

# **Lagoon Final Closure Report**

for the

## **Ojibway Correctional Facility Marenisco, Michigan**

Prepared for:

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## **1.0 SUMMARY OF CESSATION OF DISCHARGE AND LAGOON CLOSURE PLAN**

At the request of the site owner, Michigan Department of Corrections (MDOC), U.P. Engineers & Architects, Inc. (UPEA) has completed the following Lagoon Final Closure Report which details the steps the owner completed in order to abandon their existing wastewater treatment plant – WWTP (lagoons).

The purpose of this report is to provide details for the cessation of discharge from the WWTP (lagoons) and to satisfy the requirements of Rule 323.2226 of the Part 22 Rules of Part 31 of the National Resources and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended. This report documents the activities completed as presented in the “Cessation of Discharge and Lagoon Closure Work Plan” dated September 2019.

The MDOC entered into an agreement with MKC Group on August 13, 2019 to complete the work outlined in the construction plans and specifications to close the Ojibway Correctional Facility (OCF) WWTP lagoons.

### **1.1 Existing Facilities**

The Ojibway Correctional Facility (OCF) was closed December 1, 2018. The Facility is located at N5705 Ojibway Road, in Section 08, T45N, R43W, in Marenisco Township, Gogebic County approximately 6 miles south of Marenisco, MI. The existing WWTP is in the northeast corner of the property which is just north of the correctional facility. A Site Location Map is presented as Figure 1.

The existing treatment system received wastewater from the correctional facility via gravity sewer to a lift station, which in turn flowed to the aerated lagoons (lagoons 5-8) primarily, and non-aerated lagoons (lagoons 1-4) occasionally. See Figure 2 for system layout. The facility utilized a bar screen in-line of the wastewater stream ahead of the lift station. The bar screen was utilized to collect larger items such as t-shirts, sheets, towels, rags, etc. prior to being discharged into the lift station.

The aerated ponds were operated in series, with wastewater entering pond 5 and moving through pond 6 to pond 7. Once in pond 7, additional treatment and solids settling occurred, while flow could be either transferred to pond 8, or discharged. Each aerated pond was constructed with a single liner consisting of a flexible membrane liner on top of a 12" layer of sand. The aerated lagoons were built according the plans and specifications with a flexible membrane liner keyed into the top, with a 12" granular material cover placed over the membrane liner. There was riprap placed on top of the granular material on the side slopes of each lagoon and around the outlet pipes.

The wastewater is held in the ponds until it is discharged. Discharges from the facility are regulated by a discharge permit issued by the Michigan Department of Environment, Great Lakes, and Energy (formerly Michigan Department of Environmental Quality (MDEQ)), permit number MIG580000.

## **1.2 Lagoon Closure Sequence**

The following list details the sequence of events leading towards final closure of the lagoons as outlined in the approved "Cessation of Discharge and Lagoon Closure Work Plan":

- 1) Remaining standing water within the lagoons was pumped to the discharge point of the system to the lowest possible water level without drawing biosolids. This was completed under the existing discharge permit issued by the MDEQ, permit number MIG580000. Prior to discharge, samples were collected from the wastewater. Each sampling event included all the parameters listed specifically for the effluent in Section A, Part 1 of the NPDES permit. The first sampling event occurred prior to discharge, with sample results submitted to EGLE prior to the first day of discharge. Subsequent sampling events followed the same procedures.
- 2) Biosolids, and minor amounts of water remaining in the lagoons, were removed and land applied in accordance with Part 24 Rules (Part 31, NREPA, P.A. 451, as amended) on-site. OCF has an existing Residuals Management Plan (RMP) for land application of biosolids, on file with EGLE. Sludge testing completed in March 2019 was utilized since no additional sludge was added to the lagoons by OCF after December 1, 2018. Approximately 2,510,000 gallons of biosolids were removed and land applied on-site. The sand (granular)



layer above the liner, where present, was mixed with the biosolids in an effort to make the biosolids manageable to transport. Samples of the mixed biosolids and sand were collected by UPEA staff from each lagoon and analyzed for Part 24 rule compliance. A summary of analytical results is included in Attachment 1. Copies of the laboratory reports are included in Attachment 2. The mixed biosolids met Part 24 criteria and were utilized in the final cover within 12-18 inches of the surface.

- 3) MKC Group demolished the lagoons in accordance with plans and specifications including the removal of the flexible membrane liners, where present, and the geo-composite clay liner, where present, and disposed of the material off-site at an approved landfill.
- 4) Staff from UPEA collected and submitted for analysis samples from soil beneath the liner as outlined in the approved closure work plan. Samples were submitted to Prein & Newhof in Grand Rapids, MI. Sample locations are shown on Figure 3. A summary of the analytical results is included in Attachment 3, with copies of the laboratory reports included in Attachment 4.
- 5) Since no contamination was found in the soil beneath the liner, no additional soil or groundwater sampling was conducted, and soils below the liner remained in place.
- 6) MKC Group removed any discharge structures and capped lines left in the ground, according to the plans and specifications.
- 7) MKC Group removed and stockpiled any items required by the owner to salvage.

### **1.3 Final Closure Report**

This report was completed to meet the requirements from the Lagoon Closure Work Plan. In accordance with R323.2226(4)(e), the MDOC shall submit a closure report documenting the implementation of the Work Plan since it is seeking EGLE approval of the lagoon closure. In addition to submitting all sampling results, as described in Section 1.6 of the Closure Work Plan, the report includes, as applicable, the sampling analysis procedures, a map showing the location where samples were obtained, and a summary of waste types and quantities removed from the site and its destination of these wastes.









