

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Niagara Falls Water Board

**SCHEDULE A
Order on Consent R9-20170906-129
REVISED SEPTEMBER 17, 2018**

Respondent shall, on or before the dates indicated:

Item	Date
1. Update Operation and Maintenance (O&M) and training procedures and staffing plans as necessary and submit revisions to the Department for review and approval. O&M and staffing plans must address preventative maintenance as well as corrective maintenance. If any current O&M/training practices are not routinely performed in accordance with the latest Department approved version and schedule set forth in the O&M manual or training and staffing plans, Respondent must provide a summary of the practice(s), rationale for any proposed modification, and incorporate the changes into the updated O&M manual and/or training and staffing plans for Department review and approval. Respondent shall begin implementing the updated O&M manual, training and staffing plans, and any approved schedules, within 30 days of receiving approval from the Department.	March 19, 2019
2. Operate all treatment processes in accordance with the latest Department approved O&M manual and training plan for the facility (including approved revisions). Discharges of effluent from Sediment Basin 5, only when Sediment Basin 5 is on-line, shall be permitted to the Chlorine Contact Tank without prior approval from the Department. Processes and equipment that have been properly decommissioned are exempt from this requirement.	Immediate
3. The current O&M manual procedures for sedimentation tank dewatering are specified in Section 3.4.7 and state that grit pumps and sludge pumps are to be used for basin dewatering. Sedimentation tank dewatering must be performed using either the current O&M manual or Department approved modifications to the O&M manual.	Immediate
4. Submit an approvable work plan and schedule which will remove excess solids from the treatment plant within 30 days. Respondent shall implement the approved work plan consistent with the approved schedule of compliance. The work plan and proposed schedule must address the following:	Completed

- a. Ensure that all three sludge belt press systems are available for operation at all time (except for normal maintenance). Each belt press system includes a belt press and all supporting equipment including a thickened sludge pump and a polymer pump. All process piping and valving shall allow all three belts presses to operate simultaneously.
 - b. Upon elimination of the excess sludge inventory in the thickener tanks, plant sludge inventory shall be maintained at sufficiently low levels to enable all treatment processes to function as intended.
 - c. Identify and either repair or replace all sludge dewatering equipment which is currently not functioning appropriately.
 - d. Evaluate and provide a summary of recommendations to improve the reliability of the thickened sludge pumping system including replacing plastic piping with ductile iron piping.
5. Improve the reliability of all Sedimentation Basin traveling bridge and chain & flight equipment. Specific actions should include:
- a. Revise the O&M manual, training plan, and standard operating procedures so that preventative maintenance and corrective actions will be undertaken in the sludge collection equipment as soon as practicable. Depending on the nature of the failure, this may require taking the basin off-line and dewatering for repairs. March 19, 2019
 - b. Evaluate and summarize appropriate recommendations and maintenance schedules for the operation of sludge collector equipment in order to prevent significant damage in the event of failure. Such items may include, but are not limited to, the installation of torque sensors and/or automatic shut-offs. Completed
 - c. As improper sludge removal contributes to septic conditions and causes the sedimentation basins to be more susceptible to wash-out, the basins should not routinely remain in service if they are not properly removing sludge. However, in certain instances, such as emergency situations, basins in such a condition may be returned to service upon Department approval. Immediate

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| <p>d. Submit a report which identifies the causes of the recurring failures of this equipment, and provides specific recommendations and schedules for improvements including the conversion from travelling bridge collectors to chain and flight collectors. Upon approval, implement the recommendations in accordance with the approved schedules.</p> | <p>Sept 19, 2018</p> |
| <p>6. Submit a work plan to evaluate alternatives to the use of ferric chloride as a flocculant for removing phosphorus with the goal of reducing iron sulfide contributions to effluent color. The plan shall include bench scale and pilot scale testing of alternative flocculants.</p> | <p>Sept. 19, 2018</p> |
| <p>7. Submit a work plan for an evaluation of how to best manage the effluent from Sedimentation Basin 5. This evaluation should consider whether treatment of the backwash can be improved through chemical addition or other methods. The work plan must identify additional data needs and include a schedule of completion. Respondent shall implement the approved work plan consistent with the approved schedule of compliance.</p> | <p>Sept. 19, 2018</p> |
| <p>8. While continuing to follow the current Wet Weather Operating Plan (WWOP), evaluate and identify any potential changes to the WWOP – at the plant and in the collection system - which would reduce or eliminate plant bypasses due to excessive wet weather influent flows, and submit proposed changes for Department approval. Respondent shall begin implementing the updated WWOP within 30 days of receiving approval from the Department.</p> | <p>Sept. 19, 2018</p> |
| <p>9. Evaluate and summarize recommendations to improve the plant's disinfection processes, including, but not limited to those alternatives previously identified in the October 2015 WWTP Effluent Turbidity Engineering Report. Respondent shall begin implementing a disinfection process within 30 days of receiving approval from the Department.</p> | <p>Sept. 19, 2018</p> |
| <p>10. Evaluate and provide a work plan and approvable schedule to conduct a pilot study to add oxidizer to carbon filter influent and backwash water to determine if sulfide generation in the carbon filters can be reduced or prevented. As part of the study, review the plant's previous use of sodium nitrate as an oxidizer. The study shall also evaluate the effect of the oxidizer on effluent disinfection and determine the most effective feed point for the oxidizer. Respondent shall begin implementing the pilot study within 30 days of receiving approval from the Department.</p> | <p>Submitted June 19, 2018; Revision due Sept. 19, 2018</p> |

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| <p>11. Submit a comprehensive planning level engineering report which evaluates the conversion or modification of the existing plant into an aerobic biological treatment process. The report should incorporate and utilize appropriate elements of the October 2015 WWTP Effluent Turbidity Engineering Report. The report must:</p> <p>A. Include a detailed alternatives evaluation (including appropriate pilot testing), identification of the recommended process technology, optimizing the collection system and treatment plant to capture and treat combined sewer overflows, the new or modified facilities that would be required, and an updated cost estimate; and</p> <p>B. identify any necessary upgrades and modifications needed to capture between 95% and 97% of CSOs.</p> | <p>March 19, 2019</p> |
| <p>12. Submit a detailed description of the means and methods used to record: a) the activation and volumes of CSO discharges from the Falls Street Tunnel and the Gorge Pump Station; and b) activations and volumes of SSO discharges from the LaSalle area.</p> | <p>Completed</p> |
| <p>13. Submit a detailed summary of the procedures followed, and the specific personnel responsible for notifications to the NYAlert system for reporting of CSO and SSO discharges.</p> | <p>Completed</p> |
| <p>14. Submit an evaluation of re-locating Outfalls 001 and 003. This evaluation should consider the effect on the water quality of the receiving water if Outfalls 001 and 003 were to be re-located. The evaluation must identify all suitable locations, costs, and applicable schedules of compliance.</p> | <p>Sept. 19, 2018</p> |
| <p>15. Submit Quarterly progress reports summarizing all actions completed.</p> | <p>Every 3 months; ending when the last deliverable is submitted pursuant to Schedule A</p> |
| <p>16. Respondent shall not conduct any further dewatering of Sedimentation Basin 5 without the prior written approval and without direct supervision of the Department. In addition, all facility operations conducted by the Respondent shall be under the direct supervision and oversight of the Department as set forth in this Consent Order.</p> | <p>On-going</p> |

- 17. Respondent shall immediately update its day to day training and operating plans, including hiring new operators and providing clear verbal instructions to staff. Completed

- 18. Submit a workplan and schedule for the design and construction of the recommendations in the attached Table 4.1 from the July 24, 2018 Engineering Report – Wastewater Treatment Plant and Gorge Pump Station Rehabilitation, attached hereto as Appendix A. June 19, 2019

Niagara Falls Water Board

NYS Department of Environmental Conservation

By: *Daniel T. O'Callaghan*
 Respondent's Signature

By: *Abby M. Snyder*
 Abby M. Snyder
 Regional Director

DANIEL T. O'Callaghan
 Respondent's Name

Dated: 11/20/2018

CHAIRMAN
 Respondent's title



4. Recommended Alternative

The recommended alternatives that were evaluated, compared, selected, and estimated under Section 2.0 are summarized in Table 4.1. The recommended alternatives were bundled into nine project groups based on relative priority. Recommended alternatives are sorted according to project group number.

Table 4.1 Summary of Recommendations

Project Group	Alternative	Description	Cost
1	2B	Primary Scum Removal and Treatment Improvements – Restore Scum Pumping and Install Fine Screen	\$1,020,000
	4C	Sedimentation Basin Improvements – Replacement of Traveling Bridges with Chain and Flight Equipment	\$8,680,000
	10C	Sedimentation Basin Isolation Plate Replacement – Replacement of Both Isolation Plate Guides	\$140,000
	19C	Sedimentation Basin No. 5 Effluent Management Improvements - Submersible Pumping System Upgrades	\$550,000
2	7C	Gorge Pumping Station Rehabilitation – Comprehensive Gorge Pumping Station Rehabilitation	\$4,110,000
3	3B	Screenings and Grit Transport Equipment Improvements - Replacement in Kind	\$560,000
	5C	Polymer Equipment Upgrades – Replacement and Upgrade of Polymer Equipment	\$820,000
	14C	Dewatering Equipment Control Upgrades – Comprehensive Dewatering System Control Upgrades	\$740,000
4	8B	Granular Activated Carbon Replacement – Replacement with Recycled Reactivated Carbon	\$1,500,000
	9B	Carbon Filter Support Gravel Replacement – Replacement of Support Gravel	\$500,000
5	1B	Electrical System Improvements - Complete Critical Repairs	\$2,360,000
	17B	Lighting Improvements – Needs Assessment and Lighting Improvements	\$250,000
6	6B	Disinfectant Dosage and Location Optimization – Optimize Sodium Hypochlorite Dosage and Location	\$650,000
	11B	Chemical Coagulant Optimization - Alternate Coagulant	\$1,500,000
	12B	Minimization of Sulfide Formation - Oxidant Addition	\$1,500,000
7	13B	Heating and Ventilation Improvements – Replacement of Critical Heating and Ventilation Equipment	\$1,160,000
8	15B	Backwash Blower Equipment Improvements – Replacement of Blower Equipment	\$300,000
9	16C	Thickened Sludge Building Waterline Replacement – Replacement of Plant Waterline and Process Waterline	\$140,000
	18B	Interior Process Piping Replacement – Needs Assessment and Piping Improvements	\$500,000
Total Project Cost (Rounded)			\$27,000,000