**Date: February 11, 2008**

PERMIT COMPLIANCE SYSTEM NUMBER: **MEU508124**

LICENSE NUMBER: **W-008124-5J-C-M**

NAME AND MAILING ADDRESS OF APPLICANT:

**RODERICK DYER**
**P.O. Box 436**
**Harrison, Maine 04040**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**722 Norway Road**
**Harrison, Maine 04040**

REGION WHERE FACILITY DISCHARGE OCCURS: **Cumberland County**

RECEIVING WATER/ CLASSIFICATION: **Groundwater/Class GW-A**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Roderick Dyer**
**(207) 583-4546**

## 1. APPLICATION SUMMARY

a. Application: Roderick Dyer has applied for a modification of Waste Discharge License (WDL) #W008124-5J-B-R,which was issued by the Department on February 28, 2007 and is due to expire on February 28, 2012. The 2/28/07 WDL authorized the use of a sub-surface waste water disposal system that is designed to treat septage leachate generated from a commercial septic tank pumping operation located on a 38.6-acre parcel northerly of Route 117. The operation removes septage and waste water from septic tanks serving area residences with pumps mounted on tank-truck vehicles. Septage and waste water pumped from septic tanks has a high biochemical oxygen demand (BOD), total suspended solids (TSS), and other pollutant concentrations and requires adequate treatment before disposal. The treatment system includes bar racks and screens to separate solids from the waste water, storage tanks, a polymer mixing tank, two sand filters, and a sub-surface waste water disposal area (often referred to as a leachfield) to dispose of the liquid fraction of the treated septage leachate.

## 1. APPLICATION SUMMARY (cont'd)

b. Source Description: The facility receives septage from the periodic maintenance and pumping of area residential sub-surface waste water disposal systems. Only septic tanks serving residential structures are pumped by the applicant. There is no contribution from septic systems serving commercial or industrial users.

c. Waste Water Treatment: Septage is pumped from area septic tanks and transported to the dewatering facility for processing. The septage is then off-loaded through a 2" bar rack to a holding tank. The licensee uses polymer to dewater the septage and to supplement the treatment process. The liquid fraction of the septage is separated from the solid fraction and is then pumped to storage tank #1 (8,000-gallon capacity) by a 3 HP conveyor screener and drained to storage tank #2 (8,000-gallon capacity) where a mixing pump adds polymer in a container hopper. The liquid is then pumped to a 5,000-gallon storage tank #3. The material is then conveyed by a timed metered pump to the sand filter system for further processing of the waste water.

Two sand filters (each 8 feet x 24 feet) are used to improve the waste water quality. The hydraulic conductivity of the filters is expected to be greatest during startup and will diminish over time due to organic material accumulations on the surface and within the first few inches of the filter. When a filter's conductivity diminishes, the waste water is directed to the second of the two sand filters, and the slow filter will be rejuvenated by vacuum suction of organics. Waste water passing through the filter is then directed to two 1,000-gallon septic tanks in series and then to an existing sub-surface waste water disposal system located southerly from the sand filters. It is noted none of above described infrastructure is being modified to increase capacity as a result of this license modification. The licensee proposes to maintain the same rate of processing but will process the septage for longer periods of time during any given day.

The existing sub-surface waste water disposal system measures 80 feet by 130 feet and contains three rows of three stone beds. Each stone bed contains a monitoring port that provides an opportunity to observe internal system performance and collect samples if necessary. In this license modification, the licensee requests authorization to construct and dispose of secondary treated waste waters into two additional sub-surface beds, each measuring 20 feet by 180 feet and located adjacent to the three existing beds. Like the existing beds, the two proposed beds will have monitoring ports that provide an opportunity to observe internal system performance and collect samples if necessary. Like soils in the existing beds, the soils in the area of the proposed leachfield area are moderately well drained, Skerry fine sandy loam. Skerry soil is not considered to be a hydric soil type. Skerry soil is suitable for the discharge of waste water. The licensee anticipates constructing the new leachfield beds during the spring of 2008.

## 1. APPLICATION SUMMARY (cont'd)

There are currently three ground water monitoring wells (MW-1, MW-2 and MW-3) being monitored pursuant to the 2/28/07 WDL. Monitoring wells have been located to intercept leachate plumes discharged from the leachfield area and will be monitored periodically in accordance with Special Condition Section A(2) of the 2/28/07 license. Due to the location of the two new leachfield beds, MW-1 and MW-2 are going to be relocated to no more 20 feet from the perimeter of the entire leachfield system.

d. Modifications requested - The licensee has requested the following modifications to the 2/28/07 WDL;

1) Increase the daily maximum flow limitation from 2,000 gallons per day (gpd) to 6,500 gpd for Outfall #002 based on an expansion of the area of the sub-surface waste water disposal system.

2) Eliminate the monitoring requirements for specific conductance, nitrates, total kjeldhal nitrogen (TKN), temperature and pH and reduce the monitoring frequency for biochemical oxygen demand (BOD) and total suspended solids (TSS) from 1/Month to 1/Year for the effluent from the treatment system (Outfall #002) prior to disposal via the sub-surface waste water disposal system.

## 2. LICENSE SUMMARY

a Terms and conditions – This licensing action;

1) Increases the daily maximum flow limitation from 2,000 gpd to 6,500 gpd for Outfall #002.

2) Eliminating the limitations and/or monitoring requirements for specific conductance, TKN and temperature and reducing the monitoring frequency for BOD, TSS, nitrates and pH from 1/Month to 1/Quarter for Outfall #002.

b. History: The most recent licensing/permitting actions include the following:

*September 25, 1996* – The Department approved a solid waste disposal license (#S-008228-53-D-N) authorizing the land spreading of septage on the northerly side of Route 117 in Harrison. The septage landspreading occurs on the same parcel of land where the applicant disposes of supernatant generated by a commercial septage dewatering operation.

*June 18, 2002* –The Department issued a new Waste Discharge License (WDL) (#W008124-5J-A-N) for the discharge of up to 2,000 gpd of supernatant from a commercial septage dewatering operation to a sub-surface waste water disposal system. The WDL was issued for a five-year term.

## 2. LICENSE SUMMARY

*December 7, 2006* – The Department modified the 6/18/02 license by reducing the monitoring frequency for the ground water monitoring wells from 1/Month to 1/Quarter. All other terms and conditions of the license remained unchanged.

*February 28, 2007* – The Department issued a renewal of the 6/18/02 WDL by issuing WDL #W008125-5J-B-R for a five-year term.

*February 28, 2007* – The Department accepted an application from the licensee to modify the daily maximum flow limitation and eliminate or modify effluent monitoring requirements for Outfall #002.

## 2. CONDITIONS OF LICENSES

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges 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 Water Classification System.

## 4. RECEIVING WATER QUALITY STANDARDS

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

## 5. RECEIVING WATER QUALITY CONDITIONS

A review of the ground water quality monitoring data submitted to the Department on the monthly Discharge Monitoring Reports (DMRs) since the facility commenced operation indicates that groundwater in the vicinity of the proposed subsurface waste water disposal area is attaining the standards of Class GW-A waters.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Outfall: Outfall #002 was designated in the previous licensing action as the effluent sampling port at the sand filters, just prior to discharge to the leachfields and is being carried forward in this license modification as a representative effluent sampling location.

b. Flow: The previous licensing action established a daily maximum flow limitation of 2,000 gallons per day for Outfall #002 based on what is now considered an overly conservative design of the system utilizing criteria found in the Maine State Plumbing Code and performance expectations of the waste water infrastructure installed when the facility

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

commenced operations. The treatment process consisting of preliminary treatment by screening, primary treatment by settling and secondary treatment by a sand filter system. Based on five years of effluent data from the treatment system indicating a much higher removal rate of pollutants than expected in the final effluent (just after the sand filter) and the fact the licensee is proposing an expansion of the leachfield system, this licensing action is granting the requested increase in the daily maximum flow limitation from 2,000 gpd to 6,500 gpd.

c. Biochemical oxygen demand (BOD) & total suspended solids (TSS) – The previous licensing established daily maximum BOD and TSS limitations of 250 mg/L for Outfall #002 based on a Department best professional judgment of best practicable treatment (BPT). The licensee has requested the Department modify the monitoring frequency from 1/Month to 1/Year based on the last five years of data for BOD and TSS from Outfall #002. The Fact Sheet for the 2/28/07 WDL stated " *BOD values at outfall #002, have ranged during the previous licensing action, between 8 and 149 mg/L and have averaged 40.5 mg/L*" and "*TSS values at outfall #002 have ranged between 2 and 158 mg/L and averaged 34 mg/L over the course of the previous license*."

The Department disagrees with the licensee's request to reduce the monitoring frequency for BOD and TSS to 1/Year as this is not frequent enough to determine if the treatment system is performing as expected and maintaining compliance with the BPT limits. Based on the consistency in the BOD and TSS test results to date, the Department does consider it to be appropriate to reduce the monitoring frequency for both parameters to 1/calendar quarter with at least 45 days between sampling events. This will provide the Department and licensee with sufficient information to determine if the system is continuing to perform as efficiently as it has historically on a year-basis and verify compliance with the license limits. Therefore, this license modification is establishing a monitoring frequency of 1/Quarter for BOD & TSS.

d. Specific conductance and temperature – The previous licensing action established a 1/Month monitoring requirement for specific conductance and temperature for Outfall #002. These parameters were to be monitored for Outfall #002 to develop a relationship between what specific conductance values were being discharged to the leachfield and what levels for the same parameters were being measured in the groundwater monitoring wells.

The Fact Sheet for the 2/28/07 WDL stated "*Specific conductance values during the previous license, at outfall #002, have ranged between 73 to 196 umhos/cm and have averaged 141 umhos/cm. At monitoring wells, specific conductance values have ranged between 34 to 415 umhos/cm (a few values above 275 umhos/cm), and averaged 141 umhos/cm at well #1, and averaged 133 umhos/cm at well #2 and have averaged 234 umhos/cm at well #3."*

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

For Outfall #002, the Department is making a best professional judgment to eliminate the monitoring requirements for specific conductance and temperature (requested by the licensee) based on the consistent values reported for the previous five-year period. Continuing to collect additional information on these parameters has limited value and is therefore being eliminated for Outfall #002 in the license modification.

d. Nitrate-Nitrogen– The 2/28/07 license established a daily maximum limit of 10 mg/L for nitrate-nitrogen based on National Primary Drinking Water Standards. The Department recognizes the fact that this limitation is a human health based criteria established for ground water but was established in Department licensing actions (including this modification) at the end of the sand filter which is prior to disposal in the leachfield system where the soils provide for additional treatment. This methodology of regulating nitrate-nitrogen in Department licensing actions serves as an early warning indicator of elevated nitrate levels being discharged rather than waiting for the monitoring wells to indicate a violation of the drinking water standard. A review of the monthly Discharge Monitoring Report (DMR) data submitted to the Department for the period November 2005 – August 2007 indicates the nitrate levels for Outfall #002 have ranged 2.0 mg/L to 23.4 mg/L with an arithmetic mean (n=20) of 6.8 mg/L. For ground water monitoring wells the DMR data ranges from 0.7 mg/L to 9.4 mg/L with an average value of 4.0 mg/L.

The Department disagrees with the licensee's request to eliminate the monitoring frequency for nitrate nitrogen in its entirety given nitrate levels for Outfall #002 have averaged 6.8 mg/L with four exceedences of the 10 mg/L-limit. However, the Department does consider it to be appropriate to reduce the monitoring frequency for nitrate-nitrogen to 1/calendar quarter with at least 45 days between sampling events. This will provide the Department and licensee with sufficient information to verify compliance with the license limit. Therefore, this license modification is establishing a monitoring frequency of 1/Quarter for nitrate-nitrogen.

e. Total Kjeldahl nitrogen (TKN) – The 2/28/07 license established a monitoring requirement for TKN without a numeric limit to help quantify the different forms of nitrogen in the waste water from Outfall #002. The monthly DMR data submitted to the Department for the period November 2005 – August 2007 indicates the TKN levels for Outfall #002 have ranged 3.5 mg/L to 33 mg/L with an arithmetic mean (n=20) of 11 mg/L.

For Outfall #002, the Department is making a best professional judgment to eliminate the monitoring requirement for TKN (requested by the licensee) based on the consistent values reported for the previous five-year period. Continuing to collect additional information on these parameters has limited value and is therefore being eliminated for Outfall #002 in the license modification.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

f. pH: The pH limit of 6.0 -9.0 standard units established in the 2/28/07 WDL is a BPT standard incorporated into similar waste discharge licenses issued by the Department. It is considered an important parameter to monitor as extreme pH swings can alter the chemistry in the soils in the leachfield and limit the soils effectiveness in providing additional treatment of the waste water or mobilize metals in the soils if the pH was extremely low. Eliminating all monitoring requirements for pH would be inappropriate. A review of the monthly DMR data submitted to the Department for the period November 2005 – August 2007 indicates that pH levels for Outfall #002 have ranged from 5.9 -6.9 standard units with only one excursion of the range limit.

The Department disagrees with the licensee's request to eliminate the monitoring frequency for pH in its entirety. However, the Department does consider it to be appropriate to reduce the monitoring frequency for pH to 1/calendar quarter with at least 45 days between sampling events. This will provide the Department and licensee with sufficient information to determine if the system is continuing to perform on a year-basis and verify compliance with the license limit. Therefore, this license modification reduces the monitoring frequency for pH to 1/Quarter.

This license modification does not change any of the parameters, limitations or monitoring requirements for the three monitoring wells (MW-1, MW-2 or MW-3) required by the 2/28/07 license.

## 7. 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 groundwater to meet standards for Class GW-A classification.

## 8. PUBLIC COMMENTS

Public notice of this application was made in the Lewiston Sun Journal newspaper that has general circulation in the vicinity of the project on or about March 1, 2007. 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 permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

## 9. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone (207) 287-7693

## 10 .RESPONSE TO COMMENTS

During the period of February 11, 2008, through the issuance date of this license modification, the Department solicited comments on the proposed draft modification to be issued for the discharge(s) from the Dyer facility. The Department did not receive comments from the licensee, state or federal agencies or interested parties that resulted in any substantive change(s) in the terms and conditions of the license. Therefore, the Department has not prepared a Response to Comments.