

City of Portland



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

April 6, 2005

DAWN R. GALLAGHER
COMMISSIONER

McKinley Partners Ltd.
Attn: Robert Meyer
23 South Main Street
Andover, New Hampshire 03755

RE: Maine Waste Discharge License (WDL) Application #W006931-5C-E-R
Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0023248
Preliminary Draft Permit/License

Dear Mr. Meyer:

Enclosed is a preliminary draft MEPDES permit/OBD Waste Discharge License which the Department proposes to issue as a formal proposed draft document after opportunity for your review and comment. By transmittal of this letter you are provided with an opportunity to comment on the preliminary draft license and its conditions. If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

All comments on the preliminary draft license must be received in the Department of Environmental Protection office on or before the close of business **Friday, April 22, 2005**. Failure to submit comments in a timely fashion will result in the preliminary draft license document being issued as drafted. Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection
Bureau of Land & Water Quality
Division of Water Resource Regulation
17 State House Station
Augusta, ME 04333

If you have any questions regarding the matter, please feel free to call me at 287-3901.

Sincerely,

Michael Demarest
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc. Preliminary Draft

cc: Gregg Wood/CMRO
Stephen Arnold, DEP/SMRO
Paul Mitnik, DEP/CMRO
Dennis Merrill, DEP/CMRO
Ted Lavery, USEPA
Laura Livingston, DMR

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
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 04769-2094
(207) 764-0477 FAX: (207) 764-1507



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

April 6, 2005

DAWN R. GALLAGHER
COMMISSIONER

Diamond Cove Homeowners Association
c/o Dirigo Management Co.
One City Center
Portland, Maine 04101

RE: Maine Waste Discharge License (WDL) Application #W006931-5C-E-R
Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0023248
Preliminary Draft Permit/License

Dear Mr. Deitz:

Enclosed is a preliminary draft MEPDES permit/OBD Waste Discharge License which the Department proposes to issue as a formal proposed draft document after opportunity for your review and comment. By transmittal of this letter you are provided with an opportunity to comment on the preliminary draft license and its conditions. If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

All comments on the preliminary draft license must be received in the Department of Environmental Protection office on or before the close of business **Friday, April 22, 2005**. Failure to submit comments in a timely fashion will result in the preliminary draft license document being issued as drafted. Comments in writing should be submitted to my attention at the following address:

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IN THE MATTER OF

MCKINLEY PARTNERS LTD.)	MAINE POLLUTANT DISCHARGE
DIAMOND COVE HOMEOWNERS ASSOCIATION)	ELIMINATION SYSTEM PERMIT
DIAMOND ISLAND, PORTLAND, CUMBERLAND COUNTY, MAINE)	AND
OVERBOARD DISCHARGE)	WASTE DISCHARGE
MAP #83E, LOTS # 10, 11 (TREATMENT FACILITY))	LICENSE
ME0023248)	RENEWAL AND TRANSFER
#W006931-5C-E-R APPROVAL		

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, et. seq., Maine Law 38 M.R.S.A., Section 414-A et. seq., and 06-096 CMR Chapter 596, the Department of Environmental Protection (hereinafter, the Department) has considered the application of **MCKINLEY PARTNERS LTD.** and the **DIAMOND COVE HOMEOWNERS ASSOCIATION** (hereinafter Diamond Cove) with its supportive data, agency review comments, and the related material on file and **FINDS THE FOLLOWING FACTS:**

1. APPLICATION SUMMARY:

The applicants submitted an application to the Department to renew Waste Discharge Conditional Permit WDCP #W006931-5C-D-R, which was issued on June 2, 1994 and expired on June 2, 2004. Waste Discharge Conditional Permit WDCP #W006931-5C-D-R authorized the year-round discharge of up to 40,000 gallons per day (gpd) of secondary treated sanitary wastewater to Casco Bay, Class SB, in Portland, Maine.

2. MODIFICATIONS REQUESTED:

The applicants are requesting the permit renewal be issued in the names of both the owner of the treatment plant and the homeowners association representing the contributing facilities.

3. PERMIT SUMMARY:

This permitting action is similar to Waste Discharge Conditional Permit #W006931-5C-D-R issued on June 2, 1994 in that it is;

- a. Carrying forward the weekly average and daily maximum technology based concentration limits for biochemical oxygen demand (BOD) and total suspended solids (TSS).
- b. Carrying forward the daily maximum technology based concentration limit for settleable solids.
- c. Carrying forward the daily maximum water quality based and monthly average technology based concentration limits for total residual chlorine.
- d. Carrying forward the daily maximum water quality based fecal coliform bacteria limit and monthly average (geometric mean) water quality based fecal coliform bacteria limits.

This permitting action is different from Waste Discharge Conditional Permit#W006931-5C-D-R issued on June 2, 1994 in that it is:

- e. Eliminating the daily maximum flow limitation of 40,000 gpd and replacing it with a monthly average limit of 35,000 gpd based on the capacity of the existing treatment plant.
- f. Establishing monthly average, weekly average and daily maximum technology based mass limits for BOD and TSS.

- g. Revising the disinfection season from May 15 to September 30 of each year to year-round.
- h. Requiring identification and repair of areas of the sand filters prone to pooling during high flows and implementing structural renovations to the topmost layer of sand filters #1 and #2.

CONCLUSIONS:

BASED on the findings in the attached Preliminary Draft Fact Sheet dated March 30, 2005, 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 that 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 in-stream 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. Although Diamond Cove has substantially renovated the treatment plant and the effluent collection infrastructure to improve the quality of the discharge and eliminate/reduce flows resulting from infiltration and inflow, the treatment plant still discharges excessive peak flows associated with seasonal high groundwater, and stormwater/meltwater events. Because of this, the Department has revised the flow limits to 35,000 monthly average to reflect the 27,230-gpd design flow of the existing contributing facilities and the existing 34,500-gpd treatment capacity, instead of the previous 40,000-gpd daily maximum. The Department has reviewed the effluent data and concludes that the stormwater/meltwater surges are not of a duration and magnitude that would disrupt the treatment, but serve only to dilute the influent. However, restoration and regrading of the loam layer of the sand filters could further reduce sand filter loading by shedding stormwater laterally as sheet flow to vegetated areas.
5. The Department has determined that the sand filters are acceptable as constructed in that they are providing adequate treatment. However, some effluent pooling occurs, especially during high flows or during periods of high groundwater and after significant stormwater/meltwater events, reportedly because of fine migration to the gravel layer. Therefore, some corrective measures must be taken to maintain and extend the reserve life of the sand filter beds.

ACTION:

THEREFORE, the Department APPROVES the application of MCKINLEY PARTNERS LTD. and the DIAMOND COVE HOMEOWNERS ASSOCIATION to discharge up to a maximum monthly average of 35,000 gallons per day of secondary treated sanitary wastewater into Casco Bay, Class SB, Portland, Maine. The discharge will be 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 expires five (5) years from the date of signature below.
4. The permittees are required to pay an annual discharge fee. Failure of the permittees to pay the annual fee within 30 days of initial billing will be considered a violation of the permit conditions and may be subject to enforcement action.
5. The permittees are required to maintain the OBD treatment system in good working order. Failure to maintain the system, including the disinfection system, is a violation of the conditions of this permit and may be subject to enforcement action.
6. The permittees have an ongoing obligation to reduce and eliminate sources of infiltration and inflow by periodically upgrading the collection infrastructure.
7. The permittees shall identify areas of the sand filters prone to pooling and implement a plan to correct the effluent flow in those areas. For Sand Filter Bed #2, the uppermost gravel layer must be brought to the original 4-inch specification. For Sand Filter Beds #1 and #2, the permittees shall reestablish the geofabric layer separating the topmost gravel layer from the loam layer and restore the loam layer to specifications. In particular, the loam layer shall be graded to a minimum thickness of 4 inches with a convex profile to shed precipitation horizontally as sheet flow to vegetated areas. The permittees shall submit to the Department for review and approval a plan to address the abovementioned corrections at least 30 days prior to construction.
8. The amount of effluent being discharged and the number of months the discharge occurs cannot be increased in accordance with 38 M.R.S.A. §464, sub-§4(A)(6).

DONE AND DATED AT AUGUSTA, MAINE, THIS _____ DAY OF _____, 2005.
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
Dawn R. Gallagher, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: August 17, 2004
Date of application acceptance: September 06, 2004

Date filed with Board of Environmental Protection _____

This Order prepared by Michael Demarest, Bureau of Land & Water Quality/#W006931-5C-E-R/ 2.2.200

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the effective date of this permit and lasting through permit expiration, the permittees are authorized to discharge secondary treated wastewaters from the facility in Portland to Casco Bay. Such discharges shall be limited and monitored by the permittees as specified below:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow [50050]	35,000 gpd	---	Report (gpd) [07]	35,000 gpd	---	---	Continuous [99/99]	Recorder [RC]
Biochemical Oxygen Demand (BOD) [00310]	8.8 lbs./day [26]	13 lbs./day [26]	15 lbs/day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	2/Month [02/30]	Grab [GR]
BOD % Removal ⁽¹⁾ [81010]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Total Suspended Solids (TSS) [00530]	8.8 lbs/day [26]	13.1 lbs./day [26]	14.6 lbs/day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	2/Month [02/30]	Grab [GR]
TSS % Removal ⁽¹⁾ [81011]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Settleable Solids [00545]	---	---	---	---	---	0.3 mL [25]	1/Week [01/07]	Grab [GR]
Fecal Coliform Bacteria ⁽²⁾ [31633]	Free from	---	---	0/100 ml ⁽³⁾ [13]	---	00/100 ml [13]	1/Week [01/07]	Grab [GR]
Total Residual Chlorine ⁽²⁾ [50060]	---	---	---	---	---	1.0 mg/L [19]	5/Week [05/01]	Grab [GR]
pH (Std. Unit) [00400]	---	---	---	---	---	6.0 - 9.0 SU [12]	5/Week [05/07]	Grab [GR]

The italicized numeric values bracketed in the table above and on the following pages are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports (DMR's)

Footnotes:

Sampling – All effluent monitoring must be conducted at a location following the last treatment unit in the treatment process as to be representative of end-of-pipe effluent characteristics. Any change in sampling location must be approved by the Department in writing. Sampling and analysis must be conducted in accordance with; a) methods approved by 40 Code of Federal Regulations (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.

1. Percent removal - The treatment facility shall maintain a minimum of 85 percent removal of both BOD5 and TSS. The percent removal must be based on a monthly average calculation using influent and effluent concentrations. The percent removal will be waived when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility shall report "NODI-9" on the monthly Discharge Monitoring Report (DMR).
2. Fecal coliform bacteria and total residual chlorine (TRC) – The limits and monitoring requirements are in effect on a year-round basis to protect the health, safety, and welfare of the public because of the proximity of the discharge to a shellfish harvesting and recreational areas.
3. Fecal coliform bacteria – The monthly average limit is a geometric mean and shall be calculated and reported as such on the monthly DMR.

SPECIAL CONDITIONS (Continued)

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time that would impair the usages designated by the classification of the receiving waters.
2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.
3. The discharge shall not impart color, taste, turbidity, toxicity, radioactivity or other properties that cause those waters to be unsuitable for the designated uses and characteristics ascribed to their class.
4. Notwithstanding specific conditions of this permit, 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.

C. DISINFECTION

If chlorination is used as a means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized, followed by a dechlorination system if the total residual chlorine (TRC) cannot be met by dissipation in the detention tank. The TRC in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied shall be sufficient to leave a TRC concentration that will effectively reduce bacteria to levels below those specified in Special Condition A, "*Effluent Limitations and Monitoring Requirements*," above.

D. SITE SPECIFIC CONDITIONS

1. The permittees shall maintain a service contract with the operator requiring adequate training of personnel under his supervision, requiring him to inspect the system at least once monthly and to assure performance of routine maintenance. The contract must be reviewed and approved by this Department.
2. McKinley Partners, LLP shall be a guarantor of the Diamond Cove Homeowners' Association reserve account for the repair, maintenance and reconstruction of the wastewater treatment facility (WWTF) for a period of twenty years from the date of final completion of the WWTF (sand filter bed 3).
3. The permittees shall retain a minimum of 50,000 square feet to allow adequate space for sand filter renovation/replacement.

E. UNAUTHORIZED DISCHARGES

The permittees are authorized to discharge only in accordance with the terms and conditions of this permit and only from the existing outfall. Discharges of wastewater from any other point source are not authorized under this permit, but must be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

F. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittees shall notify the Department of the following.

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and
2. Any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system

at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall include information on:

- (a) the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and
- (b) any anticipated impact caused by the change in the quantity or quality of the wastewater to be discharged from the treatment system.

G. OPERATION & MAINTENANCE (O&M) PLAN

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

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittees shall 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 shall be kept on-site at all times and made available to Department and EPA personnel upon request.

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

H. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall 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 a Department 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. A signed copy of the DMR and all other reports required herein must be submitted to the following address:

Maine Department of Environmental Protection
Bureau of Land and Water Quality
Division of Engineering, Compliance and Technical Assistance
312 Canco Road
Portland, Maine 04103

I. REOPENING OF PERMIT FOR MODIFICATIONS

If new site-specific information or any other pertinent information is gathered during the term of this permit, the Department may, at anytime and with notice to the permittees, modify this permit to:

- (a) include effluent limits necessary to control specific pollutants where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded.
- (b) require additional monitoring;
- (c) impose or change monitoring requirements or limitations based on new information;
- (d) require elimination of the discharge. Where an alternative form of wastewater disposal is feasible, the Department will require termination of the discharge when grant funds are made available for elimination of the discharge.

**MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND MAINE WASTE DISCHARGE LICENSE
FACT SHEET**

Date: **March 30, 2005**

PERMIT NUMBER: **ME0023248**
LICENSE NUMBER: **#W006931-5C-E-R**
NAME AND ADDRESS OF APPLICANTS

**McKinley Partners Ltd.
Attn: Robert Meyer
23 South Main Street
Hanover, New Hampshire 03755**

**Diamond Cove Homeowners Association
c/o Dirigo Management Co.
One City Center
Portland, Maine 04101**

COUNTY: **Cumberland County**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:
**Great Diamond Island
Portland, Maine 04109**

RECEIVING WATER AND CLASSIFICATION: **Casco Bay, Class SB**

COGNIZANT OFFICIAL(S) AND TELEPHONE NUMBERS:

<p>Mc Kinley Partners LTD. Attn: Robert Meyer Position: Contact Telephone: (603) 643-0331</p>	<p>Diamond Cove Homeowners Association Attn: Jon Deitz Position: Acting Director Telephone: (not on file)</p>
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1. APPLICATION SUMMARY:

The applicants submitted an application to the Department to renew Waste Discharge Conditional Permit WDCP #W006931-5C-D-R, which was issued on June 2, 1994 and expired on June 2, 2004. Waste Discharge Conditional Permit WDCP #W006931-5C-D-R authorized the year-round discharge of up to 40,000 gallons per day (gpd) of secondary treated sanitary wastewater to Casco Bay, Class SB, in Portland, Maine.

2. MODIFICATIONS REQUESTED:

The applicants are requesting the permit renewal be issued in the names of both the owner of the treatment plant and the homeowners association representing the contributing facilities.

3. PERMIT SUMMARY:

A. Regulatory - On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From that point forward, the program has been referred to as the MEPDES permit program and permit #ME0023248 (same as the NPDES permit application number) will be utilized as the primary reference number for the Diamond Cove wastewater treatment facility.

B. Terms and Conditions:

This permitting action is similar to Waste Discharge Conditional Permit #W006931-5C-D-R issued on June 2, 1994 in that it is;

- a. Carrying forward the weekly average and daily maximum technology based concentration limits for biochemical oxygen demand (BOD) and total suspended solids (TSS).
- b. Carrying forward the daily maximum technology based concentration limit for settleable solids.
- c. Carrying forward the daily maximum water quality based and monthly average technology based concentration limits for total residual chlorine.
- d. Carrying forward the daily maximum water quality based fecal coliform bacteria limit and monthly average (geometric mean) water quality based fecal coliform bacteria limits.

This permitting action is different from Waste Discharge Conditional Permit#W006931-5C-D-R issued on June 2, 1994 in that it is:

- e. Eliminating the daily maximum flow limitation of 40,000 gpd and replacing it with a monthly average limit of 35,000 gpd based on the capacity of the existing treatment plant.
- f. Establishing monthly average, weekly average and daily maximum technology based mass limits for BOD and TSS.
- g. Revising the disinfection season from May 15 to September 30 of each year to year-round.
- h. Requiring identification and repair of areas of the sand filters prone to pooling during high flows and implementing structural renovations to the topmost layer of sand filters #1 and #2.

C. History – The most current/relevant regulatory actions regarding the discharge from the facility include:

May 17, 1989- NPDES permit #ME0023264 was issued to McKinley Partners. #ME0023264 expired on May 17, 1994.

06/02/1994– The Department issued Maine Waste Discharge Permit #W006931-5C-D-R for a ten-year term. The WDL authorized the discharge of up to 40,000 gpd of secondary treated wastewater.

08/17/2004 – The applicant(s) submitted an application to the Department for renewal of the WDL. The Department accepted the application for processing on the same date.

3. PERMIT SUMMARY (cont'd)

- D. Source description - Sanitary wastewaters are generated from the 193-acre residential facility. The facility is comprised of 79 dwelling units (2 one-bedroom, 15 two-bedroom, 53 three-bedroom and 9 four-bedroom units) a restaurant, two administrative/maintenance building and a three-slip marina.
- E. Wastewater treatment - The effluent currently receives a secondary level of treatment. The raw sewage is collected from the 79 housing units, restaurant, marina, administrative and maintenance buildings by a network of approximate 4,200 linear feet of new PVC and 1,900 feet of refurbished clay piping. The raw sewage is distributed between six 10,000-gallon settling tanks configured in two rows of three tanks. Supernatant from the settling tanks is collected in a wet well and distributed amongst three 100-ft. by 115-ft. (11,500 sq. ft.) sand filter beds. The treated wastewater is collected in the underdrain system and conveyed to a disinfection system consisting of liquid sodium hypochlorite disinfection and two 1,000-gallon detention tanks. Dechlorination is accomplished through sodium bisulfate injection. The sanitary treated wastewater then travels through a V-notch weir-type flowmeter before being discharged to Casco Bay through an eight-inch diameter outfall pipe with diffuser. The outfall pipe extends approximately 250 feet from the shoreline to a point where there is approximately twelve vertical feet of water over the crown of the pipe at mean low water. The wastewater treatment facility is operated by a contractor operator.

4. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment, 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. In addition, 38 M.R.S.A., Section 420, requires the regulation of toxic substances at the levels set forth for Federal Water Quality Criteria as published by the U.S. Environmental Protection Agency pursuant to the Clean Water Act.

5. RECEIVING WATER QUALITY STANDARDS

Maine Law, 38 M.R.S.A., Section 469, classifies Casco Bay at the point of discharge as Class SB waters. Maine Law, 38 M.R.S.A., Section 465-B(2) describes the classification standards for Class SB waters.

6. RECEIVING WATER CONDITIONS

Table Category 3 entitled, *Estuarine and Marine Water With Insufficient Data or Information to Determine Attainment*, in a document entitled, State of Maine Department of Environmental Protection, 2002 Integrated Water Quality Monitoring and Assessment Report, published by the Department lists the Portland-Falmouth area (DMR area #14) Class SB/SC with insufficient data to determine attainment. Attainment in this context is in regard to the designated use of harvesting of shellfish. Currently, DMR shellfish harvesting area #14 is closed to the harvesting of shellfish due to insufficient (limited) ambient water quality data to meet the standards in the National Shellfish Sanitation Program. Therefore, area #14 remains closed. Compliance with the fecal coliform bacteria limits in this permitting action which are being carried forward from the previous licensing action ensure that Diamond Island will not cause or contribute to the shellfish harvesting closure.

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- A. Best Practicable Treatment (BPT) - Overboard discharges may be permitted only where no technologically-proven alternative exists. Overboard discharge treatment systems must be capable of meeting secondary treatment standards as described in Code of Maine Regulations Chapter 525, Section 3 unless the Department finds that alternate limits are appropriate.
- A. Best Practicable Treatment (continued)
1. The applicant has demonstrated that connection to a municipal sewerage system is not possible because one is not located on Diamond Island. The applicant's Licensed Site Evaluator/P.E. has determined that there is not a subsurface option because of insufficient area to install subsurface systems to serve the entire facility.
 2. The applicant has documented that the existing treatment constitutes BPT. Specifically, the discharge is from a year-round facility and the applicant has demonstrated that a subsurface wastewater system is not practicable on land owned or controlled by the applicant in conformance with the State of Maine Subsurface Wastewater Disposal Rules at this time.
 3. The existing treatment system is capable of meeting secondary treatment standards and is appropriate technology for the wastewater being discharged.
- B. Flow - The previous licensing action established a daily maximum flow limitation of 40,000 gpd that is not being carried forward in this permitting action. Instead, the flow limitation will be set at 35,000 gpd as a monthly average. The new limit better reflects the 34,500 gpd design capacity of the existing wastewater treatment facility. The monthly Discharge Monitoring Reports (DMRs) submitted by the applicant(s) for the period beginning December 1999 and ending in December of 2004 indicates the monthly average flow is approximately 10,932 gpd and the daily maximum flow was 60,712 gpd.

Additionally, the Department's Division of Engineering, Compliance and Technical Assistance (DECTA) has reviewed documents submitted by both McKinley Partners and the Diamond Cove Homeowners' Association concerning alleged deficiencies in the construction of the sand filters serving the facility. They conclude the following:

1. Sporadic ponding have been identified at six nodes. Preliminary investigation by the Wastewater Contractor identified migration of fines from the loam to the gravel area as the probable cause of the ponding. Further identification and repair of these areas of fines migration into the stone layer are required to correct this problem.
 2. The loam thickness should be increased to meet current design standards and ensure the ground surface of the sand filters is properly crowned to facilitate stormwater/meltwater drainage as sheet flow away from the beds.
 3. Future licensed flow should be revised to reflect the calculated capacity of the three sand filters. This would mean that the license limit be set at one GPD/square foot on a monthly average basis (estimated at 34,500 GPD monthly average).
 4. Because the reserve life for the sand filters was originally established at seven years and two of the sand filters have operated over 15 years to date without any replacement the sand filters (and other equipment) may need replacement in the near future. Proper funds should be maintained to ensure proper maintenance/replacement occurs.
- C. Dilution - Department Regulation Chapter 530.5, *Surface Water Toxics Control Program*, §D(3)(b) states that for discharges to the ocean, dilution must be calculated as near-field or initial dilution, or that dilution available as the effluent plume rises from the point of discharge

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

to its trapping level, at mean low water level and slack tide for the acute exposure analysis and at mean tide for the chronic exposure analysis using appropriate models determined by the Department such as MERGE or CORMIX. Using plan and profile information provided by the permittee and the CORMIX model, the Department has determined the dilution factors for the discharge from the wastewater treatment facility are as follows:

Acute = 87:1 Chronic = 1,276:1 Harmonic Mean: 3,828:1⁽¹⁾

Footnote:

(1) The harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by three (3). This multiplying factor is based on guidelines for estimation of human health dilution presented in the USEPA publication "*Technical Support Document for Water Quality-based Toxics Control*" (Office of Water; EPA/505/2-90-001, page 88), and represents an estimation of harmonic mean flow on which human health dilutions are based in a riverine 7Q10 flow situation.

- D. Biochemical Oxygen Demand (BOD5) & Total Suspended Solids (TSS): - The previous licensing established monthly and weekly average BOD5 and TSS best practicable treatment (BPT) concentration limits of 30 mg/L and 45 mg/L respectively, that are based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR Part 133.102 and Department rule Chapter 525(3)(III). The maximum daily BOD5 and TSS concentration limits of 50 mg/L were based on a Department best professional judgment of BPT. All three concentration limits are being carried forward in this permitting action. DMRs submitted to the Department by the applicant(s) for the period December 1999 to the present indicate the average BOD5 discharged is 2 mg/L and the maximum BOD5 has been 9 mg/L, well below the permitted 30 mg/L and 50 mg/L, respectively. The monthly average and daily maximum TSS values reported were 1.7 mg/L and 11 mg/L respectively, well below their respective limits of 30 mg/L and 50 mg/L respectively.

Previous licensing actions did not establish monthly average, weekly average and daily maximum limitations by mass. However, federal regulation 40 CFR §122.45(f) and Department rule Chapter 523 (6)(f) state "All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except..." Therefore, monthly average and weekly average technology based mass limits for BOD and TSS are calculated based on the (monthly average) daily flow limitation of 0.035 MGD, the applicable BPT concentration limits and a conversion factor of 8.34 lbs/gallon. The limitations were calculated as follows:

Monthly average: $(0.035 \text{ MGD})(8.34)(30 \text{ mg/L}) = 8.8 \text{ lbs/day}$

Weekly average: $(0.035 \text{ MGD})(8.34)(45 \text{ mg/L}) = 13 \text{ lbs/day}$

Daily maximum: $(0.035 \text{ MGD})(8.34)(50 \text{ mg/L}) = 15 \text{ lbs/day}$

- This permitting action also establishes a new requirement of 85% removal for BOD and TSS pursuant to Department rule Chapter 525(3)(III)(a&b)(3).

Monitoring frequencies for BOD and TSS of twice monthly are being carried forward from the previous licensing action and are based on Department policy for facilities with a flow limitation of less than or equal to 0.035 MGD (gpd)

- E. Settleable solids - The previous permit established monthly average and daily maximum BPT concentration limits of 0.1 ml/L and 0.3 ml/L respectively. The Department has reconsidered its position on the necessity of a monthly average limitation. The Department has made the determination that the daily maximum limitation of 0.3 ml/L provides the Department with sufficient information to determine if the discharge is receiving BPT. Therefore, this permitting action is eliminating the monthly average limitation.

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

F. Fecal coliform bacteria - The previous licensing action established a daily maximum water quality limitation of 0 colonies/100 ml per request of the Diamond Cove Homeowners Association. In 1998, the Department reevaluated the water quality based fecal coliform bacteria limitations it was establishing in permits for discharges to marine and estuarine waters. The Department determined that to promote consistency with the National Shellfish Sanitation Program, new water quality based limitations of 15 colonies/100 ml as a monthly average (geometric mean) and 50 colonies/100 ml were to be established in licensing/permitting actions thereafter.

However, the previous and more restrictive “coliform free” standards are being carried forward. The limitations are in effect on a year-round basis to protect year-round recreational users of the beaches in the vicinity of the discharge as well as to continue to improve ambient water quality such that DMR shellfish harvesting Area C-14 can be opened to harvesting.

G. Total residual chlorine (TRC) - Limits for TRC are specified to ensure that ambient water quality standards are maintained and that BPT is being applied to the discharge. The previous licensing action established a monthly average technology based limitation of 0.1 mg/L and a daily maximum water quality based limit of 0.3 mg/L. The Department imposes the more stringent of the water quality or technology based limits in permitting actions. End-of-pipe water quality based concentration thresholds may be calculated as follows:

<u>Parameter</u>	<u>Acute Criterion</u>	<u>Acute Dilution Factor</u>	<u>Daily Max. Threshold</u>
Chlorine	0.013 mg/L	87:1	the lesser of 1.13 mg/L or 0.3 mg/L

<u>Parameter</u>	<u>Chronic Criterion</u>	<u>Chronic Dilution Factor</u>	<u>Daily Max. Threshold</u>
Chlorine	0.0075mg/L	1,276:1	9.65 mg/L

The Department has established a daily maximum BPT limitation of 0.3 mg/L for facilities that need to dechlorinate their effluent unless calculated water quality based limits are lower than 0.3 mg/L. In the case of Diamond Island, the calculated acute water quality based threshold is lower than 0.3 mg/l, thus the daily maximum water quality based limit of 1.13 mg/L is imposed.

H. pH Range- The previous licensing action established a pH range limitation of 6.0 - 8.5 standard units. This permitting action is expanding the range limit from 6.0 – 8.5 to 6.0 –9.0 standard units pursuant to a new Department rule found at Chapter 525(3)(III)(c). The new limits are considered BPT.

8. ANTI-BACKSLIDING/ ANTI-DEGRADATION POLICY

Maine law 38 M.R.S.A. §464(4)(F) contains the antidegradation policy of the State. More specifically, §464(4)(F)(3) states that “The Department may only issue a discharge license pursuant to section 414-A or approve water quality certification pursuant to the Federal Water Pollution Control Act, Section 401, Public Law 92-500, as amended, if the standards of classification of the water body and the requirements of this paragraph are met. The Department may issue a discharge permit or approve water quality certification for a project affecting a water body in which standards of classification are not met if the project does not cause or contribute to the failure of the water body to meet the standards of classification.

9. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

The overboard discharge treatment system has been inspected by the Department annually over the past five years. The treatment system was consistently found to be in compliance with the inspection criteria. As permitted, 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 waterbody to meet standards for Class SB classification.

10. PUBLIC COMMENTS

Notification to abutting landowners and facility owners of this application was by certified mail on or about May 11, 2004. 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.

11. DEPARTMENT CONTACTS

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

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12. RESPONSE TO COMMENTS

[Reserved]