



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI  
GOVERNOR

DAVID P. LITTELL  
COMMISSIONER

June 13, 2007

Mr. Steve Sudduth  
Wyonegonic Camps, Inc  
215 Wyonegonic Road  
Denmark, Maine 04022

RE: Permit Compliance System Tracking Number (PCS) # MEU507602  
Maine Waste Discharge License (WDL) Application # W007602-5J-D-R  
**Final License**

Dear Mr. Sudduth:

Enclosed please find a copy of your **final** Maine WDL which was 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.*"

If you have any questions regarding this matter, please 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

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
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STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

WYONEGONIC CAMPS, INC	)	PROTECTION AND IMPROVEMENT
DENMARK, CUMBERLAND COUNTY, MAINE	)	OF WATERS
SURFACE WASTEWATER DISPOSAL SYSTEM	)	
MEU507602	)	WASTE DISCHARGE LICENSE
#W007602-5J-D-R	)	RENEWAL
APPROVAL	)	

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

**APPLICATION SUMMARY**

The applicant has applied for renewal of Waste Discharge License (WDL) #W007602-5J-C-R, which was issued on June 21, 2002 and is scheduled to expire on June 21, 2007. The application is for the continuing operation of a surface wastewater disposal (spray-irrigation) system for the treatment and seasonal disposal waste water that is generated at a rate of 7,000 gallons per day of sanitary wastewater, from Wyonegonic Camps, Inc. in Denmark, Maine. The facility has been assigned number MEU507602 for license compliance tracking purposes.

**LICENSE SUMMARY**

**This license is similar to the June 21, 2002 WDL in that it is carrying forward from the previous licensing action:**

1. With respect to the waste water treatment lagoon; effluent sampling for biochemical oxygen demand (BOD), nitrate-nitrogen, and total kjeldahl-nitrogen (TKN) on a twice per year monitoring frequency.
2. With respect to the spray irrigation discharge, weekly application rates and monitoring total gallons applied.
3. With respect to ground water monitoring wells, depth to water level below land surface, nitrate-nitrogen, and specific conductance.
4. General operational and spray irrigation operational constraints and the requirement for submittal of an annual spray irrigation performance report after the conclusion of the spray irrigation season.

## **LICENSE SUMMARY**

**This license is different from the June 21, 2002 WDL in that it is:**

1. Eliminating the daily spray irrigation discharge limit as other operational constraints address concerns with excessive application rates.
2. Requiring the operation and responsible charge of the spray irrigation system by an individual who has been certified by the Department in the operation of waste water treatment facilities (refer to Special Condition B of this license).
3. Revising the prohibition against spray irrigation if there has been more than 0.5 inches of precipitation within the previous 24-hour period to a prohibition against irrigation if there has been more than 1.0 inch of precipitation within the previous 24-hour period.

## **CONCLUSIONS**

**BASED** on the findings in the attached Fact Sheet dated June 12, 2007, 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 MRSA 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) 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 the WYONEGONIC CAMPS, INC, to operate a surface wastewater disposal system to discharge waste water generated at a rate of 7,000 gpd and discharged at a rate of 1.5 inches per acre per week (40,728 gallons per acre per week) over a 1.43-acre spray irrigation area, SUBJECT TO THE FOLLOWING CONDITIONS, and all applicable standards and regulations including:

1. Standard Conditions of Industrial Waste Discharge Licenses (revised 8/14/96), copy attached.
2. The attached Special Conditions, including effluent limitations and monitoring requirements.
3. This license expires five (5) years from the date of signature, below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 14<sup>TH</sup> DAY OF JUNE, 2007.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

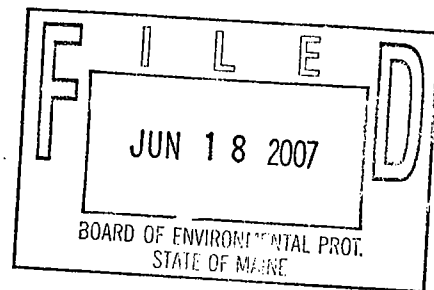
BY: \_\_\_\_\_

David P. Littell, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 1, 2007

Date of application acceptance: March 8, 2007



Date filed with Board of Environmental Protection \_\_\_\_\_

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

W76025JDR

6/12/07

**SPECIAL CONDITIONS**

**A. LIMITATIONS AND MONITORING REQUIREMENTS**

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

Effluent Characteristic	Discharge Limitations		Minimum Monitoring Requirements	
	Weekly <u>Average</u> as specified	Daily <u>Maximum</u> as specified	Measurement <u>Frequency</u> as specified	Sample <u>Type</u> as specified
Biochemical Oxygen Demand [00310]	---	Report mg/L [19]	Twice/Year <sup>(2)</sup> [02/YR]	Grab [GR]
Nitrate-Nitrogen [00620]	---	Report mg/L [19]	Twice/Year <sup>(2)</sup> [02/YR]	Grab [GR]
Total Kjeldahl-Nitrogen (TKN) [00625]	---	Report mg/L [19]	Twice/Year <sup>(2)</sup> [02/YR]	Grab [GR]

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 page 7 of this license.

**SPECIAL CONDITIONS**

**A. LIMITATIONS AND MONITORING REQUIREMENTS**

2. During the period beginning the effective date of the license, the licensee is authorized to operate a surface wastewater treatment and disposal system. The **SPRAY IRRIGATION FIELD** <sup>(3)</sup> (**OUTFALLS #SF1**) shall be limited and monitored as specified below.

***APRIL 15 – NOVEMBER 15***

Effluent Characteristic	Discharge Limitations		Minimum Monitoring Requirements	
	Monthly <u>Total</u> as specified <i>[MP]</i>	Weekly <u>Average</u> as specified <i>[WC]</i>	Measurement <u>Frequency</u> as specified	Sample <u>Type</u> as specified
Application Rate (Weekly) <sup>(4)</sup> <i>[51125]</i>	---	40,728 Gallons/Acre <sup>(5)</sup> <i>[8B]</i>	1/Week <i>[01/07]</i>	Calculate <i>[CA]</i>
Total Gallons Applied <i>[00095]</i>	Report (Gallons) <i>[57]</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 page 7 of this license.

Note: The spray irrigation field is comprised of 1.43 acres.

## SPECIAL CONDITIONS

### A. LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning the effective date of the license, the licensee is authorized to operate a surface wastewater treatment and disposal system. The **GROUND WATER MONITORING WELL(S) (MW1 & MW2)** shall be limited and monitored as specified below.

Effluent Characteristic	Discharge Limitations		Minimum Monitoring Requirements	
	Weekly <u>Average</u> as specified	Daily <u>Maximum</u> as specified	Measurement <u>Frequency</u> as specified	Sample <u>Type</u> as specified
Depth to Water Level Below Landsurface  [72019]	---	Report (feet) <sup>(6)</sup>  [27]	Twice/Year <sup>(7)</sup>  [02/YR]	Measure  [MS]
Nitrate-Nitrogen  [00620]	---	10 mg/L <sup>(8)</sup>  [19]	Twice/Year <sup>(7)</sup>  [02/YR]	Grab  [GR]
Specific Conductance  [00095]	---	Report (umhos/cm) <sup>(9,10)</sup>  [11]	Twice/Year <sup>(7)</sup>  [02/YR]	Grab  [GR]

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 page 7 of this license.

Note: MW2 is located downgradient from the spray irrigation field, whereas MW1 is located downgradient from the effluent lagoon.

## SPECIAL CONDITIONS

### A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes – [Special Condition A(1), A(2) & A(3)]

#### Lagoon Effluent

- (1) Lagoon effluent shall be sampled as it exits the lagoon to be sprayed and shall be representative of what is actually sprayed on the spray-irrigation field.
- (2) Lagoon effluent sampling shall be conducted in **August and September** of each calendar year in accordance with federally approved methods for sampling, handling and preservation. Samples shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services and in accordance with methods approved by 40 Code of Federal Regulations (CFR) Part 136.

Note: The licensee is not required to test for these parameters during a month where no wastewater was disposed of via the spray irrigation system.

#### Spray-Irrigation Fields

- (3) The licensee shall measure the flow of wastewater to the irrigation area by the use of a meter or pump calibration data.
- (4) Weekly is defined as Sunday through Saturday.
- (5) For Discharge Monitoring Report (DMR) reporting purposes, the licensee shall report the highest weekly and daily application rate for the month in the applicable box on the form. See Special Condition I for additional reporting requirements for weekly application rates.

#### Groundwater Monitoring

- (6) Measured to the nearest one-tenth of a foot as referenced from the surface of the ground at the base of the monitoring well.
- (7) Ground water sampling shall be conducted in the months of **May and October** of each year in accordance with Department approved methods for sampling, handling, and preservation. Samples shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services and in accordance with methods approved by 40 Code of Federal Regulations (CFR) Part 136.
- (8) National Primary Drinking Water Standard – Maximum Contamination Level (MCL).
- (9) Temperature calibrated to 25.0° C.
- (10) **Specific Conductance values greater than 275 umhos/cm, consistent trends approaching 275 umhos/cm or sudden spikes from previous levels shall be reported immediately to the Department, and may necessitate the need for additional ground water testing requirements.**

(This note is to be added to the comments section of the DMR).



## **SPECIAL CONDITIONS**

### **B. TREATMENT PLANT OPERATOR**

This treatment facility must be operated by a person holding a minimum of a Maine **Grade SITS-I** certificate (or a Maine Professional Engineer [P.E.]) pursuant to Title 32 M.R.S.A., Section 4171 et seq and Department Rule Chapter 531. All proposed contracts for facility operation by any person must be approved by the Department prior to the licensee engaging the services of the contract operator.

### **C. MONITORING AND REPORTING**

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Forms provide by the Department and **postmarked on or before the thirteenth (13<sup>th</sup>) day of the month and submitted in a timely fashion such that the DMR's are received by the Department on or before the fifteenth (15<sup>th</sup>) day of the month** following the completed reporting period. A signed copy of the Discharge Monitoring Report and all other reports required herein shall be submitted to the Department's facility inspector at the following address:

Maine Department of Environmental Protection  
Division of Water Quality Management  
Bureau of Land and Water Quality  
312 Canco Road  
Portland, Maine 04103

### **D. AUTHORIZED DISCHARGES**

The licensee is authorized to discharge treated sanitary wastewater only in accordance with the terms and conditions of this license and only to the existing spray irrigation field (#SF1) and from those sources as indicated in the Waste Discharge License Application. Discharge of wastewater from any other location or from sources other than those indicated on said application requires formal modification of this license.

The collection, treatment or discharge of wastewater which has constituents unlike that or significantly higher in strength than that of domestic wastewater is prohibited without formal modification of this license.

## **SPECIAL CONDITIONS**

### **E. NARRATIVE EFFLUENT LIMITATIONS**

1. The effluent shall not contain materials in concentrations or combinations which would impair the usages designated by the classification of the groundwater.
2. Notwithstanding specific conditions of this license the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

### **F. NOTIFICATION REQUIREMENT**

In accordance with Standard Condition #6 of this license, the licensee shall notify the Department of the following.

1. Any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system.
2. For the purposes of this section, adequate notice shall include information on:
  - (a) the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and
  - (b) any anticipated impact of the change in the quantity or quality of the wastewater to be discharged from the treatment system.

### **G. GENERAL OPERATIONAL CONSTRAINTS**

1. All wastewaters shall receive pretreatment through septic tanks and a properly designed, operated and maintained lagoon system prior to land irrigation.
2. The spray irrigation facilities shall be effectively maintained and operated at all times so that there is no discharge to surface waters, nor any contamination of ground waters which will render them unsatisfactory for usage as a public drinking water supply.
3. The surface wastewater disposal system shall not cause lowering of the quality of the ground water, as measured in the groundwater monitoring wells specified by this license below the State Primary and Secondary Drinking Water Standards specified in the Maine State Drinking Water Regulations pursuant to Maine Law 22 M.R.S.A. § 2601.

In the event that groundwater monitoring results indicate adverse effects, 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, or ceasing operation of the system until the ground water attains applicable standards.

## **SPECIAL CONDITIONS**

### **G. GENERAL OPERATIONAL CONSTRAINTS (cont'd))**

4. The Department shall be notified as soon as the licensee becomes aware of any threat to public health, unlicensed discharge of wastewater, or any malfunction that threatens the proper operation of the system, and action taken to repair/correct, and prevent recurrence. Notification shall be made in accordance with the attached Standard Conditions of this license.
5. The licensee shall maintain a file on the location of all system components and relevant features. Each component shall be mapped and field located sufficiently to allow adequate inspections and monitoring by both the licensee and the Department. Septic tanks shall be accessible for inspections and pumping. Risers shall be installed as necessary.
6. All system components including collection pipes, tanks, manholes, pumps, pumping stations, spray disposal fields, and monitoring wells shall be identified and referenced by a unique system identifier in all logs and reports.

### **H. SPRAY IRRIGATION OPERATIONAL CONSTRAINTS**

1. The licensee shall be limited by and monitor the spray irrigation system for the parameters in the table titled "Effluent Limitations and Monitoring Requirements" Special Condition A(2) of this license at the monitoring frequency specified.
2. The maximum wastewater application rate shall not exceed 40,728 gallons per acre on a weekly basis. Note: 1 acre-inch is equivalent to 27,152 gallons
3. Irrigation shall be limited to the time period between **April 15 and November 15** each calendar year. Compliance with other operational constraints must be maintained at all times.
4. A suitable year round vegetative cover shall be maintained and wastewater may not be applied to areas without established vegetation or ground cover (organic matter) covering at least 75% of the surface of the ground.
5. Irrigation events shall be scheduled, timed and interrupted so that:
  - No surface runoff occurs during irrigation from the spray area;
  - There must be at least 10 inches of separation between the ground surface and the ground water table at the time of spray irrigation events. The root zone shall not be completely saturated at the conclusion of irrigation;
  - And, the effects of evaporation from the soil and transpiration by plants AKA evapo-transpiration as influenced by temperature (soil & air), wind, relative humidity and sunlight are maximized.

## **SPECIAL CONDITIONS**

### **H. SPRAY IRRIGATION OPERATIONAL CONSTRAINTS (cont'd)**

6. The licensee shall manage irrigation to prevent surface water runoff and shall not irrigate land areas when water is ponded on the land surface for longer than 15 minutes at a time.
7. No wastewater shall be applied to the site following a rainfall or precipitation accumulation exceeding 1.0 inch within the previous 24-hour period. A rain gauge shall be located on site to monitor daily precipitation.
8. No wastewater shall be applied where there is snow present on the surface of the ground.
9. No wastewater shall be applied when there is frost within the upper 18 inches of the soil profile.
10. No traffic or equipment shall be allowed in the spray-irrigation field except where installation occurs or where normal maintenance or repairs are performed.

### **I. SPRAY IRRIGATION OPERATIONAL PROCEDURES, LOGS AND REPORTS**

1. **At least one week prior to the commencement of spray irrigation for the season**, the licensee shall notify the Department's compliance inspector that they have verified that conditions are appropriate (absence of frozen ground, soil drainage, moisture conditions, etc) for spray irrigation.
2. **Each day prior to irrigating**, the licensee shall visually inspect (or have another suitable Department approved method for assessing) the spray irrigation site to determine if area conditions are appropriate for spraying and all the operational constraints listed above are met.

Observations may include:

- The level of free water in an auger hole, a nearby well, or observation pit;
  - Methods for estimating the amount of water present in the soil, either by feel or soil moisture measurement devices;
  - Current and past weather conditions (such as when and how much precipitation has occurred, potential for evapo-transpiration as influenced by temperature, wind, and relative humidity).
3. **Within one hour after start-up of the spray-irrigation system and at the conclusion of the spray-event**, the licensee shall walk the spray irrigation site, or have some other suitable Department-approved method, to check the system for leakage in the piping system and determine if individual sprayheads and pump(s) are functioning as designed, and verify that application rates are appropriate for the existing site conditions. Should significant malfunctions or leaks be detected, the licensee must shut down the portion of the spray system malfunctioning and make necessary repairs before resuming operation of the spray system. An irrigation cycle shall be stopped if runoff or ponding occurs.

## **SPECIAL CONDITIONS**

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

4. **The licensee shall maintain a daily log of all spray irrigation operations** which records, date, weather and soil conditions, rainfall, lagoon freeboard (top of lagoon to the water surface), areas irrigated, volume sprayed (gallons), application rates (daily and hourly), and other relevant observations/comments from daily inspections. The log shall be in accordance with the format of the "Monthly Operations Log" provided as Attachment "A" of this license.

**Weekly spray application rates** shall be reported in accordance with the format of the "Spray Application Report by Week" provided as Attachment "B" of this license. Depth to water below land surface observed in monitoring wells shall be reported in accordance with the format of the Depth to Ground Water provided as Attachment "C" of this license.

**The daily operational logs and weekly spray application reports for each month shall be submitted to the Department as an attachment to the monthly Discharge Monitoring Reports (DMR's). Copies will also be maintained on site for Department review and for license operation maintenance purposes.**

### **J. VEGETATION MANAGEMENT**

1. The licensee shall remove vegetation in the spray-irrigation areas as necessary as not to impair the operation of the spray-irrigation system and to ensure uniform distribution of wastewater over the desired application area.
2. The vegetative buffer zones along the perimeter of the site shall be maintained to maximize vegetation and forest canopy density in order to minimize off-site drift of spray.

### **K. LAGOON MAINTENANCE**

1. The banks of the lagoon shall be inspected weekly during the operating season and properly maintained. There shall be no overflow through or over the banks. Any signs of leaks, destructive animal activity or soil erosion of the berms shall be repaired immediately. The Department shall be notified by phone immediately and then in writing within five (5) days of such incidents documenting the corrective action(s) that were taken to eliminate the overflow.
2. Annual maintenance of the banks of the lagoon shall be conducted to keep them free of woody vegetation and other vegetation that may be detrimental to the integrity of the berm and or lagoon liner.
3. The waters within the lagoon shall be kept free of all vegetation (i.e. grasses, reeds, cattails, etc) that hinders the operation of the lagoon.

## **SPECIAL CONDITIONS**

### **K. LAGOON MAINTENANCE (CONT'D)**

4. The lagoon shall be dredged as necessary to maintain the proper operating depths that will provide best practicable treatment of the wastewater. All material removed from the lagoon(s) shall be properly disposed of in accordance with all applicable State and Federal rules and regulations.
5. At the end of each spray season, the lagoon shall be lowered to a level sufficient to allow for storage of precipitation and/or infiltration during the period the spray system is not being used and/or operated.
6. The licensee shall maintain the lagoon freeboard at design levels or at least two (2) feet whichever is greater. Freeboard measured to the nearest tenth of a foot, shall be reported on the daily operational logs as the mathematical difference between the water level in the lagoon and the lowest elevation point on the lagoon berm at both the beginning and end of spray irrigation.

### **L. SEPTIC TANKS**

1. All septic tanks shall be watertight and tanks must be constructed of materials approved by the Department and in accordance with the *Maine Subsurface Wastewater Disposal Rules*. Metal septic tanks are prohibited.
2. Inlet and outlet connections of each septic tank or compartment shall be designed to obtain effective retention of scum and sludge. All connections and baffles shall be fastened with and constructed of, or coated with, materials that are resistant to corrosion.
3. Septic tanks and other treatment tanks shall be regularly inspected (at least once per calendar year) and maintained to ensure that they are providing best practicable treatment. Reports of the results of the inspection shall include the amount of sludge build-up, baffle conditions, etc., and shall be reported to the Department's compliance inspector prior to the end of the month following the inspection.
4. Tank contents should be removed whenever the sludge and scum occupies one-third of the tank's liquid capacity or whenever levels approach maximum design capacity.

### **M. DISPOSAL OF SEPTAGE WASTE IN WASTEWATER TREATMENT FACILITY**

The licensee is prohibited from accepting septage for disposal into any part or parts of the wastewater disposal system. Septage shall mean any waste, refuse, effluent, sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added.

## **SPECIAL CONDITIONS**

### **N. INSPECTIONS AND MAINTENANCE**

1. All inspections shall include an evaluation of any repair, upgrades, pumping, operational and/or maintenance needs.
2. The inspection report or log shall include the date of the inspection, the names of the person performing the inspection, and other relevant system operations.
3. Maintenance logs shall be maintained for each system component including pumps, pump stations, septic tanks, lagoons, spray apparatus, and pipes. At a minimum, the log shall include the alphanumeric ID, the date of maintenance, type of maintenance performed, names or person performing the maintenance, and other relevant system observations.

### **O. PUMPING STATIONS**

1. The collection system shall be operated with a duplex pump system, or with standby pumps and motors on site.
2. There shall be a high-level detection system with a highly visible red light or audio warning system in the event of the malfunction. The level detection system in the tank shall be set to activate at a level that will leave ample capacity in the pump tank in order to make repairs and/or activate the standby pump.
3. Employees shall be trained to report activated alarms to the licensee as soon as possible.
4. A manual check of the operation of the pump, testing all level controls, switches and alarms shall be performed and recorded at least once per month during the operation of the surface disposal system.

### **P. PUMPING (SOLIDS REMOVAL FROM SEPTIC TANKS, PUMPING STATIONS, AND OTHER TREATMENT TANKS)**

1. The licensee shall keep a pumping log including the date of pumping, quantity of material removed (solids % capacity), name and number of licensed contractor, pumping frequency and other relevant observations.
2. Following pumping, the tanks shall be checked for damage at key joints and the inlet and outlet baffles, and repaired promptly if damaged.

## **SPECIAL CONDITIONS**

### **Q. SUBMITTAL OF ANNUAL SPRAY IRRIGATION PERFORMANCE REPORT**

**By January 31<sup>st</sup> of each calendar year\*\*** the licensee shall submit to the Department for review and approval an annual report of the treatment system's performance covering the previous calendar year (January 1 to December 31). The annual report shall include any standard reporting form(s) developed by the Department (PCS codes 90199, 90299, 90399, 90499, 90599).

The annual report shall include, but is not necessarily limited to, the following topics:

- Yearly totals and monthly summaries of the number of days sprayed, spray volumes and average application rates for the previous calendar year and a trend analysis for the previous five-year period.
- Septic Tank Inspection & Pumping Log.
- Summary of significant maintenance activities and repairs.
- Additions/Deletions to the System.
- A listing of all wastewater overflow including pumping station, manhole and building backups for the previous calendar year.
- System performance evaluation in regards to compliance with the terms and conditions of the license.
- Any system calibrations performed during the calendar year
- The report shall be dated and signed by the operator in responsible charge.

**\*\* The Department will prompt the licensee and the facility inspector in the comment section of the Discharge Monitoring Report (DMR) issued in December of each calendar year that the Annual Spray Irrigation Performance Report is due On or before January 31<sup>st</sup>.**

**[This note to be added to the comments section of the DMR]**



## **SPECIAL CONDITIONS**

### **R. OPERATIONS AND MAINTENANCE (O & M) PLAN AND SITE PLAN**

The licensee shall operate the treatment facility in accordance with an approved operational and maintenance plan that describes step-by-step how the surface wastewater disposal system is operated and maintained and what measures or standard operating procedures that will ensure compliance with the terms and conditions of this license.

The operational and maintenance plan shall include 11" x 17" site plan(s) (to scale) of the lagoon and spray irrigation areas. The plan shall include, but not be limited to showing the location of the lagoon(s), ground water monitoring wells, observation pits, spray irrigation pump station(s), layout of the mainline and lateral piping distribution system, individual spray heads, soil types, and contour lines at 20 foot intervals or less. Any property boundary or surface water within 500 feet of the lagoon or spray irrigation field must be shown on the plan. All system components shall be identified by unique alphanumeric identifiers.

It shall be the responsibility of the licensee to keep the plans current over the course of the license, and for the plans to reflect any modifications or additions to the system. If significant changes to the operations and maintenance plan are warranted, the licensee shall inform the Department facility inspector in writing and within 10 days of implementing said actions. The plans shall be kept on-site at all times and made available to the Department upon request.

### **S. PUBLIC ACCESS TO LAND APPLICATION SITES AND SIGNAGE**

Public access to the land application sites shall be controlled during the season of active site use. Such controls shall include the posting of signs showing the activities being conducted at each site.

The licensee shall install and maintain signs measuring at least 8 ½" x 11" around the perimeter of the lagoon and spray irrigation site that inform the general public that the area is being used to dispose of sanitary wastewaters. Each sign must be placed such that at least two other signs (one left, one right) may be seen from any one posted sign. The signs must be constructed of materials that are weather resistant.

The licensee must walk the perimeter of the lagoon and spray site prior to the beginning of each spray season and make any necessary repairs to the signage to comply with this condition.

## **SPECIAL CONDITIONS**

### **T. GROUND WATER MONITORING WELLS**

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 not to be representative of groundwater conditions.

### **U. REOPENING OF PERMIT MODIFICATIONS**

Upon evaluation of any required test results, results of inspections and/or reporting required by the Special Conditions of this licensing action, additional site specific or any other pertinent information or test results obtained during the term of this license, the Department may, at anytime and with notice to the licensee, modify this license to require additional monitoring, inspections and/or reporting based on the new information.

### **V. 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 this license shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision or part thereof, had been omitted, unless otherwise ordered by the court.

(Month/Year) \_\_\_\_\_

inches)

[illegible]

**Spray Application Report by Week****Attachment B****Facility Name** \_\_\_\_\_;

Facility Name: Wyonegonic Camps, Denmark, Maine; W-007602-5J-D-R

(Month \_\_\_\_\_, Year \_\_\_\_\_) Weekly Application Rate \_\_\_\_\_ gallons/acre \_\_\_\_\_ 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 if 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 \_\_\_\_\_

**Depth to Groundwater (Tenths of Feet)****Attachment C** (Month \_\_\_\_\_, Year \_\_\_\_\_)

Facility Name: Wyonegonic Camps Inc., Denmark, Maine; W-007602-5J-D-R

Field Name/#	Monitoring Location	1. 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 groundwater table must be present prior to spraying.

Signature of Responsible Official: \_\_\_\_\_, Date \_\_\_\_\_

**MAINE WASTE DISCHARGE LICENSE**

**FACT SHEET**

Date: **June 12, 2007**

PERMIT COMPLIANCE TRACKING SYSTEM NUMBER: **MEU507602**

LICENSE NUMBER: **W007602-5J-D-R**

NAME AND MAILING ADDRESS OF APPLICANT:

**Wyonegonic Camps, Inc.  
Attn: Steve Sudduth  
215 Wyonegonic Road  
Denmark, ME 04022**

COUNTY: **Cumberland County**

NAME AND ADDRESS OF FACILITY:

**215 Wyonegonic Road  
Denmark, ME**

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

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Steve Sudduth  
207-452-2051**

**1. APPLICATION SUMMARY:**

- a. Application: The applicant has applied for renewal of Waste Discharge License (WDL) #W007602-5J-C-R, which was issued on June 21, 2002 and is scheduled to expire on June 21, 2007. The application is for the continuing operation of a surface wastewater disposal (spray-irrigation) system for the treatment and seasonal disposal waste water that is generated at a rate of 7,000 gallons per day of sanitary wastewater, from Wyonegonic Camps, Inc. in Denmark, Maine. The facility has been assigned number MEU507602 for license compliance tracking purposes.

b. History: Recent Department licensing actions include the following:

- |                   |   |
|-------------------|---|
| July 22, 1988     | - The Department issued WDL #W007602-66-A-N, which authorized the operation of a new surface wastewater disposal system for the treatment and disposal of sanitary wastewater. The WDL expired on July 22, 1993.      |
| February 16, 1995 | - The Department issued WDL #W007602-YB-B-R, which renewed the surface waste water disposal system for the disposal of waste water generated at a rate of 7,000 gallon per day. The WDL expired on February 16, 2000. |
| December 14, 2000 | - The licensee submitted an application for renewal to the Department.  |
| June 21, 2002     | - The Department issued WDL #W007602-5J-C-R which renewed the license to discharge waste water generated at the Wyonegonic Camps, Inc. facility. The June 21, 2002 WDL is scheduled to expire on June 21, 2007.       |
| March 1, 2007     | - Application for renewal was received by the Department. The application was subsequently accepted by the Department for processing on March 8, 2007.  |

c. Source Description:

The applicant operates Wyonegonic Camps, Inc, a residential camp for girls on the east shore of Moose Pond in the Town of Denmark. Waste water generated is similar in characteristics to typical domestic residential waste water. The applicant reports that the camp currently accommodates up to 300 users during the peak season (late June to mid August). Lesser volumes of waste water are generated during camp opening in the late spring to early summer (May through June) with zero (0) to twenty-five (25) users, during staff training and orientation (25 to 130 users), during post season (25 to 175 users) and during September until seasonal closing [zero (0) to twenty-five (25) users].

See Attachment "A" of this Fact Sheet for a location map and Attachment "B" of this Fact Sheet for a schematic of the collection system provided by the applicant.

d. Waste Water Treatment (Spray-Irrigation):

- The applicant treats sanitary wastewater through a slow rate land irrigation system (spray-irrigation). Prior to spraying, the wastewater receives pretreatment through septic tanks and a clay-lined stabilization lagoon. Attachment "C" of this Fact Sheet is a schematic of the waste water treatment system provided by the applicant.
- The lagoon was designed to provide ample over-winter storage capacity for 17" of net winter precipitation over a 240-day non-irrigation period of time (267,217 gallons). The lagoon was lined with a commercial bentonite clay liner to minimize infiltration.

- From the lagoon, effluent is pumped across an access roadway to the adjacent spray irrigation area. The spray irrigation area consists of three parallel lateral lines each containing three spray nozzles (for a total of nine [9] nozzles) that are equally spaced 100 feet on center. The lateral lines are separated by 100 feet from the other lateral spray distribution lines.
- No influent or effluent flow meters are utilized. Effluent flow from the lagoon is calculated based on an assumed rate of 9.9 gallons per minute per spray nozzle for a total of 89.1 gallons per minute when the system is fully operational. The licensee maintains a pumping log including the date of pumping, duration of pumping cycle, calculations of quantity pumped, and calibration information to ensure the volume of waste water pumped does not exceed limits in the license.

e. Site Conditions:

The lagoon and spray irrigation area is located on a gentle slope about 1,000 feet east of Moose Pond, the nearest water body. Soils at the site are characterized as Skerry-Colonel Association, a moderately well drained soil that is suitable for spray irrigation for waste water disposal. The site is underlain by glacial till material of reported low hydraulic conductivity. The spray irrigation area is mostly wooded with a mixed hardwood canopy predominated with Oak and Beech species.

## 2. CONDITIONS OF THE LICENSE

Maine law, 38 M.R.S.A. Section 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 Water Classification System.

## 3. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A § 470 indicates the groundwater at the point of discharge is classified as Class GW-A receiving waters. Maine law, 38 M.R.S.A., §465-C describes the standards for Class GW-A waters 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 the usage of these waters, other than occurring from natural phenomena.

## 4. TREATMENT

Slow rate land irrigation treatment is an environmentally sound and appropriate technology for best practicable treatment and disposal of sanitary wastewater. 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.



## 5. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- a. Monitoring Parameters – Effluent monitoring parameters are being carried forward from the previous licensing action. Monitoring for these parameters provides an indication of the effectiveness of the lagoon treatment process and the condition of the waste water being applied to the land via spray irrigation. Lagoon monitoring is being required twice per year when waste water is being disposed of via the spray irrigation system. Well monitoring is required whether or not spray irrigation occurs.

*Biochemical Oxygen Demand (BOD)* – Monitoring for BOD provides an indication of the condition of the waste water being applied from the lagoon, of the degree of loading of organic material and the effectiveness of the spray irrigation treatment process. A limit of 100 mg/L is generally established at larger spray irrigation facilities as a best practicable treatment (BPT) standard, however, in this licensing action the Department is carrying forward the requirement to report BOD levels in the lagoon effluent. During the past five years the lagoon effluent discharged has ranged between 15 mg/L to 67 mg/L with an average value of 38 mg/L. Sampling for BOD is required twice yearly in the months of August and September when waste water is disposed of via the spray irrigation system.

*Nitrate-Nitrogen & Total Kjeldahl-Nitrogen* – Nitrogen compounds are by-products of the biological breakdown of ammonia and are inherent in domestic-like sanitary waste water. Because nitrate-nitrogen is weakly absorbed by soil, it functions as a reliable indicator of contamination from waste disposal sites. Elevated levels of nitrate-nitrogen in drinking water supplies are human health concerns. The nitrate-nitrogen limit of 10 mg/L is a National Primary Drinking Water standard and is being carried forward from the previous licensing action for the monitoring wells. During the past five years lagoon effluent levels have ranged between 0.05 mg/L to 4.3 mg/L with an average value of 1.3 mg/L. Also during the same period, nitrate samples of ground water monitoring wells have ranged between 0.05 mg/L to 2.6 mg/L with an average value of 1.0 mg/L. Total Kjeldahl Nitrogen (TKN) samples of the lagoon effluent ranged between 36.0 to 75 mg/L with an average value of 57 mg/L. Lagoon effluent sampling for nitrate-nitrogen and TKN is required twice annually in the months of August and September when waste water is disposed of via the spray irrigation system. Sampling of the monitoring wells for the nitrate-nitrogen parameter is required twice yearly in the months of May and October.

*Specific Conductance* – Conductance is generally considered to be a “field” parameter meaning that it is measured directly in the field via instrumentation and does not require laboratory analysis. This parameter is considered to be a surveillance level monitoring parameter and is used as an early warning indicator of potential ground water contamination when there exists a trend in the data (or when consistent trends approach 275 umhos/cm, or sudden spikes from previous levels). During the past five years, monitoring well conductance has ranged between 90 to 200 with an average value of 166 umhos/cm in monitoring well MW1. Sampling of the monitoring wells for this parameter is required twice yearly in the months of May and October whether or not spray irrigation occurs. For purposes of this license, specific conductivity may be measured in the laboratory (normally a field parameter) as long as Department approved methods for handling and preservation of the sample are adhered to and analysis is performed in

## 5. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

accordance with methods approved by 40 Code of Federal Regulations (CFR) Part 136. By definition the sample shall be temperature calibrated to 25°C.

In addition, the licensee shall report immediately to the Department specific conductance values greater than 275 umhos/cm\*\*, consistent trends approaching 275 umhos/cm or sudden spikes from previous levels, which may necessitate the need for additional groundwater testing requirements.

\*\*Groundwater levels of specific conductance would normally be expected to be substantially lower and this concentration may indicate incipient failure or a water quality problem and was chosen as an early warning level.

### b. Design Flow:

*Waste Water Generation:* The spray irrigation area and lagoon were designed to treat flows generated at a rate of 7,000 gallons per day (gpd) of sanitary wastewater during the summer camp season. Using State Plumbing Code guidelines and the approximate camp population served by the system, the estimated flow from the camp appears to fall well within the 7,000 GPD limit. In addition, the actual weekly spray application rates indicate an average daily generation of waste water at a rate below 7,000 GPD even during peak season. It is noted that the season for the camp extends from May until October, or a total of 22 weeks of operation. Given an assumed generation of 7,000 GPD and 22 weeks of operation the total amount of waste water that is generated equals 1,078,000 gallons of waste water to be disposed (7,000 GPD X 7 days per week X 22 weeks of operation).

*Waste Water Disposal:* During the past five years the licensee has reported to the Department average weekly spray irrigation application rates ranging between a low of 10,692 to a high value of 68,518 gallons per day, with an average weekly spray irrigation rate of 30,903 gpd.

The spray irrigation area covers 1.42 acres of land area. It is noted that the spray irrigation season extends from April 15<sup>th</sup> through November 15<sup>th</sup> of each year, or for a total of 31 weeks duration. During that 31 week duration, the licensee is authorized to discharge 58,241 gallons per week, or a total of (58,241 gallons per week X 31 weeks) 1,805,471.

The lagoon covers approximately 0.20 acres of land area. During normal years, precipitation amounts to approximately 40 inches per year, however, in a typical landscape approximately ½ runs off the ground surface and the other half either infiltrates into the ground or evaporates. This licensing action assumes, in the lagoon watershed, that there is no runoff from the lagoon catchment area and no infiltration into the ground below the lagoon due to the bentonite liner. Approximately one-fourth of the 40 inches of precipitation evaporates or 10 inches evaporates, leaving 30 inches of net precipitation that would accumulate in the lagoon area., and would need to be addressed in the lagoon mass water balance. An area of 0.20 acres accumulating 30 net inches of precipitation would amount to 162,914 gallons (0.20 acres X 43,560 square feet per acre X 2.5 feet [30 inches] net precipitation that needs to be discharged from the lagoon catchment area. Given a peak

## 5. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

generation level assumed to be 1,078,000 gallons and the net precipitation of 162,914 gallons, the system would need to be able to discharge a total of 1,240,914 gallons. Since the system is authorized to discharge a total of 1,805,471 gallon, the system has the capacity to discharge more than 550,000 gallons than is generated, thus there is ample capacity and flexibility for the system to treat the generated waste water flow.

The daily and hourly maximum irrigation rates from the previous licensing action are being eliminated as there are redundant spray irrigation constraints to provide a margin of safety against hydraulically overloading the spray area during any spray event.

	License Limit	Equivalent Inches	Based on total spray area of 1.42 acres**
Application Rate (weekly)	40,728 gallons/acre	1.5 inches	58,241 gallons per week

\*\* Nine (9) spray heads with a spray irrigation radius of 47 feet each

Note: 1 acre-inch is equivalent to 27, 152 gallons

Regardless of the calculated rate, the system operator shall monitor each waste application to verify adequate infiltration of the waste into the soil and an irrigation cycle should be stopped if runoff or ponding start to occur.

### c. Groundwater Monitoring Wells

The Department generally requires a minimum of three monitoring wells for monitoring surface wastewater disposal (spray-irrigation) systems. One well is typically installed up-gradient from the lagoon to monitor ambient groundwater conditions, one well installed down-gradient from the lagoon to monitor lagoon leakage, and one well installed down gradient from the spray field to monitor effects on the groundwater from the spray operation. Two ground water monitoring wells currently exist on site and are shown on Attachment "C" of this Fact Sheet. The monitoring wells are located more or less hydro-geologically down gradient from the lagoon and spray irrigation area. They are identified as MW1 that is downgradient from the lagoon and MW2 that is downgradient from the spray irrigation area. Due to the consistent quality effluent from the lagoon, the Department finds that the existing wells satisfy Department criteria for ground water monitoring wells at the facility.

## 6. 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 should field calibrate their equipment on a regular basis to ensure proper application and uniformity, and when operating conditions are changed from the assumed design.

## **6. SYSTEM CALIBRATION (cont'd)**

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. Attachment "D" of this Fact Sheet entitled "Example Spray-Irrigation Field Calibration Report Form" is provided as an aid to the Licensee in the re-calibration process. It is recommended that this form or similar form be submitted to the Department Compliance Inspector shortly after re-licensing and annually thereafter, or whenever operating conditions are changed from the assumed design

## **7. GREASE TRAPS**

Although not specifically required by this licensing action, it is the Department's recommendation that any food preparation facility or dining halls serviced by the spray-irrigation treatment system have an external grease interceptor preceding the septic tank, to help facilitate best practicable treatment and ensure proper functioning of the septic tank(s). Grease interceptors should be inspected by the licensee at least two times per year and the tank cleaned when the volume of the grease equals more than 50% of the capacity of the tank.

Note: Any food preparation facilities connected to "subsurface" systems are required to have external grease interceptors preceding the septic tanks in accordance with the State of *Maine Subsurface Wastewater Disposal Rules*.

## **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 Bridgton News newspaper on or about March 8, 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 licenses 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.

## **10. DEPARTMENT CONTACTS**

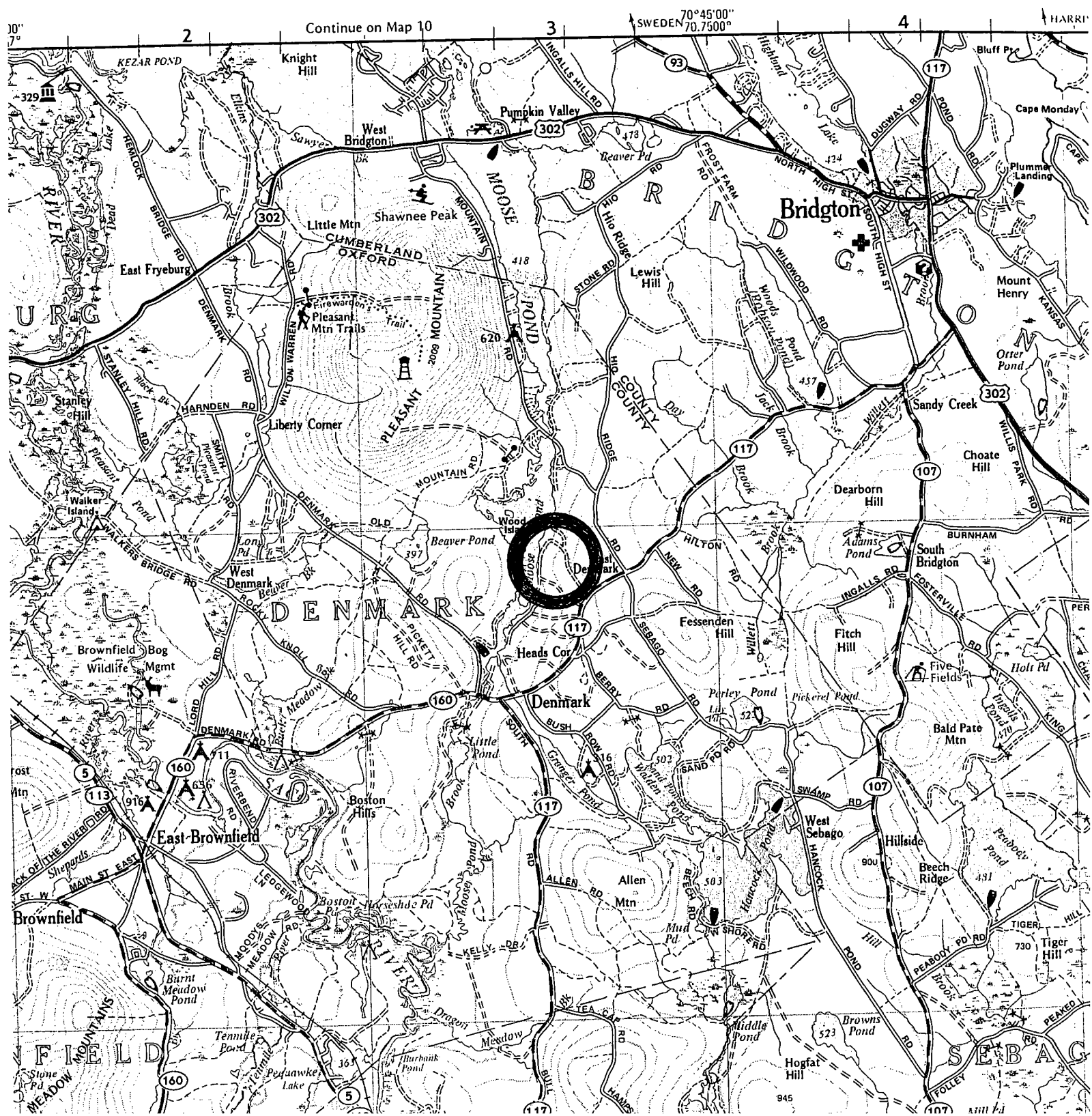
Additional information concerning this licensing action may be obtained from and written comments should be sent to:

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) 287-7658

## **11. RESPONSE TO COMMENTS**

During the period of April 9, 2007, through the issuance date of the license, the Department solicited comments on the proposed draft license to be issued for the licensee's 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.

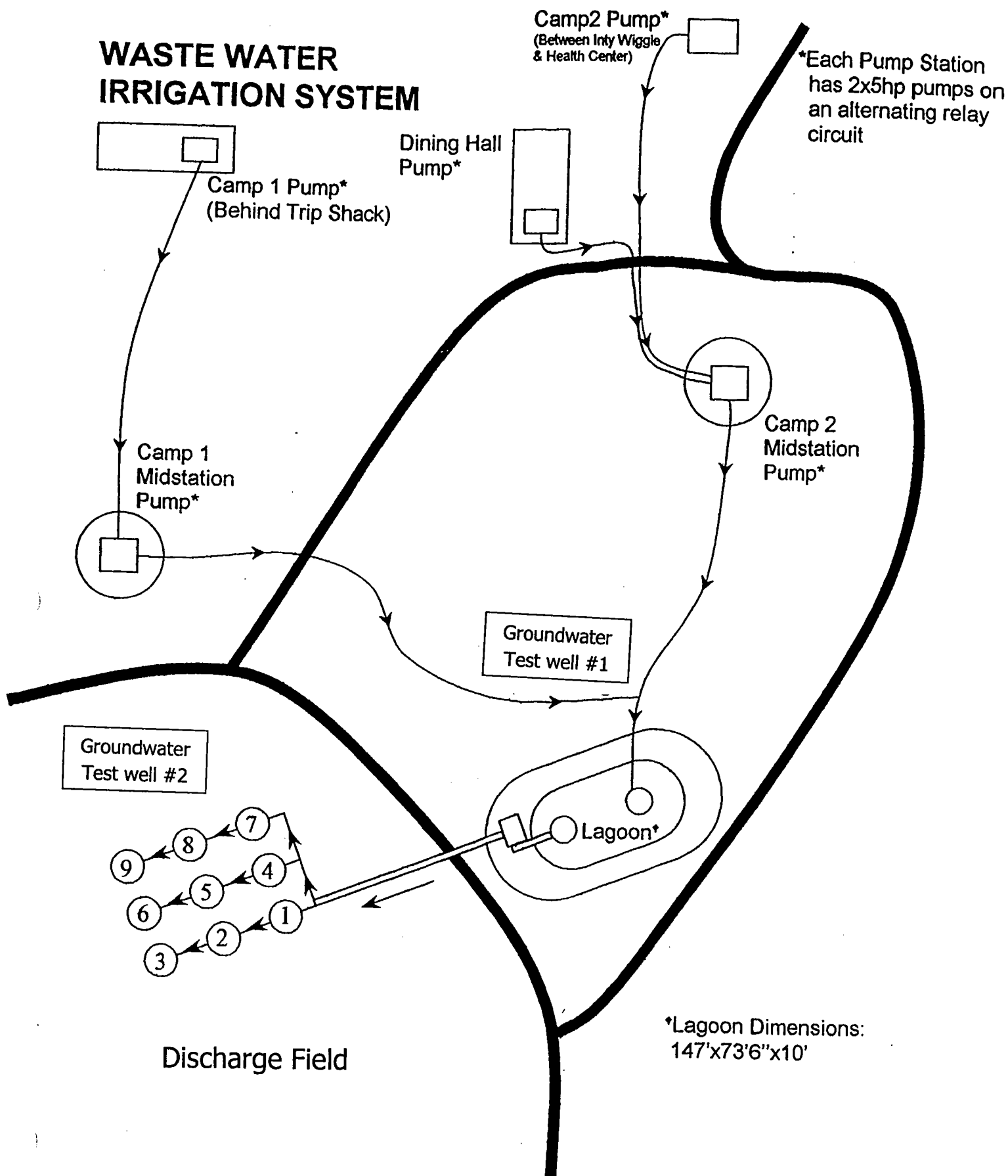
# **ATTACHMENT A**



## **ATTACHMENT B**



# WASTE WATER IRRIGATION SYSTEM



# CAMP 1 SYSTEM to LAGOON

Senior Lower

7 Toilets, 5 hand sinks

Trip Shack Kitchen

2 Toilets, 1 urinal

2 hand sinks, 3 showers

Trip Shack  
Kitchen

Senior Upper

5 toilets

5 hand sinks

Tank  
5

Tank 4

Tank 1

Tank 2

Tank 3

Pump  
Tank

10'  
13'6"

3'6"

9'6"

4'

4'

3'6"

8'

10'

Tank#1 Double Chambered concrete 13'6"x10'x10'

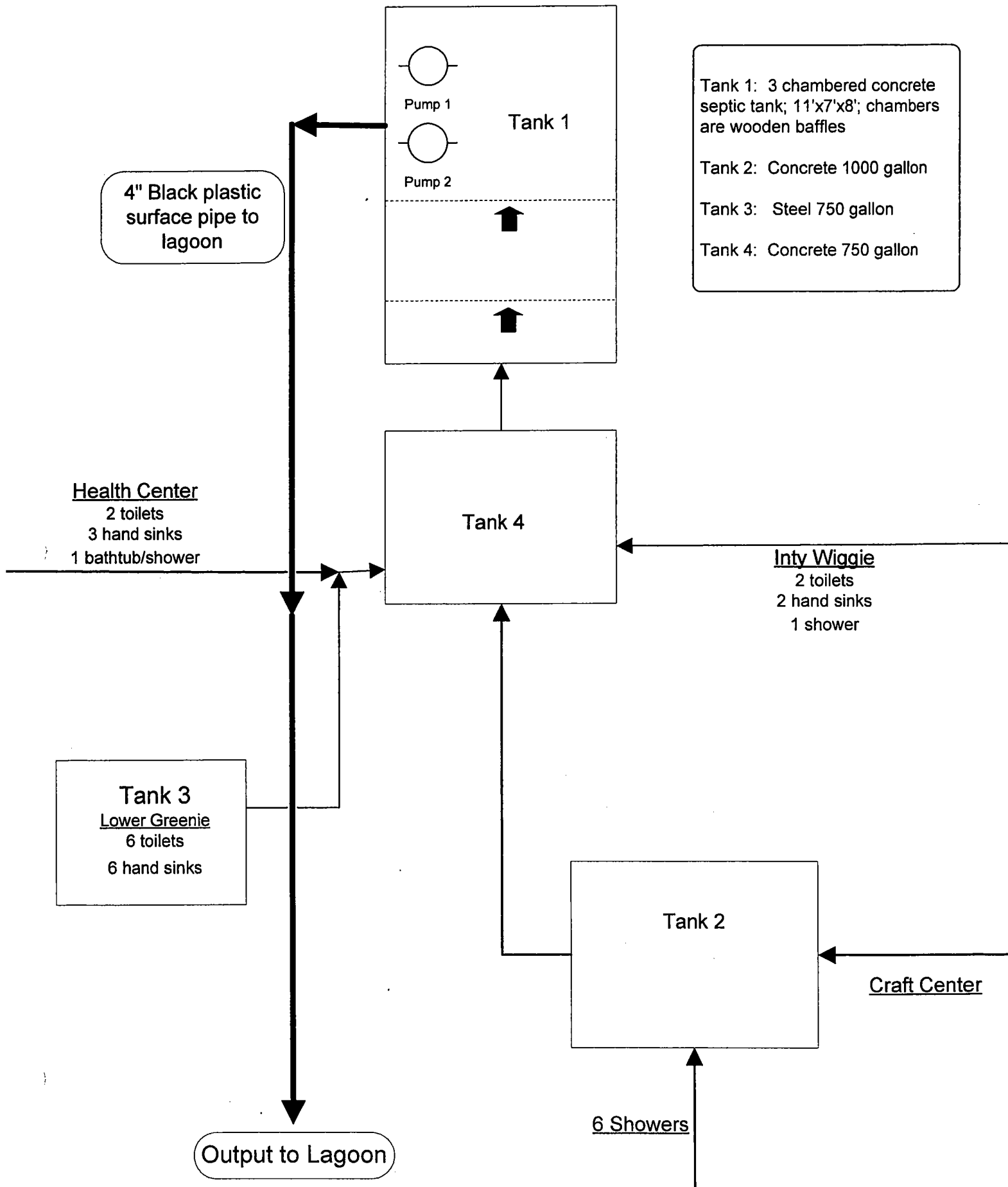
Tank#2 Concrete, 9'6"x8'x2'3"

Tank#3 Double Chambered concrete, 3'6"x8'x5'  
Pump station occupies the second chamber

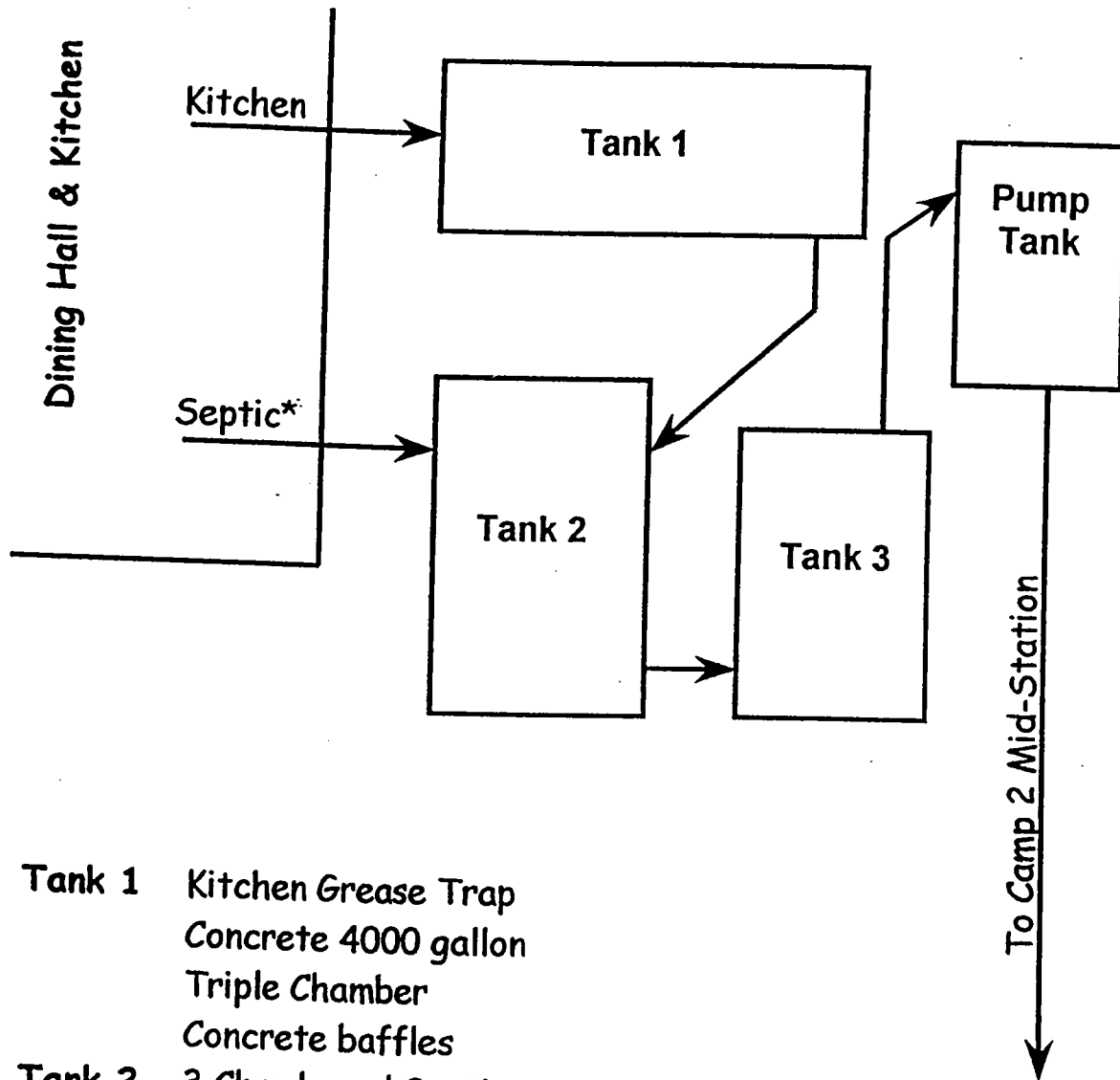
Tank#4 Kitchen Grease concrete 1000 gallon  
Pumps out and discharges into tank#1

Tank#5 Double chambered concrete 1000 gallon  
11'x5'x4', discharges into tank#2

# Camp 2 System to Lagoon



# KITCHEN & DINING HALL



- Tank 1** Kitchen Grease Trap  
Concrete 4000 gallon  
Triple Chamber  
Concrete baffles
- Tank 2** 3 Chambered Septic  
Concrete 4500 gallon  
Concrete baffles
- Tank 3** Concrete Septic  
2500 gallons
- Pump Tank** Concrete Pump Tank  
1000 gallons  
Twin pump system with  
alternating relays (auto  
backup)

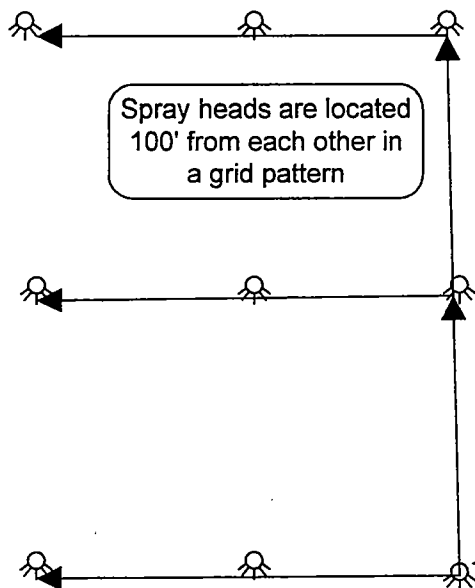
**\*Septic**  
4 Toilets  
4 Sinks  
2 Showers

# **ATTACHMENT C**

Wyonegonic Camps  
Lagoon and Sprayfield  
Schematic 2007



Test Well #2  
150' west of spray field



Spray field  
With 9 spray heads

280' south of ground pump

Senior Camp Road

Test Well #1  
180' west of lagoon

Camp 1

Camp 2



Above ground pump



Effluent  
Lagoon

P.

This schematic is  
not drawn to scale.

## Attachment D

### Example Spray Irrigation Field Calibration Report Form

#### Background Data

Describe the reasons for system re-calibration (example annual calibration or change in operating conditions). When there has been a change in operating conditions list the specific changes such as new components (pumps, spray heads, size or type of pipes, etc.) or previously approved design changes.

Describe the current method for estimating the flow of wastewater to the irrigation area, ie, meter or pump calibration data. When using pump calibration data list the estimated flow rate of the pump for the existing site conditions (example gallons per minute). Also note the assumed diameter of coverage for the individual spray heads and the resulting area of application (acreage). Based on this information what is the assumed application rate in inches per hour and gallons per acre. Note: 1 acre-inch equals 27,150 gallons.

#### System Calibration

Describe or attach illustrations of the system calibration procedure, ie, grid layout or rain gauge or other uniform containers.

List the actual radius of spray coverage of the individual spray heads as measured during the field calibration and note any application uniformity problems such as noticeable ponding or uneven applications.

Calculate the acreage of the application based on the actual radius of coverage measured in the field. Show calculations.

Example:  $(27,150 \text{ gallons/acre/week})(1.5 \text{ inch/week})(1.3 \text{ acres}) = 52,942 \text{ gallons/week}$

Calculate the estimated hourly application rate in inches per hour and gallons per acre obtained during the above calibration. Show calculations.

#### **2. New Calibration Data**

What changes to the estimates of wastewater flow are proposed, if any and why? And are the licensed application rates satisfied?

Any adjustments to improve uniformity of spray applications?

Submitted by: Signature of Operator in Responsible Charge	On Date:
Reviewed by: Signature of Operator in Responsible Charge	On Date: