PERMIT NO. GW1810039

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENT

GROUNDWATER DISCHARGE PERMIT

In compliance with the provisions of Michigan's Natural Resources and Environmental Protection Act, 1994 P.A. 451, as amended (NREPA), Part 31, Water Resources Protection, and Part 41, Sewerage Systems,

The Bayberry Group Incorporated
Wood Ridge Road
Glen Arbor, Michigan 49636

is authorized to discharge 233,707 gallons per day, 20,800,000 gallons per year of sanitary sewage from **The Homestead** located at

Wood Ridge Road
Glen Arbor, Michigan 49636

designated as **Homestead Resort**

to the groundwater of the State of Michigan in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit.

Rule Authorization:	**2218**
Wastewater Type:	**Sanitary Sewage**
Wastewater Treatment Method:	**Aerated Lagoons/Sand Filter**
Wastewater Disposal Method:	**Spray Irrigation**

The issuance of this permit does not authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Michigan Department of Natural Resources and Environment (Department) permits, or approvals from other units of government as may be required by law.

This permit is based on a complete application submitted on June 15, 2009.

This permit takes effect on June 1, 2010. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules.

This permit and the authorization to discharge shall expire at midnight, June 1, 2015. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application which contains such information, forms, and fees as are required by the Department by December 3, 2014.

Issued May 24, 2010 .

James R. Janiczek, Chief
Groundwater Permits Unit
Permits Section, Water Bureau

PERMIT FEE REQUIREMENTS

In accordance with Section 324.3122 of the NREPA, the permittee shall make payment of an annual permit fee to the Department for each December 15th the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by March 1st for notices mailed by January 15th. The fee is due no later than 45 days after receiving the notice for notices mailed after January 15th.

In accordance with Section 324.3132 of the NREPA, the permittee shall make payment of an annual biosolids land application fee to the Department. In response to the Department's annual notice, the permittee shall submit the fee, which shall be postmarked no later than January 31st of each year.

CONTACT INFORMATION

Unless specified otherwise, all contact with the Michigan Department of Natural Resources and Environment (the "Department") required by this permit shall be made to the Cadillac District Supervisor of the Water Bureau. The Cadillac District Office is located at 120 West Chapin Street, Cadillac, Michigan 49601,
Telephone: 231-775-3960, Fax: 231-775-1511.

CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Office of Administrative Hearings of the Michigan Department of Labor and Economic Growth, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Labor and Economic Growth may reject any petition filed more than 60 days after issuance as being untimely.

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1. Effluent Limitations

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge a maximum of 233,707 gallons per day, 20,800,000 gallons per year, of sanitary sewage from the monitoring points listed below to the groundwater in the W 1/2 of the SE ¼, Section 14, T29N, R14W, Glen Arbor Township, Leelanau County, Michigan. The discharge shall be limited and monitored by the permittee as specified below.

Parameter	Maximum Daily Limit	Units	Monitoring Frequency	Sample Type
EFFLUENT				
Monitoring Point **EQ-1**				
Flow	233,707	GPD	Daily	Report Total
Flow	20,800,000	GPY	Annually	Calculation
Total Inorganic Nitrogen	25	mg/l	Weekly During Discharge	Calculation
Ammonia Nitrogen	(report)	mg/l	"	Grab
Nitrate Nitrogen	(report)	mg/l	"	Grab
Nitrite Nitrogen	(report)	mg/l	"	Grab
pH (Minimum)	6.5	S.U.	"	Grab
pH (Maximum)	9.5	S.U.	"	Grab
Biochemical Oxygen Demand (BOD5)	(report)	mg/l	"	Grab
Dissolved Oxygen	(report)	mg/l	"	Grab
Chloride	250	mg/l	"	Grab
Sodium	150	mg/l	"	Grab
Total Phosphorus	7	mg/l	"	Grab
Fecal Coliform:				
Monthly Average	130	counts/100 ml*	"	Grab
Weekly Maximum	300	counts/100 ml*	"	Grab
SOILS				
Monitoring Point **S-1**				
Bray P1(Total Phosphorus)	(report)	mg/kg	Annually	Composite
Sodium	(report)	mg/kg	Annually	Composite
pH	(report)	S.U.	Annually	Composite
Cation Exchange Capacity	(report)	meq/100 grams	Annually	Composite

* This limit is based on Rules 62(2) and 62(3) of the Part 4 Water Quality Standards for partial body contact.

a) Total Inorganic Nitrogen
The daily maximum value for total inorganic nitrogen shall be reported as the sum of the daily maximum values for ammonia nitrogen, nitrate nitrogen, and nitrite nitrogen.

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b) Sampling Locations
Influent flow, effluent flow, and land application rate shall be measured in accordance with the approved sampling plan. The location and method of collecting and analyzing effluent quality and soil samples shall be in accordance with the approved sampling plan. The Department may approve alternate sampling locations which are demonstrated by the permittee to be representative.

c) Total Phosphorus – Bray P1 Soils Testing
Soils at land application sites shall be sampled a minimum of once every year to determine phosphorus levels and the results shall be used to determine land application rates. Sample soil using an 8 inch vertical core, and take 20 or more cores in a random pattern spread evenly over each uniform field area. A uniform field area shall be no greater than 20 acres or it can be up to 40 acres if that field has one soil map unit and has been managed as a single field for the last ten years. The 20 cores shall be composited into one sample and analyzed using the Bray P1 method. Alternate methods may be used upon approval of the Department. Additional information on soil sampling can be found in Michigan State University Extension Bulletins E2904 and E498.

2. Nutrient Based Discharge and Irrigation Application Rates

The Limits of the daily discharge Flows and the daily and weekly Application Rates are a function of the results of the weekly effluent sampling and analysis as follows:

Irrigation Season: May 1 through October 31				
Irrigation (May 1- October 31)				
LA-1: Parcel B				
Parameter:				
EFFLUENT TIN Concentration Range	**MAXIMUM VOLUME**	**MAXIMUM APPLICATION RATE**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
(X = TIN Concentration)	**Gallons/Day Gallons/Week**	**Inches/Day Inches/Week**	**Daily Weekly**	**Calculation Calculation**
20 = X < 25 mg/l	66,463 gpd	0.34 in/day	Daily	Calculation
	332,340 gpw	1.7 in/wk	Weekly	Calculation
16 = X < 20 mg/l	78,192 gpd	0.4 in/day	Daily	Calculation
	390,989 gpw	2.0 in/wk	Weekly	Calculation
12 = X < 16 mg/l	97,740 gpd	0.5 in/day	Daily	Calculation
	488,736 gpw	2.5 in/wk	Weekly	Calculation
8 = X < 12 mg/l	117,288 gpd	0.6 in/day	Daily	Calculation
	586,483 gpw	3.0 in/wk	Weekly	Calculation
0 = X < 8 mg/l	156,384 gpd	0.8 in/day	Daily	Calculation
	781,978 gpw	4.0 in/wk	Weekly	Calculation
LA-2: Parcel C				
20 = X < 25 mg/l	32,862 gpd	0.34 in/day	Daily	Calculation
	164,324 gpw	1.7 in/wk	Weekly	Calculation
16 = X < 20 mg/l	38,661 gpd	0.4 in/day	Daily	Calculation
	193,322 gpw	2.0 in/wk	Weekly	Calculation
12 = X < 16 mg/l	48,327 gpd	0.5 in/day	Daily	Calculation
	241,653 gpw	2.5 in/wk	Weekly	Calculation
8 = X < 12 mg/l	57,992 gpd	0.6 in/day	Daily	Calculation
	289,983 gpw	3.0 in/wk	Weekly	Calculation
0 = X < 8 mg/l	77,323 gpd	0.8 in/day	Daily	Calculation
	386,644 gpw	4.0 in/wk	Weekly	Calculation

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3. Groundwater Monitoring and Limitations (Upgradient)

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit MW-1*, MW-5 and MW-8 are the upgradient wells, the permittee shall sample the groundwater from the hydraulically upgradient groundwater monitor wells as described below:

Parameter	Limit	Units	Monitoring Frequency	Sample Type
Static Water Elevation	(report)	USGS-Ft	Quarterly	Measured
pH	(report)	S.U.	Quarterly	Grab
Specific Conductance	(report)	umhos/cm	Quarterly	Grab
Total Inorganic Nitrogen	(report)	mg/l	Quarterly	Calculation
Ammonia Nitrogen	(report)	mg/l	Quarterly	Grab
Nitrate Nitrogen	(report)	mg/l	Quarterly	Grab
Nitrite Nitrogen	(report)	mg/l	Quarterly	Grab
Chloride	(report)	mg/l	Quarterly	Grab
Sodium	(report)	mg/l	Quarterly	Grab
Total Phosphorus	(report)	mg/l	Quarterly	Grab
Calcium	(report)	mg/l	Annually	Grab
Iron	(report)	ug/l	Annually	Grab
Magnesium	(report)	mg/l	Annually	Grab
Manganese	(report)	ug/l	Annually	Grab
Potassium	(report)	mg/l	Annually	Grab
Dissolved Oxygen	(report)	mg/l	Annually	Grab
Bicarbonate	(report)	mg/l	Annually	Grab
Sulfate	(report)	mg/l	Annually	Grab

* Sampling of MW-1 and MW-7 is not required during the first quarter (February).

a) Sampling Locations
Unless an alternative monitoring schedule is approved in the Sampling and Analysis Plan, quarterly sampling shall be in the months of February, May, August and November. Annual sampling shall be in August. The Department may approve alternate sampling locations which are demonstrated by the permittee to be representative.

b) Total Inorganic Nitrogen at Groundwater Monitoring Points
The value for total inorganic nitrogen shall be reported as the sum of the values for ammonia nitrogen, nitrate nitrogen, and nitrite nitrogen.

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4. Groundwater Monitoring and Limitations (Downgradient)

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee shall sample the groundwater from hydraulically downgradient groundwater monitor wells. The discharge of treated wastewater shall not cause the groundwater in monitor wells MW-2, MW-6, MW-7*, MW-9, and MW-10 shall be sample to exceed the limitations below.

Parameter	Maximum Daily Limit	Units	Monitoring Frequency	Sample Type
Static Water Elevation	(report)	USGS-Ft	Quarterly	Measured
pH	(report)	S.U.	Quarterly	Grab
Specific Conductance	(report)	umhos/cm	Quarterly	Grab
Total Inorganic Nitrogen	10	mg/l	Quarterly	Calculation
Ammonia Nitrogen	(report)	mg/l	Quarterly	Grab
Nitrate Nitrogen	(report)	mg/l	Quarterly	Grab
Nitrite Nitrogen	0.5	mg/l	Quarterly	Grab
Chloride	250	mg/l	Quarterly	Grab
Sodium	120	mg/l	Quarterly	Grab
Total Phosphorus	1	mg/l	Quarterly	Grab
Calcium	(report)	mg/l	Annually	Grab
Iron	0.3	mg/l	Annually	Grab
Magnesium	(report)	mg/l	Annually	Grab
Manganese	0.05	mg/l	Annually	Grab
Potassium	(report)	mg/l	Annually	Grab
Dissolved Oxygen	(report)	mg/l	Annually	Grab
Bicarbonate	(report)	mg/l	Annually	Grab
Sulfate	250	mg/l	Annually	Grab

* Sampling of MW-1 and MW-7 is not required during the first quarter (February)

a) Sampling Locations
Unless an alternative monitoring schedule is approved in the Sampling and Analysis Plan, quarterly sampling shall be in the months of February, May, August and November. Annual sampling shall be in August. The Department may approve alternate sampling locations which are demonstrated by the permittee to be representative.

b) Total Inorganic Nitrogen at Groundwater Monitoring Points
The daily maximum value for total inorganic nitrogen shall be reported as the sum of the daily maximum values for ammonia nitrogen, nitrate nitrogen, and nitrite nitrogen.

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5. Schedule of Compliance

The permittee shall comply with the following schedule. Submittals shall comply with Rule 323.2218 which may be obtained via the Internet at http://www.deq.state.mi.us/documents/deq-wmd-gwp-part22.pdf. All submittals shall be to the Department.

a) On or before August 1, 2010, the permittee shall submit for review and approval an updated Sampling and Analysis Plan that includes effluent, groundwater and soil sampling requirements pursuant to Rule 2223.

b) On or before September 2, 2010, the permittee shall submit a workplan to address elevated phosphorus levels in the effluent.

c) On or before September 2, 2010, the permittee shall submit for review and approval by the Department an updated Operations and Maintenance Manual pursuant to Rule 2218(4)(b). A guidance document is available via the Internet at: http://www.deq.state.mi.us/documents/deq-wmd-gwp-Part22GuidshtVI.pdf. The updated plan shall describe steps taken by the Homestead to prevent and verify any aerosol drift beyond the boundaries of the irrigation parcels.

d) On or before February 1, 2011, the permittee shall submit for review and approval a report describing the effectiveness of the steps taken during the 2010 irrigation season to prevent and verify any aerosol drift beyond the boundaries of the irrigation parcels. If necessary, the report shall contain a section that proposes additional measures to prevent off site migration of the aerosol drift.

6. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the NREPA.

7. Submittal Requirements for Self-Monitoring Data

The permittee shall submit self-monitoring data monthly on the Department's Compliance Monitoring Report (CMR) for each calendar month of the authorized discharge period to:

NMS-CMR-Data Entry-Groundwater, Water Bureau, Michigan Department of Natural Resources and Environment, P.O. Box 30273, Lansing, Michigan, 48909-7773.

AND

Cadillac District Office, Water Bureau, Michigan Department of Natural Resources and Environment, 120 West Chapin Street, Cadillac, Michigan 49601

The forms shall be postmarked no later than the 15th day of the month following each month of the authorized discharge period(s).

Alternative Daily Discharge Monitoring Report formats may be used if they provide equivalent reporting details and are approved by the Department.

8. Facility Operation and Maintenance

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee shall comply with the inspection, operation and maintenance program requirements specified below. All inspections shall be documented in a logbook to be maintained at the on-site facility and shall be available for review by Department personnel at all times.

Location	Condition	Measurement Frequency	Sample Type
Lagoon	Freeboard -2 foot minimum	Weekly	Visual Observation
	Control Structures	Weekly	Visual Observation
	Dike Integrity	Weekly	Visual Observation
	Vegetation Control	Weekly	Visual Observation
	Nuisance Animals	Weekly	Visual Observation
	Odors	Weekly	Olfactory Observation

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Location	Condition	Measurement Frequency	Sample Type
Irrigation Fields	Ponding	Daily During Discharge	Visual Observation
	Pooling	Daily During Discharge	Visual Observation
	Erosion	Daily During Discharge	Visual Observation
	Odors	Daily During Discharge	Olfactory Observation
	Piping	Daily During Discharge	Visual Observation
	Sprinkler Heads	Daily During Discharge	Visual Observation
	Spray Drift*	Daily During Discharge	Visual Observation

a) Lagoon Inspection
These inspections shall include:
(1) the lagoon dikes for vegetative growth, erosion, slumping, animal burrowing or breakthrough;
(2) the lagoon for growth of aquatic plants, offensive odors, insect infestations, scum, floating sludge, and septic conditions;
(3) the depth of the water in each cell and the freeboard with a minimum two (2) feet of freeboard being maintained at all times;
(4) the control structures and pump stations to assure that valves, gates and alarms are set correctly and properly functioning;
(5) the lagoon security fence and warning signs.

b) Lagoon Facility Maintenance
The permittee shall implement a Lagoon Facility Maintenance Program that incorporates the following management practices unless otherwise authorized by the Department.
(1) Vegetation shall be maintained at a height not more than six (6) inches above the ground on lagoon dikes.
(2) Not more than 10 percent of the water surface shall be covered by floating vegetation and not more than 10 percent of the water perimeter may have emergent rooted aquatic plants.
(3) Dike damage caused by erosion, slumping or animal burrowing shall be corrected immediately and steps taken to prevent occurrences in the future.
(4) The integrity of the lagoon liner shall be protected. Liner damages shall be corrected immediately and steps taken to prevent future occurrences.
(5) The occurrence of scum, floating sludge, offensive odors, insect infestations, and septic conditions shall be minimized.
(6) A schedule for the inspection and maintenance of the collection system, lift stations, mechanical and electrical systems, transfer stations, and control structures shall be developed and implemented.

c) Lagoon Drawdown Conditions
The permittee shall observe the following conditions when drawing down a cell for transfer or discharge unless otherwise authorized by the Department.
(1) Water discharged shall be removed from the surface two feet of the cell at a rate of less than one foot per day.
(2) The permittee shall maintain a minimum of two feet of freeboard in all cells at all times. Upon written notification, the Department may require a minimum of three feet of freeboard for larger systems.
(3) The permittee shall maintain a minimum of two feet of water in all cells at all times.

d) Irrigation Inspection
Irrigation inspection is required during discharge periods and shall include:
(1) an inspection of spray irrigation areas to insure there is no spray drift occurring off the easement areas; at a minimum of every two hours; or more often on windy days.
(2) inspect sprayheads for clogging or non-rotation;
(3) inspection of spray irrigation for signs of ponding, pooling or signs of erosion;
(4) prior to initiating spray irrigation, evaluate wind and rainfall conditions and make irrigation adjustments as warranted (including, but not limited to shutting down part of the system, discharging for a shorter period of time; or even turning the system off).

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e) Irrigation Maintenance
The permittee shall implement an Irrigation Maintenance Program that incorporates the following management practices as well as those outlined in the approved Discharge Management Plan, which is considered part of this permit.
(1) Sprayheads shall be maintained in good working conditions and repaired/replaced within a week's time. Flow to the sprayhead shall be turned off to prevent ponding or pooling, until the needed repair or replacement has been made;
(2) Spray Irrigation area fencing and signage shall be kept in good condition;

9. General Conditions

a) Irrigation shall be stopped immediately if spray drift is detected beyond the easement boundaries.

b) The discharge shall not be, or not be likely to become, injurious to the protected uses of the waters of the state.

c) The discharge shall not cause runoff to, ponding on, or flooding of adjacent property, shall not cause erosion, and shall not cause nuisance conditions.

d) The discharge shall not create a facility as defined in Part 201, Environmental Response, of the NREPA.

10. Other Conditions

a) **Basis of Design** - The discharge shall be treated in accordance with the approved basis of design pursuant to Rule 2218(2).
b) **Wastewater Characterization** - The wastewater being treated shall be of the same chemical, biological, and physical characteristics as described in the characterization required pursuant to Rule 2220.
c) **Land Application:**
Slow Rate Land Application
(1) A portion of the flow is expected to percolate to the groundwater while the remainder is utilized by plants or lost through evaporation.
(2) The wastewater loading volume shall be designed so that the wastewater will be absorbed and held within the effective rooting zone of the vegetative cover established on the site receiving the wastewater.
(3) The header ditch drainage and the grading of the furrows, where utilized, shall be tested for equal liquid distribution before seeding.
(4) The system shall be seeded with a mixture of perennial vegetative cover, which are grasses such as reed canary grass, tall fescue, and orchard grass, alone or in combination with legumes, such as clover, alfalfa, and birdsfoot trefoil, suited to the climate and the soil moisture conditions created as a result of the application of wastewater in accordance with the designed loading cycle. The Department may approve alternative vegetative cover on a case-by-case basis, but may impose restrictions based upon the characteristics of the proposed alternative.
(5) All furrow side slopes, where present, shall be designed and constructed to allow for periodic maintenance and or mechanical harvesting of vegetative cover.
(6) The depth of the furrows of a ridge and furrow system, when utilized, shall be adequate to contain the highest proposed furrow stream.
(7) The treatment system must have sufficient hydraulic capacity to treat organic or inorganic loading so that the discharge receives physical, chemical biological treatment or a combination of treatments to meet the standards of Rule 2222.
(8) Crops for human consumption grown on effluent irrigated fields shall be limited to crops requiring processing prior to consumption.
(9) Animals that produce milk for human consumption shall not be allowed to graze on any effluent irrigated fields until 30 days following the application of effluent.
(10) In no case shall nutrients provided by wastewater and supplemental fertilization exceed the nutrient requirements of the crop based on the yield goal for that crop.

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11. Compliance Requirements

Compliance with all applicable requirements set forth in Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance with concentration limitations of effluent or groundwater shall be reported as follows.

a) If the facility is in a wellhead protection area, within 48 hours from the time the permittee becomes aware of the noncompliance, the permittee shall report noncompliance to the public water supply manager.

b) Within seven (7) days from the time the permittee becomes aware of the noncompliance, the permittee shall report, in writing, all instances of noncompliance. Written reporting shall include all of the following: 1) the name of the substance(s) for which a limit was exceeded; 2) the concentration at which the substance was found; and 3) the location(s) at which the limit was exceeded.

c) Within 14 days from the time the permittee becomes aware of the noncompliance, the permittee shall resample the monitoring point at which the limit was exceeded for the substance for which a limit was exceeded.

d) Within 60 days from the time the permittee becomes aware of the noncompliance, the permittee shall submit a written report that shall include all of the following: 1) the results of the confirmation sampling; 2) an evaluation of the cause for the limit being exceeded and the impact of that event to the groundwater; and 3) a proposal detailing steps taken or to be taken to prevent recurrence.

e) In accordance with applicable rules, the Department may require additional activities including, but not limited, to the following:
   (1) Change the monitoring program, including increasing the frequency of effluent monitoring or groundwater sampling, or both.
   (2) Develop and implement a groundwater monitoring program if one is not in place.
   (3) If the discharge is in a designated wellhead protection area, assess the affects of the discharge on the public water supply system.
   (4) Review the operational or treatment procedures, or both, at the facility.
   (5) Define the extent to which groundwater quality exceeds the applicable criteria that would designate the site as a facility under Part 201.
   (6) Revise the operational procedures at the facility.
   (7) Change the design or construction of the wastewater operations at the facility.
   (8) Initiate an alternative method of waste treatment or disposal.
   (9) Remediate contamination to comply with the terms of Part 201, if applicable.

f) If the Department determines there is a change in groundwater quality from a normal operating baseline that indicates the concentration of a substance in groundwater may exceed an applicable limit, then the discharger shall take the following actions if required by the Department:
   (1) Change the monitoring program, including increasing the frequency of effluent sampling or groundwater sampling, or both.
   (2) Review the operational or treatment procedures, or both, at the facility.

12. Request for Discharge of Water Treatment Additives

In the event a permittee proposes to discharge water treatment additives (WTAs) to groundwater, the permittee shall submit a request to discharge WTAs to the Department for approval. Such requests shall be sent to the Surface Water Assessment Section, Water Bureau, Department of Natural Resources and Environment, P.O. Box 30273, Lansing, Michigan 48909, with a copy to the Department contact listed on the cover page of this permit. Instructions to submit a request electronically may be obtained via the Internet (http://www.michigan.gov/deq and on the left side of the screen click on Water, Water Quality Monitoring, and Assessment of Michigan Waters; then click on the Water Treatment Additive List which is under the Information banner). Written approval from the Department to discharge such WTAs at specified levels shall be obtained prior to discharge by the permittee. Failure to obtain approval prior to discharging any WTA is a violation of this permit. Additional monitoring and reporting may be required as a condition for the approval to discharge the WTA. WTAs include such chemicals as herbicides used to kill weeds and grasses as part of lagoon maintenance.

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A request to discharge WTAs to groundwater shall include all of the following:

a) product Information:
   (1) name of the product;
   (2) Material Safety Data Sheet;
   (3) product function (i.e. microbiocide, flocculants, etc.);
   (4) specific gravity if the product is a liquid; and
   (5) annual product use rate (liquids in gallons per year and solids in pounds per year);

b) ingredient information:
   (1) name of each ingredient;
   (2) CAS number for each ingredient; and
   (3) fractional content by weight for each product;

c) the monitoring point from which the WTA is to be discharged;

d) the proposed WTA discharge concentration;

e) the discharge frequency (i.e., number of hours per day and number of days per year);

f) the type of removal treatment, if any, that the WTA receives prior to discharge;

g) relevant mammalian toxicity studies for the product or all of its constituents (if product toxicity data are submitted, the applicant shall provide information showing that the product tested has the same composition as the product listed under Item "a" above. Preferred studies are subchronic or chronic in duration, use the oral route of exposure, examine a wide array of endpoints and identify a no-observable-adverse-effect-level. Applicants are strongly encouraged to provide the preferred data. If preferred data are not available, then the minimum information needed is an oral rat LD50 study. In addition, an environmental fate analysis that predicts the mobility of the product/ingredients and their potential to migrate to groundwater may be provided.

h) If the discharge of the WTA to groundwater is within 1,000 feet of a surface water body, the following information shall also be provided:
   (1) a 48-hour LC50 or EC50 for a North American freshwater planktonic crustacean (either Ceriodaphnia sp., Daphnia sp., or Simocephalus sp.); and
   (2) the results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of Rule 323.1057(2) of the Water Quality Standards.

Prior to submitting the request, the permittee may contact the Surface Water Assessment Section by telephone at 517-335-1180 or via the Internet at the address given above to determine if the Department has the product toxicity data required by Item "g" above. If the Department has the data, the permittee will not need to submit product toxicity data.

13. Residuals Management Program (RMP) for Land Application of Biosolids

The permittee is authorized to land apply bulk biosolids or prepare bulk biosolids for land application in accordance with the requirements established in R323.2401 through R323.2418 of the Michigan Administrative Code (Part 24 Rules). The permittee shall develop and implement an RMP to assure land applied bulk biosolids comply with the requirements of the Part 24 Rules. Incineration, landfilling and other residual disposal activities shall be conducted in accordance with the appropriate statutory requirements.

a) Program Development
   On or before 180 days prior to the land application of biosolids the permittee shall develop an RMP and submit the information required for implementation to the Department for approval. At a minimum, the program submittal shall include:
   (1) a description of the type and size of facility generating the biosolids;
   (2) a description of the biosolids treatment processes including the volume of biosolids generated from each process;
   (3) storage volume provided, if applicable;

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(4) transportation methods and spill prevention plan;
(5) a description of the land application method;
(6) a listing of the required information on all land application sites, information on initial application notifications required by R323.2408 and class B biosolids site restriction notifications, if applicable, as specified in R323.2414(3)(f);
(7) a land application plan which shows compliance with the applicable management requirements identified in R323.2410 and the loading rates and limitations as specified in R323.2408, R323.2409 and R323.2417;
(8) a description of the pathogen reduction method used to comply with R323.2411, R323.2414 and R323.2418;
(9) a description of the vector attraction reduction method used to comply with R323.2415; and
(10) information on monitoring program, monitoring frequencies pursuant to R323.2412, and one year of records representing the volume and concentrations of pollutants in the biosolids.

b) RMP Implementation
The permittee shall implement the approved RMP immediately upon written approval from the Department. Upon RMP approval, the permittee may land apply bulk biosolids, and the approved RMP becomes an enforceable requirement of this permit.

c) Modifications to the Approved RMP
The permittee shall submit proposed modifications to its RMP to the Department for approval. The approved modification shall become effective upon the date of approval. Upon written notification, the Department may impose additional requirements and/or limitations to the approved RMP as necessary to protect public health and the environment from any adverse effect of a pollutant in the biosolids.

d) Recordkeeping
Records required by R323.2413 shall be kept for a minimum of five years. However, the records documenting cumulative loading for sites subject to cumulative pollutant loading rates shall be kept as long as the site receives biosolids.

e) Annual Report
The permittee shall report the number of dry tons of biosolids generated that were applied to the land in the State of Michigan in the state fiscal year (October 1 through September 30). The annual report shall include information required in R323.2413(2)(h) and R323.2413 (3) to (8), except R323.2413 (6)(b), (7)(b), and (8)(b). The report shall be submitted to the Department on or before October 30 of each year.

PART II

Definitions

This list of definitions may include terms not applicable to this permit.

Annual monitoring frequency refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

Biosolids are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

Bulk biosolids means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

By-Pass means any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this permit.

Class B Biosolids refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

Daily concentration is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. If the parameter concentration in any sample is less than the quantification limit, regard that value as zero when calculating the daily concentration.
For pH, report the maximum value of any individual sample taken during the month and the minimum value of any individual sample taken during the month.

Department means the Michigan Department of Natural Resources and Environment.

Detection Level means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

Flow Proportioned sample is a composite sample with the sample volume proportional to the effluent flow.

Furrow stream is the volume, in gallons per unit time, usually per minute, of wastewater discharged into the furrow.

GPD means gallons per day.

GPY means gallons per year.

Grab sample is a single sample taken at neither a set time nor flow.

MGD means million gallons per day.

Mg/l is a unit of measurement and means milligrams per liter.

Monthly monitoring frequency refers to a calendar month. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

POTW is a publicly owned treatment works.

Quantification level means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

PART II

Quarterly monitoring frequency refers to a three month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

Report means there is no limit associated with the individual substance for the medium that is being sampled, that the permittee must only report the result of the laboratory analysis.

Weekly monitoring frequency refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation must be reported for that period if a discharge occurs during that period.

24-Hour Composite sample is a flow proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period.

PART II

1. Start-up Notification

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Department within 14 days following the effective date of this permit, and then 60 days prior to the commencement of the discharge.

2. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a written notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

3. Notification of Changes in Discharge, Treatment or Facility Operations

If proposing to modify the quantity or effluent characteristics of the discharge or the treatment process for the discharge, the permittee shall notify the Department of the proposed modification prior to its occurrence. Significant modifications require the permittee to submit an application. A permit modification shall be processed in accordance with applicable rules and laws prior to implementation of the modification.

4. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

5. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. Guidance on how to collect representative samples is contained in Guidesheet III, “Characterization of Wastewater”, which is available via the Internet at http://www.deq.state.mi.us/documents/deq-wmd-gwp-P22GuidshtIII.pdf.

6. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to either SW-846, 3rd edition, September 1986, “Test Methods for the Evaluation of Solid Waste, Physical-Chemical Methods”, or Section 304(h) of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq), 40 CFR Part 136 - Guidelines Establishing Test Procedures for the Analysis of Pollutants, unless specified otherwise in this permit. Requests to use test procedures not defined here shall be submitted to the Department for review and approval. The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee’s laboratory Quality Control/Quality Assurance program.

7. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

8. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

PART II

9. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Department.

10. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the NREPA or Rule 35 of the Mobile Home Park Commission Act (1987 PA 96) for assurance of proper facility operation shall be submitted as required by the Department.

11. Permit Monitoring Requirements

Pursuant to Rule 2223(1), the Department may modify the effluent or groundwater monitoring parameters or frequency requirements of this permit. The permittee may request a modification of the parameters of frequency of monitoring of this permit with adequate supporting documentation.

12. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwater of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the first page of this permit, or if the notice is provided after regular working hours call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventative measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

13. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24-hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

a) that an upset occurred and that the permittee can identify the specific cause(s) of the upset;

b) that the permitted wastewater treatment facility was, at the time, being properly operated; and

c) that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

PART II

14. Bypass Prohibition and Notification

a) Bypass Prohibition - Bypass is prohibited unless:
(1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and

(3) the permittee submitted notices as required under 14.b. or 14.c. below.

b) Notice of Anticipated Bypass - If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 14.a. above.

c) Notice of Unanticipated Bypass - The permittee shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated on the first page of this permit (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

d) Written Report of Bypass - A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.

e) Bypass Not Exceeding Limitations - The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of 14.a., 14.b., 14.c., and 14.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II, Section 12 of this permit.

f) Definitions
(1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

(2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

15. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

16. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

a) provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or

b) upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

PART II

17. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code). For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the NREPA.

18. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit or other pollutants) removed from or resulting from treatment or control of wastewaters, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the NREPA, Part 31, Water Resources Protection; Part 55, Air Pollution Control; Part 111, Hazardous Waste Management; Part 115, Solid Waste Management; Part 121, Liquid Industrial Wastes; Part 301, Inland Lakes and Streams; and Part 303, Wetland Protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwater of the state.

19. Treatment System Closure

a) In the event that discharges from a treatment system are planned to be eliminated, the permittee shall do the following:
   (1) Eliminate all physical threats associated with discharge related facilities not later than five (5) days after use of the facility has ceased.
   (2) Not less than 75 days before cessation of discharge related activities, characterize any wastewater, sediments and sludges related to the discharge, pursuant to Rule 2226(4)(a)(i-iii).

b) Within 30 days of completing the characterization, the discharger shall submit a closure plan to the Department for review and approval that describes how the wastewater, sediments and sludges associated with the discharge will be handled in accordance with Part 31, Part 115, Part 111, or Part 201, as appropriate.

c) Closure activities must be initiated within 30 days of Department approval of the Closure Plan, and must be completed within one (1) year of approval of the Closure Plan.

d) If the groundwater exceeds a standard established by the Department that would result in the site qualifying as a facility under Part 201, then the discharger shall comply with the requirements of Part 201.

e) The Department may require post closure monitoring activities to evaluate the effectiveness of the closure activities. Any wastewater or residual disposal inconsistent with the approved plan shall be considered a violation of this permit. After proper closure of the treatment system, this permit may be terminated.

f) The discharger must certify completion of the approved closure plan. Certification shall be by a qualified person described as follows:
   (1) An engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, being §339.101 et seq. Of the Michigan Compiled Laws, and known as the occupational code.
   (2) A professional geologist certified by the American Institute of Professional Geologists, 7828 Vance Drive, Suite 103, Arvada, Colorado 80003.
   (3) A professional hydrologist certified by the American Institute of Hydrology, 2499 Rice Street, Suite 135, St. Paul, Minnesota 55113.
   (4) A groundwater professional certified by the National Ground Water Association, Association of Groundwater Scientists and Engineers Division, 601 Dempsey Road, Westerville, Ohio 43081.
   (5) Another groundwater professional certified by an organization approved by the Department.

20. Right of Entry

The permittee shall allow the Department or any agent appointed by the Department, upon the presentation of credentials:

a) to enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

b) at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any effluent discharge, discharge of pollutants, and groundwater monitoring wells and soils associated with the discharge.

PART II

21. Untreated or Partially Treated Sewage Discharge Requirements

In accordance with Section 324.3112a of the Michigan Act, if untreated sewage, including sanitary sewer overflows (SSO) and combined sewer overflows (CSO), or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into the waters of the state, the entity responsible for the sewer system shall immediately, but not more than 24 hours after the discharge begins, notify, by telephone, the Department, the National Park Service, local health departments, a daily newspaper of general circulation in the county in which the permittee is located, and a daily newspaper of general circulation in the county or counties in which the municipalities whose waters may be affected by the discharge are located that the discharge is occurring.

At the conclusion of the discharge, written notification shall be submitted in accordance with and on the "CSO/SSO Reporting Form" available via the internet at: http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3715---,00.html, or, alternatively for combined sewer overflow discharges, in accordance with notification procedures approved by the Department.

In addition, in accordance with Section 324.3112a of the Michigan Act, each time a discharge of untreated sewage or partially treated sewage occurs, the permittee shall test the affected waters for *Escherichia coli* to assess the risk to the public health as a result of the discharge and shall provide the test results to the affected local county health departments and to the Department. The testing shall be done at locations specified by each affected local county health department but shall not exceed 10 tests for each separate discharge event. The affected local county health department may waive this testing requirement, if it determines that such testing is not needed to assess the risk to the public health as a result of the discharge event. The results of this testing shall be submitted with the written notification required above, or, if the results are not yet available, submit them as soon as they become available. This testing is not required, if the testing has been waived by the local health department, or if the discharge(s) did not affect surface waters.

Permittees accepting sanitary or municipal sewage from other sewage collection systems are encouraged to notify the owners of those systems of the above reporting and testing requirements.

22. Availability of Reports

Except for data determined to be confidential under Rule 323.2128 of the Michigan Administrative Code, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Sections 3112, 3115, 4106 and 4110 of the NREPA.

23. Construction Certification

On or before 30 days following completion of construction of any new wastewater treatment facilities after issuance of this permit, pursuant to Rule 2218(4)(a), the permittee shall submit a certification that a quality control and quality assurance program was utilized and the facilities constructed were built consistent with standard construction practices to comply with the permit and the NREPA. This certification shall be by an engineer licensed under Act 299 of the Public Acts of 1980.

PART III
DISCHARGE PROHIBITIONS

1. Discharge to the Surface Waters

This permit does not authorize any discharge to the surface waters. The permittee is responsible for obtaining any permits required by federal or state laws or local ordinances.

2. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

3. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits or approvals as may be required by law.

4. Duty to Comply

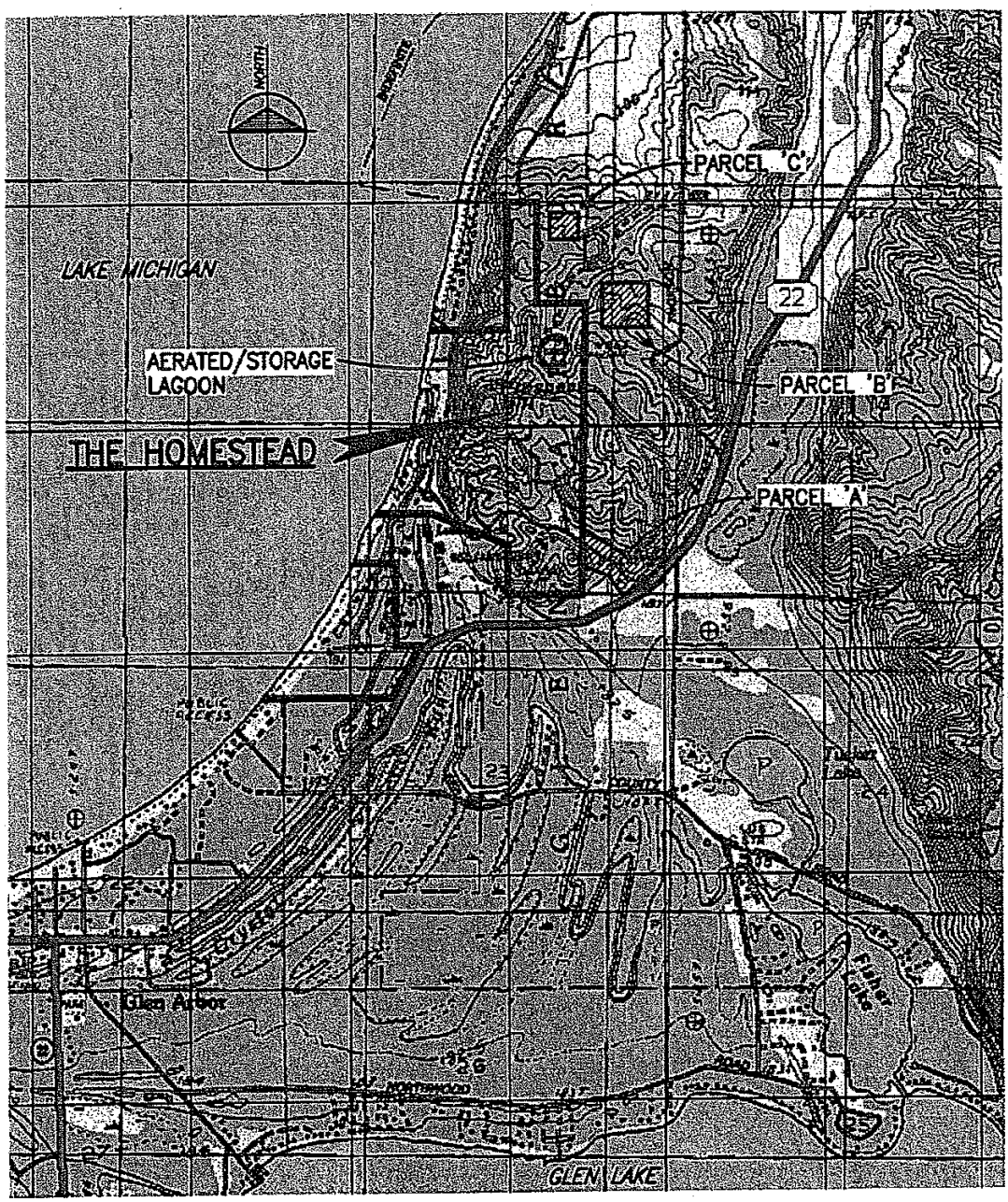
All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Conditions, or terms of this permit constitutes a violation of the NREPA and constitutes grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of an application for permit renewal.

5. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

ATTACHMENT I



ITEM NO. 10
SITE MAP 1

Client:

Sheet 1 of 1

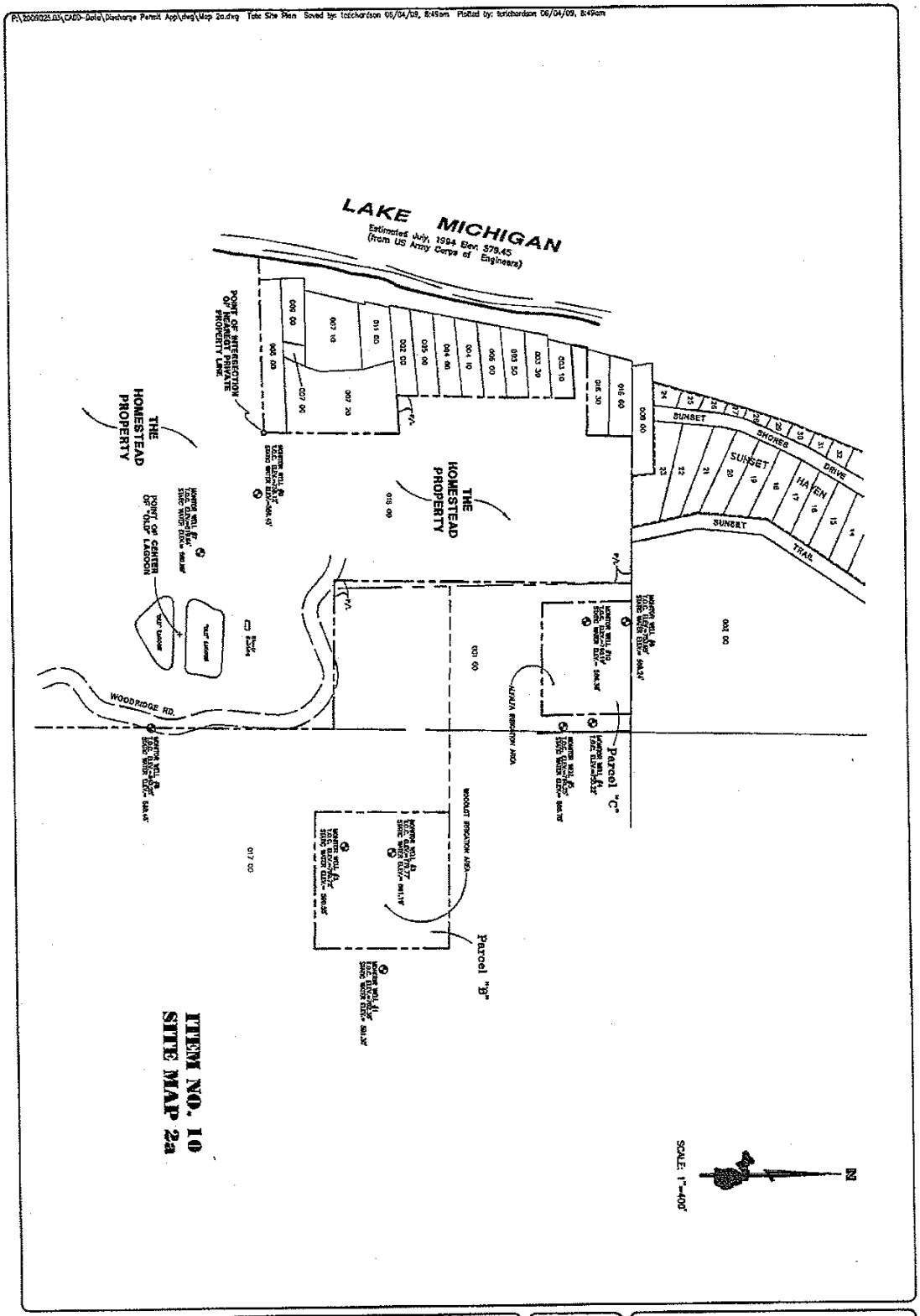
SECTION 14, T 28 N, R 14 W
GLEN ARBOR TOWNSHIP
LEELANAU COUNTY, MICHIGAN

Job No.:	2009025.03
Date:	05-19-09
Scale:	1:23039
Drawn:	TcR
Chk'd.:	MKS
Rev.:	

Gosling Czubak
engineering sciences, inc.
1280 Business Park Drive
Traverse City, MI 49686-8507
231-946-9191 800-968-1062
Fax: 231-941-4603

- Engineers
- Surveyors
- Environmental Services
- Landscape Architecture

ATTACHMENT II



ATTACHMENT III