STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
GAYLORD DISTRICT OFFICE

GRETCHEN WHITMER
GOVERNOR

PHILLIP D. ROOS
DIRECTOR

July 13, 2023

VN-014717

VIA EMAIL

Mike Richards
Shanty Creek – Watars Association
5780 Shanty Creek Road
Bellaire, Michigan 49615

Dear Mike Richards:

SUBJECT: Violation Notice
Site Name: Shanty Creek Resort WWTF

The Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), inspected the Shanty Creek Resort WWTF, located at 5780 Shanty Creek Road, Bellaire, Michigan 49615, on May 15, 2023, to determine compliance with Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); MCL 324.3101 *et seq*., and the administrative rules promulgated thereunder being 2006 AACS R 323.2101 *et seq*., as amended; and Groundwater Discharge Permit No. GW1810155 (Permit); which was issued on April 6, 2017, effective May 1, 2017.

Tammi Gall, Certified Operator, and Randy Holcheck, Operator, both of Mead & Hunt, participated in the inspection with me and Micky Leonard of the WRD. The inspection included an interview, records review, and site inspection of the wastewater systems under monitoring points EQ-1 and EQ-2 in the Permit. A one-time sampling event was conducted by Micky Leonard in conjunction with the quarterly sampling event for the monitor wells.

The main treatment components for monitoring point EQ-1 consists of two aerated lagoons with associated piping and pumps, chemical addition and filtration system for phosphorus removal, and the subsurface drip irrigation systems at disposal sites 4-1 and 4-2. There are also two septic tank tile field systems under monitoring point EQ-2 that serve a few of the condominium developments at the resort.

Please find enclosed a copy of the sampling results from the inspection. A one-time grab sample was obtained for analysis of the groundwater at monitor wells MW-8, MW-10, and MW-12. As you will note, sample results from EGLE's laboratory indicate compliance with limits in the facility's Permit for the groundwater parameters sampled at MW-8, MW-10, and MW-12. In addition, a comparison of the sampling results from EGLE's laboratory/contract laboratory and the facility's contract laboratory shows general consistency between the data points.

As part of the record keeping and reporting evaluation portion of the inspection, randomly selected effluent, and groundwater data from the Discharge Monitoring Reports were compared to the data on the laboratory analytical reports. These analytical results were determined to be consistent with the data reported to EGLE.

The following items were noted during the inspection and/or file review:

1. The WRD has identified the following effluent monitoring and non-reporting violations occurring between November 2019 through May 2023. These monitoring results and non-reporting are violations of your permit.

| Date | Parameter | Monitor Location | Permit Limitation | *Reported Value | Unit Code |
|---|---|---|---|---|---|
| 11/6/2019 | Total Phosphorus | EQ-1 | 1.0 | 1.15 | mg/L |
| 11/13/2019 | Total Phosphorus | EQ-1 | 1.0 | 1.15 | mg/L |
| 11/19/2019 | Total Phosphorus | EQ-1 | 1.0 | 1.4 | mg/L |
| 1/7/2020 | Total Phosphorus | EQ-1 | 1.0 | 1.48 | mg/L |
| 1/14/2020 | Total Phosphorus | EQ-1 | 1.0 | 1.66 | mg/L |
| 2/19/2020 | Total Phosphorus | EQ-1 | 1.0 | 1.66 | mg/L |
| 2/25/2020 | Total Phosphorus | EQ-1 | 1.0 | 1.68 | mg/L |
| 5/19/2020 | Total Phosphorus | EQ-1 | 1.0 | 2.15 | mg/L |
| 7/7/2020 | Total Phosphorus | EQ-1 | 1.0 | 1.2 | mg/L |
| 8/19/2020 | Total Phosphorus | EQ-1 | 1.0 | 1.21 | mg/L |
| 8/26/2020 | Total Phosphorus | EQ-1 | 1.0 | 1.4 | mg/L |
| 10/6/2020 | Total Phosphorus | EQ-1 | 1.0 | 1.2 | mg/L |
| 11/24/2020 | Nitrate Nitrogen | EQ-1 | (Report) | *D | mg/L |
| 11/24/2020 | Nitrite Nitrogen | EQ-1 | (Report) | *D | mg/L |
| 11/24/2020 | Sodium | EQ-1 | 400 | *D | mg/L |
| 11/24/2020 | pH | EQ-1 | 9.5 | *D | SU |
| 11/24/2020 | Ammonia Nitrogen | EQ-1 | (Report) | *D | mg/L |
| 11/24/2020 | Chloride (90006) | EQ-1 | 500 | *D | mg/L |
| 11/24/2020 | Total Phosphorus | EQ-1 | 1.0 | *D | mg/L |
| 11/24/2020 | pH | EQ-1 | 6.5 | *D | SU |
| 11/24/2020 | Total Inorganic Nitrogen | EQ-1 | 20 | *D | mg/L |
| 11/24/2020 | Dissolved Oxygen | EQ-1 | (Report) | *D | mg/L |
| 11/24/2020 | BOD5 | EQ-1 | 30 | *D | mg/L |
| 3/3/2021 | Total Phosphorus | EQ-1 | 1.0 | 1.1 | mg/L |
| 3/9/2021 | Total Phosphorus | EQ-1 | 1.0 | 1.2 | mg/L |
| 3/16/2021 | Total Phosphorus | EQ-1 | 1.0 | 1.4 | mg/L |
| 3/23/2021 | Total Phosphorus | EQ-1 | 1.0 | 1.4 | mg/L |
| 5/25/2021 | Total Phosphorus | EQ-1 | 1.0 | 1.2 | mg/L |
| 7/7/2021 | Total Phosphorus | EQ-1 | 1.0 | 1.5 | mg/L |
| 7/21/2021 | Total Phosphorus | EQ-1 | 1.0 | 2.2 | mg/L |
| 7/28/2021 | Total Phosphorus | EQ-1 | 1.0 | 3.2 | mg/L |
| 8/3/2021 | Total Phosphorus | EQ-1 | 1.0 | 2.5 | mg/L |
| 8/10/2021 | Total Phosphorus | EQ-1 | 1.0 | 1.9 | mg/L |
| 8/17/2021 | Total Phosphorus | EQ-1 | 1.0 | 2.2 | mg/L |

| Date | Parameter | Monitor Location | Permit Limitation | *Reported Value | Unit Code |
|---|---|---|---|---|---|
| 8/31/2021 | Total Phosphorus | EQ-1 | 1.0 | 1.9 | mg/L |
| 2/1/2022 | Total Phosphorus | EQ-1 | 1.0 | 3.3 | mg/L |
| 5/11/2022 | Total Phosphorus | EQ-1 | 1.0 | 2 | mg/L |
| 5/24/2022 | Total Phosphorus | EQ-1 | 0.5 | 0.59 | mg/L |
| 5/25/2022 | Total Phosphorus | EQ-1 | 1.0 | 2.4 | mg/L |
| 6/8/2022 | Total Phosphorus | EQ-1 | 1.0 | 2 | mg/L |
| 6/21/2022 | Total Phosphorus | EQ-1 | 1.0 | 2 | mg/L |
| 6/29/2022 | Total Phosphorus | EQ-1 | 1.0 | 1.9 | mg/L |
| 7/12/2022 | Total Phosphorus | EQ-1 | 1.0 | 3.4 | mg/L |
| 7/19/2022 | Total Phosphorus | EQ-1 | 1.0 | 2.6 | mg/L |
| 7/27/2022 | Total Phosphorus | EQ-1 | 1.0 | 2.3 | mg/L |
| 8/2/2022 | Total Phosphorus | EQ-1 | 1.0 | 3.5 | mg/L |
| 8/9/2022 | Total Phosphorus | EQ-1 | 1.0 | 3.3 | mg/L |
| 8/17/2022 | Total Phosphorus | EQ-1 | 1.0 | 3.5 | mg/L |
| 8/30/2022 | Total Phosphorus | EQ-1 | 1.0 | 2.5 | mg/L |
| 9/20/2022 | Total Phosphorus | EQ-1 | 1.0 | 1.2 | mg/L |
| 9/27/2022 | Total Phosphorus | EQ-1 | 1.0 | 1.1 | mg/L |
| 1/17/2023 | Total Phosphorus | EQ-1 | 1.0 | 2.1 | mg/L |
| 1/31/2023 | Total Phosphorus | EQ-1 | 1.0 | 2.3 | mg/L |
| 3/14/2023 | Total Phosphorus | EQ-1 | 1.0 | 3.3 | mg/L |
| 3/28/2023 | Total Phosphorus | EQ-1 | 1.0 | 3 | mg/L |
| 4/11/2023 | Total Phosphorus | EQ-1 | 1.0 | 3.0 | mg/L |
| 5/9/2023 | Total Phosphorus | EQ-1 | 1.0 | 2.3 | mg/L |
| 5/15/2023 | Specific Conductance | MW-10 | (Report) | *C | umho/cm |
| 5/15/2023 | Specific Conductance | MW-12 | (Report) | *C | umho/cm |

*Reported Value Codes: *C (Laboratory Problem/Error), *D (Laboratory Results Not Received in Time of Report)

2. The phosphorus effluent violations as noted in the table above appear to be continuing. The dosing rate and mixing for the alum feed and the disc filters should be evaluated to determine if any changes need to be made. Please provide an update on the status of the chemical feed and disc filtration system and any other potential causes for the phosphorus exceedances including any corrective actions planned or taken to address the phosphorus issues.

3. There was no discharge from the lagoon system during the inspection because the drip irrigation system for the lagoons was reportedly plugged and in need of maintenance and/or replacement. It appears this is an ongoing issue with reduced discharge rates because of plugging problems. Please provide an evaluation of the cause(s) of the plugging problems to determine if repairs and/or replacement is warranted. Please note that a construction permit under Part 41, Sewerage Systems, of the NREPA would be required from EGLE if other than a replacement in kind is done.

4. One aerator was out of service in the primary pond and needs to be repaired or replaced. Please provide a status report on the correction actions taken and/or planned to address this issue.

5. The effluent turbine flow meter was recently replaced in June of 2022 but was apparently not functioning properly and service has been scheduled. Please provide an update on when the flow meter will be repaired.

6. At the Ridgewalk septic tank drainfield system (EQ-2) it was reported that the control panel is not working properly to count the doses from the siphon chamber. Please provide an update on the repair or replacement of the dose counter in the control panel.

7. There are inconsistencies in the analytical methods being used at the contract laboratory to what is in the facility's sampling and analysis plan for calcium, iron, magnesium, phosphorus potassium and sodium. Please ensure that methods in the sampling and analysis plan and methods used at the contract laboratory are the same and EPA approved.

8. It was reported that there was at least one section of fencing surrounding the lagoon that needed to be repaired or replaced. Please provide confirmation when the fence has been repaired.

The violations identified in this Violation Notice are continuing.

The violations identified in this Violation Notice are violations of Part 31 of the NREPA, and the Permit.

Shanty Creek Resort WWTF should take immediate action to achieve and maintain compliance with the terms and conditions of Part 31 of the NREPA, and the Permit.

Please submit a written response to Items 1 through 8 to this office by September 15, 2023.

If you have any factual information you would like us to consider regarding the violations identified in this Violation Notice, please provide them with your written response.

We anticipate and appreciate your cooperation in resolving this matter. Should you require further information regarding this Violation Notice, contact me at WaltersD@michigan.gov; 517-599-1461; or EGLE, WRD, Gaylord District Office, 2100 West M-32, Gaylord, Michigan 49735-9282.

Sincerely,

David C. Walters, P.E.

Digitally signed by: David C. Walters, P.E.
DN: CN = David C. Walters, P.E. email = WaltersD@michigan.gov C = US O = EGLE OU = WRD
Date: 2023.07.13 11:34:24 -04'00'

David C. Walters, P.E.
Gaylord District Office
Water Resources Division

Enclosure
cc: Andrew Reh, Shanty Creek Resort WWTF
Tammi Gall, Mead & Hunt
Randy Holcheck, Mead & Hunt

# *MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, and ENERGY*
# *WATER RESOURCES DIVISION*
# *POINT SOURCE MONITORING*

Report of a
Wastewater Survey
Conducted at
**Shanty Creek Resort WWTF**
Permit No. GW1810155
Antrim County
Bellaire, MI 49615
Start Date: May 15, 2023

**SURVEY SUMMARY**

Wastewater monitoring was performed on May 15, 2023 beginning at 14:30.

The results of the water quality analyses are presented in Table 1.

The results of EGLE monitoring are compared to the results reported by the facility in Table 1.

Samples were preserved according to Table 2. Letter codes for laboratory results are defined in Table 2.

**SURVEY PROCEDURE**

The flow and samples were obtained as follows:

| Sample Location | Sampling Methods |
|---|---|
| MW Samples collected side by side with facility samples after purging | Individual Grab Samples |

An individual grab is a single instantaneous sample.

Samples were analyzed by the EGLE Laboratory located in Lansing, MI.

# Table 2 - Grab Samples

| Monitoring Point | MW-8 | | MW-10 | | MW-12 | |
|---|---|---|---|---|---|---|
| Date Collected | 5/15/2023 | | 5/15/2023 | | 5/15/2023 | |
| Time Collected | 15:14 | | 15:36 | | 14:49 | |
| | **EGLE** | **Shanty Creek Resort WWTF** | **EGLE** | **Shanty Creek Resort WWTF** | **EGLE** | **Shanty Creek Resort WWTF** |
| Temperature (C) | 14 | 15.2 | 14 | 15.4 | 13 | 13.5 |
| pH (S.U.) | 7.17 | 7.3 | 7.72 | 7.3 | 8.24 | 7.8 |
| Dissolved Oxygen (mg/L) | 5.5 | 7.24 | 10.14 | 12.3 | 2.55 | 3.8 |
| | **mg/L** | | **mg/L** | | **mg/L** | |
| NO2 | <0.01 ND | <0.1 ND | <0.01 ND | <0.1 ND | <0.01 ND | <0.1 ND |
| NO3 + NO2 | 5.4 | 5.1 | 0.16 | 0.12 | <0.01 ND | <0.1 ND |
| NH3 | --- | 0.026 | --- | 0.017 | --- | 0.11 |
| Total Phosphorus | 0.46 | <0.01 ND | 0.01 | <0.05 | 0.047 | <0.05 ND |
| Calcium | 110 | --- | 55 | --- | 43 | --- |
| Sodium | 62 | 64 | 8.6 | 8.9 | 12 | 12 |
| Potassium | 7.2 | --- | 1.2 | --- | 1.5 | --- |
| Magnesium | 38 | --- | 14 | --- | 22 | --- |
| Chloride | 56 | 59 | 4.2 | <10 ND | <4 ND | <10 ND |
| Sulfate | 25 | --- | 7 | --- | <5 ND | --- |
| | **µg/L** | | **µg/L** | | **µg/L** | |
| Total Iron (Fe) | 12000 | --- | <20 ND | --- | 210 | --- |
| Total Manganese (Mn) | 3100 | --- | <5 ND | --- | 26 | --- |

## Table 5 - Sample Preservation and Lab Letter Codes

| Parameter | Preservative |
|---|---|
| COD/TOC/Phenol/Nutrients (Chlorine Absent) | 10 drops $H_2SO_4$/500 mL (to pH <2) |
| pH & Dissolved Oxygen (D.O.) | Meter reading |
| Total Metals | 5 mL 1:1 $HNO_3$/500 mL (to pH <2) |

Samples preserved as required, cooled to 6 degrees Celsius with chain of custody maintained

Lab Letter Codes

ND - Indicates compound analyzed for but not detected

Survey by: Micky Leonard, Environmental Quality Analyst

Contact with Management: Tammi Gall, Certified Operator

Laboratory Analyses by: Michigan Department of Environment, Great Lakes, and Energy Laboratory, Lansing, Michigan
Merit Laboratories, Inc., East Lansing, Michigan

Report by: Micky Leonard, Environmental Quality Analyst
Field Operations Section
Water Resources Division

Publish Date: 6/21/2023