CWSRF STORMWATER PROJECT PLAN FOR THE CARO AREA WASTEWATER TREATMENT SYSTEM IMPROVEMENTS

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PREPARED BY:

HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

555 Hulet Drive
Bloomfield Hills, Michigan 48302

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SECTION 1.0 — SUMMARY AND RECOMMENDATION

1.1 SUMMARY

This Fiscal Year 2024 (FY2024) Clean Water State Revolving Fund (CWSRF) Project Plan was prepared on behalf of the City of Caro for the purpose of obtaining a low interest loan financing and/or grant funding from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for the construction of improvements to the City's facilities.

The FY2024 CWSRF Project Plan has been prepared using EGLE's "Project Planning Document Preparation Guidance" and the Program's administrative rules. The CWSRF program provides for financial assistance in the form of low interest loans and additional potential principal forgiveness and/or grant funding. While the rates have not been set yet for FY2024, the FY2023 rates were 1.875% and 2.125% for 20-year loans and 30-year loans, respectively. There is additional potential subsidization available for communities deemed "overburdened."

The Program rules call for compliance with the basic Federal Planning Requirements and the National Environmental Policy Act (NEPA). This Project Plan will serve as a basis for project prioritization and must be submitted to the EGLE by May 1, 2023, in order to be on the project priority list for the fiscal year of 2024. The FY2024 CWSRF Project Plan recommends improvements to the City's wastewater collection and treatment system to provide reliability, compliance with current regulatory requirements and to sustain the required level of service to its customers.

1.2 CONCLUSIONS

The following is a summary of the proposed projects:

- From the various alternatives reviewed, Improvement Project Alternative A: Rehabilitation and Replacement of Existing Facilities, was found to be the most cost-effective and environmentally preferred alternative to ensure the WWTP and lift stations can provide reliable service over the planning period. The proposed project involves replacement of and upgrades to existing equipment at the WWTP and the sanitary lift station sites in the collection system that has served its useful life. The design capacity of the WWTP or collection system will not be increased.
- There is a small area within the Study Area that is not currently connected to the sanitary sewerage system, and a project to extend service to the aera by constructing additional sanitary sewers is proposed. Connection of this area will only nominally increase flows to the WWTP and will replace existing on-site septic systems that are no longer reliable. The proposed sewer will not increase development as it serves an existing commercial area that is already in the Study Area.
- The Plan also recommends applying for $100,000 in funding from the CWSRF to use to use towards the development/further development of the City's existing wastewater Asset Management Plan (AMP.) These funds will be used for additional mapping and inspection of the sanitary sewer system to determine the condition of a portion of the sewer system and identify future operation and maintenance and capital improvement needs.

1.3 RECOMMENDATIONS

The selected projects identified in this Plan have been reviewed and found to be the most cost-effective and environmentally-sound alternatives. The following recommendations are therefore to be made:

- A resolution should be formally adopted approving acceptance and implementation of this Plan.

SECTION 2.0 — BACKGROUND

2.1 STUDY AND SERVICE AREAS:

The City of Caro is located in Tuscola County, and lies within the Cass River watershed, which ultimately discharges to Saginaw Bay in Lake Huron. The Study Area consists of the existing Wastewater Treatment Plant (WWTP) and sanitary sewer collection system service area, which includes the City of Caro, the Caro Regional Center (State Hospital and Corrections Facility), and portions of Almer and Indianfields Townships. The WWTP is located in the City of Caro near the Cass River and includes various equipment and facilities to provide primary and secondary treatment, disinfection, and management of solids delivered to the WWTP. The collection system includes the sanitary sewer system pipes, manholes and other structures, and 11 lift stations, which convey the sanitary sewerage from the system's customers to the WWTP. The Study Area is shown in Figure 2-1.

The Study Area is limited to these areas due to the following reasons:

- The proposed project involves replacement of and upgrades to existing equipment at the WWTP and collection system lift stations that have served their anticipated useful lives. The design capacity of the Plant will not be increased.
- The area within and surrounding the existing service area has experienced minor population growth and significant increases are not expected to occur within the next 20 years.

2.2 POPULATION DATA

Using the 2020 Census tract data available from the State's Geographic Information System, the existing population of the City of Caro was estimated at approximately at 4,323 people and the Caro Area WWTP's service area was estimated at approximately 5,473 people. The East Michigan Council of Governments (EMCOG) was consulted for population projections, which are shown below in Table 2-1. See Appendix A for attached documentation of contact with the EMCOG, notifying them of this proposed Project Plan.

Table 2-1. Population Projections

Year	City of Caro Population	Tuscola County Population
2010	Waiting on EMCOG	55,678
2015		53,775
2020		53,168
2025		52,980
2030		53,110
2035		53,431
2040		53,566
2045		53,568

* MDOT Bureau of Transportation Planning
http://www.emcog.org/downloads/Tuscola_Co_Population_Forecast_Through_2045.pdf

2.3 EXISTING ENVIRONMENT EVALUATION

The following information related to the existing environment surrounding the proposed project along with information related to potential impacts resulting from implementation of the proposed project.

2.3.1 Cultural and Historic Resources:

Tuscola County is committed to preserving and protecting historical sites. The Michigan State Historic Preservation Act provides local governments, non-profits, and property owners with historic preservation services and training. The following link was consulted to determine the Historic Places located within Tuscola County: National Archives NextGen Catalog (https://catalog.archives.gov/id/25337646.) The National Register of Historic Places listed the following sites within the proposed Study Area:

- **Resource Name: Tuscola County Courthouse, Reference Number: 96001419**
  - Address: 440 North State Street; City or Town: Caro; County: Tuscola; State: Michigan
  - List Date: 12/06/1990; Period of Significance: 1932-1933
  - Areas of Significance: Architecture
  - Architectural Classification: Art Deco
- **Resource Name: Hotel Montague, Reference Number: 91000875**
  - Address: 200 South State Street; City or Town: Caro; County: Tuscola; State: Michigan
  - List Date: 07/09/1991; Period of Significance: 1923-1924; 1923-1941
  - Areas of Significance: Architecture; Commerce
  - Architectural Classification: Classic Revival
- **Resource Name: Trinity Episcopal Church, Reference Number: 75000961**
  - Address: 106 Joy Street; City or Town: Caro; County: Tuscola; State: Michigan
  - List Date: 05/12/1975
  - Areas of Significance: Architecture; Religion
  - Architectural Classifications: Gothic Revival

The projects proposed within this Project Plan will not impact these historical sites because the work will be performed on existing sites that are currently part of the wastewater system and were previously disturbed. The proposed sewer extension is proposed in a previously disturbed area that is currently a commercial site.

2.3.2 Air Quality:

Through the use of the EGLE Air Monitoring Site Map (Air Monitoring Sites (arcgis.com), it has been determined that Tuscola County is in compliance with all applicable standards. This project, and the alternatives discussed will have no impact on the quality of the air in the Project Area. None of the NESHAP or Natural Resources and Environmental Protection Act (NREPA) regulations are anticipated. However, if encountered prior to or during the design and construction phases, all hazardous wastes, liquid industrial by-products, solid wastes (including contaminated soils), building materials containing asbestos, etc. will be managed and disposed of in accordance with all applicable regulations.

2.3.3 Wetlands:

There are areas identified as wetlands on the National Wetlands Inventory (NWI) or Michigan Resource Information System (MIRIS) Land Cover maps within Study Area's proposed limits of work. The proposed work will be located primarily on existing City property and easements and within roadway rights-of-way. Since the proposed work will

be at existing facility locations, no impacts to any existing wetland areas are expected. However, for final design, any wetlands that may be impacted would be flagged, applications for the appropriate permits will be submitted and necessary mitigation measures will be undertaken to protect the influenced wetlands. The wetland map for the Study Area is shown in Figure 2-2.

2.3.4 Great Lake Shorelands, Coastal Zones, and Costal Management Areas:

There are no coastal zones located with the Study Area and therefore no impacts are anticipated.

2.3.5 Floodplains:

Locations of potential floodplains within the Study Area were identified based on the Flood Insurance Rate Maps (FIRM) on the Federal Emergency Management Agency (FEMA) website. The floodplain map for the City of Caro is shown in Figure 2-3, and while three existing lift stations are near the limits of the existing floodplain, there are no earth changing activities proposed at these locations other than construction of above-grade electrical and communication panels. The floodplain elevations at these individual sites will be verified during the design phase, and the new facilities designed to be above the floodplain elevation. The construction will have minimal earth changing activities other than the construction of electrical cabinets. The proposed project at the WWTP site does not include any excavations or other earth-changing activities within the established floodplain.

However, if isolated excavations must be located within the 100-year floodplain, construction will only be undertaken after first contacting EGLE and obtaining the appropriate permits. Appropriate mitigation measures and soil erosion efforts will be undertaken to protect the floodplains and surface waters influenced by the project, including but not limited to silt fences, turbidity curtains, stone check dams, gravel access drives, rip-rap, etc. Additionally, excavations will be filled with appropriate backfill materials, compacted and restored to existing grade with surface restoration matching existing vegetation.

2.3.6 Natural or Wild and Scenic Rivers:

EGLE's records and maps were consulted and there are no state-designated rivers within the Study Area.

2.3.7 Major Surface Waters:

The major surface water in the Study Area is the Cass River, which is adjacent to the Caro Area WWTP site, but will not be directly impacted by any of the proposed work. As stated previously, appropriate mitigation measures and soil erosion efforts will be undertaken to protect the surface waters influenced by the project, including but not limited to silt fences, turbidity curtains, stone check dams, gravel access drives, rip-rap, etc.

2.3.8 Topography:

The terrain within the Study Area is characterized by a sloped topography generally decreasing from west to east and ranging from 824 to 623 feet throughout the City.

2.3.9 Geology:

The relatively flat topography is the result of a glacier lake plain formation veneered by sediments deposited in the forerunners of the present Great Lakes. This area was influenced by the Wisconsin Period of glaciation, which included the Saginaw Lobe that extended throughout the Saginaw River Valley. Bedrock in the area varies from west to east with Berea Sandstone and Bedford on the western edge of the Study Area, Bayport Limestone in the middle, and Michigan Formation in the eastern portion.

2.3.10 Soil Types:

Soils in the Study Area vary widely but generally consist of two main types. The Study Area to the north and west of the Cass River are well to moderately well-drained soils in the form of silt or silt-loam. However, the northwest portion of Indianfields Township and the southwest portion of Almer Township are poorly-drained soils in the form of sand overlying loam or silty clay loam. To the south and west of the Cass River, soils vary between well-drained sands and sandy loams to poorly-drained soils consisting of sands over silty clay loam. There are several areas east of the River affected by high water table during much of the year.

2.3.11 Agricultural Resources:

The Caro area has long been among the leaders in the State in bean, sugar beet, wheat, corn, and grain production. The majority of the agricultural areas exist outside the Study Area. Because there will be no increase in Plant capacity under this project, the agricultural areas will not be affected.

2.3.12 Fauna and Flora:

Because all of the proposed work is on land that has been previously disturbed is already part of the WWTP and LS sites, there are not any anticipated impacts to the fauna and flora of the area. The capacity and permit requirements for the WWTP will not change nor will there be induced development or growth as a result of the proposed project. However, an application for review by the Michigan Natural Features Index (MNFI) has also been made, and resulting correspondence will be included in Appendix A.

2.4 EXISTING SYSTEM

A description of the City's existing facilities is provided in the following sections.

2.4.1 Caro Area Wastewater Treatment Plant

The City owns and operates the original Caro Area WWTP, which was originally constructed in 1957 with primary treatment and a trickling filter for secondary treatment. In 1986, the trickling filter was replaced by a bio-disc secondary treatment system. That system was replaced with an oxidation ditch in 2008 as part of a major upgrade to the existing facility that also included a new grit system, a third secondary clarifier, pump and piping replacements, and electrical and communication improvements. No significant updates have been undertaken since 2008.

The WWTP's design flow since 1986 has remained at approximately 1.2 Million Gallons per Day (MGD) with a peak hour flow of 3.0 MGD. The WWTP's approximate average annual flow is 0.635 MGD. This level of demand has been consistent for several years and is not expected to change in the foreseeable future. Only a small number of City residents and businesses are not currently connected to the sewer system.

The Caro Area WWTP serves primarily resident and commercial uses, and does not receive the discharge of any type or quantity of substance which may cause interference with the operation of the treatment works; and, therefore, is not required to develop an industrial pretreatment program in accordance with Section 307 of the Federal Water Pollution Control Act.

The WWTP provides preliminary, primary and secondary treatment and disinfection using chlorine gas for liquid flows. There is an equalization tank that provides temporary storage of peak wet weather flows. Solids removed undergo digestion in two reactors and then are placed in drying beds for dewatering before being hauled for land application and/or landfilling if needed. The WWTP's Residuals Management Plant is up to date.

2.4.2 Caro Area Sanitary Sewer Collection System

The City's sanitary collection system is a separated system, but does receive some wet weather flow in the form of inflow from home footing drains and infiltration of groundwater through the existing sewer system. It was generally constructed throughout the late 1950s and 1960s. The City has cleaned and inspected about 20% of its collection system sewers in the last ten years and continues to perform additional cleaning and inspection to address any operational and/or structural issues as they are identified and reduce inflow and infiltration into the system. The City continues to monitor and address inflow and infiltration but has not experienced any recent Sanitary Sewer Overflows and/or basement backups due to inflow and infiltration. There is an equalization basin provided at the WWTP to attenuate the wet weather flows on the treatment system.

The sanitary collection system contains a total of 11 lift stations. All but two of the lift stations have been mechanically updated, and those are anticipated to be completed within the next two years. Sewage collected from the service area is treated at the WWTP to meet current effluent quality requirements prior to discharge into the Cass River.

2.4.3 Stormwater Systems

The City of Caro is served by separate sewers, which include sanitary sewers and storm sewers. The storm sewers convey precipitation runoff and provide drainage to City roads and other areas, and discharge to surface waters through various outfalls. The storm sewer system is not a part of any of the proposed projects considered in this Plan.

2.4.4 Operation and Maintenance of System

The City must balance operation and maintenance with the need to ensure affordability of the system to its customer base, which is generally considered "overburdened." However, the City proactively maintains the WWTP and sewer system to reduce the potential for sudden failures or upsets.

2.4.5 Climate Resiliency

The WWTP is equipped with emergency electrical service by a diesel engine driven generator rated at 400 KW, 500 KVA. The emergency service is automatically activated in the event the primary service is interrupted for any reason, such as storms, required maintenance, etc.

All wastewater systems are somewhat susceptible to climate impacts, particularly flooding if rainfall amounts and intensities continue to increase, but the Caro Area WWTP is generally 5 to 10 feet above the existing 100-year floodplain levels. The proposed projects are intended to provide additional resiliency by insuring they can continue to meet existing design criteria.

2.5 NEED FOR PROJECT

The City recently made a complete inspection of the WWTP's working components and developed a plan for rehabilitation and/or replacement of various equipment and systems required to sustain operation, meet permit requirements and the required level of service to its customers and the environment. While the WWTP and collection system regularly meets all permit conditions, if the identified deficiencies are not addressed, it would be much more difficult to continue to meet those standards and may result in enforcement actions by EGLE and/or impacts to water quality and public health. The following items require rehabilitation and/or replacement as noted:

2.5.1 WWTP Needs:

- The existing primary digester cover has failed and requires replacement.
- The existing disinfection system is beyond its anticipated useful life and needs to be replaced. It should be converted to Ultraviolet Disinfection (UV) to reduce the City's dependence on chlorine gas, and the potential health and safety implications associated with the existing system.
- The existing secondary clarifiers require new rotating equipment and baffle/weir improvements. Covers or a canopy should also be considered to reduce growth of algae. New Variable Frequency Drives (VFDs) should be added to the older Clarifier Nos. 1 and 2 to increase energy efficiency and performance.
- The existing secondary waste activated sludge pump has holes in the volute and should be replaced.
- The existing septage receiving station needs to be relocated to better service the public as several accidents have occurred damaging equipment and facilities in the vicinity of it.
- Building improvements required include new doors and windows, which are old, inefficient and do not operate properly. New, energy-efficient doors and windows are also needed for security purposes.
- The existing laboratory cabinets have deteriorated and require replacement with chemical resistant units. The existing counters have been well maintained and may be reused.
- The existing WWTP pavement is failing throughout the site and requires replacement for safety and access.
- The existing, former primary tanks should be re-purposed for supernatant storage to enhance thickening and improve nutrient removal.
- A "greenhouse" cover is required over the existing sludge drying beds to improve solids dewatering.
- The existing fine screens should be re-located to be downstream of the existing grit system, and the grit system has equipment that is worn and requires replacement.

2.5.2 Sanitary Collection System Needs:

- The City has been making upgrades as required to the sanitary collection system's existing 11 lift stations, but the existing electrical services and control panels should be moved above-grade to reduce the need for confined-space entry to access the controls and potential for damage from flooding. The existing communication/SCADA system also requires replacement as the existing system is becoming obsolete.
- There is a small area in the City of Caro's commercial district that is not currently served by the sanitary collection system, and the existing on-site septic tanks have caused issues for the owners. The City is proposing to extend sanitary sewers to these properties to allow for connection to the Caro Area Sanitary system.
- The City has initiated development of an asset management plan for its sanitary collection system and WWTP. It has also been conducting ongoing cleaning and inspection of the sanitary sewer system and has completed inspection of approximately 20% of the system to date and made repairs and performed maintenance as issues were identified. The City is requesting an additional $100,000 through the CWSRF to further develop its AMP by televising a key area of the sanitary sewer system that is anticipated to have structural defects and has been identified as a high Inflow and Infiltration area. The funds will also assist with mapping and inventorying the collection system.

2.6 PROJECTED FUTURE NEEDS

As described previously, population in the City is expected to remain stable, or possibly decline slightly. As such, no additional sanitary treatment or conveyance capacity is required for the City.

Figure 2-1. City of Caro Study and Service Area Map

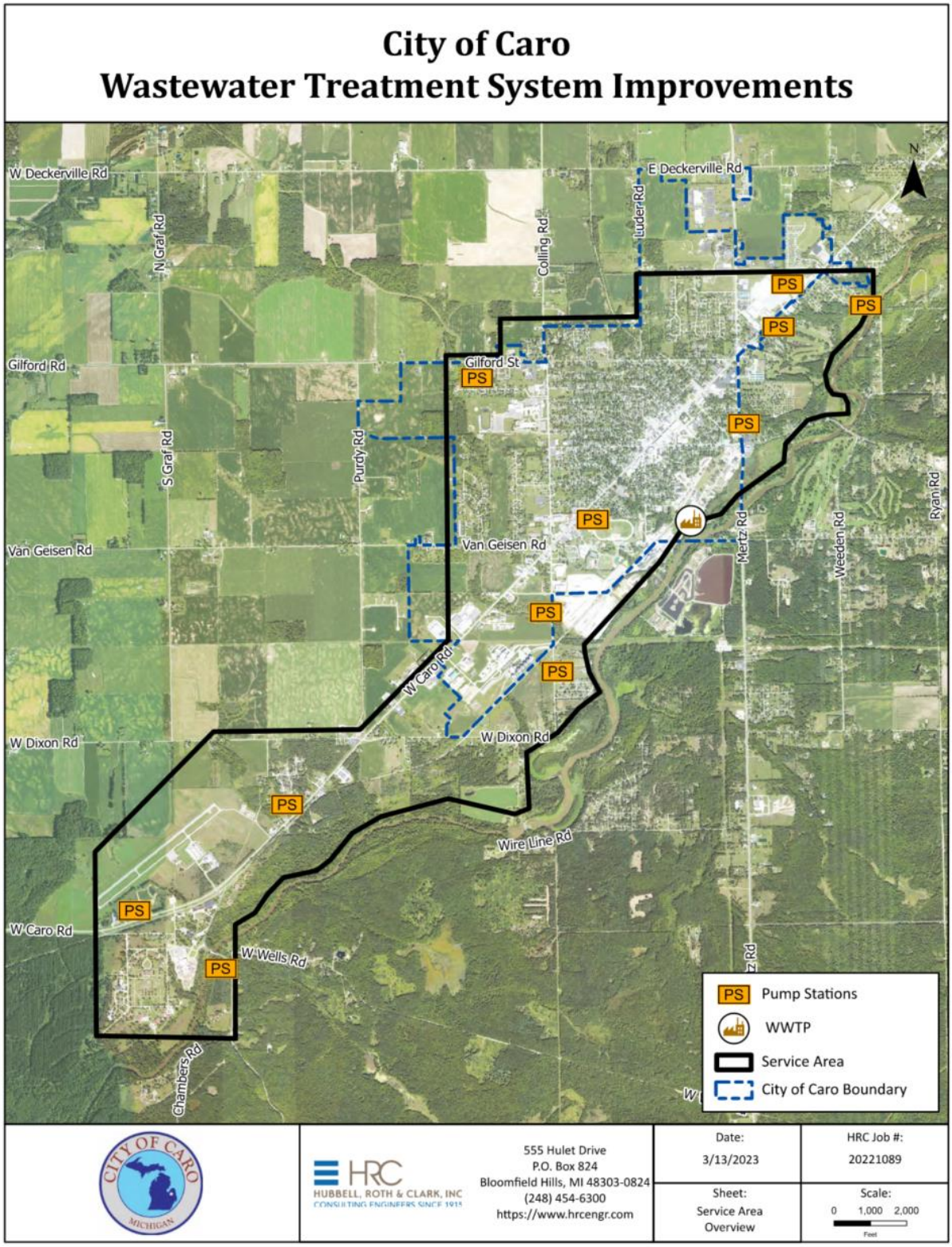


Figure 2-2. City of Caro Study Area National Wetland Map

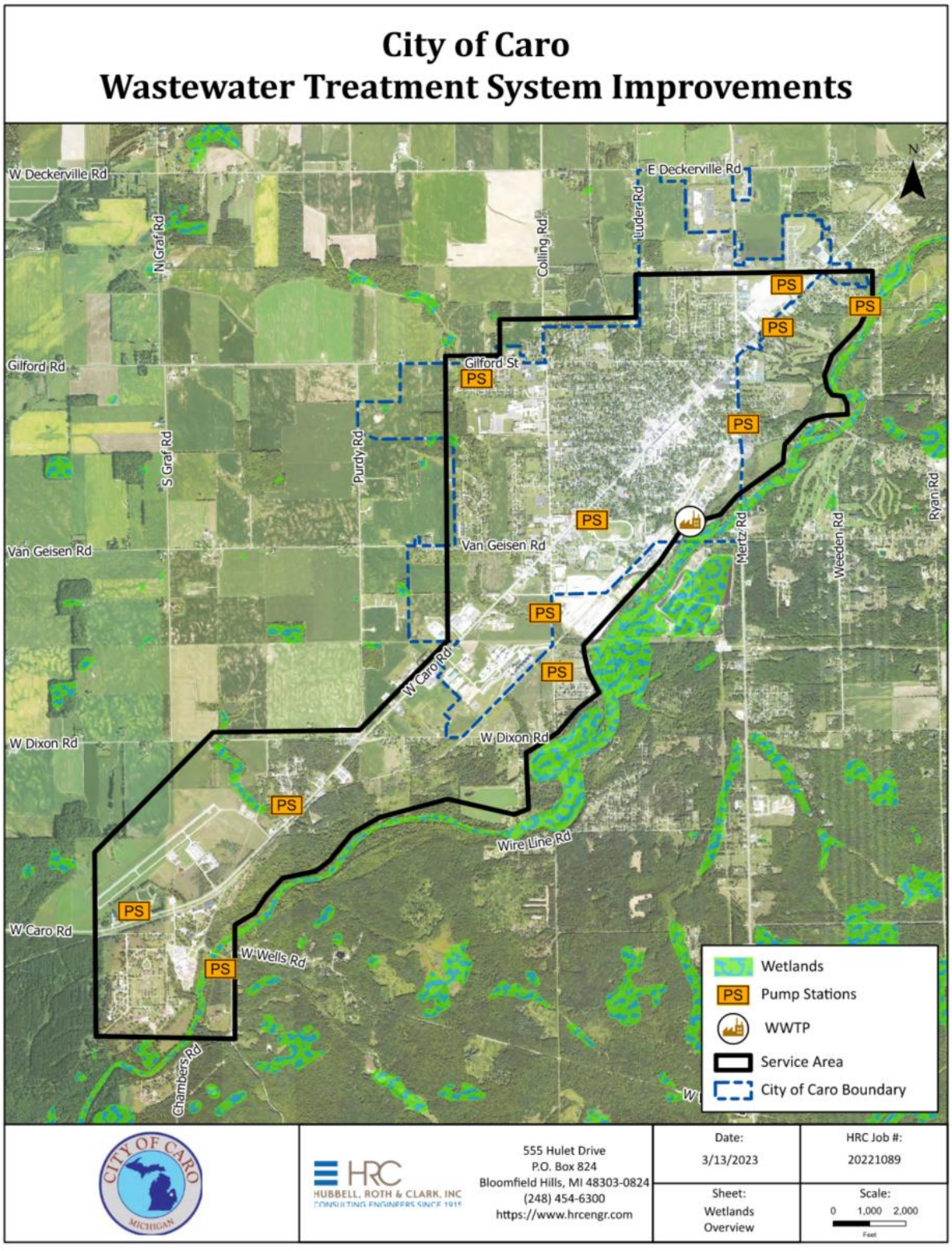
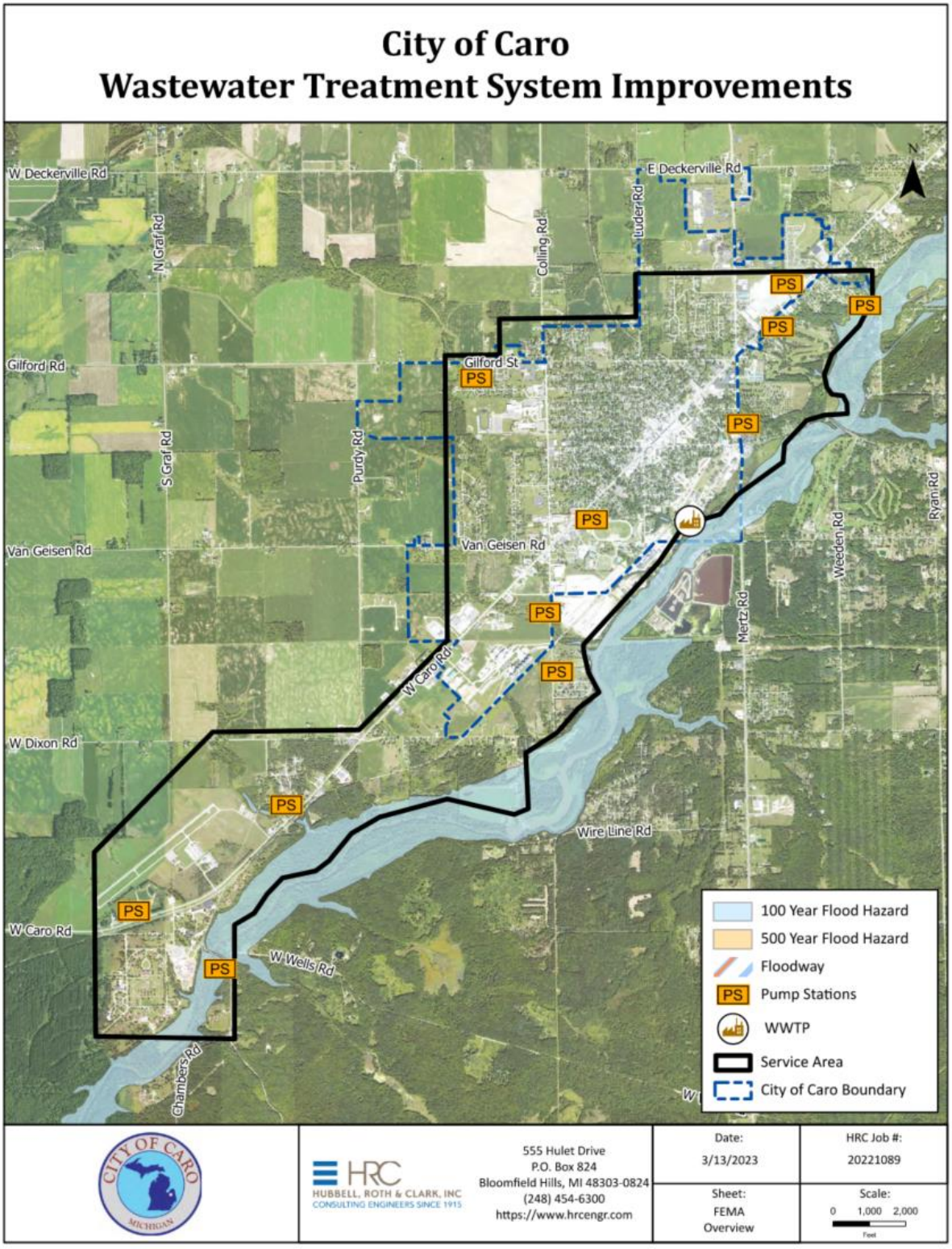
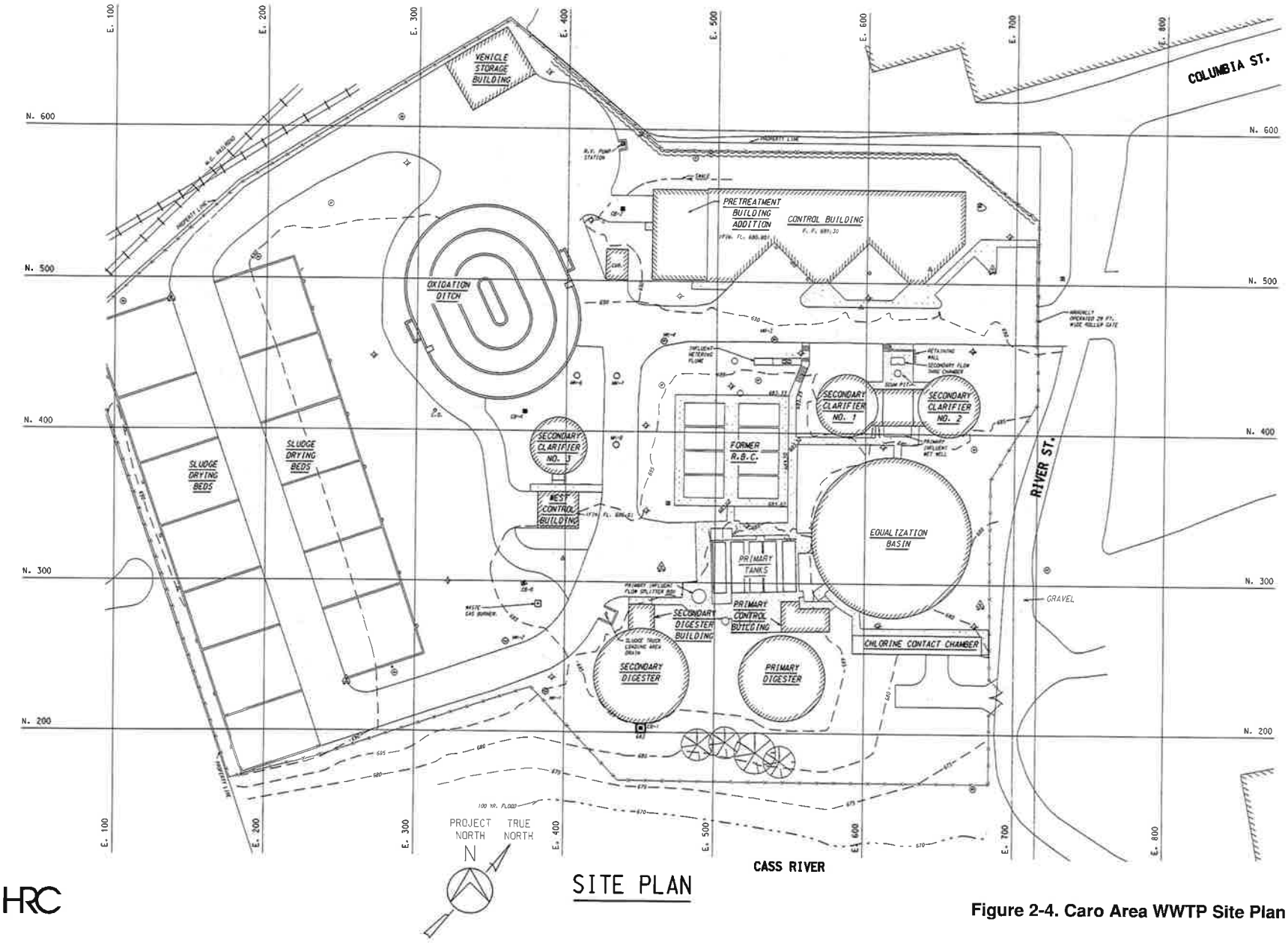


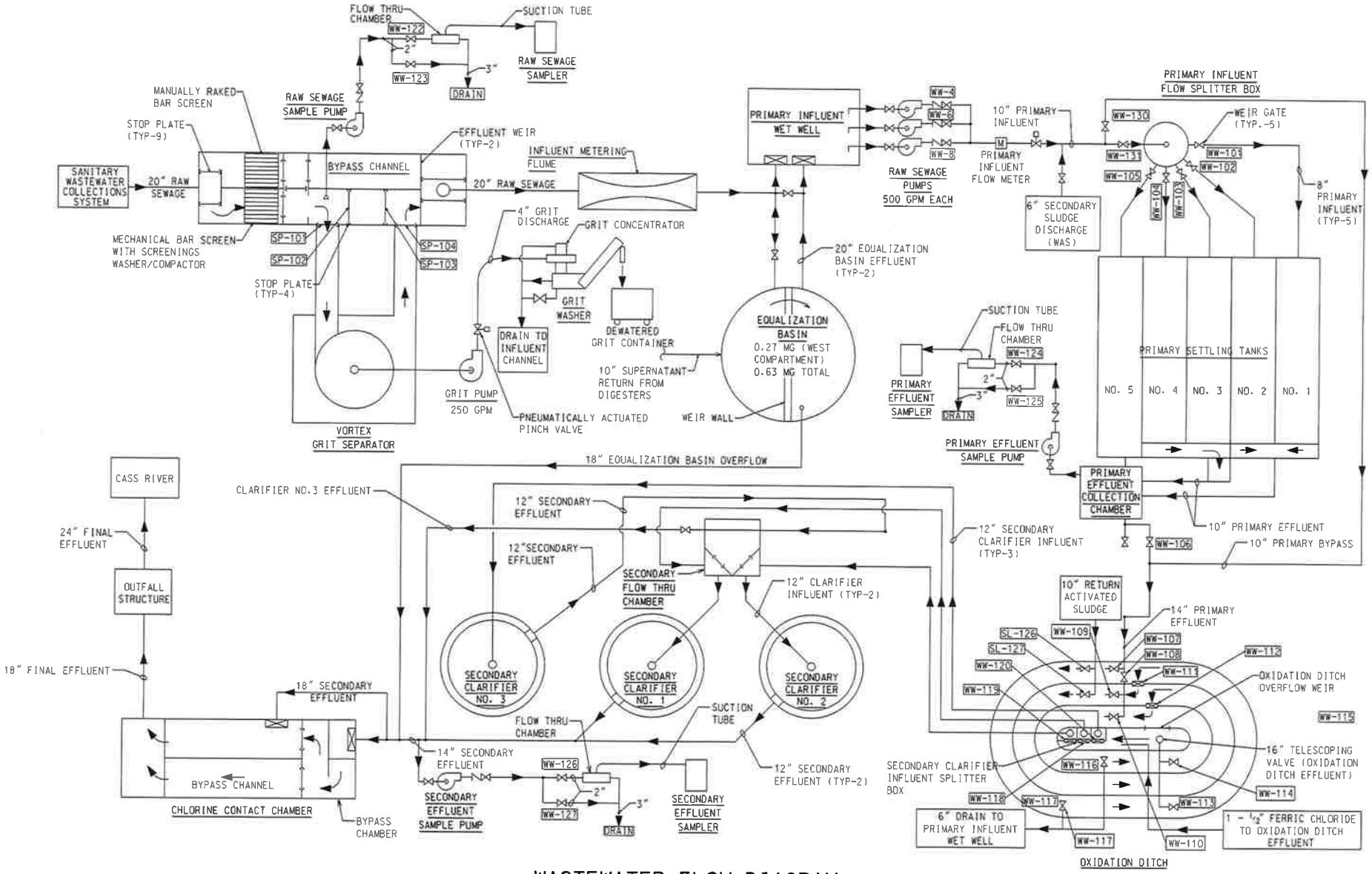
Figure 2-3. City of Caro Study Area Floodplain Map





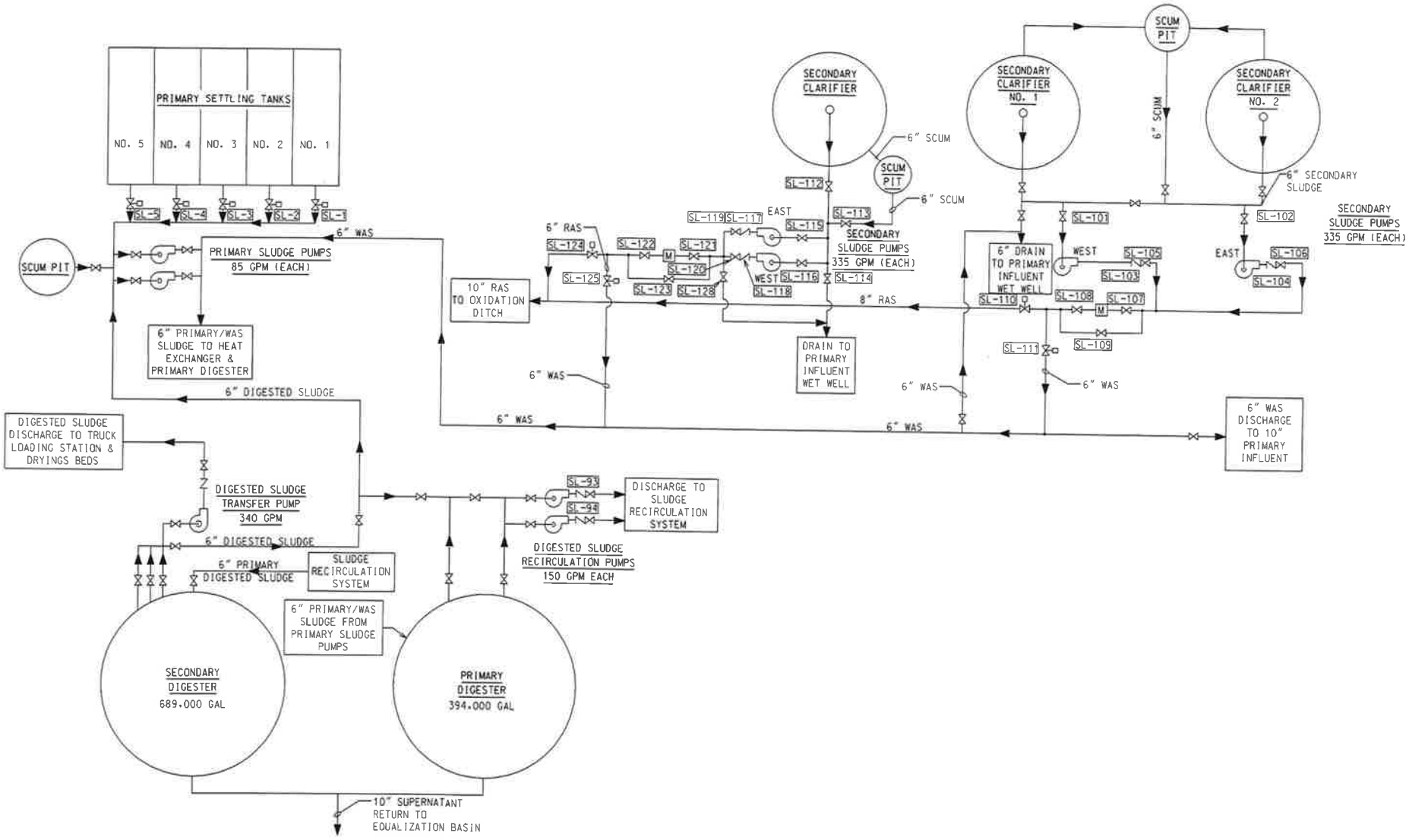
SITE PLAN

Figure 2-4. Caro Area WWTP Site Plan



WASTEWATER FLOW DIAGRAM

Figure 2-5. Caro Area WWTP Wastewater Flow Diagram



SOLIDS HANDLING SYSTEM

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Figure 2-6. Caro Area WWTP Solids Handling System

SECTION 3.0 — ANALYSIS OF ALTERNATIVES

The CWSRF administrative rules require an analysis of alternatives to address the issues identified in the "Need for Project." The alternatives must consider the objectives of the project, technical constraints, and discharge permit requirements.

3.1 WASTEWATER TREATMENT SYSTEM IMPROVEMENTS PROJECT

It is proposed that a single project will address the various needs at the Caro Area WWTP and collection system. The CWSRF guidance requires evaluation of the various alternatives described below. However, an in-depth analysis, including the monetary and environmental evaluations, is only required for the principal alternatives, which for this project are the Improvement Project Alternatives A and B. All alternatives serve the same customers and provide the same capacity.

3.1.1 No Action

If the City is to take no action and does not make any improvements, then the structures, equipment and facilities will require increasing maintenance, cause operational issues, and will eventually fail, resulting in the inability to meet the system's NPDES discharge permit requirements and the system's required level of service. There could also possibly flooding be and/or basement backups. Therefore, the No Action alternative is not a viable alternative and is not considered further.

3.1.2 Optimum Performance of Existing System

The existing system is currently sized and operated adequately to meet all NPDES discharge requirements and the required level of service. The primary concern is sudden failure of equipment, facilities and structures due to the condition and being beyond the anticipated useful service life.

3.1.3 Regionalization

The Caro Area WWTP system already functions as a regional system and there are no neighboring communities to connect to for additional regionalization. Part of the proposed improvement project alternatives includes extension of the sanitary sewer within the existing Service and Study Areas to a couple of properties that currently utilize on-site septic facilities that are currently having issues.

3.1.4 Improvement Project Alternative A: Rehabilitation and Replacement of Existing Facilities

This Alternative A would rehabilitate the existing equipment, facilities and structures, where feasible, and replace specific mechanical equipment, generally in kind, that is beyond its useful life. The existing gas chlorine disinfection system, however, would be replaced with an ultraviolet disinfection system, and the existing primary clarifiers modified to improve WWTP performance. Details of these rehabilitation efforts are as follows:

- Replacement of the existing primary digester cover, which has failed and requires replacement.
- Conversion of the existing disinfection system, which is beyond its anticipated useful life and needs to be replaced, to Ultraviolet Disinfection (UV) to reduce the City's dependence on chlorine gas, and the potential health and safety implications associated with the existing system.

- Replacement of the existing secondary clarifiers rotating equipment and baffle/weirs, which are beyond the expected useful life. A canopy will also be provided to reduce growth of algae and new Variable Frequency Drives (VFDs) added to the older Clarifier Nos. 1 and 2 to increase energy efficiency and performance.
- Replacement of the existing secondary waste activated sludge pump, which is old and currently has holes in the volute.
- Relocation of the existing septage receiving station needs to better service the public and reduce damage from public access of it.
- Replacement of existing doors and windows, which are old, inefficient and do not operate properly. New, energy-efficient doors and windows are also needed for security purposes.
- Replacement of the existing laboratory cabinets that have deteriorated and require replacement with chemical resistant units. The existing counters have been well maintained and may be reused.
- Replacement of the existing WWTP pavement, which is failing throughout the site and requires replacement for safety and access.
- Re-purposing the former primary tanks for supernatant storage to enhance thickening and improve nutrient removal.
- Construction of a "greenhouse" cover over the existing sludge drying beds to improve solids dewatering.
- Relocation of the fine screens downstream of the existing grit system, and replacement of portion of the grit system has equipment that is worn and requires replacement.
- Replacement and relocation of the existing electrical services and control panels should be moved above-grade to reduce the need for confined-space entry to access the controls and potential for damage from flooding. The existing communication/SCADA system also requires replacement as the existing system is becoming obsolete.
- There is a small area in the City of Caro's commercial district that is not currently served by the sanitary collection system, and the existing on-site septic tanks have caused issues for the owners. These properties are in the Study Area and existing Caro Area Service Area. The City is proposing to extend sanitary sewers to these properties to allow for connection to the Caro Area Sanitary system.
- The City also requests an additional $100,000 to be used for asset management purposes to further clean, inspect and map key portions of the sanitary collection system (sanitary sewers.)

3.1.5 Improvement Project Alternative B: Replacement of Existing Facilities

As required by the EGLE Project Planning Guidelines, an alternative that includes replacement of the facilities identified for improvement was made for comparative purposes. While replacement would provide entirely new equipment and facilities that may have a longer expected useful life than rehabilitation of existing facilities, rehabilitation projects have generally been found to be the most cost-effective option over the course of the planning period and provide the required reliability through the planning period.

This project would generally include the same facilities, structures and equipment identified above, but with the following replacements made in lieu of rehabilitation:

- Replacement of the existing primary digester structure, in lieu of just the cover.
- Replacement of the existing secondary clarifiers with entirely new clarifiers, in lieu of replacing just the mechanical equipment. This includes new solids pumps and VFDs.
- Replacement of existing septage receiving station with new, upgraded septage receiving station.
- Replacement of the fine screens and grit system.

- Replacement of existing lift stations with new packaged submersible pumps in the existing wet wells and integrated controls and electrical equipment in lieu of just replacing the electrical panels and controls.

The following elements are the same under both alternatives:

- Replacement of existing doors and windows, which are old, inefficient and do not operate properly. New, energy-efficient doors and windows are also needed for security purposes.
- Replacement of the existing laboratory cabinets that have deteriorated and require replacement with chemical resistant units. The existing counters have been well maintained and may be reused.
- Replacement of the existing WWTP pavement, which is failing throughout the site and requires replacement for safety and access.
- Re-purposing the former primary tanks for supernatant storage to enhance thickening and improve nutrient removal.
- Construction of a "greenhouse" cover over the existing sludge drying beds to improve solids dewatering.
- Extension of new sanitary sewers to existing properties within the current WWTP service area to allow for connection to the Caro Area Sanitary system.
- The $100,000 to be used for asset management purposes to further clean, inspect and map key portions of the sanitary collection system (sanitary sewers.)

3.2 ALTERNATIVES ANALYSIS

The principal alternatives that will be considered for this analysis are:

- Improvement Project Alternative A- Rehabilitation of WWTP Components and Lift Stations
- Improvement Project Alternative B- Replacement of WWTP Components and Lift Stations

3.3 MONETARY EVALUATION

A preliminary cost estimate has been developed and a present worth analysis for both Alternatives A and B discussed above has been completed.

Escalation costs and land acquisition were not included in this monetary evaluation. Much of the work will be completed. within the ROW or existing easements. Any new easements that are necessary will be temporary and will vary based on the selected alternative.

The present worth of the construction cost within the project period of 20 years is determined by using the formula provided below:

$$\text{Present Worth} = \frac{F}{(1+i)^n}$$

where, F – future value/estimated project cost
n – number of years
i – EPA discount rate

The OM&R costs throughout the project period of 20 years are determined by using the formula provided below:

$$\textit{Present Worth} = A * [\,(1+i)^n - \frac{1}{i(1+i)^n}\,]$$

where, A – annual expenditure
n – number of years
i – EPA discount rate

As indicated by the CWSRF guidance document, the salvage value has been calculated based on in-place construction cost with straight-line depreciation over the estimated design useful life. For newly constructed equipment, facilities and structures, typically assumed useful life estimates were made in accordance with CWSRF guidance and are detailed in the present worth analysis. The CWSRF guidance document does not provide information on useful life estimates on rehabilitation methods. Therefore, the estimated design life for the anticipated rehabilitation repairs is predicted based on engineering judgement, past rehabilitation experience, manufacturer test data, and manufacturer's recommended service life. The salvage value for rehabilitation repairs has been calculated based on installation and material cost with straight-line depreciation over the anticipated design life of the various projects and components.

Appendix B details the present worth analysis taking into consideration O&M costs and salvage value, considering the current Environmental Protection Agency (EPA) discount rate. The operation, maintenance and replacement costs are the same for both alternatives, so are listed as $0 to represent that they are generally the same as what the system already has in their budgets.

Table 3-1 provides a summary of the monetary evaluation for the two principal alternatives.

Table 3-1. Monetary Evaluation Summary

SUMMARY OF MONETARY EVAULATION

	Alternative A: Rehabilitation and Replacement of Existing Facilities	Improvement Project Alternative B: Replacement of Existing Facilities
Capital Costs	**$14,000,000**	**$25,400,000**
Annual OM&R Costs	**$0**	**$0**
20 Year Salvage Value	**$1,768,000**	**$3,309,000**
Net Present Worth	**$12,232,000**	**$22,091,000**
Anuual Equivalent Present Worth	**$748,000**	**$1,351,000**

Notes:
Net Present Worth is the sum of capital costs, OM&R costs, and interest during construction, less 20 year salvage value.
Present Worth Costs are based on Straight Line Depreciation and no inflation.
EPA Planning Discount rate = 2.0%
ENR CCI = 13175

3.4 ENVIRONMENTAL EVALUATION

The expected environmental impacts of the proposed alternatives, mainly the impact of the temporary construction, will be similar in nature except the replacement Alternative B would involve more open cut excavation. Proper traffic control, soil erosion and sedimentation control, adherence to all applicable permits and construction regulations will mitigate impacts to the general public. The costs for increased mitigation measures are minimal in comparison to the major work items involved in each alternative. However, Alternative A clearly is more cost-effective and utilizes less resources as equipment and structures that have been found to be in good condition and remain usable through the planning period will be re-used in lieu of constructing new facilities.

The water quality will likely be improved through the implementation of newer equipment that allows for better reliability and performance, and more energy efficiency is anticipated through the use of new variable speed drives and newer, more efficient electrical equipment and drives. There will be an increase in energy used for the proposed UV Disinfection system, but the impacts of this will be offset by the reduction in potential environmental and public safety impacts from the existing use of chlorine gas.

3.4.1 Conclusion

Based on the above discussion and cost estimates, Improvement Project Alternative A: Rehabilitation and Replacement of Existing Facilities, is recommended as the selected alternative.

SECTION 4.0 — SELECTED ALTERNATIVE

4.1 PROPOSED FACILITIES AND DESIGN PARAMETERS

The proposed project consists of all improvements described in the previous discussion as Improvement Project Alternative A: Rehabilitation and Replacement of Existing Facilities. The basis of design for these facilities is to sustain the existing design parameters as there is no anticipated increase in the WWTP's existing service area or population. The only major change to the treatment process is the replacement of the existing chlorine disinfection system with a new UV Disinfection system.

4.2 USEFUL LIFE

The CWSRF program requires that the weighted useful life of the assets financed by the CWSRF loan not exceed the length of the proposed loan term (20 or 30 years.) Appendix B provides details related to the present worth analysis and the anticipated weighted useful life of the improvements, which has been calculated to be 30 years, which meets the requirements for either a 20 or 30 year loan term..

$$\textit{Weighted useful life} = \frac{(\text{sum of each asset's dollar value times its estimated useful life})}{\text{Total estimated dollars spent on assets}}$$

4.3 WATER AND ENERGY EFFICIENCY

The CWSRF requires, to the maximum extent practicable, to select an alternative that maximizes the potential for efficient water use, reuse recapture, and conservation, and energy conservation. As previously stated, more energy efficiency is anticipated through the use of new variable speed drives and newer, more efficient electrical equipment and drives. There will be an increase in energy used for the proposed UV Disinfection system, but the impacts of this will be offset by the reduction in potential environmental and public safety impacts from the existing use of chlorine gas.

4.4 SCHEDULE FOR DESIGN AND CONSTRUCTION

Table 4-1 provides a proposed fourth-quarter loan closing schedule for the project to be completed in fiscal year 2024.

Table 4-1. Proposed Design and Construction Schedule

Engineering Service	FY2024 Q3 Timeframe	
City of Caro WWTP Improvements	Design	April 2023 – May 2024
	Construction Start	August 2024
	Construction End	Spring 2025

4.5 COST SUMMARY

The estimated total project cost of the proposed projects is summarized in the table below, and detailed cost estimates for the selected alternatives are presented in Appendix B.

4.5.1 User Costs and Cost Sharing

The costs as described above will be paid for by charges made to users of the system through sewer billing. Detailed user cost calculations are shown in Appendix B. The total estimated project cost has been translated into an estimated total monthly "user cost" over the useful life of the project. The number of "residential user equivalents" represents the cost spread over the total number of customers, where larger commercial and industrial account usages are counted using a multiplier of the typical residential usage. In this way, the average cost to the typical, residential user can be expressed.

Note that the City is likely to be considered "overburdened" using EGLE's criteria, which allows the City to utilize either a 20-year or 30-year loan period. Having a longer loan term period reduces the monthly cost impact to users. In addition, it is anticipated that the City will qualify for some principal forgiveness and/or grant funding that will likely reduce cost impacts to users further. Finally, the City will have additional opportunities to reduce the proposed scope of work and associated project costs, if needed or desired, once the level of possible funding has been established.

Table 4-2. Estimated User Cost Summary

	Total Capital Cost Alt: A	**Total Residential Equivalents:**
	$14,000,000	2,500
ESTIMATED MONTHLY USER COST:	**20 Year Loan**	**30 Year Loan**
(With no principal forgiveness/grant)	$23.33	$15.56

The total estimated project cost of the proposed Improvement Project Alternative A: Rehabilitation and Replacement of Existing Facilities includes the proposed improvements to the WWTP and collection system along with a request for $100,000 to be used for asset management purposes to further clean, inspect and map key portions of the sanitary collection system (sanitary sewers.)

4.6 IMPLEMENTABILITY

The implementation of the selected Project Alternative A: Rehabilitation and Replacement of Existing Facilities, is predicated on receipt of CWSRF funding for all proposed items of work. Should funds not be made available to pursue the improvements, the City would likely have to find an alternative source of funding. The City may also elect to delay projects until a CWSRF loan is obtained at a later date or divide the project into smaller parts and implement them over a significantly longer duration.

The City has the legal authority, managerial capability and financial means to build, operate and maintain the system. The City utilized CWSRF funding in 2008 for an upgrade project to other areas of the WWTP and it was a successful project. The Caro

SECTION 5.0 — ENVIRONMENTAL AND PUBLIC HEALTH IMPACTS

5.1 DIRECT IMPACTS

The anticipated environmental impacts resulting from the construction of the selected plan include beneficial and adverse, short term and long term, and irreversible impacts. The following is a discussion of the environmental impacts of the selected plan.

5.1.1 Construction Impacts

Construction activities associated with the proposed improvements will take place at the locations of existing facilities. Construction and equipment manufacturing related jobs would be generated, and local contractors would have an equal opportunity to bid on the construction contracts.

The environmental impacts for each alternative are expected to be minimal to none. All elements of improvement efforts in this project aim to have the least impact possible on the community and environment. No long-lasting negative impacts are expected for any alternative. Implementation of the Project Plan would create temporary disruption to nearby residents/businesses and customers due to required construction. This includes noise and dust generated by the work and possible erosion of spoils from open excavation. However, there will be no major disruptions to the service connections. The assessment of alternate solutions and sites for the proposed project included identification of any important resources of either historic or environmental value which are protected by law and should be avoided and none were found.

The proposed project locations are all at existing facilities on City property or within the right-of-way so no mature trees are anticipated to be impacted as a result of the construction activities. No registered contamination sites were found within the project area using the EGLE site contamination online mapper tool (Environmental Mapper (state.mi.us).

The short-term adverse impacts associated with construction activities would be minimal, and mitigatable, in comparison to the resulting long-term beneficial impacts. All restoration required post-rehab/replacement should return the impacted area to existing conditions. Short-term impacts for customers and resident include traffic disruption, dust, and noise. No long-term negative impacts are anticipated.

In addition, the existing wastewater system requires rehabilitation in the immediate future, as described previously. Without the construction of the proposed project, the structural integrity of the system may be degraded as the system may not be able to treat and/or convey the wastewater in accordance with its NDPES permit and required level of service.

The investment in non-recoverable resources committed to the Project Plan would be traded off for the improved performance of the facilities during the life of the system. The commitment of resources includes public capital, energy, labor, and unsalvageable materials. These non-recoverable resources would be foregone for the provision of the proposed improvements. Construction accidents associated with this project may cause irreversible bodily injuries or death. Accidents may also cause damage to or destruction of equipment and other resources.

5.1.2 Operational Impacts

The ongoing function and operation of the City's facilities will not be impacted by the proposed projects. All construction projects will be sequenced such that the facilities will continue to function and meet permit requirements.

5.1.3 Social Impacts

The surrounding area will not be impacted other than temporary, short-term impacts associated with construction. After the proposed projects are implemented, the risk of failure of the assets will have been reduced and additional water quality improvements achieved.

5.2 INDIRECT IMPACTS

Indirect impacts are those caused or facilitated by the proposed project, but which are removed in time and/or distance. The following indirect impacts were considered:

- There are no anticipated changes in rate, density, or type of residential, commercial, or industrial development and the associated transportation changes
- There are no changes in land use as all of the work is proposed to take place on previously-disturbed sites that are part of the existing wastewater collection and treatment system
- There are no anticipated changes in air or water quality due to facilitated development, other than temporary traffic impacts due to construction, which will be offset by improved water quality and the elimination of chlorine gas disinfection
- Ther are no changes to the natural setting or sensitive features resulting from secondary growth (or to the associated to the cultural, human, and social and economic resources) as the existing wastewater service area is not changing.
- There are little to no impacts of area aesthetics as most of the work is proposed to take place at the existing WWTP. There may be new, above-grade electrical panels constructed at some of the existing pump station sites, but these already are part of the existing wastewater collection system and used for this purpose.
- There may be additional use of electricity due to the installation of the UV Disinfection system, but this will be offset by the potential negative impacts of ongoing use of chlorine gas as a disinfectant.

5.3 CUMULATIVE IMPACTS

Cumulative impacts are those caused or facilitated by the proposed project and increase in magnitude over time or that result from individually minor impacts that accumulate into significant actions over time. The following cumulative impacts were considered:

- There is not anticipated to be increased siltation or other impacts caused by successive discharges to the same waterbody over time.
- There are no changed water quality impacts from direct discharges and nonpoint sources anticipated over time.
- There are no indirect impacts from induced development over time as the wastewater service area is not changing.
- The impacts of construction on business and residential access and traffic are anticipated to be minimal, as most work is taking place at the existing WWTP and the work at the remote lift stations is anticipated to be short-term.
- Fiscal impacts to the public are offset by the increased reliability of the system and avoiding costs associated with sudden, catastrophic failures of key assets and facilities.

SECTION 6.0 — MITIGATION

6.1 MITIGATION OF SHORT-TERM IMPACTS

Minimal environmental disruption will occur during construction. Guidelines will be established for cover vegetation removal, dust control, traffic control and accident prevention. Once construction is completed those short-term effects will stop and the impacted areas will be returned to the original conditions. The soil erosion impact would be mitigated through the contractor's required compliance with a program for control of soil erosion and sedimentation as specified in Part 91 of Michigan Act 451, P.A. of 1994. The use of soil erosion and sedimentation controls (i.e., straw bales, sedimentation basins, catch basin inserts, silt fencing, etc.) will be properly implemented when necessary.

Careful considerations will be taken during the construction planning process to ensure that the system remains in service while the improvements are underway. Construction equipment will be maintained in good condition to decrease noise. All access roads will be swept as necessary to avoid tracking sediment onto public roads.

6.1 MITIGATION OF LONG-TERM IMPACTS

There are no long-term impacts anticipated as the project is to rehabilitate and/or replace equipment, structures and facilities at the existing sites with similar equipment. There are no alternate siting decisions as the existing sites will continue to be used for their existing purposes. The wastewater system will continue to meet its existing NPDES permit and the potential for odors, hazardous chemicals, etc. is reduced by the improvements proposed herein.

6.1 MITIGATION OF INDIRECT IMPACTS

There is no additional growth anticipated in the Study Area as the existing service area is not being increased. The population of the Study Area is expected to remain generally constant over the 20-year planning period. No historic, aesthetic, or agricultural lands will be impacted as all work is proposed to take place at the existing wastewater facility sites.

6.1.1 Staging and Construction

The City has identified improvements that are required in the short-term to maintain reliable service of the wastewater system. The improvements will take place at existing facilities and are part of the City's long-term capital improvement plan. There is no proposed staging of construction. No discrete component of this project must be completed prior to completion of the entire project plan to remedy a severe public health, water quality or other environmental problem. Therefore, partitioning of the project is also not necessary.

SECTION 7.0 — PUBLIC PARTICIPATION

7.1 PUBLIC MEETING

A Public Meeting will be held on April 3rd, 2023.

- Caro City Hall: 317 S State St. Caro MI 48723

7.2 PUBLIC MEETING ADVERTISEMENT, SUMMARY, AND ADOPTION OF PROJECT PLAN

Appendix D includes the following:

- Notice of Public Meeting. The public was made aware of the meeting and invited to participate and offer comments and questions.
- Summary of Public Meeting.
  (A summary of the public meeting, including any comments or questions from the public, will be provided in the final version of the Project Plan.)

Appendix E includes the following:

- Resolution and Project Plan Submittal Form
  *(*A resolution adopting the Project Plan, if approved by the Drain Board, will be provided in the final version of the Project Plan.*)*

SECTION 8.0 — FISCAL SUSTAINABILITY PLAN

A Fiscal Sustainability Plan (FSP) is available for the facilities that will be replaced or rehabilitated under this project. The signed FSP form can be found in Appendix C.

The existing asset registry for the system will be updated and modified to reflect add any new assets constructed. Data for any existing facilities and assets impacted by the project will be updated with any new data and rehabilitation dates. At the conclusion of the project, the inventory will be fully updated to accurately reflect the improvements, including condition and performance data. This will provide a benchmark to judge future performance by. Lastly, useful life estimates will be updated for rehabilitated assets and solicited from manufacturers of newly installed assets. These estimates will be used to plan for future operation, maintenance and replacement costs to maintain the required level of service for the system.

Ongoing water and energy conservation efforts are also part of the City's overall priorities and any opportunities for increasing conservation were reviewed as part of the alternatives. The installation of new electrical equipment and variable frequency drives will improve electric usage. The proposed UV Disinfection system will increase energy usage, but this environmental impact will be offset by the elimination of the transport, storage and use of chlorine gas for disinfection. The proposed asset management work is intended to help identify additional potential sources of inflow and infiltration that, if eliminated, would reduce the need to transport and treat the clear water.

Appendix A — CWSRF Agency Correspondence

Saginaw Chippewa Indian Tribe of Michigan
Tribal Historic Preservation Office

6650 EAST BROADWAY, MT. PLEASANT, MI 48858
PHONE (989) 775-4751 • FAX (989) 775-4767

March 9, 2023

Marisa Lavins
Hubbell, Roth & Clark, Inc.
555 Hulet Drive
Bloomfield Hills, MI 48302-0360

RE: Notice of Opportunity to Comment
Water System Improvement Plan
City of Caro Wastewater Treatment Plant Improvements
FY24 CWSRF Project Plan

Dear Ms. Lavins:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, I have reviewed the above-cited undertakings at the locations noted above. Based on the information provided for our review, it is the opinion of the Saginaw Chippewa Indian Tribe of Michigan's Tribal Historic Preservation Office (SCIT THPO) that there are no recorded resources within the area of potential effect. It is also the opinion of the SCIT THPO that the projects will have no effect on cultural resources.

This letter evidences that Hubbell, Roth & Clark is in compliance with 36 CFR § 800.4 "Identification of historic properties," and the fulfillment of Hubbell, Roth & Clark's responsibility to notify the SCIT THPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4 (d) (1) "No historic properties affected."

If the scope of the work changes in any way please notify this office immediately.

If you have any questions, please contact Marcella Hadden, Tribal Historic Preservation Officer, at 989-775-4751 or by email at mlhadden@sagchip.org.

Miigwetch (thank you) for this opportunity to review and comment and for your cooperation.

Sincerely,

Marcella Hadden
Tribal Historic Preservation Officer
Saginaw Chippewa Indian Tribe of Michigan

Lavins, Marisa

From: Douglas Taylor <Douglas.Taylor@nhbp-nsn.gov>
Sent: Friday, March 3, 2023 10:55 AM
To: Lavins, Marisa
Subject: RE: FNSI Notice of Public Comment - Hubbell Roth, and Clark Inc.

Greetings,

Ref: FNSI Notice of Public Comment - Hubbell Roth, and Clark Inc.

Thank you for including the Nottawaseppi Huron Band of the Potawatomi (NHBP) in your consultation process. From the description of your proposed project, it does not appear as if any cultural or religious concerns of the Tribe's will be affected. We therefore have no objection to the project. Of course, if the project scope is significantly changed or inadvertent findings are discovered during the course of the project, please contact us for further consultation.

Very Respectfully
Douglas R. Taylor

Douglas R. Taylor | Tribal Historic Preservation Officer (THPO) & NAGPRA Representative
Pine Creek Indian Reservation
1301 T Drive S, Fulton, MI 49052
o: 269-704-8347 | c: 269-419-9434 | f: 269-729-5920
Douglas.Taylor@nhbp-nsn.gov | www.nhbp-nsn.gov

NOTTAWASEPPI HURON BAND OF THE POTAWATOMI
A FEDERALLY RECOGNIZED TRIBAL GOVERNMENT

From: Lavins, Marisa <MLavins@hrcengr.com>
Sent: Wednesday, March 1, 2023 12:19 PM
To: Douglas Taylor <Douglas.Taylor@nhbp-nsn.gov>; John Rodwan <John.Rodwan@nhbp-nsn.gov>
Subject: FNSI Notice of Public Comment - Hubbell Roth, and Clark Inc.

Dear Douglas and John,

I hope this email finds both of you well! My name is Marisa Lavins, and I am a Graduate Engineer at Hubbell, Roth, and Clark Inc. Please find the attached letter as an opportunity of comment on behalf of the City of Caro for a project being submitted to EGLE for CWSRF funding opportunities. We appreciate your review and would be grateful for a response by April 7th, 2023. If you have any further questions or concerns, please do not hesitate to contact me. Thank you for your time, and I am looking forward to hearing from you.

Best,

Marisa J. Lavins
Graduate Engineer I
Hubbell, Roth, & Clark Inc.

EMAIL: mlavins@hrcengr.com
PHONE: 248-454-6330 (ext 330)

HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

555 Hulet Drive
Bloomfield Hills, MI 48302-0360

248-454-6300

www.hrcengr.com

March 1, 2023

Nottawaseppi Huron Band of the Potawatomi
1485 Mno-Bmadzewen Way
Fulton MI, 49052

Attn: Douglas Taylor, Tribal Historic Preservation Officer
John Rodwan, Tribal Historic Preservation Officer

Re: Notice and Opportunity to Comment
City of Caro Wastewater Treatment Plant Improvements
FY24 CWSRF Project Plan

HRC Job No. 20221089

Dear Doug Taylor and John Rodwan, THPO:

The City of Caro is submitting a Project Plan to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for acceptance into the Clean Water State Revolving Fund (CWSRF) Loan Program. The Project Plan requires a review to determine any potential impacts on historic properties with religious and/or cultural significance within the vicinity of the project.

The City of Caro is located in Tuscola County, and lies within the Cass River watershed, which ultimately discharges to Saginaw Bay in Lake Huron. The Study Area consists of the existing wastewater treatment plant (WWTP) service area, which includes the City of Caro, the Caro Regional Center (State Hospital and Corrections Facility), and portions of the Townships Almer and Indianfields.

On behalf of the City of Caro, we are requesting information regarding the impacts of the above-referenced proposed project upon any historic properties with religious and/or cultural significance in the vicinity of the project. The project construction will involve the following:

- The proposed project involves replacement of and upgrades to existing equipment at the WWTP and pumping sites in the collection system that has served its useful life. The design capacity of the Plant will not be increased.

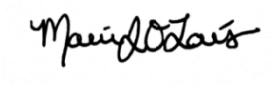
The proposed project site covers mostly rural areas with construction taking place at existing facilities. Excavations will be used throughout the site to help with the rehabilitation of existing facilities. Since the proposed project involves replacement of existing facilities, no impacts are expected from the proposed project upon any historic properties with religious and/or cultural significance.

On behalf of the City of Caro, we are providing you with the opportunity to comment on the above-referenced project to assure that it will not cause an impact to any historical properties with religious and/or cultural significance in which you may be aware. We appreciate your review and would be grateful for a response by April 7th, 2023, so that we may meet program deadlines.

If you have any questions or require any additional information, please contact the undersigned.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.



Marisa J. Lavins
Graduate Engineer I

Attachment

pc: HRC; S. Duffy, File

HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

555 Hulet Drive
Bloomfield Hills, MI 48302-0360

248-454-6300

www.hrcengr.com

March 1, 2023

Saginaw Chippewa Indian Tribe
7500 Soaring Eagle Blvd
Mt. Pleasant, MI 48858

Attn: Marcella Hadden, Tribal Historic Preservation Officer
William Johnson, Tribal Historic Preservation Officer
Sally Kniffen, Environmental Program Specialist

Re: Notice and Opportunity to Comment
City of Caro Wastewater Treatment Plant Improvements
FY24 CWSRF Project Plan

HRC Job No. 20221089

Dear Marcella Hadden and William Johnson, THPO and Sally Kniffen, Environmental Program Specialist:

The City of Caro is submitting a Project Plan to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for acceptance into the Clean Water State Revolving Fund (CWSRF) Loan Program. The Project Plan requires a review to determine any potential impacts on historic properties with religious and/or cultural significance within the vicinity of the project.

The City of Caro is located in Tuscola County, and lies within the Cass River watershed, which ultimately discharges to Saginaw Bay in Lake Huron. The Study Area consists of the existing wastewater treatment plant (WWTP) service area, which includes the City of Caro, the Caro Regional Center (State Hospital and Corrections Facility), and portions of the Townships Almer and Indianfields.

On behalf of the City of Caro, we are requesting information regarding the impacts of the above referenced proposed project upon any historic properties with religious and/or cultural significance in the vicinity of the project. The project construction will involve the following:

- The proposed project involves replacement of and upgrades to existing equipment at the WWTP and pumping sites in the collection system that has served its useful life. The design capacity of the Plant will not be increased.

The proposed project site covers mostly urban areas with construction taking place at existing facilities. Excavations will be used throughout the site to help with the rehabilitation of existing facilities. Since the proposed project involves replacement of existing facilities, no impacts are expected from the proposed project upon any historic properties with religious and/or cultural significance.

On behalf of the City of Caro, we are providing you with the opportunity to comment on the above-referenced project to assure that it will not cause an impact to any historical properties with religious and/or cultural significance in which you may be aware. We appreciate your review and would be grateful for a response by April 7th, 2023, so that we may meet program deadlines.

If you have any questions or require any additional information, please contact the undersigned.

Very truly yours,

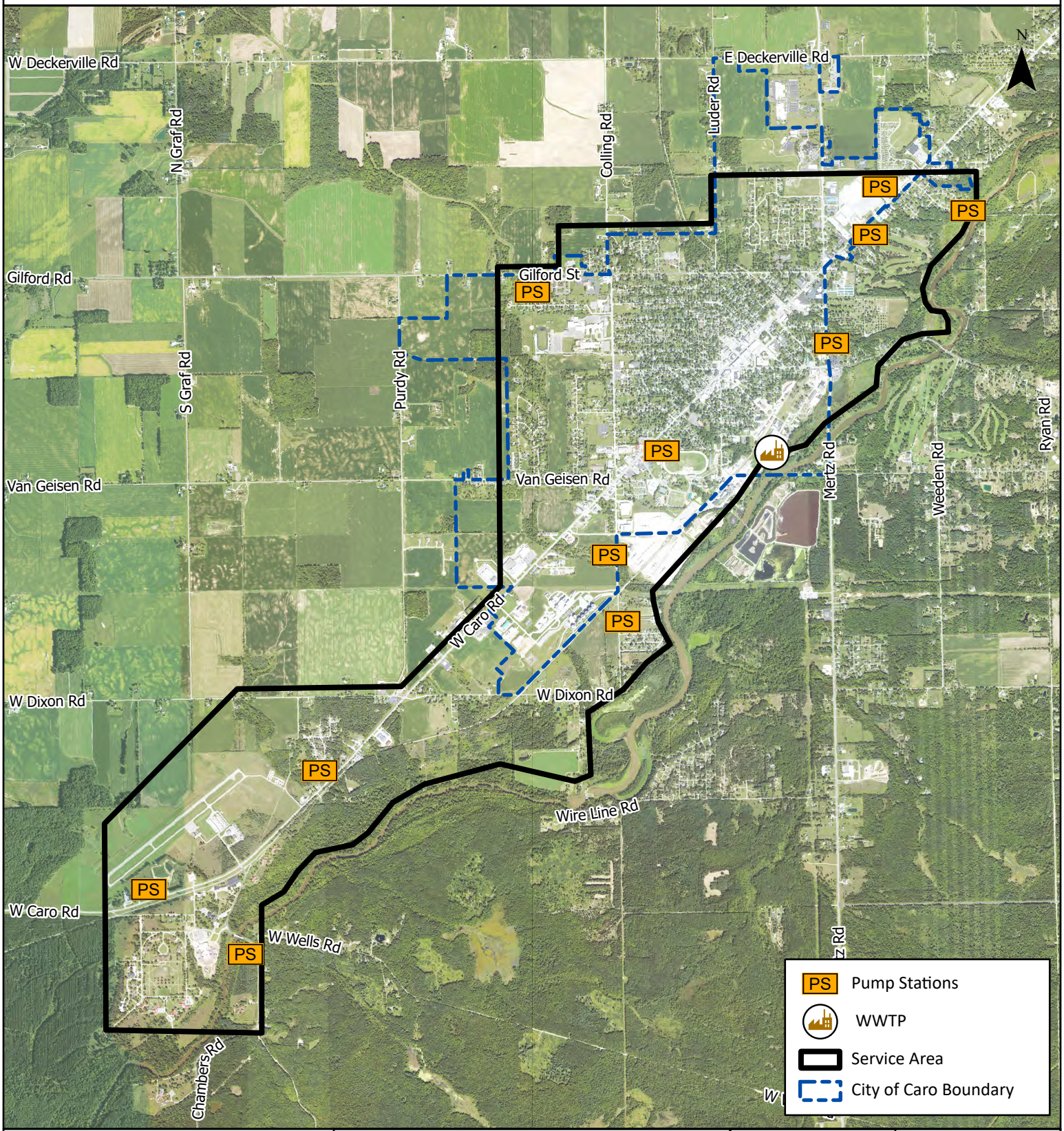
HUBBELL, ROTH & CLARK, INC.

Marisa J. Lavins
Graduate Engineer I

Attachment
Project Plan Map

pc: HRC; S. Duffy, File

City of Caro
Wastewater Treatment System Improvements



CITY OF CARO MICHIGAN

HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

555 Hulet Drive
P.O. Box 824
Bloomfield Hills, MI 48303-0824
(248) 454-6300
https://www.hrcengr.com

Date:	HRC Job #:
3/13/2023	20221089
Sheet: Service Area Overview	Scale: 0 1,000 2,000 Feet

Appendix B — CWSRF Cost and Present Worth Analysis

CITY OF CARO WWTP IMPROVEMENTS CWSRF

SUMMARY OF MONETARY EVAULATION

	Alternative A: Rehabilitation and Replacement of Existing Facilities	Improvement Project Alternative B: Replacement of Existing Facilities
Capital Costs	**$14,000,000**	**$25,400,000**
Annual OM&R Costs	**$0**	**$0**
20 Year Salvage Value	**$1,768,000**	**$3,309,000**
Net Present Worth	**$12,232,000**	**$22,091,000**
Anuual Equivalent Present Worth	**$748,000**	**$1,351,000**

Notes:

Net Present Worth is the sum of capital costs, OM&R costs, and interest during construction, less 20 year salvage value.
Present Worth Costs are based on Straight Line Depreciation and no inflation.
EPA Planning Discount rate = 2.0%
ENR CCI = 13175

	Total Capital Cost Alt: A	**Total Residential Equivalents:**
	$14,000,000	2,500
ESTIMATED MONTHLY USER COST:	**20 Year Loan**	**30 Year Loan**
(With no principal forgiveness/grant)	$23.33	$15.56

ENGINEER'S OPINION OF PROBABLE PROJECT COST

Bloomfield Hills, MI — Telephone: (248) 454-6300

PROJECT:	**Alternative A: Rehabilitation and Replacement of Existing Facilities**	DATE:	**3/15/2023**
LOCATION:	**Caro Area POTW**	PROJECT NO.	**20221089**
BASIS FOR ESTIMATE:	[x] CONCEPTUAL [ ] PRELIMINARY [ ] FINAL	ESTIMATOR:	**SLD**
WORK:	**Improvements to Existing WWTP Equipment**	CHECKED BY:	**TGM**
	New Electrical and Communication for Lift Stations	CURRENT ENR:	**13175**

USEFUL LIFE	DESCRIPTION	QUANT.	UNIT	UNIT AMOUNT	TOTAL AMOUNT
50	Replace Primary Digester Cover	1	EA	$ 750,000	$750,000
20	New UV Disinfection System and Demo of Existing Chlorine Sy	1	EA	$ 1,000,000	$1,000,000
20	Replace Clarifier Nos. 1 and 2 Rotating Equipment	2	EA	$ 300,000	$600,000
20	Canopy over Clarifiers to Prevent Algae	3	EA	$ 70,000	$210,000
20	New VFDs for Clarifier Nos. 1 and 2	2	EA	$ 35,000	$70,000
20	Replacement secondary waste activated sludge pumps	2	EA	$ 75,000	$150,000
20	Relocate existing septage receiving station	1	LS	$ 150,000	$150,000
50	Replace existing doors and windows	1	LS	$ 400,000	$400,000
50	Replace existing laboratory cabinets	1	LS	$ 60,000	$60,000
20	Replace existing pavement	6,000	SYD	$ 100	$600,000
20	Re-purpose former primary tanks for supernatant storage	1	LS	$ 250,000	$250,000
20	Construct “greenhouse” cover over sludge drying beds	1	LS	$ 300,000	$300,000
20	Relocate fine screens and grit system upgrades	1	LS	$ 400,000	$400,000
20	Replace existing electrical at lift stations	11	EA	$ 50,000	$550,000
10	Update communications/SCADA at lift stations	11	EA	$ 15,000	$165,000
50	Extend sanitary sewer to properties currently on septic	2,000	lft	$ 650	$1,300,000
	Unit Cost Subtotal				***$6,955,000***
	Contractor General Conditions, Overhead and Permits	10	*%*		*$696,000*
	Contingencies	40	*%*		*$2,782,000*
	Construction Subtotal				***$10,433,000***
	Asset Management CCTV of Sewers	*1*	*LS*		*$100,000*
	Engineering, Legal, and Administration	25	*%*		*$2,608,000*
	Escalation	8	*%*		*$835,000*
	TOTAL PROJECT COST				***$14,000,000***

Alternative A: Rehabilitation and Replacement of Existing Facilities

PRESENT WORTH ANALYSIS

CAPITAL COST		FIRST COST[1]	SERVICE LIFE (YEARS)		PRESENT WORTH[2]
Civil / Site Work	$	2,616,000	50	$	1,560,000
Paving		1,208,000	20		1,208,000
Structural / Buildings		2,436,000	50		1,452,000
Process / Mechanical		6,301,000	20		6,301,000
Electrical		1,107,000	20		1,107,000
I&C		332,000	10		604,000
TOTAL CAPITAL COST	**$**	**14,000,000**	31	$	12,232,000
PW OF SALVAGE VALUE ***(FIRST COST - PRESENT WORTH)***	$	1,768,000			
ANNUAL OPERATION AND MAINTENANCE COST					
TOTAL ANNUAL O&M COST[3]			$ 0		
PRESENT WORTH OF O&M COST				$	0
NET PRESENT WORTH				**$**	**12,232,000**
AVERAGE ANNUAL EQUIVALENT COST OF PRESENT WORTH				**$**	**748,000**

Notes:

(1) January 2023 ENR 20 Cities CCI = 13175

(2) Cost is based on a study period of 20 years and a discount rate of 2.0%
Present Worth Costs are based on Straight Line Depreciation and no inflation.
https://www.whitehouse.gov/omb/information-for-agencies/circulars/

(3) The anticipated O&M is similar for both alternatives and to the existing budgeted OM&R costs, and therefore is not included in this analysis.

ENGINEER'S OPINION OF PROBABLE PROJECT COST

Bloomfield Hills, MI — Telephone: (248) 454-6300

PROJECT: **Improvement Project Alternative B: Replacement of Existing Facilities** — DATE: **3/15/2023**

LOCATION: **Caro Area POTW** — PROJECT NO. **20221089**

BASIS FOR ESTIMATE: [x] CONCEPTUAL [ ] PRELIMINARY [ ] FINAL — ESTIMATOR: **SLD**

WORK: **Replace 2 Clarifiers, Screens, & Grit; New Digester; and UV Disinfeciton** — CHECKED BY: **TGM**

Replace Lift Station Equipment w/New Packaged Equip — CURRENT ENR: **13175**

Items Different than Alternative A

USEFUL LIFE	DESCRIPTION	QUANT.	UNIT	UNIT AMOUNT	TOTAL AMOUNT
50	***Replace Primary Digester Unit Entirely****	***1***	***EA***	***$ 1,750,000***	***$1,750,000***
20	New UV Disinfection System and Demo of Existing Chlorine Sy	1	EA	$ 1,000,000	$1,000,000
20	***Replace Clarifier Nos. 1 & 2, incl. drives, VFDs, pumps****	***2***	***EA***	***$ 1,250,000***	***$2,500,000***
20	Canopy over Clarifiers to Prevent Algae	3	EA	$ 70,000	$210,000
50	***New septage receiving station****	***1***	***LS***	***$ 600,000***	***$600,000***
50	Replace existing doors and windows	1	LS	$ 400,000	$400,000
50	Replace existing laboratory cabinets	1	LS	$ 50,000	$50,000
20	Replace existing pavement	6,000	SYD	$ 100	$600,000
20	Re-purpose former primary tanks for supernatant storage	1	LS	$ 250,000	$250,000
20	Construct “greenhouse” cover over sludge drying beds	1	LS	$ 300,000	$300,000
20	***Replace fine screens and grit system****	***1***	***LS***	***$ 1,000,000***	***$1,000,000***
20	***New package lift station equp w/elect./SCADA****	***11***	***EA***	***$ 250,000***	***$2,750,000***
50	Extend sanitary sewer to properties currently on septic	2,000	lft	$ 650	$1,300,000
	Unit Cost Subtotal				***$12,710,000***
	Contractor General Conditions, Overhead and Permits	10	*%*		*$1,271,000*
	Contingencies	40	*%*		*$5,084,000*
	Construction Subtotal				***$19,065,000***
	Engineering, Legal, and Administration	25	*%*		*$4,766,250*
	Escalation	8	*%*		*$1,525,000*
	TOTAL PROJECT COST				***$25,400,000***

Improvement Project Alternative B: Replacement of Existing Facilities

PRESENT WORTH ANALYSIS

CAPITAL COST		FIRST COST[1]	SERVICE LIFE (YEARS)		PRESENT WORTH[2]
Civil / Site Work	$	2,598,000	50	$	1,549,000
Paving		1,199,000	20		1,199,000
Structural / Buildings		5,596,000	50		3,336,000
Process / Mechanical / Electrical		16,007,000	20		16,007,000
TOTAL CAPITAL COST	**$**	**25,400,000**		$	22,091,000
PW OF SALVAGE VALUE ***(FIRST COST - PRESENT WORTH)***	$	3,309,000			
ANNUAL OPERATION AND MAINTENANCE COST					
TOTAL ANNUAL O&M COST[3]			$ 0		
PRESENT WORTH OF O&M COST				$	0
NET PRESENT WORTH				**$**	**22,091,000**
AVERAGE ANNUAL EQUIVALENT COST OF PRESENT WORTH				**$**	**1,351,000**

Notes:

(1) January 2023 ENR 20 Cities CCI = 13175

(2) Cost is based on a study period of 20 years and a discount rate of 2.0%
Present Worth Costs are based on Straight Line Depreciation and no inflation.
https://www.whitehouse.gov/omb/information-for-agencies/circulars/

(3) The anticipated O&M is similar for both alternatives and to the existing budgeted OM&R costs, and therefore is not included in this analysis.

Appendix C — EGLE Submittable forms

(To be provided in final version)

Appendix D — Project Planning Public Meeting

(Summary of Public Meeting to be provided in final version)

Appendix E — Resolution and Project Plan Submittal Form

(To be provided in final version)

Appendix F — Overburdened and Significantly Overburdened Community Status Determination Worksheet

(To be provided in final version)

Appendix G —NPDES Permit

PERMIT NO. MI0022551

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the federal Clean Water Act (federal Water Pollution Control Act, 33 U.S.C., Section 1251 *et seq*., as amended); Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2019-06,

Tuscola County Board of Public Works
207 East Grant Street
Caro, MI 48723

is authorized to discharge from the **Caro Wastewater Treatment Plant** located at

724 Columbia Avenue
Caro, MI 48723

designated as **Caro WWTP**

to the receiving water named the Cass River in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit is based on a complete application submitted on March 31, 2017, as amended through July 23, 2018.

This permit takes effect on January 1, 2020. 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. On its effective date, this permit shall supersede National Pollutant Discharge Elimination System (NPDES) Permit No. MI0022551 (expiring October 1, 2017).

This permit and the authorization to discharge shall expire at midnight on **October 1, 2022**. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application that contains such information, forms, and fees as are required by the Michigan Department of Environment, Great Lakes, and Energy (Department) by **April 4, 2022**.

Issued: December 23, 2019. Modified (minor) on January 9, 2020.

Original signed by Christine Alexander
Christine Alexander, Manager
Permits Section
Water Resources Division

PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the NREPA, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. Payment may be made electronically via the Department's MiWaters system. The MiWaters website is located at https://miwaters.deq.state.mi.us. Payment shall be submitted or postmarked by January 15 for notices mailed by December 1. Payment shall be submitted or postmarked no later than 45 days after receiving the notice for notices mailed after December 1.

Annual Permit Fee Classification: Municipal Minor, 1 MGD to less than 10 MGD (Individual Permit)

In accordance with Section 324.3132 of the NREPA, the permittee shall make payment of an annual biosolids land application fee to the Department if the permittee land applies biosolids. The permittee shall submit the fee in response to the Department's annual notice. Payment may be made electronically via the Department's MiWaters system. The MiWaters website is located at https://miwaters.deq.state.mi.us. Payment shall be submitted or postmarked no later than January 31 of each year for notices mailed by December 15. Payment shall be submitted or postmarked no later than 45 days after receiving the notice for notices mailed after December 15.

In accordance with Section 324.3118 of the NREPA, the permittee shall make payment of an annual storm water fee to the Department for each January 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. Payment may be made electronically via the Department's MiWaters system. The MiWaters website is located at https://miwaters.deq.state.mi.us. Payment shall be submitted or postmarked by March 15 for notices mailed by February 1. Payment shall be submitted or postmarked no later than 45 days after receiving the notice for notices mailed after February 1.

CONTACT INFORMATION

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Bay City District Office of the Water Resources Division. The Bay City District Office is located at 401 Ketchum Street, Suite B, Bay City, MI 48708-5430, Telephone: 989-894-6200, Fax: 989-891-9237.

CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environment, Great Lakes, and Energy, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

PART I

Section A. Limitations and Monitoring Requirements

1. Final Effluent Limitations, Monitoring Point 001A

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 treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Cass River at Latitude 43.48265, Longitude -83.39106. Such discharge shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration				Monitoring	Sample
Parameter	**Monthly**	**7-Day**	**Daily**	**Units**	**Monthly**	**7-Day**	**Daily**	**Units**	**Frequency**	**Type**
Flow	(report)	---	(report)	MGD	---	---	---	---	Daily	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)										
May – Oct	40	100	(report)	lbs/day	4	---	10	mg/l	5x Weekly	24-Hr Composite
Nov	130	200	(report)	lbs/day	13	---	20	mg/l	5x Weekly	24-Hr Composite
Dec – Apr	200	300	(report)	lbs/day	20	---	30	mg/l	5x Weekly	24-Hr Composite
Total Suspended Solids (TSS)										
May – Oct	200	300	(report)	lbs/day	20	---	30	mg/l	5x Weekly	24-Hr Composite
Nov – Apr	300	450	(report)	lbs/day	30	45	(report)	mg/l	5x Weekly	24-Hr Composite
Ammonia Nitrogen (as N)										
May – Oct	5.0	20	(report)	lbs/day	0.5	---	2.0	mg/l	5x Weekly	24-Hr Composite
Nov	160	---	(report)	lbs/day	16	---	(report)	mg/l	5x Weekly	24-Hr Composite
Dec – Apr	(report)	---	(report)	lbs/day	(report)	---	(report)	mg/l	5x Weekly	24-Hr Composite
Total Phosphorus (as P)	10	---	(report)	lbs/day	1.0	---	(report)	mg/l	3x Weekly	24-Hr Composite
Fecal Coliform Bacteria	---	---	---	---	200	400	(report)	cts/100 ml	5x Weekly	Grab
Total Residual Chlorine	---	---	---	---	---	---	38	ug/l	5x Weekly	Grab
Acute Toxicity	---	---	---	---	---	---	(report)	TU_A	Quarterly	Grab
							Individual Chronic Value			
Chronic Toxicity	---	---	---	---	3.0	---	(report)	TU_c	Quarterly	Grab
Total Mercury										
Corrected	(report)	---	(report)	lbs/day	(report)	---	(report)	ng/l	Quarterly	Calculation
Uncorrected	---	---	---	---	---	---	(report)	ng/l	Quarterly	Grab
Field Duplicate	---	---	---	---	---	---	(report)	ng/l	Quarterly	Grab
Field Blank	---	---	---	---	---	---	(report)	ng/l	Quarterly	Preparation
Laboratory Method Blank	---	---	---	---	---	---	(report)	ng/l	Quarterly	Preparation
	12-Month Rolling Avg				**12-Month Rolling Avg**					
Total Mercury	0.00003	---	---	lbs/day	3.0	---	---	ng/l	Quarterly	Calculation

PART I

Section A. Limitations and Monitoring Requirements

	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration				Monitoring	Sample
Parameter	**Monthly**	**7-Day**	**Daily**	**Units**	**Monthly**	**7-Day**	**Daily**	**Units**	**Frequency**	**Type**
					Minimum % Monthly		**Minimum % Daily**			
TSS Minimum % Removal										
Nov – Apr	---	---	---	---	85	---	(report)	%	Monthly	Calculation
					Minimum Daily		**Maximum Daily**			
pH	---		---	---	6.5		9.0	S.U.	5x Weekly	Grab
Dissolved Oxygen										
May – Oct	---	---	---	---	4.0	---	---	mg/l	5x Weekly	Grab
Nov – Apr	---	---	---	---	3.0	---	---	mg/l	5x Weekly	Grab

The following design flow was used in determining the above limitations, but is not to be considered a limitation or actual capacity: 1.2 MGD.

a. Narrative Standard
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.

b. Sampling Locations
Samples for $CBOD_5$, TSS, Ammonia Nitrogen, and Total Phosphorus shall be taken prior to disinfection. Samples for Fecal Coliform Bacteria, Total Residual Chlorine, Acute Toxicity, Chronic Toxicity, Total Mercury, pH, and Dissolved Oxygen shall be taken after disinfection. The Department may approve alternate sampling locations that are demonstrated by the permittee to be representative of the effluent.

c. Quarterly Monitoring
Quarterly samples shall be taken during the months of January, April, July, and October. If the facility does not discharge during these months, the permittee shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittee shall enter "*G" on the Discharge Monitoring Report (DMR). (For purposes of reporting on the Daily tab of the DMR, the permittee shall enter “*G” on the first day of the month only).

d. Total Residual Chlorine (TRC)
Compliance with the TRC limit shall be determined on the basis of one (1) or more grab samples. If more than one (1) sample per day is taken, the additional samples shall be collected in near equal intervals over at least eight (8) hours. The samples shall be analyzed immediately upon collection and the average reported as the daily concentration. Samples shall be analyzed in accordance with Part II.B.2. of this permit.

e. Percent Removal Requirements
Monthly percent removal shall be calculated based on the monthly average effluent TSS concentrations and the monthly average influent concentrations for approximately the same period. Daily percent removal shall be calculated based on the daily effluent TSS concentrations and the daily influent concentrations for the same day. Reporting of Daily percent removal is only required on days on which an influent sample is obtained.

PART I

Section A. Limitations and Monitoring Requirements

f. Final Effluent Limitation for Total Mercury

The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a multiple discharger variance from the WQBEL of 1.3 ng/l, pursuant to Rule 1103(9) of the Water Quality Standards. Compliance with the LCA shall be determined as a 12-month rolling average, the calculation of which may be done using blank-corrected sample results. The 12-month rolling average shall be determined by adding the present monthly average result to the preceding 11 monthly average results then dividing the sum by 12. For facilities with quarterly monitoring requirements for total mercury, quarterly monitoring shall be equivalent to three (3) months of monitoring in calculating the 12-month rolling average. Facilities that monitor more frequently than monthly for total mercury must determine the monthly average result, which is the sum of the results of all data obtained in a given month divided by the total number of samples taken, in order to calculate the 12-month rolling average. If the 12-month rolling average for any quarter is less than or equal to the LCA, the permittee will be considered to be in compliance for total mercury for that quarter, provided the permittee is also in full compliance with the Pollutant Minimization Program for Total Mercury, set forth in Part I.A.4. of this permit.

After a minimum of 10 quarterly data points have been collected, the permittee may request a reduction in the monitoring frequency for total mercury. This request shall contain an explanation as to why the reduced monitoring is appropriate and shall be submitted to the Department. Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency for total mercury indicated in Part I.A.1. of this permit. The monitoring frequency shall not be reduced to less than annually. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittee.

g. Total Mercury Testing and Additional Reporting Requirements

The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E, "Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry," EPA-821-R-02-019, August 2002. The quantification level for total mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The use of clean technique sampling procedures is required unless the permittee can demonstrate to the Department that an alternate sampling procedure is representative of the discharge. Guidance for clean technique sampling is contained in EPA Method 1669, “Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (Sampling Guidance),” EPA-821-R96-001, July 1996. Information and data documenting the permittee's sampling and analytical protocols and data acceptability shall be submitted to the Department upon request.

In order to demonstrate compliance with EPA Method 1631E and EPA Method 1669, the permittee shall report, on the daily sheet, the analytical results of all field blanks and field duplicates collected in conjunction with each sampling event, as well as laboratory method blanks when used for blank correction. The permittee shall collect at least one (1) field blank and at least one (1) field duplicate per sampling event. If more than ten (10) samples are collected during a sampling event, the permittee shall collect at least one (1) additional field blank AND field duplicate for every ten (10) samples collected. Only field blanks or laboratory method blanks may be used to calculate a concentration lower than the actual sample analytical results (i.e., a blank correction). Only one (1) blank (field OR laboratory method) may be used for blank correction of a given sample result, and only if the blank meets the quality control acceptance criteria. If blank correction is not performed on a given sample analytical result, the permittee shall report under "Total Mercury – Corrected" the same value reported under "Total Mercury – Uncorrected." The field duplicate is for quality control purposes only; its analytical result shall not be averaged with the sample result.

PART I

Section A. Limitations and Monitoring Requirements

h. Whole Effluent Toxicity Final Requirements

Test species shall include fathead minnow **and** *Ceriodaphnia dubia*. Testing and reporting procedures shall follow procedures contained in EPA-821-R-02-013, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (Fourth Edition). The acute toxic unit (TU_A) value and chronic toxic unit (TU_C) value for **each species tested** shall be reported on the DMR. If multiple chronic toxicity tests for the same species are performed during the month, the maximum TU_A value and monthly average TU_C value for the species shall be reported. For **each species not tested**, the permittee shall enter **"*W"** on the DMR. (For purposes of reporting on the Daily tab of the DMR, the permittee shall enter "*W" on the first day of the month only). Completed toxicity test reports for each test conducted shall be retained by the permittee in accordance with the requirements of Part II.B.5. of this permit and shall be available for review by the Department upon request. After two (2) years of toxicity testing and upon approval from the Department, the monitoring frequency may be reduced to no less than annually if the test data indicate that the toxicity requirements of R 323.1219 of the Michigan Administrative Code are consistently being met. After one (1) year of toxicity testing and upon approval from the Department, the chronic toxicity tests may be performed using the more sensitive species identified in the chronic toxicity results collected to date. If a more sensitive species cannot be identified, the chronic toxicity tests shall be performed with both species. Toxicity test data acceptability is contingent upon validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request.

PART I

Section A. Limitations and Monitoring Requirements

2. Quantification Levels and Analytical Methods for Selected Parameters

Quantification levels (QLs) are specified for selected parameters in the table below. These QLs shall be considered the maximum acceptable unless a higher QL is appropriate because of sample matrix interference. Justification for higher QLs shall be submitted to the Department within 30 days of such determination. Where necessary to help ensure that the QLs specified can be achieved, analytical methods may also be specified in the table below. The sampling procedures, preservation and handling, and analytical protocol for all monitoring conducted in compliance with this permit, including monitoring conducted to meet the requirements of the application for permit reissuance, shall be in accordance with the methods specified in the table below, or in accordance with Part II.B.2. of this permit if no method is specified in the table below, unless an alternate method is approved by the Department. **Not all QLs are expressed in the same units in the table below**. The table is continued on the following page:

Parameter	QL	Units	Analytical Method
1,2-Diphenylhydrazine (as Azobenzene)	3.0	ug/l	
2,4,6-Trichlorophenol	5.0	ug/l	
2,4-Dinitrophenol	19	ug/l	
3,3'-Dichlorobenzidine	1.5	ug/l	EPA Method 605
4-Chloro-3-Methylphenol	7.0	ug/l	
4,4'-DDD	0.01	ug/l	EPA Method 608
4,4'-DDE	0.01	ug/l	EPA Method 608
4,4'-DDT	0.01	ug/l	EPA Method 608
Acrylonitrile	1.0	ug/l	
Aldrin	0.01	ug/l	EPA Method 608
Alpha-Endosulfan	0.01	ug/l	EPA Method 608
Alpha-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Antimony, Total	1	ug/l	
Arsenic, Total	1	ug/l	
Barium, Total	5	ug/l	
Benzidine	0.1	ug/l	EPA Method 605
Beryllium, Total	1	ug/l	
Beta-Endosulfan	0.01	ug/l	EPA Method 608
Beta-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Bis (2-Chloroethyl) Ether	1.0	ug/l	
Bis (2-Ethylhexyl) Phthalate	5.0	ug/l	
Boron, Total	20	ug/l	
Cadmium, Total	0.2	ug/l	
Chlordane	0.01	ug/l	EPA Method 608
Chloride	1.0	mg/l	
Chromium, Hexavalent	5	ug/l	
Chromium, Total	10	ug/l	
Copper, Total	1	ug/l	
Cyanide, Available	2	ug/l	EPA Method OIA 1677
Cyanide, Total	5	ug/l	
Delta-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Dieldrin	0.01	ug/l	EPA Method 608
Di-N-Butyl Phthalate	9.0	ug/l	
Endosulfan Sulfate	0.01	ug/l	EPA Method 608

PART I

Section A. Limitations and Monitoring Requirements

Parameter	QL	Units	Analytical Method
Endrin	0.01	ug/l	EPA Method 608
Endrin Aldehyde	0.01	ug/l	EPA Method 608
Fluoranthene	1.0	ug/l	
Heptachlor	0.01	ug/l	EPA Method 608
Heptachlor Epoxide	0.01	ug/l	EPA Method 608
Hexachlorobenzene	0.01	ug/l	EPA Method 612
Hexachlorobutadiene	0.01	ug/l	EPA Method 612
Hexachlorocyclopentadiene	0.01	ug/l	EPA Method 612
Hexachloroethane	5.0	ug/l	
Lead, Total	1	ug/l	
Lindane	0.01	ug/l	EPA Method 608
Lithium, Total	10	ug/l	
Mercury, Total	0.5	ng/l	EPA Method 1631E
Nickel, Total	5	ug/l	
PCB-1016	0.1	ug/l	EPA Method 608
PCB-1221	0.1	ug/l	EPA Method 608
PCB-1232	0.1	ug/l	EPA Method 608
PCB-1242	0.1	ug/l	EPA Method 608
PCB-1248	0.1	ug/l	EPA Method 608
PCB-1254	0.1	ug/l	EPA Method 608
PCB-1260	0.1	ug/l	EPA Method 608
Pentachlorophenol	1.8	ug/l	
Perfluorooctane sulfonate (PFOS)	2.0	ng/l	ASTM D7979 or an isotope dilution method (sometimes referred to as Method 537 modified)
Perfluorooctanoic acid (PFOA)	0.002	ug/l	ASTM D7979 or an isotope dilution method (sometimes referred to as Method 537 modified)
Phenanthrene	1.0	ug/l	
Phosphorus (as P), Total	10	ug/l	
Selenium, Total	1.0	ug/l	
Silver, Total	0.5	ug/l	
Strontium, Total	1000	ug/l	
Sulfate	2.0	mg/l	
Sulfides, Dissolved	20	ug/l	
Thallium, Total	1	ug/l	
Toxaphene	0.1	ug/l	EPA Method 608
Vinyl Chloride	1.0	ug/l	
Zinc, Total	10	ug/l	

PART I

Section A. Limitations and Monitoring Requirements

3. Additional Monitoring Requirements

As a condition of this permit, the permittee shall monitor the discharge from monitoring point 001A for the constituents listed below. This monitoring is an application requirement of 40 CFR 122.21(j), effective December 2, 1999. Testing shall be conducted in May 2020, August 2021, March 2022, and May 2022. Grab samples shall be collected for available cyanide, total phenols, and the Perfluoroalkyl and Polyfluoroalkyl Substances and Volatile Organic Compounds identified below. For all other parameters, 24-hour composite samples shall be collected.

The results of such additional monitoring shall be submitted with the application for reissuance (see the cover page of this permit for the application due date). The permittee shall notify the Department within 14 days of completing the monitoring for each month specified above in accordance with Part II.C.5. Additional reporting requirements are specified in Part II.C.11. If, upon review of the analysis, it is determined that additional requirements are needed to protect the receiving waters in accordance with applicable water quality standards, the permit may then be modified by the Department in accordance with applicable laws and rules.

Hardness
calcium carbonate

Perfluoroalkyl and Polyfluoroalkyl Substances
Perfluorooctane Sulfonate (PFOS) Perfluorooctanoic Acid (PFOA)

Metals (Total Recoverable), Cyanide and Total Phenols

antimony	arsenic	available cyanide	nickel
beryllium	cadmium	chromium	zinc
copper	lead	thallium	
selenium	silver	total phenolic compounds	

Volatile Organic Compounds

acrolein	acrylonitrile	benzene	bromoform
carbon tetrachloride	chlorobenzene	chlorodibromomethane	chloroethane
2-chloroethylvinyl ether	chloroform	dichlorobromomethane	1,1-dichloroethane
1,2-dichloroethane	trans-1,2-dichloroethylene	1,1-dichloroethylene	1,2-dichloropropane
1,3-dichloropropylene	ethylbenzene	methyl bromide	methyl chloride
methylene chloride	1,1,2,2-tetrachloroethane	tetrachloroethylene	toluene
1,1,1-trichloroethane	1,1,2-trichloroethane	trichloroethylene	vinyl chloride

Acid-Extractable Compounds

4-chloro-3-methylphenol	2-chlorophenol	2,4-dichlorophenol	2,4-dimethylphenol
4,6-dinitro-o-cresol	2,4-dinitrophenol	2-nitrophenol	4-nitrophenol
Pentachlorophenol	phenol	2,4,6-trichlorophenol	

Base/Neutral Compounds

acenaphthene	acenaphthylene	anthracene	benzidine
benzo(a)anthracene	benzo(a)pyrene	3,4-benzofluoranthene	benzo(ghi)perylene
benzo(k)fluoranthene	bis(2-chloroethoxy)methane	bis(2-chloroethyl)ether	bis(2-chloroisopropyl)ether
bis(2-ethylhexyl)phthalate	4-bromophenyl phenyl ether	butyl benzyl phthalate	2-chloronaphthalene
4-chlorophenyl phenyl ether	chrysene	di-n-butyl phthalate	di-n-octyl phthalate
dibenzo(a,h)anthracene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene
3,3'-dichlorobenzidine	diethyl phthalate	dimethyl phthalate	2,4-dinitrotoluene
2,6-dinitrotoluene	1,2-diphenylhydrazine	fluoranthene	fluorene
Hexachlorobenzene	hexachlorobutadiene	hexachlorocyclo-pentadiene	hexachloroethane
indeno(1,2,3-cd)pyrene	isophorone	naphthalene	nitrobenzene
n-nitrosodi-n-propylamine	n-nitrosodimethylamine	n-nitrosodiphenylamine	phenanthrene
pyrene	1,2,4-trichlorobenzene		

PART I

Section A. Limitations and Monitoring Requirements

4. Pollutant Minimization Program for Total Mercury

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/l. The permittee shall continue to implement the Pollutant Minimization Program approved on October 7, 2006, and modifications thereto, to proceed toward the goal. The Pollutant Minimization Program includes the following:

a. an annual review and semi-annual monitoring of potential sources of mercury entering the wastewater collection system;

b. a program for quarterly monitoring of influent and periodic monitoring of sludge for mercury; and

c. implementation of reasonable cost-effective control measures when sources of mercury are discovered. Factors to be considered include significance of sources, economic considerations, and technical and treatability considerations.

On or before March 31 of each year, the permittee shall submit a status report to the Department for the previous calendar year that includes 1) the monitoring results for the previous year, 2) an updated list of potential mercury sources, and 3) a summary of all actions taken to reduce or eliminate identified sources of mercury.

Any information generated as a result of the Pollutant Minimization Program set forth in this permit may be used to support a request to modify the approved program or to demonstrate that the Pollutant Minimization Program requirement has been completed satisfactorily.

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items a. and b. above.

This permit may be modified in accordance with applicable laws and rules to include additional mercury conditions and/or limitations as necessary.

5. Untreated or Partially Treated Sewage Discharge Reporting and Testing Requirements

In accordance with Section 324.3112a of the NREPA, if untreated or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into the waters of the state, the permittee shall immediately, but not more than 24 hours after the discharge begins, notify 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. The permittee shall also notify the Department via its MiWaters system on the form entitled “Report of Discharge (CSO\SSO\RTB).” The MiWaters website is located at https://miwaters.deq.state.mi.us. At the conclusion of the discharge, the permittee shall make all such notifications specified in, and in accordance with, Section 324.3112a of the NREPA, and shall notify the Department via its MiWaters system on the form entitled “Report of Discharge (CSO\SSO\RTB).”

The permittee shall also annually contact municipalities, including the superintendent of a public drinking water supply with potentially affected intakes, whose waters may be affected by the permittee's discharge of untreated or partially treated sewage, and if those municipalities wish to be notified in the same manner as specified above, the permittee shall provide such notification.

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Additionally, in accordance with Section 324.3112a of the NREPA, each time a discharge of untreated 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 results of this testing shall be submitted to the Department via MiWaters as part of the notification specified above, or, if the results are not yet available, submitted as soon as they become available. This testing is not required if it has been waived by the local health department, or if the discharge(s) did not affect surface waters. 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.

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.

6. Facility Contact

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

a. The facility contact shall be (or a duly authorized representative of this person):
- for a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form,
- for a partnership, a general partner,
- for a sole proprietorship, the proprietor, or
- for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.

b. A person is a duly authorized representative only if:
- the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
- the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section releases the permittee from properly submitting reports and forms as required by law.

7. Continuous Monitoring

If continuous monitoring equipment is used and becomes temporarily inoperable, the permittee shall manually obtain a minimum of three (3) equally spaced grab samples/readings within each 24-hour period for the affected parameter(s). On such days, in the comment field on the Daily tab of the DMR, the permittee shall indicate "continuous monitoring system inoperable," the date on which the system is expected to become operable again, and the number of samples/readings obtained during each 24-hour period.

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8. Monthly Operating Reports

Part 41 of Act 451 of 1994 as amended, specifically Section 324.4106 and associated R 299.2953, requires that the permittee file with the Department, on forms prescribed by the Department, operating reports showing the effectiveness of the treatment facility operation and the quantity and quality of liquid wastes discharged into waters of the state.

Within 30 days of the effective date of this permit, the permittee shall submit to the Department a revised treatment facility monitoring program to address monitoring requirement changes reflected in this permit, or submit justification explaining why monitoring requirement changes reflected in this permit do not necessitate revisions to the treatment facility monitoring program. The permittee shall implement the revised treatment facility monitoring program upon approval from the Department. Applicable forms and guidance are available on the Department's web site at https://www.michigan.gov/egle/0,9429,7-135-3313_71618_44117---,00.html. The permittee may use alternate forms if they are consistent with the approved treatment facility monitoring program. Unless the Department provides written notification to the permittee that monthly submittal of operating reports is required, operating reports that result from implementation of the approved treatment facility monitoring program shall be maintained on site for a minimum of three (3) years and shall be made available to the Department for review upon request.

9. Asset Management

The permittee shall at all times properly operate and maintain all facilities (i.e., the sewer system and treatment works as defined in Part 41 of the NREPA), and control systems installed or used by the permittee to operate the sewer system and treatment works and achieve and maintain compliance with the conditions of this permit (also see Part II.D.3 of this permit). The requirements of an Asset Management Program function to achieve the goals of effective performance, adequate funding, and adequate operator staffing and training. Asset management is a planning process for ensuring that optimum value is gained for each asset and that financial resources are available to rehabilitate and replace those assets when necessary. Asset management is centered on a framework of five (5) core elements: the current state of the assets; the required sustainable level of service; the assets critical to sustained performance; the minimum life-cycle costs; and the best long-term funding strategy.

a. Asset Management Program Requirements

On or before June 1, 2020, the permittee shall submit to the Department an Asset Management Plan for review and approval. An approvable Asset Management Plan shall contain a schedule for the development and implementation of an Asset Management Program that meets the requirements outlined below in 1) – 4). A copy of any Asset Management Program requirements already completed by the permittee should be submitted as part of the Asset Management Plan. Upon approval by the Department the permittee shall implement the Asset Management Plan. (The permittee may choose to include the Operation and Maintenance Manual required under Part II.C.14. of this permit as part of their Asset Management Program).

1) *Maintenance Staff.* The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. The level of staffing needed shall be determined by taking into account the work involved in operating the sewer system and treatment works, planning for and conducting maintenance, and complying with this permit.

2) *Collection System Map.* The permittee shall complete a map of the sewer collection system it owns and operates. The map shall be of sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by the Department. **Note: Items below referencing combined sewer systems are not applicable to separate sewer systems.** Such map(s) shall include but not be limited to the following:

a) all sanitary sewer lines and related manholes;

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b) all combined sewer lines, related manholes, catch basins and CSO regulators;

c) all known or suspected connections between the sanitary sewer or combined sewer and storm drain systems;

d) all outfalls, including the treatment plant outfall(s), combined sewer treatment facility outfalls, untreated CSOs, and any known SSOs;

e) all pump stations and force mains;

f) the wastewater treatment facility(ies), including all treatment processes;

g) all surface waters (labeled);

h) other major appurtenances such as inverted siphons and air release valves;

i) a numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;

j) the scale and a north arrow;

k) the pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow; and

l) the manhole interior material, rim elevation (optional), and invert elevations.

3) *Inventory and assessment of fixed assets.* The permittee shall complete an inventory and assessment of operations-related fixed assets including portions of the collection system owned and operated by the permittee. Fixed assets are assets that are normally stationary (e.g., pumps, blowers, buildings, manholes, and sewer lines). The inventory and assessment shall be based on current conditions and shall be kept up-to-date and available for review by the Department.

a) The fixed asset inventory shall include the following:

(1) a brief description of the fixed asset, its design capacity (e.g., pump: 120 gallons per minute), its level of redundancy, and its tag number if applicable;

(2) the location of the fixed asset;

(3) the year the fixed asset was installed;

(4) the present condition of the fixed asset (e.g., excellent, good, fair, poor); and

(5) the current fixed asset (replacement) cost in dollars for year specified in accordance with approved schedules;

b) The fixed asset assessment shall include a “Business Risk Evaluation” that combines the probability of failure of the fixed asset and the criticality of the fixed asset, as follows:

(1) Rate the probability of failure of the fixed asset on a scale of 1-5 (low to high) using criteria such as maintenance history, failure history, and remaining percentage of useful life (or years remaining);

(2) Rate the criticality of the fixed asset on a scale of 1-5 (low to high) based on the consequence of failure versus the desired level of service for the facility; and

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(3) Compute the Business Risk Factor of the fixed asset by multiplying the failure rating from (1) by the criticality rating from (2).

4) *Operation, Maintenance & Replacement (OM&R) Budget and Rate Sufficiency for the Sewer System and Treatment Works.* The permittee shall complete an assessment of its user rates and replacement fund, including the following:

a) beginning and end dates of fiscal year;

b) name of the department, committee, board, or other organization that sets rates for the operation of the sewer system and treatment works;

c) amount in the permittee's replacement fund in dollars for year specified in accordance with approved schedules;

d) replacement fund strategy of all assets with a useful life of 20 years or less;

e) expenditures for maintenance, corrective action and capital improvement taken during the fiscal year;

f) OM&R budget for the fiscal year; and

g) rate calculation demonstrating sufficient revenues to cover OM&R expenses. If the rate calculation shows there are insufficient revenues to cover OM&R expenses, the permittee shall document, within three (3) fiscal years after submittal of the Asset Management Plan, that there is at least one rate adjustment that reduces the revenue gap by at least 10 percent. The permittee may prepare and submit an alternate plan, subject to Department approval, for addressing the revenue gap. The ultimate goal of the Asset Management Program is to ensure sufficient revenues to cover OM&R expenses.

b. Annual Reporting

The permittee shall develop a written report that summarizes asset management activities completed during the previous year and planned for the upcoming year. The written report shall be submitted to the Department on or before August 1 of each year. The written report shall include:

1) a description of the staffing levels maintained during the year;

2) a description of inspections and maintenance activities conducted and corrective actions taken during the previous year;

3) expenditures for collection system maintenance activities, treatment works maintenance activities, corrective actions, and capital improvement during the previous year;

4) a summary of assets/areas identified for inspection/action (including capital improvement) in the upcoming year based on the five (5) core elements and the Business Risk Factors computed in accordance with condition a.3)b)(3) above;

5) a maintenance budget and capital improvement budget for the upcoming year that take into account implementation of an effective Asset Management Program that meets the five (5) core elements;

6) an updated asset inventory based on the original submission; and

7) an updated OM&R budget with an updated rate schedule that includes the amount of insufficient revenues, if any.

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Section B. Storm Water Pollution Prevention

1. Final Effluent Limitations and Monitoring Requirements

The permittee is authorized to discharge storm water associated with industrial activity, as defined under 40 CFR 122.26(b)(14)(i-ix), to the surface waters of the state. Such discharge shall be limited and monitored by the permittee as specified below.

a. Narrative Standard
In accordance with R 323.1050 of the Part 4 Rules promulgated pursuant to Part 31 of the NREPA, the surface waters of the state shall not, as a result of this discharge, have any of the following physical properties in unnatural quantities which are or may become injurious to any designated use: turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits.

Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department, followed by a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.

b. Visual Assessment of Storm Water Discharges
To ensure that storm water discharges from the facility do not violate the narrative standard in the receiving waters, storm water discharges shall be visually assessed in accordance with this permit.

c. Implementation of Storm Water Pollution Prevention Plan
The permittee shall implement an acceptable Storm Water Pollution Prevention Plan (SWPPP) as required by this permit.

d. Certified Operator
The permittee shall have the Industrial Storm Water Certified Operator who has supervision over the facility's storm water treatment and control measures included in the SWPPP.

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The SWPPP is a written procedure to reduce the exposure of storm water to significant materials and the amount of significant materials in the storm water discharge. An acceptable SWPPP shall identify potential sources of contamination and describe the controls necessary to reduce their impacts in accordance with Part I.B.2. through Part I.B.7. of this permit.

2. Source Identification

To identify potential sources of significant materials that have reasonable potential to pollute storm water and subsequently be discharged from the facility, the SWPPP shall, at a minimum, include the following:

a. A site map identifying:

1) buildings and other permanent structures

2) storage or disposal areas for significant materials

3) secondary containment structures and descriptions of the significant materials contained within the primary containment structures

4) storm water discharge points (which include outfalls and points of discharge), numbered or otherwise labeled for reference

5) location of storm water and non-storm water inlets (numbered or otherwise labeled for reference) contributing to each storm water discharge point

6) location of NPDES-permitted discharges other than storm water

7) outlines of the drainage areas contributing to each storm water discharge point

8) structural controls or storm water treatment facilities

9) areas of vegetation (with brief descriptions such as lawn, old field, marsh, wooded, etc.)

10) areas of exposed and/or erodible soils and gravel lots

11) impervious surfaces (e.g., roofs, asphalt, concrete, etc.)

12) name and location of receiving water(s), and

13) areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the NREPA.

b. A list of all significant materials that have reasonable potential to pollute storm water. For each material listed, the SWPPP shall include each of the following descriptions:

1) identification of the storm water discharge point(s) and inlet(s) through which significant materials could discharge if released; and

2) an evaluation of each material's reasonable potential to be exposed to storm water from, at a minimum, the following areas or activities listed below:

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a) loading, unloading, and other significant material-handling operations

b) outdoor storage, including secondary containment structures

c) outdoor manufacturing or processing activities

d) significant dust- or particulate-generating processes

e) discharge from vents, stacks, and air emission controls

f) on-site waste disposal practices

g) maintenance and cleaning of vehicles, machines, and equipment

h) areas of exposed and/or erodible soils

i) Sites of Environmental Contamination listed under Part 201 (Environmental Response) of the NREPA

j) areas of significant material residues

k) areas where animals (wild or domestic) congregate and deposit wastes, and

l) other areas where storm water may come into contact with significant materials.

c. A listing of significant spills and significant leaks of polluting materials that occurred in areas exposed to precipitation or that discharge to a point source at the facility. The listing shall include spills that occurred over the three (3) years prior to the effective date of a permit authorizing discharge under this permit. The listing shall include the date, volume, and exact location of the release, and the action taken to clean up the material and/or prevent exposure to storm water or contamination of surface waters of the state. Any release of polluting materials that occurs after the SWPPP has been developed shall be controlled in accordance with the SWPPP and is cause for the SWPPP to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss.

d. A determination as to whether the facility discharges storm water to a water body for which an EPA-approved Total Maximum Daily Load (TMDL) has been established. If so, the permittee shall assess whether the TMDL requirements for the facility's discharge are being met through the existing SWPPP controls or whether additional control measures are necessary. The permittee's assessment of whether the TMDL requirements are being met shall focus on the effectiveness, adequacy, and implementation of the permittee's SWPPP controls. The applicable TMDLs will be identified in this permit.

e. A summary of existing storm water discharge sampling data (if available), describing pollutants in storm water discharges at the facility. This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected.

f. A description of actions taken to investigate potential illicit connections. All illicit connections to Municipal Separate Storm Sewer Systems (MS4s) or waters of the state should be permanently plugged or rerouted to the sanitary sewer system, in accordance with the authorization from the local Wastewater Treatment Plant. Any discharge from an illicit connection is a violation of the conditions of this permit.

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3. Nonstructural Controls

To prevent significant materials from contacting storm water at the source, the SWPPP shall, at a minimum, include each of the following nonstructural controls:

a. Written procedures and a schedule for routine preventive maintenance. Preventive maintenance procedures shall describe routine inspections and maintenance of storm water management and control devices (e.g., cleaning of oil/water separators and catch basins, routine housekeeping activities, etc.), as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to the storm sewer system or the surface waters of the state. The routine inspection shall include areas of the facility in which significant materials have the reasonable potential to contaminate storm water. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below.

b. Written procedures and a schedule for good housekeeping to maintain a clean, orderly facility. Good housekeeping procedures shall include routine inspections that focus on the areas of the facility that have a reasonable potential to contaminate storm water entering the property. The routine housekeeping inspections may be combined with the routine inspections for the preventive maintenance program. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below.

c. Written procedures and a schedule for **quarterly** comprehensive site inspections, to be conducted by the Industrial Storm Water Certified Operator. At a minimum, one inspection shall be performed within each of the following quarters: January-March, April-June, July-September, and October-December. The comprehensive site inspections shall include, but not be limited to, inspection of structural controls in use at the facility, and the areas and equipment identified in the routine preventive maintenance and good housekeeping procedures. These inspections shall also include a review of the routine preventive maintenance reports, good housekeeping inspection reports, and any other paperwork associated with the SWPPP.

   The permittee may request Department approval of an alternate schedule for comprehensive site inspections. Such a request may be made if the permittee meets the following criteria: the permittee is in full compliance with this permit, the permittee has an acceptable SWPPP, the permittee has installed and/or implemented adequate structural controls at the facility, the permittee has all required inspection reports available at the facility, and the permittee has the Industrial Storm Water Certified Operator at the facility. The Department may revoke the approval of an alternate schedule at any time upon notification to the permittee if these criteria are not being met.

   A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below, and the following shall be included on the comprehensive inspection form/report:

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1) Date of the inspection.

2) Name(s), title(s), and certification number(s) of the personnel conducting the inspection.

3) Precipitation information (i.e., a description of recent rainfall/snowmelt events).

4) All observations relating to the implementation of control measures. Items to include if applicable:

a) updates on corrective actions implemented due to previously identified pollutant and/or discharge issues

b) any evidence of, or the potential for, pollutants to discharge to the drainage system or receiving waters and the condition of and around the storm water discharge point including flow dissipation measures needing maintenance or repairs

c) any control measures needing maintenance or repairs, and

d) any additional control measures needed to comply with permit requirements.

5) Any required revisions to the SWPPP resulting from the inspection.

6) A written certification stating the facility is in compliance with this permit and the SWPPP, or, if there are instances of noncompliance, they are identified.

7) Written procedures and a schedule for **quarterly** visual assessments of storm water discharges. At a minimum, one visual assessment shall be conducted within each of the following quarters: January-March, April-June, July-September, and October-December. These assessments shall be conducted as part of the comprehensive site inspection within one month (either prior to or after) of control measure observations made in accordance with 4), above. If the Department has approved an alternate schedule for the comprehensive site inspection, the visual assessment may likewise be conducted in accordance with the same approved alternate schedule. Additional guidance for developing written procedures for quarterly visual assessments is available on the Internet at www.michigan.gov/eglestormwater, then in the center of the page, click on the 'Industrial Program' link, and find guidance documents under the 'Conducting Visual Assessments of Industrial Storm Water Discharges' heading.

The following are the requirements of the visual assessment. The permittee shall develop and clearly document, in writing, procedures for meeting these requirements:

a) The permittee shall continue to implement previously developed written procedures for conducting the visual assessment. If Qualified Personnel rather than the Industrial Storm Water Certified Operator will collect storm water samples, these procedures shall include a written description of the training given to these personnel to qualify them to collect the samples, as well as documentation verifying that these personnel have received this training. The first visual assessment shall be conducted in conjunction with the next occurring comprehensive inspection. If changes resulting in altered drainage patterns occur at the facility, the permittee shall modify the procedures for conducting the visual assessment in accordance with the requirements of Keeping SWPPPs Current, below, and these modifications shall be incorporated into the SWPPP prior to conducting the next visual assessment.

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b) A visual assessment shall be conducted of a representative storm water **sample** collected **from each storm water discharge point**. Storm water samples shall be visually assessed for conditions that could cause a violation of Part I.B.1.a. of this permit. The visual assessment shall be made of the storm water sample in a clean, clear glass or plastic container. Only the Industrial Storm Water Certified Operator shall conduct this visual assessment. Visual assessment of the storm water sample shall be conducted within 48 hours of sample collection.

Representative storm water samples shall be collected:

(1) from each storm water discharge point identified as set forth under Source Identification, above. These samples may be collected by one or more of the following: the Industrial Storm Water Certified Operator; and/or an individual who meets qualifications acceptable to the Department and who is authorized by the Industrial Storm Water Certified Operator to collect the sample ("Qualified Personnel"); and/or an automated sampling device; and

(2) within the first 30 minutes of the start of a discharge from a qualifying storm event and on discharges that occur at least 72 hours (3 days) from the previous discharge. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample shall be collected as soon thereafter as practicable, but not exceeding 60 minutes. In the case of snowmelt, samples shall be collected during a period with measurable discharge from the site. Sample collection may occur during the facility's normal hours of operation as described in the facility's written procedures.

c) A visual assessment shall be conducted of the storm water **discharge at each storm water discharge point**. (If an automated sampling device is used to collect the storm water sample, this requirement is waived). Either the Industrial Storm Water Certified Operator and/or Qualified Personnel may conduct this visual assessment. This visual assessment may be conducted directly – by someone physically present at the storm water discharge at each storm water discharge point; or it may be conducted indirectly – through the use of a visual recording taken of the storm water discharge at each storm water discharge point. Direct visual assessment shall be conducted at the same time that the storm water sample is collected. Indirect visual assessment shall be conducted using a visual recording taken of the storm water discharge at the same time that the storm water sample was collected.

d) Visual assessments shall be documented. This documentation shall be retained in accordance with Record Keeping, below, and shall include the following:

(1) sampling location(s) at the storm water discharge point(s) identified on the site map (see Source Identification, above);

(2) storm event information (i.e., length of event expressed in hours, approximate size of event expressed in inches of precipitation, duration of time since previous event that caused a discharge, and date and time the discharge began);

(3) date and time of the visual assessment of each storm water **discharge** at each storm water discharge point;

(4) name(s) and title(s) of the Industrial Storm Water Certified Operator or Qualified Personnel who conducted the visual assessment of the storm water **discharge** at each storm water discharge point. If an automated sampling device was used to collect the storm water sample associated with this storm water discharge point, this documentation requirement is waived;

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(5) observations made during visual assessment of the storm water **discharge** at each storm water discharge point. If an automated sampling device was used to collect the storm water sample associated with this storm water discharge point, this documentation requirement is waived;

(6) if applicable, any visual recordings used to conduct the visual assessment of the storm water **discharge** at each storm water discharge point;

(7) date and time of sample collection for each storm water **sample**;

(8) name(s) and title(s) of the Industrial Storm Water Certified Operator or Qualified Personnel who collected the storm water **sample**. If an automated sampling device was used to collect the storm water sample, the permittee shall document that, instead;

(9) date and time of the visual assessment of each storm water **sample**;

(10) name(s), title(s), and operator number(s) of the Industrial Storm Water Certified Operator(s) who conducted the visual assessment of each storm water **sample**;

(11) observations made during visual assessment of each storm water **sample**;

(12) full-color photographic evidence of the storm water **sample** against a white background;

(13) nature of the discharge (i.e., rainfall or snowmelt);

(14) probable sources of any observed storm water contamination; and

(15) if applicable, an explanation for why it was not possible to collect samples within the first 30 minutes of discharge.

e) When adverse weather conditions prevent a visual assessment during the quarter, a substitute visual assessment shall be conducted during the next qualifying storm event. Documentation of the rationale for no visual assessment during a quarter shall be included with the SWPPP records as described in Record Keeping, below. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, electrical storms, or situations that otherwise make sampling impractical such as drought or extended frozen conditions.

f) If the facility has two (2) or more storm water discharge points that are believed to discharge substantially identical storm water effluents, the facility may conduct visual assessments of the discharge at just one (1) of the storm water discharge points and report that the results also apply to the other substantially identical storm water discharge point(s). The determination of substantially identical storm water discharge points is to be based on the significant material evaluation conducted as set forth under Source Identification, above, and shall be clearly documented in the SWPPP. Visual assessments shall be conducted on a rotating basis of each substantially identical storm water discharge point throughout the period of coverage under this permit.

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d. A description of material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the SWPPP and made available to the appropriate personnel. The procedures shall identify measures to prevent spilled materials or material residues from contaminating storm water entering the property. The SWPPP shall include language describing what a reportable spill or release is and the appropriate reporting requirements in accordance with Part II.C.6. and Part II.C.7. of this permit. The SWPPP may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); a Hazardous Waste Contingency Plan prepared in accordance with 40 CFR 264 and 265 Subpart D, as required by Part 111 of the NREPA; or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112.

e. Identification of areas that, due to topography, activities, or other factors, have a high potential for significant soil erosion. Gravel lots shall be included. The SWPPP shall also identify measures used to control soil erosion and sedimentation. If dust suppression is used, the SWPPP shall include a description of the dust suppression material used and the actions implemented to prevent an unauthorized discharge.

f. A description of the employee training program that will be implemented on an annual basis to inform appropriate personnel at all levels of their responsibility as it relates to the components and goals of the SWPPP. The SWPPP shall identify periodic dates for the employee training program. Records of the employee training program shall be retained in accordance with Record Keeping, below.

g. Identification of actions to limit the discharge of significant materials in order to comply with TMDL requirements, if applicable.

h. Identification of significant materials expected to be present in storm water discharges following implementation of nonstructural preventive measures and source controls.

4. Structural Controls

Where implementation of the measures required by Nonstructural Controls, above, does not control storm water discharges in accordance with Part I.B.1.a. of this permit, the SWPPP shall provide a description of the location, function, design criteria, and installation/construction schedule of structural controls for prevention and treatment. Structural controls may be necessary:

a. to prevent uncontaminated storm water from contacting, or being contacted by, significant materials; or

b. if preventive measures are not feasible or are inadequate to keep significant materials at the site from contaminating storm water. Structural controls shall be used to treat, divert, isolate, recycle, reuse, or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with Part I.B.1.a. of this permit.

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5. Keeping SWPPPs Current

a. The permittee and/or the Industrial Storm Water Certified Operator shall review the SWPPP annually after it is developed and maintain a written report of the review in accordance with Record Keeping, below. Based on the review, the permittee or the Industrial Storm Water Certified Operator shall amend the SWPPP as needed to ensure continued compliance with the terms and conditions of this permit. The written report shall be submitted to the Department on or before January 10 of each year.

b. The SWPPP developed under the conditions of a previous permit shall be amended as necessary to ensure compliance with this permit.

c. The SWPPP shall be updated or amended whenever changes at the facility have the potential to increase the exposure of significant materials to storm water, significant spills occur at the facility, or when the SWPPP is determined by the permittee or the Department to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. SWPPP updates necessitated by increased activity or significant spills at the facility shall include a description of how the permittee intends to control any new sources of significant materials, or respond to and prevent spills in accordance with the requirements of this permit (see Source Identification; Nonstructural Controls; and Structural Controls, above).

d. The Department may notify the permittee at any time that the SWPPP does not meet minimum requirements of this permit. Such notification shall identify why the SWPPP does not meet minimum requirements of this permit. The permittee shall make the required changes to the SWPPP within 30 days after such notification from the Department and shall submit to the Department a written certification that the requested changes have been made.

e. Amendments to the SWPPP shall be signed and retained on-site with the SWPPP pursuant to Signature and SWPPP Review, below.

6. Contact Information and Industrial Storm Water Certified Operator Update

a. The SWPPP shall include contact information (i.e. mailing address, phone number, and email address) for the Facility Contact, Industrial Storm Water Certified Operator, environmental consultant, and/or any other appropriate individuals who manage the storm water program at the facility.

b. If the Industrial Storm Water Certified Operator is changed or an Industrial Storm Water Certified Operator is added, the permittee shall provide the name and certification number of the new Industrial Storm Water Certified Operator to the Department. If a facility has multiple Industrial Storm Water Certified Operators, the names and certification numbers of all shall be included in the SWPPP.

7. Signature and SWPPP Review

a. The SWPPP shall be reviewed and signed by the Industrial Storm Water Certified Operator(s) and by either the permittee or an authorized representative in accordance with 40 CFR 122.22. The SWPPP and associated records shall be retained on-site at the facility that generates the storm water discharge.

b. The permittee shall make the SWPPP, reports, log books, storm water discharge sampling data (if collected), visual assessment documentation, and items required by Record Keeping, below, available upon request to the Department. The Department makes the non-confidential business portions of the SWPPP available to the public.

PART I

Section B. Storm Water Pollution Prevention

8. Record Keeping

The permittee shall maintain records of all SWPPP-related inspection and maintenance activities. All such records shall be retained for three (3) years. The following records are required by this permit (see Nonstructural Controls; and Keeping SWPPPs Current, above):

a. routine preventive maintenance inspection reports

b. routine good housekeeping inspection reports

c. comprehensive site inspection reports

d. documentation of visual assessments

e. employee training records, and

f. annual SWPPP review reports.

PART I

Section B. Storm Water Pollution Prevention

9. Non-Storm Water Discharges

Storm water is defined in Part II.A. of this permit to encompass non-storm water discharges included under the conditions of this permit. Any discharge of wastewater other than storm water as defined under the conditions of this permit shall be in compliance with an NPDES permit issued for the discharge. The non-storm water discharges included under the conditions of this permit are authorized under this permit, provided pollution prevention controls for the non-storm water component are identified in the permittee's SWPPP. The non-storm water discharges included under the conditions of this permit are as follows:

a. discharges from fire hydrant flushing

b. potable water sources, including water line flushing

c. water from fire system testing and fire-fighting training without burned materials or chemical fire suppressants

d. irrigation drainage

e. lawn watering

f. routine building wash-down that does not use detergents or other compounds

g. pavement wash waters where contamination by toxic or hazardous materials has not occurred (unless all contamination by toxic or hazardous materials has been removed) and where detergents are not used

h. uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids

i. springs

j. uncontaminated groundwater

k. foundation or footing drains where flows are not contaminated with process materials such as solvents, and

l. discharges from fire-fighting activities. Discharges from fire-fighting activities are exempted from the requirement to be identified in the SWPPP.

10. Tracer Dye Discharges

This permit does not authorize the discharge of tracer dyes without approval from the Department. Requests to discharge tracer dyes shall be submitted to the Department in accordance with Rule 1097 (R 323.1097 of the Michigan Administrative Code).

PART I

Section C. Industrial Waste Pretreatment Program

1. Industrial Waste Pretreatment Program

It is understood that the permittee does not receive the discharge of any type or quantity of substance which may cause interference with the operation of the treatment works; and, therefore, the permittee is not required to immediately develop an industrial pretreatment program in accordance with Section 307 of the Federal Water Pollution Control Act. The permittee is required to comply with Section 307 of the Federal Water Pollution Control Act upon accepting any such discharge for treatment. The permittee is required to notify the Department within thirty (30) days if any user discharges or proposes to discharge such wastes to the permittee for treatment.

Under no circumstances shall the permittee allow introduction of the following wastes into the waste treatment system:

a. pollutants which cause pass-through or interference;

b. pollutants which create a fire hazard or explosion hazard in the sewerage system, including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;

c. pollutants which will cause corrosive structural damage to the sewerage system; but in no case, discharges with pH less than 5.0, unless the works is specifically designed to accommodate such discharges;

d. solid or viscous pollutants in amounts which will cause obstruction to the flow in the sewerage system resulting in interference;

e. any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the treatment plant;

f. heat in amounts which will inhibit biological activity in the treatment plant resulting in interference; but in no case, heat in such quantities that the temperature at the treatment plant exceeds 40 degrees Centigrade (104 degrees Fahrenheit) unless the Department, upon request of the permittee, approves alternate temperature limits;

g. pollutants which result in the presence of toxic gases, vapors or fumes within the sewerage system in a quantity that may cause acute worker health and safety problems; and

h. any trucked or hauled pollutants, except at discharge points designated by the permittee.

If information is gained by the Department that the permittee receives or is about to receive industrial wastes, then this permit may be modified in accordance with applicable laws and rules to incorporate the requirements of Section 307 of the Federal Water Pollution Control Act.

PART I

Section D. Residuals Management Program

1. Residuals Management Program 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 permittee's approved Residuals Management Program (RMP) approved on February 6, 2001, and approved modifications thereto, in accordance with the requirements established in R 323.2401 through R 323.2418 of the Michigan Administrative Code (Part 24 Rules). The approved RMP, and any approved modifications thereto, are enforceable requirements of this permit. Incineration, landfilling and other residual disposal activities shall be conducted in accordance with Part II.D.7. of this permit. The Part 24 Rules can be obtained via the internet (http://www.michigan.gov/egle/ and near the top of the screen click on Water, Wastewater, Surface Water, then click on Biosolids & Industrial Pretreatment, Biosolids, then click on Biosolids Laws and Rules Information which is under the Laws & Rules banner in the center of the screen).

a. Annual Report
On or before October 30 of each year, the permittee shall submit an annual report to the Department for the previous fiscal year of October 1 through September 30. The report shall be submitted electronically via the Department's MiWaters system at https://miwaters.deq.state.mi.us. At a minimum, the report shall contain:

1) a certification that current residuals management practices are in accordance with the approved RMP, or a proposal for modification to the approved RMP; and

2) a completed Biosolids Annual Report Form, available at https://miwaters.deq.state.mi.us.

b. Modifications to the Approved RMP
Prior to implementation of modifications to the RMP, the permittee shall submit proposed modifications 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.

c. Record Keeping
Records required by the Part 24 Rules 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.

d. Contact Information
RMP-related submittals shall be made to the Department.

PART II

Section A. Definitions

Part II may include terms and /or conditions not applicable to discharges covered under this permit.

Acute toxic unit (TU_A) means $100/LC_{50}$ where the LC_{50} is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

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 shall be reported for that period if a discharge occurs during that period.

Authorized public agency means a state, local, or county agency that is designated pursuant to the provisions of Section 9110 of Part 91, Soil and Sedimentation Control (SESC) of the NREPA to implement soil erosion and sedimentation control requirements with regard to construction activities undertaken by that agency.

Best management practices (BMPs) means structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water, to direct the flow of storm water, or to treat polluted storm water.

Bioaccumulative chemical of concern (BCC) means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

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.

Certificate of Coverage (COC) is a document, issued by the Department, which authorizes a discharge under a general permit.

Chronic toxic unit (TU_C) means $100/MATC$ or $100/IC_{25}$, where the maximum acceptable toxicant concentration (MATC) and IC_{25} are expressed as a percent effluent in the test medium.

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, Land Application of Biosolids, promulgated under Part 31 of the NREPA. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

Combined sewer system is a sewer system in which storm water runoff is combined with sanitary wastes.

PART II

Section A. Definitions

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. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen). When required by the permit, report the maximum calculated daily concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the Discharge Monitoring Reports (DMRs).

For pH, report the maximum value of any *individual* sample taken during the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs and the minimum value of any *individual* sample taken during the month in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. For dissolved oxygen, report the minimum concentration of any *individual* sample in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Daily loading is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs.

Daily monitoring frequency refers to a 24-hour day. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Department means the Michigan Department of Environment, Great Lakes, and Energy.

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.

Discharge means the addition of any waste, waste effluent, wastewater, pollutant, or any combination thereof to any surface water of the state.

EC_{50} means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

Fecal coliform bacteria monthly
FOR WASTEWATER STABILIZATION LAGOONS (WWSLs) THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a discharge event. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR. If the period in which the discharge event occurred was partially in each of two months, the calculated monthly value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a reporting month. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

PART II

Section A. Definitions

Fecal coliform bacteria 7-day
FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days of discharge during a discharge event. If the number of daily concentrations determined during the discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean value for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. If the 7-day period was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days in a reporting month. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. The first calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

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

General permit means an NPDES permit issued authorizing a category of similar discharges.

Geometric mean is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

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

IC_{25} means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

Illicit connection means a physical connection to a municipal separate storm sewer system that primarily conveys non-storm water discharges other than uncontaminated groundwater into the storm sewer; or a physical connection not authorized or permitted by the local authority, where a local authority requires authorization or a permit for physical connections.

Illicit discharge means any discharge to, or seepage into, a municipal separate storm sewer system that is not composed entirely of storm water or uncontaminated groundwater. Illicit discharges include non-storm water discharges through pipes or other physical connections; dumping of motor vehicle fluids, household hazardous wastes, domestic animal wastes, or litter; collection and intentional dumping of grass clippings or leaf litter; or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water waste directly into a separate storm sewer.

Individual permit means a site-specific NPDES permit.

Inlet means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

PART II

Section A. Definitions

Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts the publicly-owned treatment works (POTW), its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference].

Land application means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

LC_{50} means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

Maximum acceptable toxicant concentration (MATC) means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

Maximum extent practicable means implementation of best management practices by a public body to comply with an approved storm water management program as required by a national permit for a municipal separate storm sewer system, in a manner that is environmentally beneficial, technically feasible, and within the public body's legal authority.

MBTU/hr means million British Thermal Units per hour.

MGD means million gallons per day.

Monthly concentration is the sum of the daily concentrations determined during a reporting period divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Monthly loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during a reporting period. The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMR.

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

Municipal separate storm sewer means a conveyance or system of conveyances designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a POTW as defined in the Code of Federal Regulations at 40 CFR 122.2.

PART II

Section A. Definitions

Municipal separate storm sewer system (MS4) means all separate storm sewers that are owned or operated by the United States, a state, city, village, township, county, district, association, or other public body created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law, such as a sewer district, flood control district, or drainage district, or similar entity, or a designated or approved management agency under Section 208 of the Clean Water Act that discharges to the waters of the state. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

National Pretreatment Standards are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Clean Water Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

No observed adverse effect level (NOAEL) means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

Noncontact cooling water is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

Nondomestic user is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

Outfall is the location at which a point source discharge enters the surface waters of the state.

Part 91 agency means an agency that is designated by a county board of commissioners pursuant to the provisions of Section 9105 of Part 91 of the NREPA; an agency that is designated by a city, village, or township in accordance with the provisions of Section 9106 of Part 91 of the NREPA; or the Department for soil erosion and sedimentation activities under Part 615, Supervisor of Wells; Part 631, Reclamation of Mining Lands; or Part 632, Nonferrous Metallic Mineral Mining, of the NREPA, pursuant to the provisions of Section 9115 of Part 91 of the NREPA.

Part 91 permit means an SESC permit issued by a Part 91 agency pursuant to the provisions of Part 91 of the NREPA.

Partially treated sewage is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's NPDES permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

Point of discharge is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

Point source discharge means a discharge from any discernible, confined, discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source discharge where the runoff from the site is ultimately discharged to waters of the state.

Polluting material means any material, in solid or liquid form, identified as a polluting material under the Part 5 Rules, Spillage of Oil and Polluting Materials, promulgated under Part 31 of the NREPA (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

POTW is a publicly owned treatment work.

PART II

Section A. Definitions

Pretreatment is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

Public (as used in the MS4 individual permit) means all persons who potentially could affect the authorized storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

Public body means the United States; the state of Michigan; a city, village, township, county, school district, public college or university, or single-purpose governmental agency; or any other body which is created by federal or state statute or law.

Qualified Personnel means an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the storm water sample.

Qualifying storm event means a storm event causing greater than 0.1 inch of rainfall and occurring at least 72 hours after the previous measurable storm event that also caused greater than 0.1 inch of rainfall. Upon request, the Department may approve an alternate definition meeting the condition of a qualifying storm event.

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.

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 shall be reported for that period if a discharge occurs during that period.

Regional Administrator is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

Regulated area means the permittee's urbanized area, where urbanized area is defined as a place and its adjacent densely-populated territory that together have a minimum population of 50,000 people as defined by the United States Bureau of the Census and as determined by the latest available decennial census.

Secondary containment structure means a unit, other than the primary container, in which significant materials are packaged or held, which is required by State or Federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface waters or groundwaters of the state.

Separate storm sewer system means a system of drainage, including, but not limited to, roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, which is not a combined sewer where storm water mixes with sanitary wastes, and is not part of a POTW.

Significant industrial user is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

PART II

Section A. Definitions

Significant materials means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111, Hazardous Waste Management, of the NREPA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills and significant leaks means any release of a polluting material reportable under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

Special-use area means secondary containment structures required by state or federal law; lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201, Environmental Remediation, of the NREPA; and/or areas with other activities that may contribute pollutants to the storm water for which the Department determines monitoring is needed.

Stoichiometric means the quantity of a reagent calculated to be necessary and sufficient for a given chemical reaction.

Storm water means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of this permit.

Storm water discharge point is the location where the point source discharge of storm water is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including *outfalls* which discharge directly to surface waters of the state, and *points of discharge* which discharge directly into separate storm sewer systems.

SWPPP means the Storm Water Pollution Prevention Plan prepared in accordance with this permit.

Tier I value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

Tier II value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

Total maximum daily loads (TMDLs) are required by the Clean Water Act for waterbodies that do not meet water quality standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet water quality standards, and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

Toxicity reduction evaluation (TRE) means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

Water Quality Standards means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of the NREPA, being R 323.1041 through R 323.1117 of the Michigan Administrative Code.

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 shall be reported for that period if a discharge occurs during that period.

WWSL is a wastewater stabilization lagoon.

WWSL discharge event is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14 day period.

PART II

Section A. Definitions

3-portion composite sample is a sample consisting of three equal-volume grab samples collected at equal intervals over an 8-hour period.

7-day concentration
FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily concentrations determined. If the number of daily concentrations determined during the WWSL discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the WWSL discharge event in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations in the reporting month. When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

7-day loading
FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily loadings determined. If the number of daily loadings determined during the WWSL discharge event is less than 7 days, the number of actual daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the WWSL discharge event in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days in a reporting month divided by the number of daily loadings determined. If the number of daily loadings determined is less than 7, the actual number of daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations in the reporting month. When required by the permit, report the maximum calculated 7-day loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

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. A time-proportioned composite sample may be used upon approval of the Department if the permittee demonstrates it is representative of the discharge.

PART II

Section B. Monitoring Procedures

1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Clean Water Act (40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. **Test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations**. Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Manager of the Permits Section, Water Resources Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30458, Lansing, Michigan, 48909-7958. The permittee may use such procedures upon 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 Assurance/Quality Control program.

3. Instrumentation

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

4. 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.

5. 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 Regional Administrator or the Department.

PART II

Section C. Reporting Requirements

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. Submittal Requirements for Self-Monitoring Data

Part 31 of the NREPA (specifically Section 324.3110(7)); and R 323.2155(2) of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, allow the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self-Monitoring," the permittee shall submit self-monitoring data via the Department's MiWaters system.

The permittee shall utilize the information provided on the MiWaters website, located at https://miwaters.deq.state.mi.us, to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the Department no later than the 20th day of the month following each month of the authorized discharge period(s). The permittee may be allowed to submit the electronic forms after this date if the Department has granted an extension to the submittal date.

3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittee shall certify, in writing, to the Department, on or before January 10th (April 1st for animal feeding operation facilities) of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

Retained self-monitoring may be denied to a permittee by notification in writing from the Department. In such cases, the permittee shall submit self-monitoring data in accordance with Part II.C.2., above. Such a denial may be rescinded by the Department upon written notification to the permittee. Reissuance or modification of this permit or reissuance or modification of an individual permittee's authorization to discharge shall not affect previous approval or denial for retained self-monitoring unless the Department provides notification in writing to the permittee.

4. 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, as amended, for assurance of proper facility operation shall be submitted as required by the Department.

PART II

Section C. Reporting Requirements

5. 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.

6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Clean Water Act, Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

a. 24-Hour Reporting
Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.

b. Other Reporting
The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters 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 (R 324.2001 through R 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC); 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** call 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 preventive measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

PART II

Section C. Reporting Requirements

8. 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 maintained (note that an upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation); 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.

No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

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

9. Bypass Prohibition and Notification

a. Bypass Prohibition
Bypass is prohibited, and the Department may take an enforcement action, 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 9.b. or 9.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 9.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 second page of this permit (if the notice is provided after regular working hours, call: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

PART II

Section C. Reporting Requirements

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 ensure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.11. 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.

10. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of R 323.1098 and R 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

11. Notification of Changes in Discharge

The permittee shall notify the Department, in writing, as soon as possible but no later than 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit, for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

PART II

Section C. Reporting Requirements

12. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under R 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.10.; and 4) the action or activity will not require notification pursuant to Part II.C.11. Following such notice, the permit or, if applicable, the facility's COC may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

13. 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.

14. Operations and Maintenance Manual

For wastewater treatment facilities that serve the public (and are thus subject to Part 41 of the NREPA), Section 4104 of Part 41 and associated Rule 2957 of the Michigan Administrative Code allow the Department to require an Operations and Maintenance (O&M) Manual from the facility. An up-to-date copy of the O&M Manual shall be kept at the facility and shall be provided to the Department upon request. The Department may review the O&M Manual in whole or in part at its discretion and require modifications to it if portions are determined to be inadequate.

At a minimum, the O&M Manual shall include the following information: permit standards; descriptions and operation information for all equipment; staffing information; laboratory requirements; record keeping requirements; a maintenance plan for equipment; an emergency operating plan; safety program information; and copies of all pertinent forms, as-built plans, and manufacturer's manuals.

Certification of the existence and accuracy of the O&M Manual shall be submitted to the Department at least sixty days prior to start-up of a new wastewater treatment facility. Recertification shall be submitted sixty days prior to start-up of any substantial improvements or modifications made to an existing wastewater treatment facility.

PART II

Section C. Reporting Requirements

15. Signatory Requirements

All applications, reports, or information submitted to the Department in accordance with the conditions of this permit and that require a signature shall be signed and certified as described in the Clean Water Act and the NREPA.

The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

The NREPA (Section 3115(2)) provides that a person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit, COC, or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application for or form pertaining to a permit or COC or in a notice or report required by the terms and conditions of an issued permit or COC, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the Department, is guilty of a felony and shall be fined not less than $2,500.00 or more than $25,000.00 for each violation. The court may impose an additional fine of not more than $25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than $25,000.00 per day and not more than $50,000.00 per day of violation. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part. With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, permit, or COC of the Department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation.

16. Electronic Reporting

Upon notice by the Department that electronic reporting tools are available for specific reports or notifications, the permittee shall submit electronically all such reports or notifications as required by this permit, on forms provided by the Department.

PART II

Section D. Management Responsibilities

1. 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, Special Conditions, or terms of this permit constitutes a violation of the NREPA and/or the Clean Water Act and constitutes grounds for enforcement action; for permit or Certificate of Coverage (COC) termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. 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. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the NREPA.

3. 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.

4. 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.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

PART II

Section D. Management Responsibilities

6. 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 (R 324.2001 through R 324.2009 of the Michigan Administrative Code). For a POTW, these facilities shall be approved under Part 41 of the NREPA.

7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, 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 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department, or the Regional Administrator, upon the presentation of credentials and, for animal feeding operation facilities, following appropriate biosecurity protocols:

a. to enter upon the permittee's premises where an effluent source is located or any place in which 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 discharge of pollutants.

9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Clean Water Act and Rule 2128 (R 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 and the Regional Administrator. As required by the Clean Water Act, 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 Section 309 of the Clean Water Act and Sections 3112, 3115, 4106 and 4110 of the NREPA.

10. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or the facility's COC, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

PART II

Section E. Activities Not Authorized by This Permit

1. Discharge to the Groundwaters

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the NREPA.

2. POTW Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW shall be by permit issued under Part 41 of the NREPA.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), 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.

4. Oil and Hazardous Substance Liability

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 to which the permittee may be subject under Section 311 of the Clean Water Act except as are exempted by federal regulations.

5. 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 under authority preserved by Section 510 of the Clean Water Act.

6. 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, including any other Department of Environment, Great Lakes, and Energy permits, or approvals from other units of government as may be required by law.

HRC OFFICE LOCATIONS

- **Bloomfield Hills**
  555 Hulet Drive
  Bloomfield Hills, MI 48302
  (248) 454-6300 | Fax: (248) 454-6312
- **Detroit**
  Buhl Building, Suite 1650
  535 Griswold Street | Detroit, MI 48226
  (313) 965-3330
- **Howell**
  105 West Grand River
  Howell, MI 48843
  (517) 552-9199
- **Kalamazoo**
  834 King Highway, Suite 107
  Kalamazoo, MI 49001
  (269) 665-2005
- **Delhi Township**
  2101 Aurelius Road, Suite 2
  Holt, MI 48842
  (517) 694-7760
- **Grand Rapids**
  801 Broadway NW, Suite 215
  Grand Rapids, MI 49504
  (616) 454-4286
- **Jackson**
  401 S. Mechanic Street, Suite B
  Jackson, MI 49201
  (517) 292-1295
- **Lansing**
  215 South Washington Square
  Lansing, MI 48933
  (517) 292-1488