

**Binghamton-Johnson City Joint Sewage
Treatment Plant Restoration and
Rehabilitation Project**

2019 Quarter 4 Report

*City of Binghamton
Village of Johnson City
Joint Sewage Board*



January 2020

2019 QUARTER 4 REPORT

BINGHAMTON-JOHNSON CITY JOINT SEWAGE TREATMENT PLANT RESTORATION AND REHABILITATION PROJECT CASE NO: R7-20110628-59

In accordance with Paragraph A-1c. of the Second Modification Consent Order (Case No. 8720110628-59) between the City of Binghamton, Village of Johnson City, the Joint Sewage Board, and the State of New York, the City submits this 2019 Quarter 4 Report. The report summarizes the status and progress of the projects and programs required by the Consent Order from October through December 2019.

SECTION 1— FACILITY OPERATIONS

We continue to operate in CEPT mode. Settling Tanks 7, 8, 9 and 10 are operating at full capacity with a maximum flow capacity of 35 MGD. The Headworks Facility is now on line and is providing fine screen and grit removal for all flow going to the primary clarifiers. SIPS is available for operation when the downstream process is complete. Flood protection is complete to elevation 845, and all storm water pump stations are fully operational. The East Scrubber system is in operation. PC continued work on the secondary process train construction this quarter. Flow was diverted through PST 7-10, SIPS, CN Cells 1-8, DN Cells, and UV on August 29, 2019, and Kruger continues to operate their equipment for the secondary process treatment as they continued checking out and verifying the performance of the computerized equipment they provided. The new CEPT was put in September but continued to have process issues until this quarter. All new CEPT systems are now fully operational, and the temporary CEPT has been removed. BAF Backwash Treatment was put into service by Kruger on September 16, 2019, but PC has had operational issues with the Actiflo system that are still ongoing. Kruger is continuing to make operational changes to the Actiflo system to accommodate the flow patterns that are being encountered.

The temporary disinfection in chlorine contact tank #2 is being used for any flows in excess of 35 MGD. Now that the isolation plate at the final effluent channel has been removed, the effluent from Chlorine Tank #2 now combines with the flow coming from the new secondary treatment process at the Final Effluent Channel. The facility is now capable of processing 60 MGD in accordance with the revised temporary operating strategy prepared to comply with the Consent Order.

See Attachment A for the plant performance during this Quarter.

Background

The Binghamton - Johnson City Joint Sewage Treatment Plant (BJCJSTP) processes 18 million gallons per day with the capability of processing up to 60 million gallons per day (MGD) of wet weather flow. This plant is jointly owned by the City of Binghamton and the Village of Johnson City and managed by the Binghamton-Johnson City Joint Sewage Board (BJCJSB).

The BJCJSTP has suffered several catastrophic events since 2006. In 2006, the BJCJSTP was flooded by a 500 year flood that affected many of the processes in operation. In May of 2011, a concrete structure suffered structural failure, and in September 2011, the BJCJSTP suffered another 500 year flood that critically damaged equipment and rendered the secondary treatment fundamentally inoperable. The secondary process system is still largely inoperable today. A Consent Order was negotiated between the City of Binghamton, the Village of Johnson City, the BJCJSB and the NYSDEC to develop a plan to

restore treatment operations at the BJCJSTP. The Consent Order requires the BJCJSTP to restore secondary treatment functionality and be able to fully treat 35 MGD of wet weather flow by August 31, 2019. To achieve this level of treatment, the reconstruction and testing of the Secondary Treatment Process must be completed as necessary to achieve treatment of 35 MGD. To comply with the Consent Order, the Sewage Treatment Plant must then be fully operable by April 1, 2020, including the remainder of the secondary treatment process. There are also several interim milestones included in the Consent Order.

The project is being constructed in accordance with Wicks Law, which required the project be bid as multiple prime contracts. More specifically, Wicks Law requires that the bulk of the construction work, consisting of the secondary treatment (BAF), be divided into a General Civil Construction Contract, an Electrical Contract, an HVAC Contract and a Plumbing Contract.

The following projects are either nearing completion, in construction, or complete.

Contract No.	Description	Status
Contract No. 1	Compost Facility Demolition	Complete
Contract No. 2	FEMA Mechanical	Complete
Contract No. 3	BAF Facility Demolition	Complete
Contract No. 4	MCC HH Emergency Replacement	Complete
Contract No. 5	BAF Restoration and Rehabilitation Civil Contract	Notice to Proceed (NTP) issued May 27, 2016
Contract No. 6	BAF Electrical	NTP issued May 27, 2016
Contract No. 7	BAF HVAC	NTP issued May 27, 2016
Contract No. 8	BAF Plumbing	NTP issued May 27, 2016
Contract No. 9	Secant Pile Contract	Complete
Contract No. 10	Solids Handling Renovation Civil	NTP Issued July 20, 2017
Contract No. 11	Solids Handling Renovation Electrical	NTP Issued July 20, 2017
Contract No. 12	Solids Handling Renovation HVAC	NTP Issued July 20, 2017
Contract No. 13	Solids Handling Renovation Plumbing	NTP Issued July 20, 2017
Floodwall	Floodwall and New Diversion Structure	Complete

Contract Descriptions

Contract No. 1 - Compost Facility Demolition

Demolition of the upper portion of the compost facility was performed to accommodate the construction of the new Administration Building to house the plant staff as well as provide the new control room to operate the new facilities. Demolition of the lower portion of the Compost Building clears the way for the construction of a new maintenance facility.

Contract Status: 100% Complete

Contract No. 2 - FEMA Mechanical

The FEMA Mechanical Project replaces valves, equipment and other miscellaneous items damaged in the 2011 flood. It includes equipment in both the East and West Primary Sludge Pumping Stations, valves and equipment located in the Head House, and equipment associated with Sludge Thickener Pumping Station Nos. 1 and 2. Work associated with this contract is being reimbursed by FEMA due to the flood of 2011.

Contract Status: 100% Complete

Contract No. 3 - BAF Facility Demolition

The BAF Demolition Contract removed existing structures and utilities that conflict with the new construction work included in the BAF Restoration Project. Demolition efforts include selective demolition in the existing process tanks (C-Filters, N-Filters, and DN-Filters) and buildings and mechanical equipment and piping to ready the site for new construction.

Status: The scope of work for the contract was increased with five Change Orders. Change Order One modified the contract to demolish and remove the existing Blower Building to improve construction on Contracts 5-8 at the C-N cells 1-8. Change Order Two demolished the known concrete in the C cell area inside the secant pile area below the elevation 825 (the original limit of demolition indicated on the contract documents). Change Order Three removed the additional concrete pile caps and steel H piles not originally included in the contract documents and also backfilled from elevation 825 to 831. The Fourth Change Order compensated the contractor for demolition of approximately 3600 CY of additional concrete within the secant pile area not known to exist. The removal of the additional concrete eliminated a delay in excess of four months on the overall project, and reduced the cost to avoid having a future contractor remove the concrete. The Fifth Change Order compensated LeChase for repairing defective rebar from the original construction while LeChase was repairing the rebar that they overcut at their own expense. The final change was to repair the existing rebar that was cut during the original construction of the C cells.

Contract Status: 100% Complete

Contract No. 4 - MCC - HH Emergency Replacement

Contract 4 replaces the original existing Motor Control Center (MCC) in the Head House. The MCC is 50 years old, and is identified as MCC-HH. The contract was bid as an emergency contract because the electrical system in the Head House is both critical to keeping the BJCJSTP in service, and because the original MCC is extremely unreliable due to the age and condition of the gear. MCC HH Emergency Replacement also replaces the existing raw sewage pump drives of the existing 50 year old equipment including new electrical feeders from the HH to the Johnson City Grit House No. 1, a new feeder from the HH to the Thickened Sludge Pump Station No. 1, and various other panel boards. The emergency work also includes replacement of the existing raw sewage variable frequency drives that were located in the existing MCC HH. The new drives will be more reliable, more efficient, and will provide better performance of the existing raw sewage pumps.

Status: The new VFD's and MCC HH have been installed in the Head House. All work on the MCC HH project has been completed including the removal of the existing MCC, and project closeout items.

We have received the final reports on testing, and the final trip settings on MCC HH from the manufacturer based on actual loadings measured in the field. Paper work is being processed for Final Completion.

Contract Status: 100% Complete

Contract No. 5 - BAF Restoration and Rehabilitation Civil Contract

When combined with the other BAF contracts (Nos. 6, 7 & 8), Contract No. 5, the General Civil contract, is intended to provide a functioning automated plant using a BIOSTYR system that can be modified to fit current plant configurations. It is also intended to provide functioning automated headworks and primary clarification processes upstream of the BIOSTYR system and solid handling processes downstream of the BIOSTYR system.

Major components of the work under Contract No. 5 include new coarse screens and ancillary equipment, new piping and valves for the influent pumps, new metering equipment, new fine screens and grit removal with ancillary equipment, a new primary distribution box, new mechanical equipment for primary clarifiers 1-10, new chemical equipment for primary treatment, modification of the primary clarifier structural components to replace the aged and deteriorated mechanical equipment, new secondary influent pumps and rehabilitation of existing pump stations for the new BAF system, a new BAF backwash tank, new CN-BAF and DN-BAF facilities, a new methanol system that will feed the DN-BAF cells, new Ultra Violet Light disinfection system to replace the existing chlorine disinfection system, new sludge thickening equipment and systems, a new administration building, new odor control equipment, two new 2MW electric generators, and a new plant outfall to the river.

Status: This quarter, PC continued installing the permanent grating at CN Cells 1-8, Influent channel, CN 9-14 Influent channel, and the CN 9-14 gallery. PC is largely complete with the grating in the DN gallery and UV, but has not completed the grating installation at the methanol storage area. PC still has not completed much of the permanent handrail installation at either CN, DN, UV and methanol. This continues to be a Contractor caused delay, and prevents us from recommending that the secondary process be turned over to the STP Staff for operation. PC continues to do a marginal effort at operating the secondary process, but for the most part the treatment process is coming up to the permit requirements. We are likely to fail to meet the permit limits for total nitrogen, VCBOD, and nitrate removal. This is the result of an adjustment of the methanol dosing rate by Kruger that significantly reduced the methanol dosing.

PC continued concrete work at the site this quarter with the placement of the concrete for the Thickener Distribution Box. Startup of the Thickener Distribution Box in conjunction with the startup of the renovated Thickener #3 will improve the ease for operation of the gravity thickeners. These two systems are anticipated to be operational in the middle of January. Their progress for concrete work was unchanged this quarter. The bulk of the concrete placed last quarter was phase 2 concrete and the remaining structural concrete is all phase 2 concrete. Kruger has completed the majority of their system demonstration testing for CN Cells 1-8, DN Cells, SIPS, BAF Backwash, and BAF Backwash tank, but continues to address issues with the DN System operation and Actiflo. In the meeting with DEC on December 10, 2019, we confirmed that PC would not meet the January 1, 2020 Milestone date for Substantial Completion Phase 2. DEC confirmed that the project had met the intentions of the August 31 completion requirements regarding the Phase 1, and that the fines associated with the Phase 1 milestone would be dropped.

PC completed leak testing CN Cells 9-14 this quarter, and also installed the air piping in all six cells. PC completed installing the K5 filter media in CN Cells 10, 12, and 14. PC also installed the K5 filter media in two of the north cells for CN Cells 9-14. The polystyrene filter media is installed in CN Cells 10, 12, and 14, and the Kruger crew is scheduled to return to the site on January 6, 2020 to complete installing the polystyrene in the remaining CN Cells. PC got a very late start on leak testing the CN 9-14 Effluent Channel as well as the CN 9-14 Influent Channel. The completion of the correction of the leaks in these two channels prevented PC from diverting flow through the CN Cells 9-14 as discussed during the December 10, 2019 meeting with DEC.

During the month of December, PC began installing the grating over the Influent Channel for CN Cells 9-14. There are significant deficiencies with the installation and will result in the necessity to remove and reinstall the grating. This is another Contractor caused delay, and this delay could also significantly impact the completion of the milestone for Phase 2.

STP continued to operate the Headworks this quarter. The issue of the hydrogen sulfide gas has been addressed, and the new odor control system appears to be functioning as intended by the Engineer. PC completed putting the CEPT online and it is operating as intended. Now that the odor control system is fully operational at the Headworks, the H₂S levels are within allowed standards for occupancy of the building.

Kruger continued the startup and testing of the CN Cells 1-8. They continued optimizing the program and systems in December since they have finally completed the Chemsan systems.

PC has not performed any corrective effort for repair of the expansion joint failure at the CN Effluent Channel. PC now has a similar failure to properly cure the expansion joint material at H line in the south CN Influent Channel. They failed to allow the dry cure of the "Mseal" as required by the manufacturer. They only had 5 days before they allowed leakage into the annulus space around the "Mseal" to be filled with water. PC has submitted a repair plan for consideration by the Owner and GHD. The plan has been evaluated, and the Engineer has determined that the defective installation of the "Mseal" in the CN Effluent channel must be replaced at no cost to the Owner.

PC completed work on the backwash header in the CN Cells 9-14. The mechanical trades completed installing the remaining piping systems in the CN 9-14 gallery this quarter.

PC continued work on grating and other ancillary work in the methanol area. GHD has completed the checkout of the systems at methanol to allow for confirmation of the safety systems. The third party inspection was completed by Petcosky last quarter, and the methanol system was put on line this quarter. Destruction of nitrates was well on the way to compliance when Kruger allowed an automated chemical dosing system to dramatically reduce the methanol dosing. This reduction in dosing eliminated almost all of the nitrate destruction.

PC has confirmed that they are not following the flawed CPM schedule, so we are having weekly schedule meetings with PC and all of the necessary multi-primers and subcontractors to advance the secondary treatment process and meet the DEC Milestones. We have notified PC that they are not in compliance with the contract for providing a comprehensive schedule. We are currently holding two months payments as incentive to PC to comply with the CPM Schedule requirements for the contract, as well as to protect the potential collection of any imposed liquidated damages due to the late finish by PC.

No significant change at the new Administration Building this quarter. PC paved the Administration Building parking lot last quarter and has finally addressed the issues they had with the curb installations. PC completed installing the asphalt base and binder coats in about ½ of the STP site before the asphalt plants were closed. They will not be able to complete this work until late spring when the asphalt plants resume making asphalt.

PC completed installing the decorative fencing on the south side of the facility. The new access gates at the front of the STP site are now operational. All storm water pump stations are also now operational from permanent power. PC began installing security hardware on the doors into the various buildings around the site, and Matco is following along behind the hardware installation to complete the electrical work for the security systems on the doors. We will soon have secure doors around the site, which should allow STP management staff to control and monitor access into the various buildings around the site.

PC began work on the PST 1-6 renovation this month. Existing condition of the concrete in these existing basins is in worse condition than anticipated by the GHD. PC began work on the prep work for the coatings in late November, but their coatings applicator has been pulled off the site to allow the correction of the surface conditions from the surrounding ground water. The existing visible leaks were corrected with the unit price for crack injection. The leak testing was completed for PST 6. We are evaluating options for the extra work necessary to complete the PST 1-6 restoration.

3 Month Look Ahead: PC Construction should complete rehabilitation of the final gravity thickener this quarter. PC/Kruger will continue optimizing the system and will complete testing of the UV system. Start-up of CN Cells 1-14, DN Cells, UV, and methanol facilities should be completed this quarter.

We will continue pushing PC to complete the thickener renovation as soon as possible. The thickener rehabilitation work has always been Phase 2 work in the PC construction contract. Thickener #1 has been rehabilitated, but thickener #2 and #3 will not be complete until a later date. We have requested a variance from DEC for the Milestone date in the Consent Order. .

The contractor's construction schedule now represents that the contractor is now nearly fourteen months behind schedule for meeting Phase I and Phase II milestones. We continue to work with them to improve their schedule. NYSDEC has a 3rd modification of the Consent Order, and several intermediate milestones in a previous modification to the Consent Order have been revised as requested by the Owner. We have shared these revised dates with the Contractors, and we are confident that PC can meet the requirements for Contract 5.

Contract Status: 94% Complete through December 2019

Contract No. 6 - BAF Electrical

The BAF Electrical Contract supports the BAF General Civil Contract and includes all electrical and instrumentation associated with the BAF contracts. The components include installation of the new UV disinfection system, installation of the new generators, installation of the electrical feed throughout the plant, as well as installation of the instrumentation and SCADA System throughout the plant.

Status: Contract No. 6 Notice to Proceed was issued on May 27, 2016 in compliance with the DEC

milestones in the Consent Order.

This quarter, Matco completed installing some ancillary electrical work in the BAF Backwash Treatment Facility, DN Cells, UV, and Methanol Building. These circuits were not critical to the operation of the secondary treatment process. Matco completed pulling the fiber optic cable, and GHD continued installing the SCADA software around the site. The two new 2MW generators are complete, but we are waiting on Matco to schedule the manufacture for the final inspection of the electrical gear associated with the generators. This work is not holding up operation of the facility.

Matco continued site wiring in locations where the site grading was sufficiently complete for them to do their work. They are waiting on PC to complete the subgrade preparation for the remaining site lighting. This work will not likely be done until spring due to the asphalt delivery options. MATCO is providing input for the Project CPM baseline schedule.

3 Month Look Ahead: MATCO will complete site wiring in advance of the paving operations scheduled for the second quarter. They continue to support the electrical work around the site and will complete the wiring for CN 9-14 area next quarter as PC makes work areas available. Matco is preparing to do the electrical work for PST 1-6, and could complete the electrical work next quarter if work locations become available.

Contract Status: 98% Complete through December 2019

Contract No. 7 - BAF HVAC

The BAF HVAC contract supports the BAF General Civil Contract and includes installation of all HVAC Systems in all STP Facilities as well as revisions to the odor control systems throughout the plant. The odor control improvements are intended to alleviate the odors that have been prevalent in the past in and around the plant.

Status: Contract No. 7 Notice to Proceed was issued on May 27, 2016 in compliance with the DEC milestones in the Consent Order. The contractor continued submitting material submittals for the HVAC equipment for the project this quarter. They continue to provide supporting information for the development of the CPM schedule, and have acknowledged they can meet the required milestones of the Consent Order. They are completing the HVAC systems in various locations throughout the site.

3 Month Look Ahead: J & K Plumbing should complete the startup and testing for all HVAC systems for the remaining facilities this quarter.

Contract Status: 99% Complete through December 2019

Contract No. 8 - BAF Plumbing

The BAF Plumbing contract supports the BAF General Civil Contract and includes installing plumbing systems for the new and existing facilities included in Contract No. 5.

Status: Contract No. 8 Notice to Proceed was issued on May 27, 2016 in compliance with the DEC milestones in the Consent Order. The contractor has continued providing the supporting information for the overall CPM schedule this quarter, and they have confirmed that they can meet the required

milestones of the Consent Order.

Danforth completed installing the plumbing for the sampling system at both CN and DN this quarter.

3 Month Look Ahead: JW Danforth should complete the remaining plumbing system this quarter. They also continue to work on the plant water supply system.

Contract Status: 97% Complete through December 2019

Contract No. 9 - Secant Pile Contract

The Secant Pile contract includes installation of the secant piles that support the excavation for the new BAF Backwash tank as well as supporting the new CN Cells 9-14. Construction also includes excavation to the final grade for the BAF Backwash tank. This project was bid separately from Contracts 5-8. In doing so, a minimum of four months on the critical path schedule was saved.

Status: The punch list for items to repair was prepared for the Contractor and they have completed the punch list work. They completed repairs of the latent defects discovered in the installation of the rebar couplings that the contractor installed in the wales and struts that support the C-N Cells above the BAF Backwash Tank.

Contract Status: 100% Complete

Contract No. 10 - Solids Handling Renovation - Civil

Contract No. 10 is intended to renovate and improve the solids handling systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment.

Status: Quandel is nearing substantial completion on the Solids Handling Building. They have experienced significant malfunction of equipment provided by Quandel to the Solids Handling Process. These malfunction issues are a direct result of either faulty equipment or equipment manufacturers lack of required coordination. We continue to have compromised operation of the new centrifuges due to these issues. We have been able to keep sufficient equipment operational to meet all sludge processing needs.

During the quarter, the existing centrifuges were removed and installation of the mechanical thickeners has progressed. They are projecting completion of the mechanical thickeners next quarter. Quandel has stated that they will need sludge to test the new mechanical thickeners by the first week in February, 2020. Quandel needs to provide the paperwork for the pressure tests for the sludge piping from the sludge blend tanks to the mechanical thickeners. PC's piping is complete to allow us to deliver sludge when requested by Quandel.

Work on the west half of the lab progressed this quarter. We anticipate the lab being fully operational by the end of this next quarter.

Quandel has completed installing the pumps for the Thickener Pump Station #2. The new pumps will be fully tested as the renovated thickeners are brought on line. GHD continues to work on the SCADA control system for automation of the renovated thickeners.

Quandel was not making any progress on the removal and recertification of the gas conditioning equipment, so we were forced to remove the work from their scope of work and the City is procuring the equipment on a sole source contract. They are alleging that they are not responsible for reconditioning the equipment. Koester was awarded a purchase order to provide and install the equipment that was Quandel's obligation. Koester is now complete with all work associated with the digester gas safety equipment and digester mixing equipment.

Quandel declined to quote a cost proposal to recoat the inside of Digesters #1 & #2, which are the two smaller digesters. They also refused to repair the spalled concrete at the top of Digester #1 despite having a unit price for repairing spalled concrete in their base bid. The owner decided to coat the inside of Digesters #1 and #2 before installing the cover on these two digesters. We had to put digester covers #1 and #2 on hold pending completion of recoating the inside. Installation of the digester covers was completed the previous quarter. The Digester gas safety equipment for Digester #1 and #2 could not be completed until after Quandel completed the installation of the covers for Digesters #1 and #2. The installation of the Digester gas safety equipment and mixing equipment for Digesters #1 and #2 are now complete.

3 Month Look Ahead: Quandel will continue to install the mechanical thickeners this quarter and the thickeners should be ready for startup and testing next quarter. Installation of the thickeners and the completion of the lab renovation will largely complete Quandel's base scope of work for the project. They would still need to complete the punch list work that develops from site walk through with the Engineer and plant staff.

We are currently planning to start up Digesters #1 and #2 with seed sludge from Digester #3 when sufficient sludge is available for feeding more than one digester.

Contract Status: 96% Complete through December 2019

Contract No. 11 - Solids Handling Renovation - Electrical

Contract No. 11 is intended to renovate and improve the components of the Solids Handlings Systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment. The contract is intended to support Contract No. 10 in the construction and renovation of the new Solids Handling System. The contract will follow the schedule of Contract No. 10.

Status: MATCO is complete with the work for Solids Handling and Digester Control Buildings. Matco proceeded with the work in the thickener pump station, the lab, and the mechanical thickeners in the Head House this quarter.

3 Month Look Ahead: The only work that Matco has remaining in the Solids Handling Building is change order work requested by GHD for the Scum Processing Equipment. They will continue work on the electrical work for the mechanical thickeners in the next quarter.

Contract Status: 95% Complete Through December 2019

Contract No. 12 - Solids Handling Renovation – HVAC

Contract No. 12 is intended to renovate and improve the HVAC components of the Solids Handlings Systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment. The contract is intended to support Contract No. 10 in the construction and

renovation of the new Solids Handling System. The contract will follow the schedule of Contract No. 10.

Status: J&K performed startup of motor operated louver in the micro turbine room. They also performed change order work for the micro turbines recirculation water. The motor operated louver and valve replacement was completed before Quandel was able to get their vendor onsite to correct ta programming and electrical defect in micro turbines 2 and 3.

3 Month Look Ahead: J&K should be complete with all base contract work by the end of the next quarter.

Contract Status: 98% Complete through December 2019

Contract No. 13 - Solids Handling Renovation – Plumbing

Contract No. 13 is intended to renovate and improve the plumbing components for the Solids Handlings systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment. The contract is intended to support Contract No. 10 in the construction and renovation of the new Solids Handling System. The contract will follow the schedule of Contract No. 10.

Danforth completed miscellaneous pipe work in the Solids Handling Building, Digester Complex, and Sludge Thickener Buildings this quarter. They began work on the plumbing work in the Head House to support the lab renovation and the mechanical thickener installation.

3 Month Look Ahead: Danforth is nearly complete with their contract work. They should be able to complete the base contract work next quarter.

Contract Status: 95% Complete through December 2019

Floodwall

The new floodwall being constructed at the STP is intended to protect the plant to an elevation 1.5 feet above the 2011 flood level. The floodwall includes concrete walls on the east and north side of the STP. The project also includes two new pump stations to pump rainwater out of the plant during the storm events that might overwhelm the existing storm drain system. The new flood wall system works in conjunction with new flood wall features included in Contract No. 5 BAF General Civil Construction. The flood wall systems are being funded by a FEMA recovery grant.

Status: No significant work this quarter. We elected to not delete the removal of the heavy stone that is being used as a haul road for the WQIP Project from Streeter's contract. We were unable to come to mutual terms for the deletion of the removal of the haul road, so Streeter will remobilize to remove the heavy stone and finish their work when the WQIP contractor is complete with the haul road.

3 Month Look Ahead: Streeter to remove and restore the grade outside the floodwall next quarter. Streeter will also complete the installation of the two headwalls and flap gates for the storm drain lines outside the floodwall.

Contract Status: 98% Complete through December 2019

**Third Modification Consent Order
Appendix A Compliance Table as of 10/28/2019**

Item No.	Description	Due Date	Status per Respondent on 10/10/19	Appendix A-1 Certification Submission Status	Appendix A-1 Certification Approval Status
3e	Complete construction of new backwash waste treatment system	June 30, 2019	Complete August 31, 2019. The BAF Backwash Treatment Facility was operational on September 16, 2019.	9/6/2019	Accepted
3f	Commence start-up of SIPS Complete construction of SIPS	April 30, 2019 June 30, 2019	Completed before April 30, 2019. Fully operational August 29, 2019.	5/13/2019 8/5/2019	Accepted Accepted
3g	Complete construction and commence start-up of the plant headworks, including the new bar screens and grit removal system	August 1, 2019	Completed June 26, 2019	8/5/2019	Accepted
3h	Complete construction and hydraulic testing of new [BAF] backwash waste tank.	June 30, 2019	June 30, 2019	7/8/2019	Accepted
3i	Complete construction and start-up for all work related to PST 7-10	August 31, 2019	Completed and operating August 29, 2019	9/6/2019	Accepted
3j	Complete construction and retrofit work on two sludge thickeners. A third sludge thickener will be kept in use throughout construction, until the other two are put into operation, and shall be retrofitted.	Two by June 30, 2019. Third one by August 30, 2019 Requested variance until March 31, 2020	One is complete, the second should be complete by January 1, 2020. Two thickeners will be available for use at all times. Thickener #1 is complete and available for use. Thickener #2 is in service and will stay in service until thickener #3 rehabilitation is complete. Thickener #3 was finally released by Plant staff for rehabilitation on June 26, 2019. Thickener #3 rehabilitation will be complete	Certification stating compliance has been achieved has not been submitted to date	Variance request is pending review. Should agree with revised startup schedule.
3k	Complete construction and start-up of 'CN' BAFs 1-8 and all 'DN' BAFs	August 31, 2019	Completed and operating August 29, 2019	9/6/2019	Start-up is not considered completed, no methanol feed to DN cells yet

Item No.	Description	Due Date	Status per Respondent on 10/10/19	Appendix A-1 Certification Submission Status	Appendix A-1 Certification Approval Status
3l	Commence Operation of BAF CN cells 1-8, BAF DN cells 1-4, backwash tank, [BAF] backwash treatment system, headworks modifications, primary clarifier modifications, permanent CEPT system, UV disinfection, sludge thickeners and all related appurtenances.	August 31, 2019 Requested a variance for the sludge thickeners as they are part of Phase 2 construction work.	Operation of BAF backwash tank, headworks, PST 7-10, and UV was achieved by August 30, 2019. BAF backwash treatment construction was complete by August 30, 2019, but Kruger did not want to put the Actiflo into service until the solids build up was sufficient in the cells for treatment to be effective. Kruger decided there was sufficient solids to put the system into service on September 16, 2019	10/10/2019	PST 1-6 are overdue; only primary clarifiers 7-10 have commenced operation
3m	Substantially complete construction of BAF C/N cells 9-14	January 1, 2020	January 1, 2020. If we can finish sooner, we will push PC to do so.		
3n	Operate the Facility in compliance with SPDES permit effluent limits	April 1, 2020	April 1, 2020		
4d	Achieve substantial completion of the repair and restoration of Anaerobic Digesters 1-3	June 30, 2019. Request a variance until September 20, 2019 to allow the expansion tanks and compressors to be installed. Insufficient sludge to start up digester until after BAF is processing sludge.	Digester #3 was complete before June 30, 2019. Digester #1 and #2 cover installation was delayed to allow for coatings and crack repairs to be done. This was discussed with the DEC in 2018 and the DEC expressed their preference for doing to coatings now rather than in the future. Digester #3 will handle all sludge flow for the interim construction period. Digesters #1 and #2: All construction work with the exception of the installation of the digester gas mixing compressors was completed by August 30, 2019. Digester gas mixing compressors were waiting on the expansion tanks added by the vendor during installation. Gas compressors were installed and began startup on Digesters 1 & 2 on September 20, 2019.	10/10/2019	Digester #3 is complete. Certification pending review. Confirmation needed for Digesters 1 and 2.

Item No.	Description	Due Date	Status per Respondent on 10/10/19	Appendix A-1 Certification Submission Status	Appendix A-1 Certification Approval Status
4e	Commence operation of Anaerobic Digesters 1-3	<p>August 31, 2019</p> <p>On 10/10/2019 requested variance due to insufficient sludge produced to startup Digesters 1 & 2; no new compliance date provided.</p>	<p>Digester 3 was operational in June 2019. All three digesters could not be operated on or before the August 31, 2019 milestone date because the STP does not currently produce enough sludge to feed more than Digester 3. Sludge production after August 31, 2019 may be adequate to start up a second digester, but likely will not see enough sludge to startup the third digester until after Phase 2 at the earliest.</p> <p>Substantially complete as of August 30, 2019. The only remaining items to be completed for Digester 1 & 2 was the gas mixing compressors. The compressors are onsite but have not been installed because the manufacturer is waiting on expansion tanks to be delivered. The expansion tanks were not part of the original design and are extra work from the manufacture. The two gas mixing compressors were installed, and startup began on September 20. It is not possible to achieve the 3rd digester startup due to insufficient sludge being produced by the STP. We are planning to startup the 2nd digester in the near future to handle increased solids loading.</p>		Variance request pending review
5b	<ul style="list-style-type: none"> • Modify the approved interim operating strategy to provide for operation of the new processes coming online by August 31, 2019. • Modify the approved interim operating strategy to provide for operation of the new processes coming online by January 1, 2020. 	<ul style="list-style-type: none"> • July 31, 2019 • December 1, 2019 	Interim Operating Strategy was completed for Phase 1 by July 31, 2019	8/5/2019 for Phase 1	Accepted

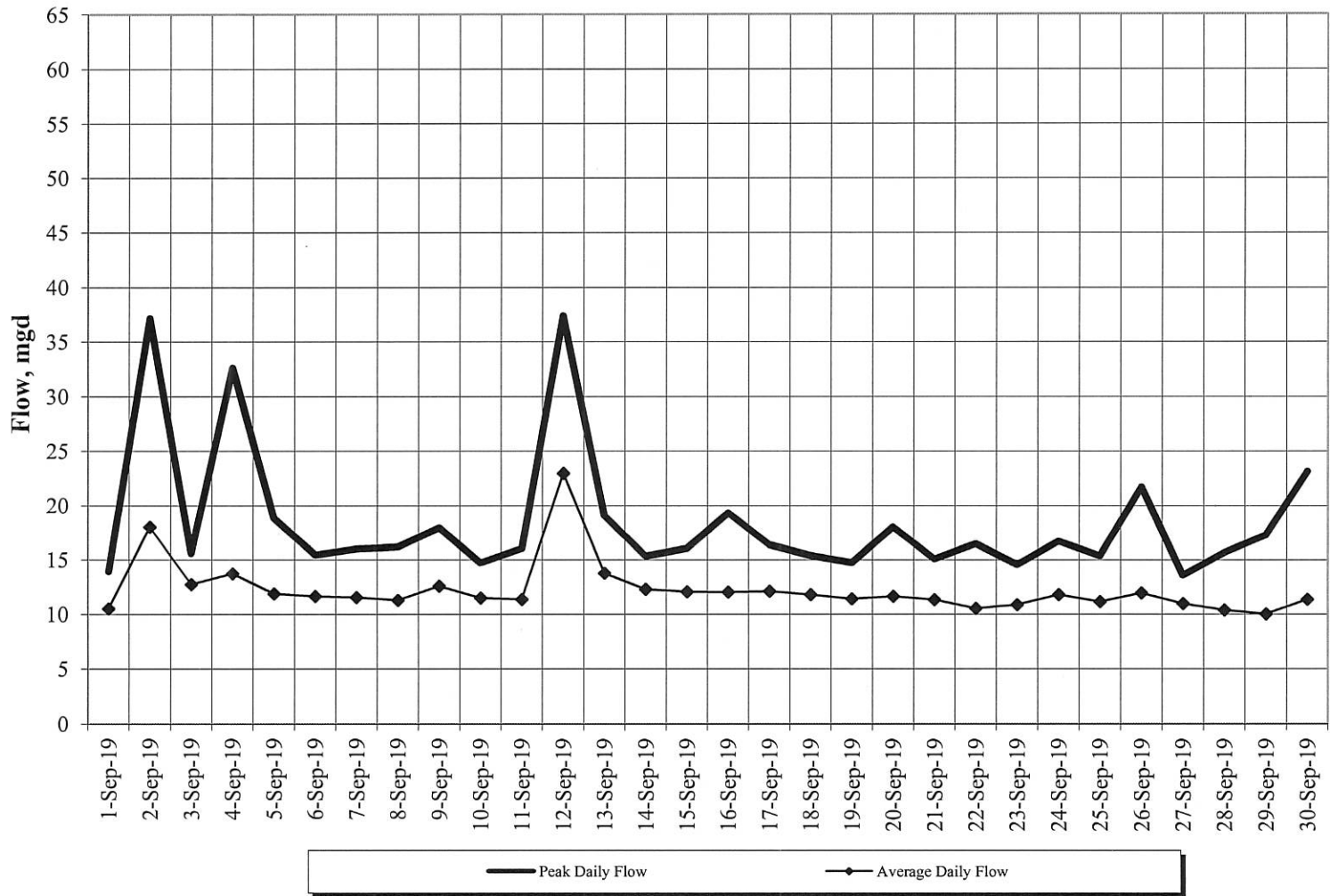
Item No.	Description	Due Date	Status per Respondent on 10/10/19	Appendix A-1 Certification Submission Status	Appendix A-1 Certification Approval Status
7	Complete construction on Flood Mitigation Phase II, completion of the flood wall and flood protection system to elevation 845 for the entire Facility	February 28, 2019	Completed March 1, 2019 for use on temporary power Completed April 19, 2019 for use on permanent power	Unsigned copy of certification received on 10/28/2019	Acceptable pending receipt of signed form.
Sch. B-2	Compliance with Interim Permit Limits, Levels and Monitoring	Effective September 1, 2019	On 8/30/2019, requested extension of Schedule B-1 Interim Permit Limits until November 30, 2019 and start of Schedule B-2 on December 2, 2019		9/5/2019 DEC replied via letter to extension request. Start-up plan submitted on October 4, 2019. Waiting on revised start-up schedule

APPENDIX A

Facility Operations

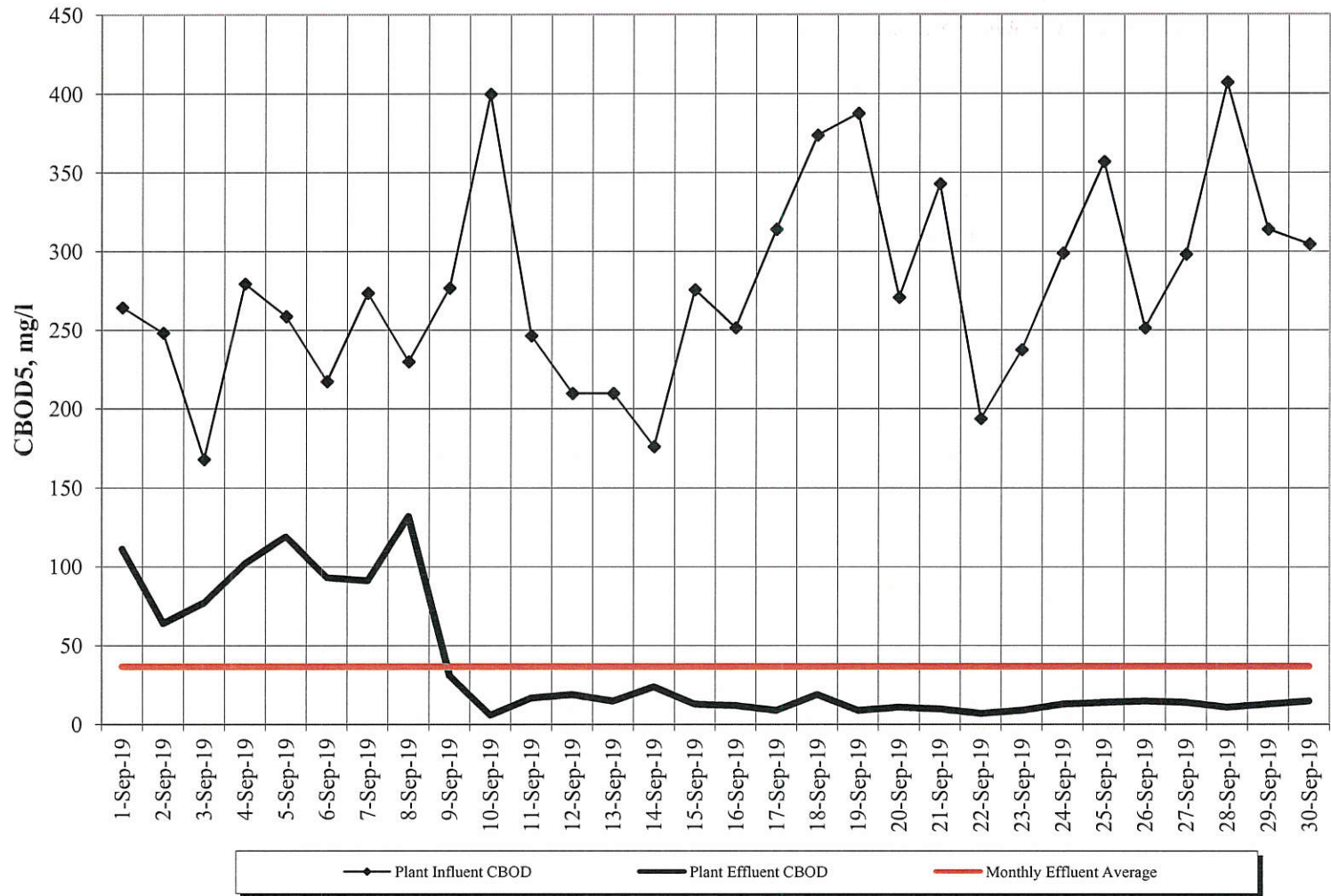
Daily Flows

Binghamton - Johnson City JSTP



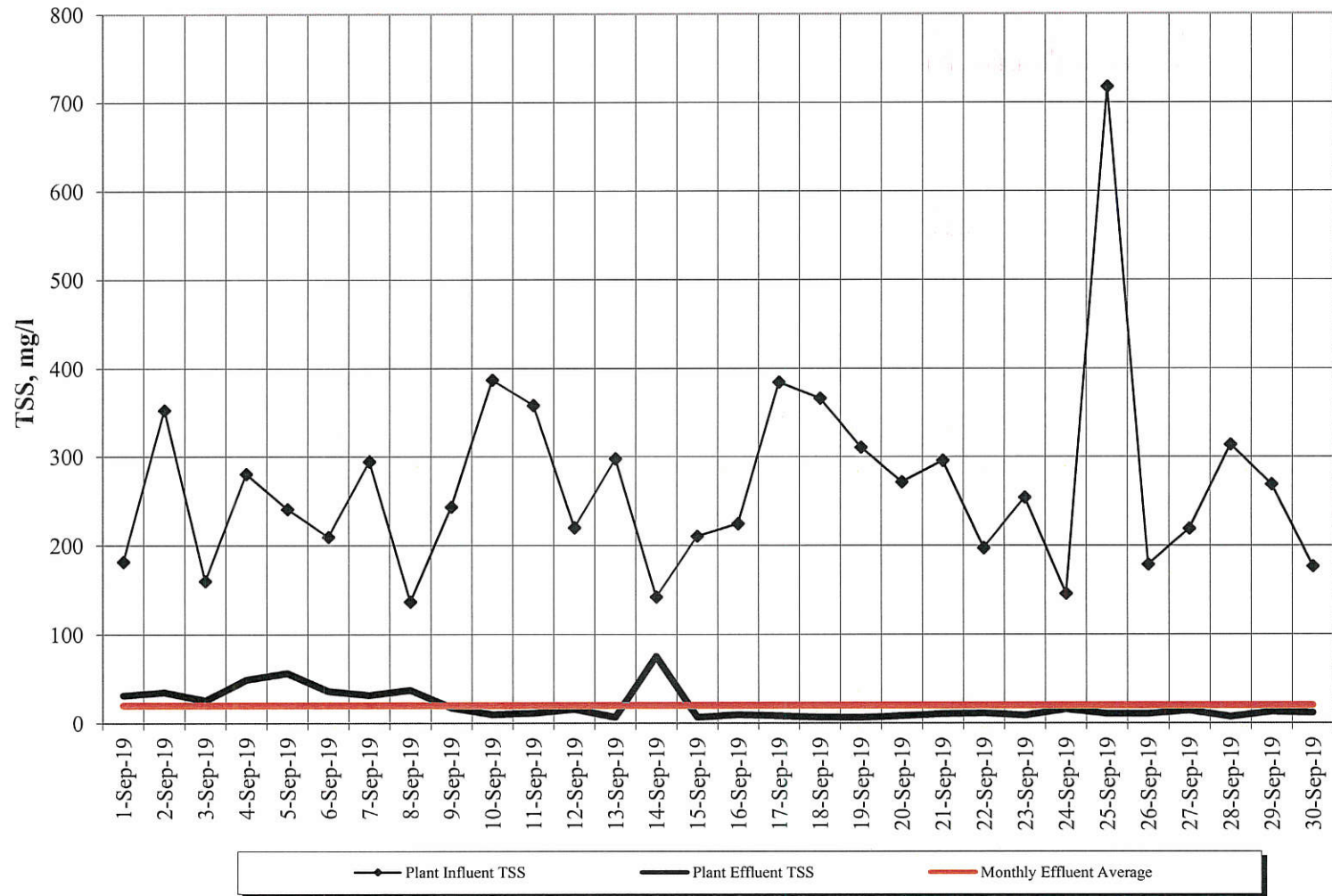
CBOD5 Concentrations

Binghamton - Johnson City JSTP

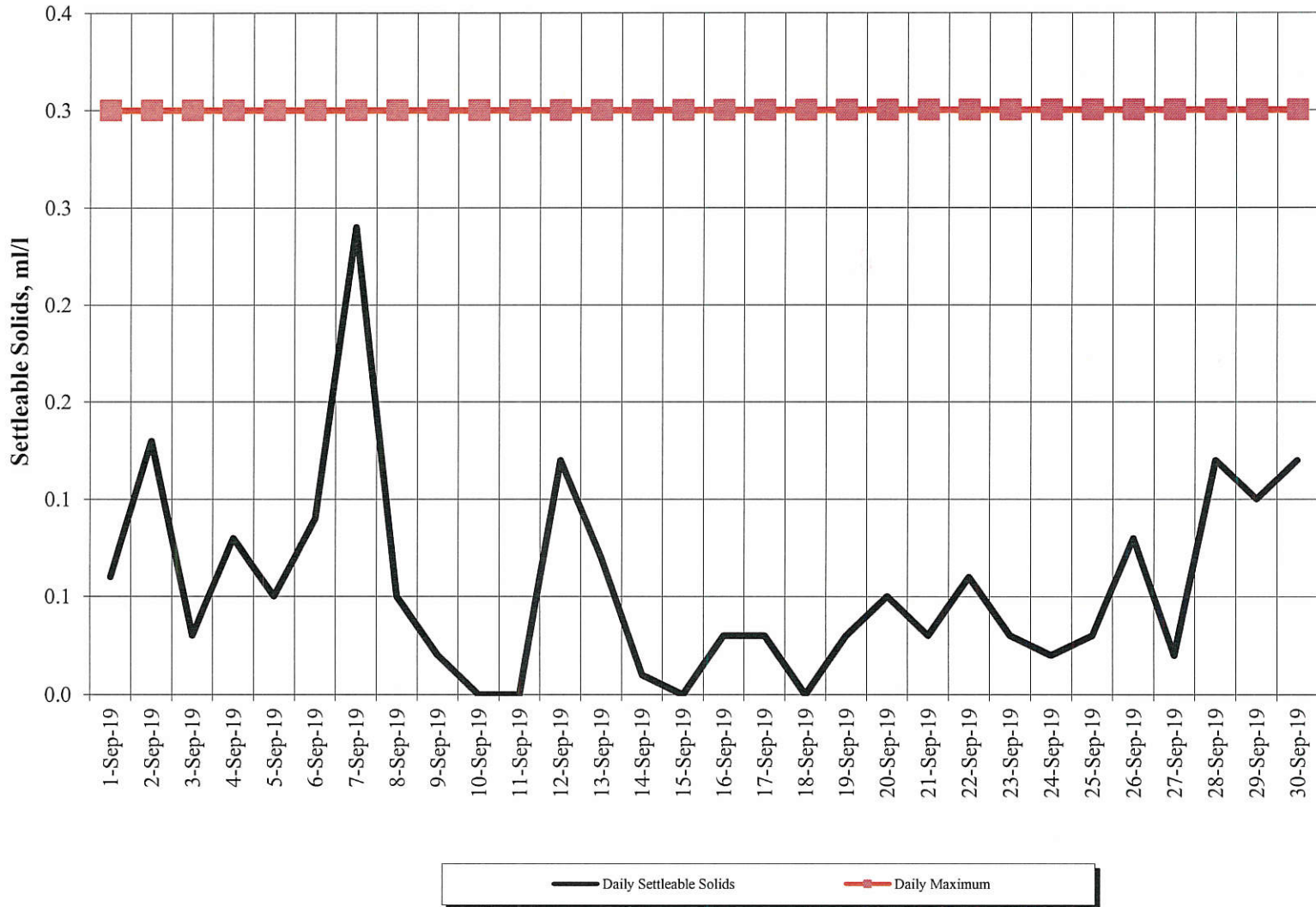


TSS Concentrations

Binghamton - Johnson City JSTP

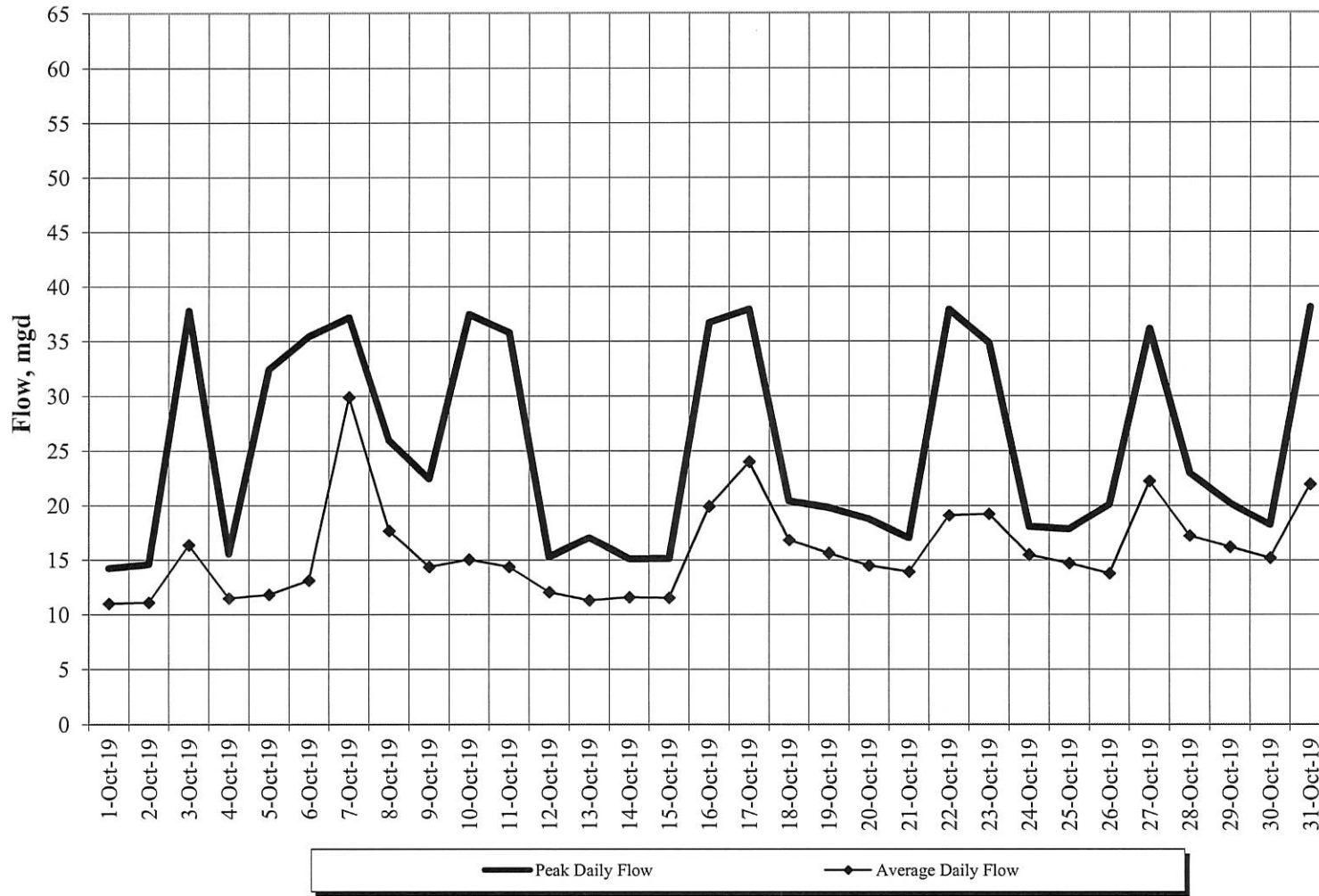


Settleable Solids Binghamton - Johnson City JSTP



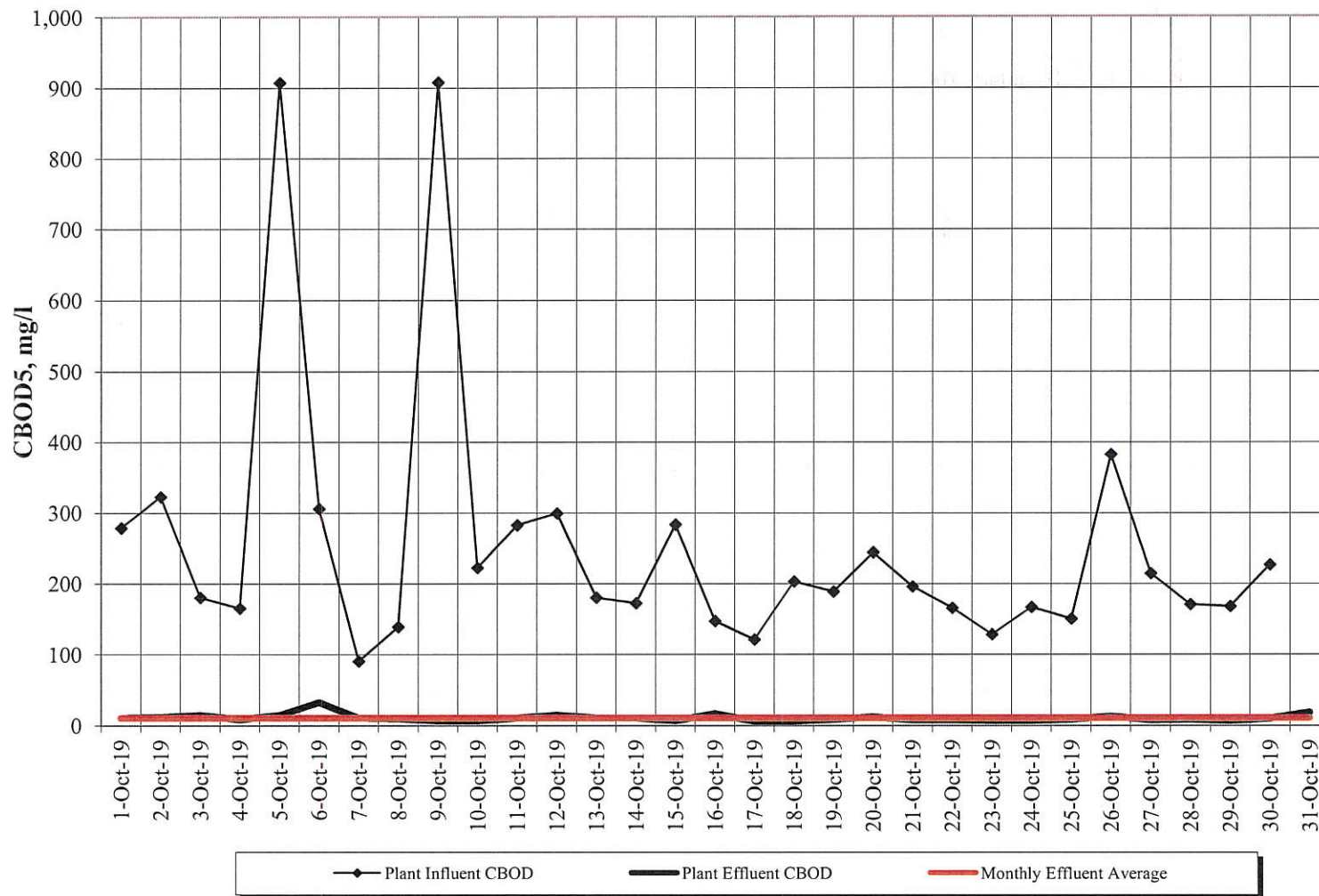
Daily Flows

Binghamton - Johnson City JSTP



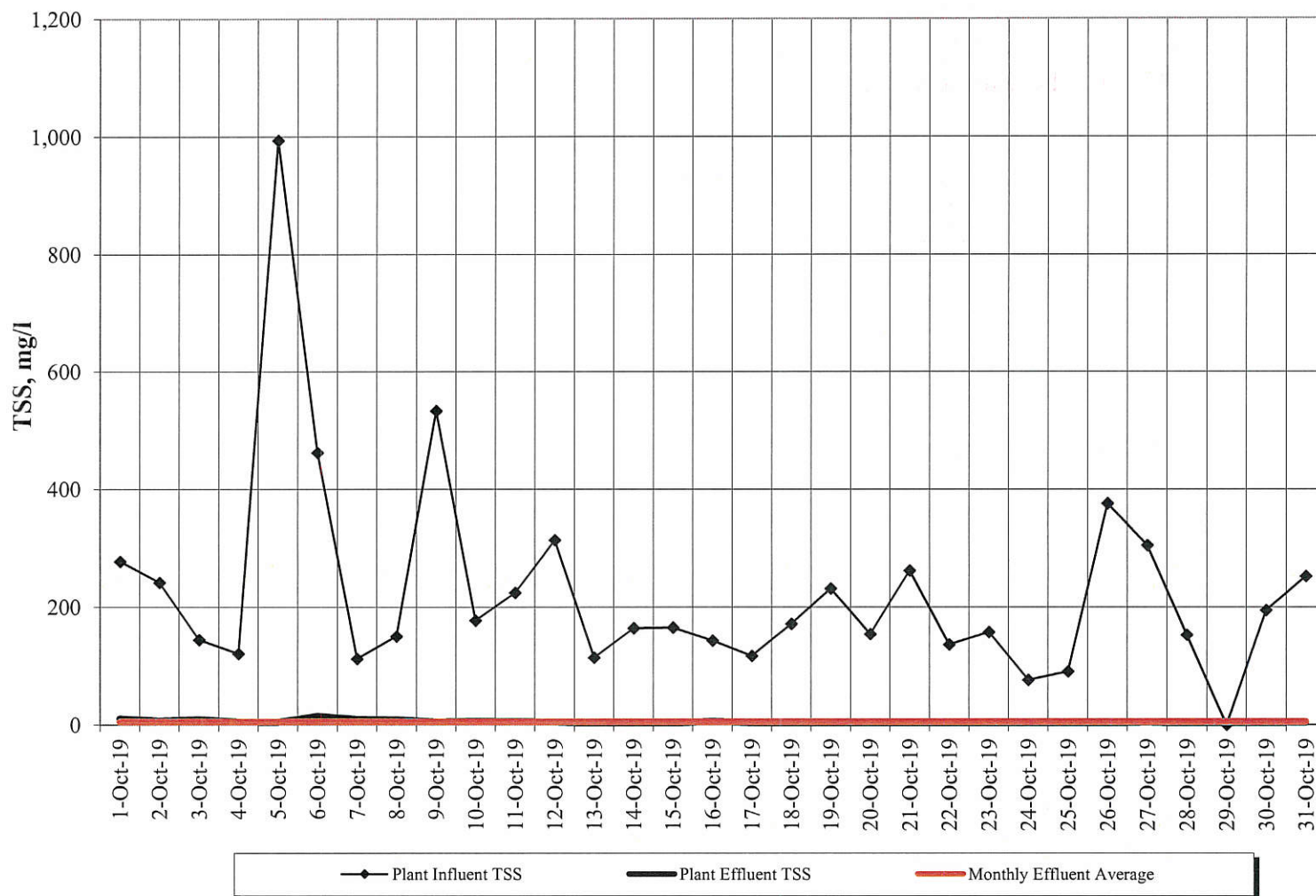
CBOD5 Concentrations

Binghamton - Johnson City JSTP



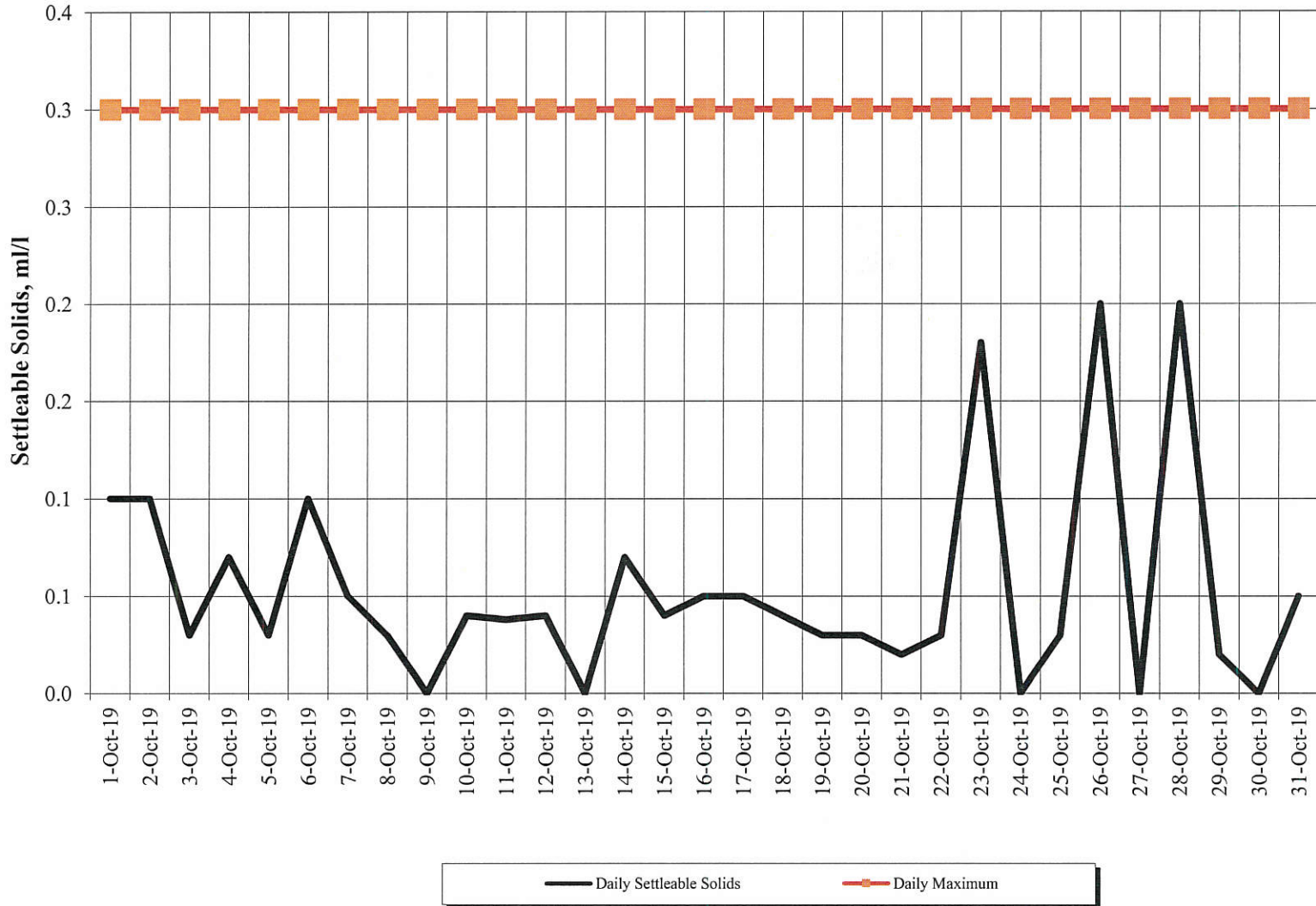
TSS Concentrations

Binghamton - Johnson City JSTP



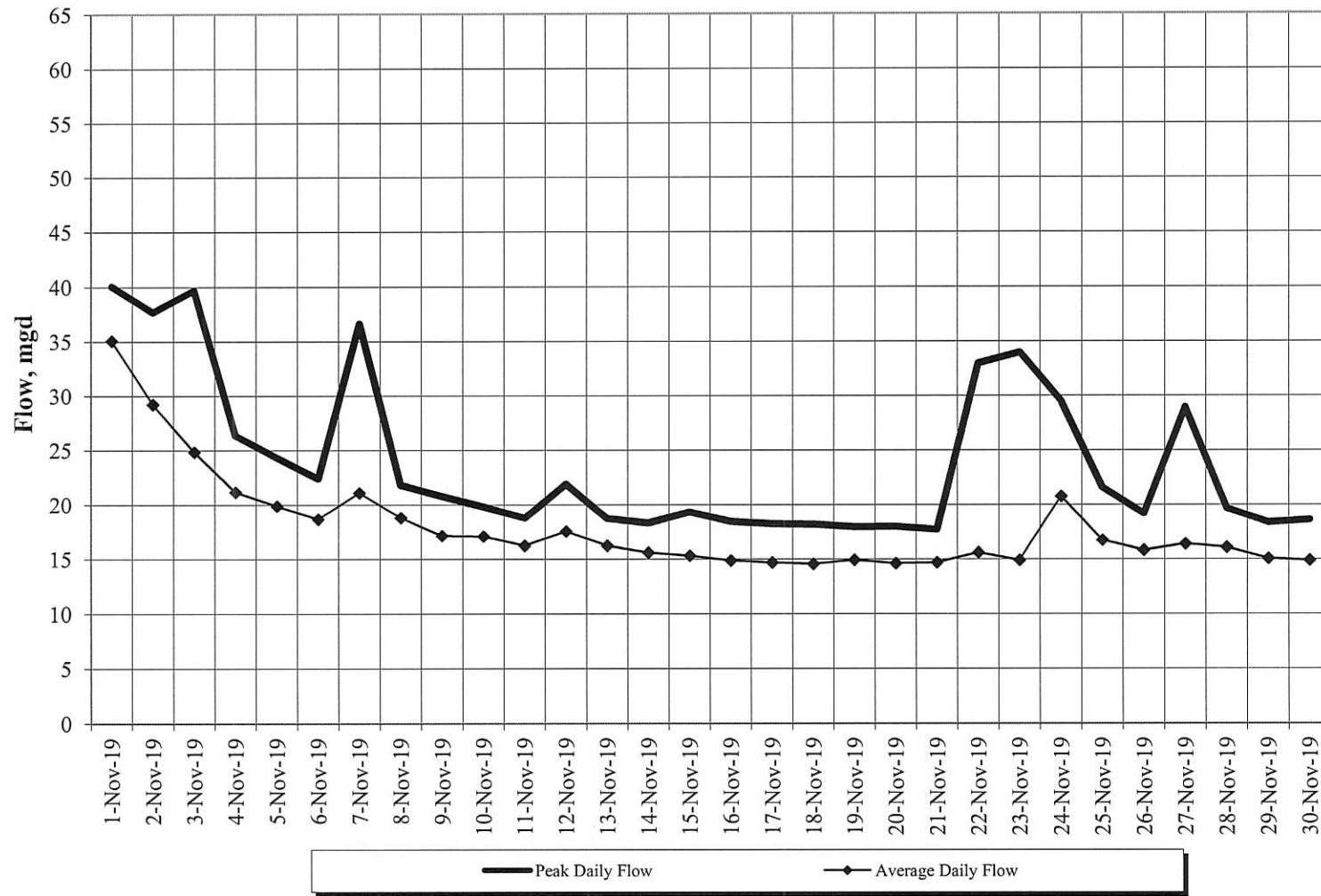
Settleable Solids

Binghamton - Johnson City JSTP

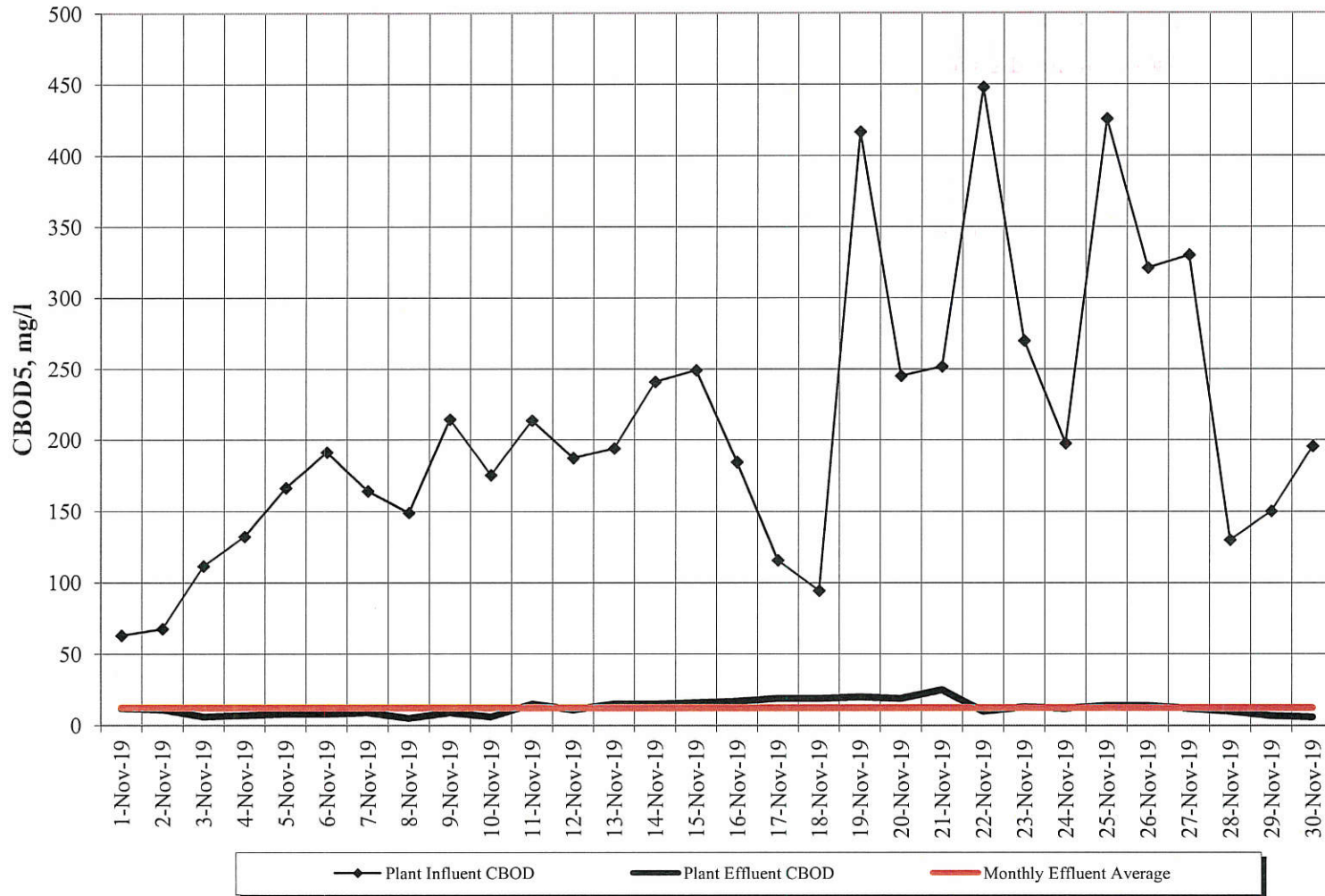


Daily Flows

Binghamton - Johnson City JSTP

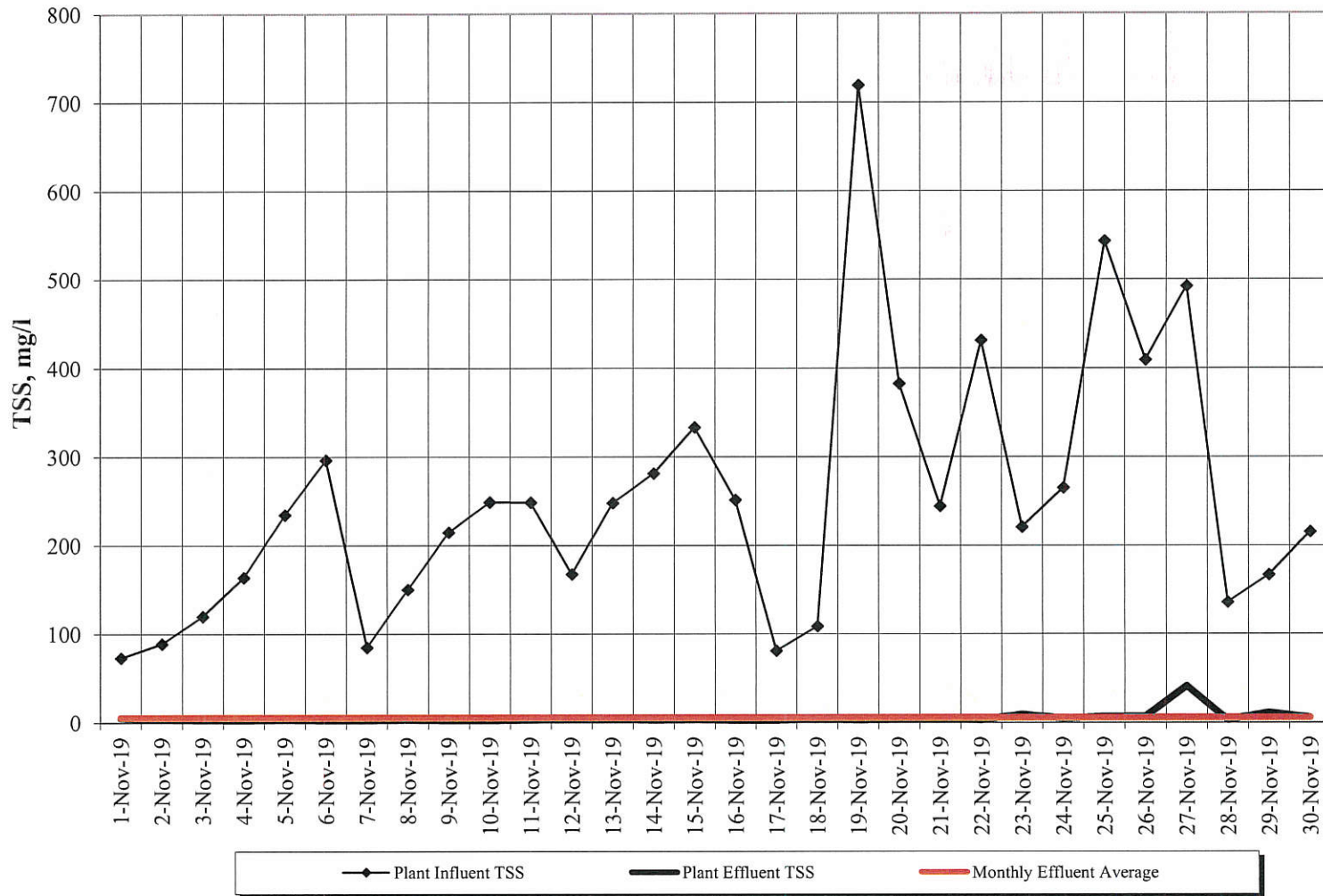


CBOD5 Concentrations Binghamton - Johnson City JSTP

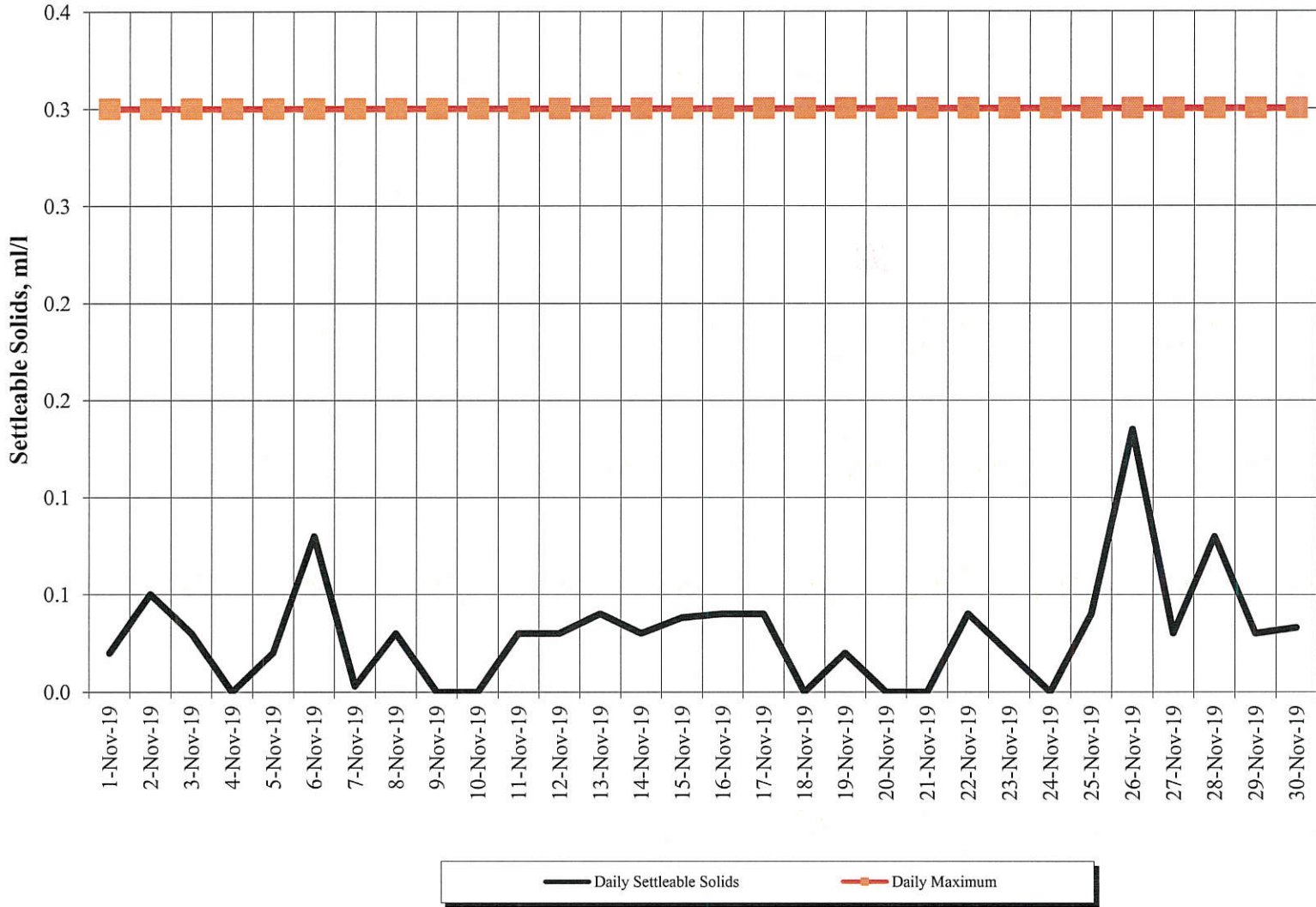


TSS Concentrations

Binghamton - Johnson City JSTP



Settleable Solids Binghamton - Johnson City JSTP



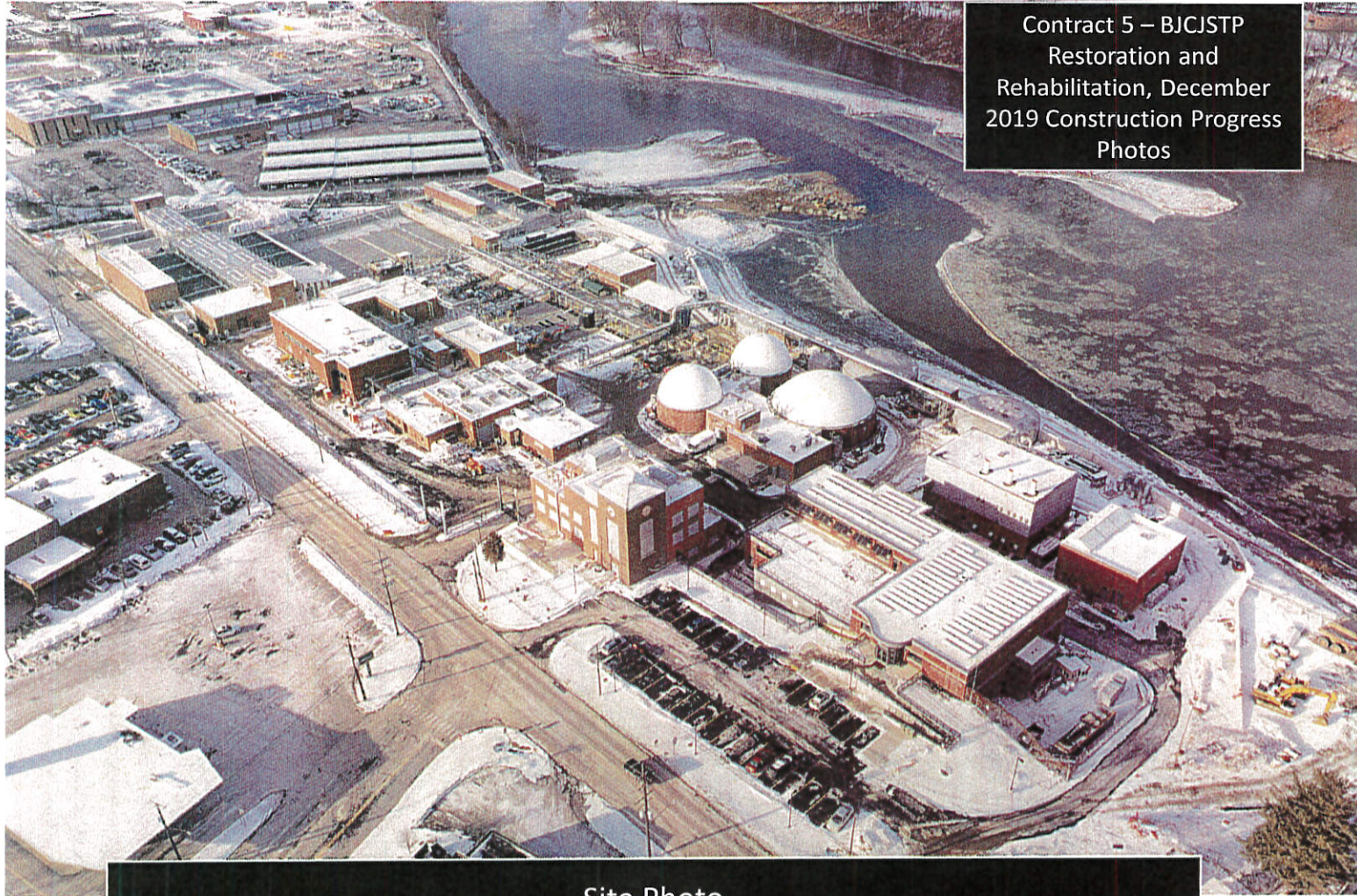
DATE	TOTAL FLOW	Final Eff Amm. Avg	FW Amm. Avg	Final Eff TKN	FW TKN	CL 2 AVG	Fecal Coli mg/l	Eff. Phos.	FW Phos. Avg	Eff. Total Iron	Daily Total Q	Iron (Fe) lbs/day
1-Sep-19	10.51			7.8	21.8	0.89	5					
2-Sep-19	18.01			17.7	14.1	0.66	5					
3-Sep-19	12.74	15.7	13.7	16.6	19.0	1.23	265	1.4	3	1.80	12.74	191
4-Sep-19	13.74			14.7	13.7	0.87	5					
5-Sep-19	11.89			16.2	23.2	0.96	10			3.42	11.89	339
6-Sep-19	11.65			16.4	23.8	0.52	5					
7-Sep-19	11.56			22.0	30.6	0.74	5					
8-Sep-19	11.30			12.3	12.4	0.63	5					
9-Sep-19	12.58			24.0	20.5	1.1	107					
10-Sep-19	11.51	15.8	19.3	16.4	26.9	0.94	5	0.8	6	0.03	11.51	3
11-Sep-19	11.36			11.8	15.2	0.92	5					
12-Sep-19	22.98			7.6	16.8	0.62	5			0.08	22.98	15
13-Sep-19	13.79			9.5	26.3	1.19	5					
14-Sep-19	12.30			10.1	21.7	1.15	5					
15-Sep-19	12.07			6.2	29.9	1.1	5					
16-Sep-19	12.04			7.2	22.8	0.92	2					
17-Sep-19	12.12	7.5	16.8	10.2	35.0	0.78	1	1.3	5	0.04	12.12	4
18-Sep-19	11.81			11.6	38.8	0.74	2					
19-Sep-19	11.43			13.5	31.8	0.75	1			0.04	11.43	4
20-Sep-19	11.66			14.6	37.9	0.93	1					
21-Sep-19	11.34			13.2	38.1	0.84	5					
22-Sep-19	10.53			10.8	30.9	1.02	1					
23-Sep-19	10.87			10.2	30.7	0.58	8					
24-Sep-19	11.81	11.9	20.2	14.2	35.7	0.76	1	1.7	4	0.06	11.81	6
25-Sep-19	11.16			12.0	32.8	1.1	5					
26-Sep-19	11.96			17.8	35.7	1.27	3			0.05	11.96	5
27-Sep-19	10.99			10.7	35.3	1.04	1					
28-Sep-19	10.39			9.5	32.6	1.05	3					
29-Sep-19	10.03			4.9	36.0	0.98	1					
30-Sep-19	11.36			11.1	24.6	1.02	1					
	12.25	12.73	17.5	12.69	27.2	1.27	4	1.30	4.50	0.69	13.31	77
	TOTAL FLOW	Final Eff. Avg as N mg/l	FW Avg as N mg/l	Final Eff TKN	FW TKN	CL 2 Max	30 Day MEAN	EFF. PHOS.	FW PHOS.	Eff. Total Iron	Daily Total Q	Mthly Avg Iron lbs/day

DATE	TOTAL FLOW	Final Eff. Amm. Avg.	FW Amm. Avg.	Final Eff. TKN	FW TKN	CL 2 AVG	Fecal Coli mg/l	Eff. Phos.	FW Phos. Avg.	Eff. Total Iron	Daily Total Q	Iron (Fe) lbs/day
1-Oct-19	11.00	7.2	17.3	7.2	25.7	0.87	1	0.97	3.7	0.04	11.00	4
2-Oct-19	11.10			11.2	35.2	1.16	2					0
3-Oct-19	16.36			8	19.1	1.08	10			0.06	16.36	9
4-Oct-19	11.49			17.3	23.5	1.12	1					0
5-Oct-19	11.84			12.9	47.6	1.01	1					0
6-Oct-19	13.14			19.1	40.0	1.05	2420					0
7-Oct-19	29.90			6.4	14.3	1.03	6					0
8-Oct-19	17.67	6.3	10.6	9.6	21.2	1.18	1	0.37	2.7	0.05	17.67	8
9-Oct-19	14.37			9.1	208.4	1.21	3					0
10-Oct-19	15.07			9.8	29.1	1.04	1			0.04	15.07	5
11-Oct-19	14.38			8.1	41.1	0.96	4					0
12-Oct-19	12.06			5.6	33.3	1.26	1					0
13-Oct-19	11.32			4.5	23.7	1.26	1					0
14-Oct-19	11.60			6.6	29.3	1.08	1					0
15-Oct-19	11.55	3	25.9	22.8	60.8	1.2	1	0.8	6.6	0.03	11.55	3
16-Oct-19	19.93			14.5	13.9	1.4	1					0
17-Oct-19	24.02			6.7	16.7	0.99	1			0.04	24.02	8
18-Oct-19	16.82			5	24.5	0.98	1					0
19-Oct-19	15.64			3.8	25.5	0.87	1					0
20-Oct-19	14.52			2.4	28.5	0.77	1					0
21-Oct-19	13.94			2.9	33.7	1.33	1					0
22-Oct-19	19.12	1.4	10.7	3.8	23.0	0.86	1	0.37	4.1	0.04	19.12	7
23-Oct-19	19.25			3.1	20.9	1.23	2					0
24-Oct-19	15.50			2.2	21.2	1.01	1			0.03	15.50	4
25-Oct-19	14.72			2.3	22.1	1.04	2					0
26-Oct-19	13.79			2.4	43.9	1.01	1					0
27-Oct-19	22.25			1.9	16.5	1.18	1					0
28-Oct-19	17.25			2.1	20.7	1.08	1					0
29-Oct-19	16.20	1.6	12.3	3	25.0	1.14	2	0.37	4.1	0.03	16.20	4
30-Oct-19	15.22			6.5	21.0	1.34	5					0
31-Oct-19	21.97			2.70	17.8	0.75	3					0
	15.90	3.90	15.3	7.21	33.1	1.40	2	0.58	4.24	0.04	16.28	6
	TOTAL FLOW	Final Eff. Avg as N mg/l	FW Avg as N mg/l	Final Eff TKN	FW TKN	CL 2 Max	30 Day MEAN	EFF. PHOS.	FW PHOS.	Eff. Total Iron	Daily Total Q	Mthly Avg Iron lbs/day

DATE	TOTAL FLOW	Final Eff Amm. Avg.	FW Amm. Avg.	Final Eff. TKN	FW TKN	CL 2 AVG.	Fecal Coli mg/l	Eff. Phos.	FW Phos. Avg.	Eff. Total Iron	Daily Total Q	Iron (Fe) lbs/day
1-Nov-19	35.09			1.6	8.6	1.23	13					0
2-Nov-19	29.23			1.8	12.0	1.06	3					0
3-Nov-19	24.85			2	14.9	1.08	2					0
4-Nov-19	21.18			2.2	19.6	0.89	1					0
5-Nov-19	19.90	10.7	8.9	2	24.6	1.19	1	0.36	4.0	0.28	19.90	46
6-Nov-19	18.68			3	30.4	1.09	1					0
7-Nov-19	21.11			2.6	16.1	1	8			0.43	21.11	76
8-Nov-19	18.80			4.4	20.3	0.86	1					0
9-Nov-19	17.13			2.6	20.3	0.83	1					0
10-Nov-19	17.09			2.3	22.5	0.84	1					0
11-Nov-19	16.22			3.4	19.5	1.03	62					0
12-Nov-19	17.54	0.2	13.2	1.9	16.7	0.63	1	0.3	3.8	0.37	17.54	54
13-Nov-19	16.23			3.2	29.6	0.97	12					0
14-Nov-19	15.60			3	29.3	0.66	4					0
15-Nov-19	15.32			2.6	32.1	1.07	3					0
16-Nov-19	14.88			2.3	29.2	0.5	1					0
17-Nov-19	14.69			2.6	19.6	0.49	1					0
18-Nov-19	14.57			3.7	18.7	0.78	1					0
19-Nov-19	14.93	1.9	11.9	4.1	44.8	0.34	1	0.32	3.4	0.43	14.93	53
20-Nov-19	14.61			4.1	34.5	0.51	3					0
21-Nov-19	14.70			3.1	28.7	0.22	2			0.60	14.70	73
22-Nov-19	15.61			3.2	35.8	0.01	1					0
23-Nov-19	14.90			5	24.7	0	3					0
24-Nov-19	20.77			2.9	27.1	0	12					0
25-Nov-19	16.72			2.4	27.7	0.01	2					0
26-Nov-19	15.81	2.1	11.0	3.5	31.7	0.03	10	0.23	5.2	0.47	15.81	62
27-Nov-19	16.37			2.1	22.8	0	6					0
28-Nov-19	16.08			2.4	21.4	0	11					0
29-Nov-19	15.06			3	22.3	0.01	1					0
30-Nov-19	14.90			1.7	24.7	0.01	2420					0
	17.95	3.73	11.3	2.82	24.3	1.23	3	0.30	4.13	0.43	17.33	62
	TOTAL FLOW	Final Eff. Avg. as N mg/l	FW Avg. as N mg/l	Final Eff. TKN	FW TKN	CL 2 Max	30 Day MEAN	EFF. PHOS.	FW PHOS.	Eff. Total Iron	Daily Total Q	Mthly Avg. Iron lbs/day

APPENDIX B

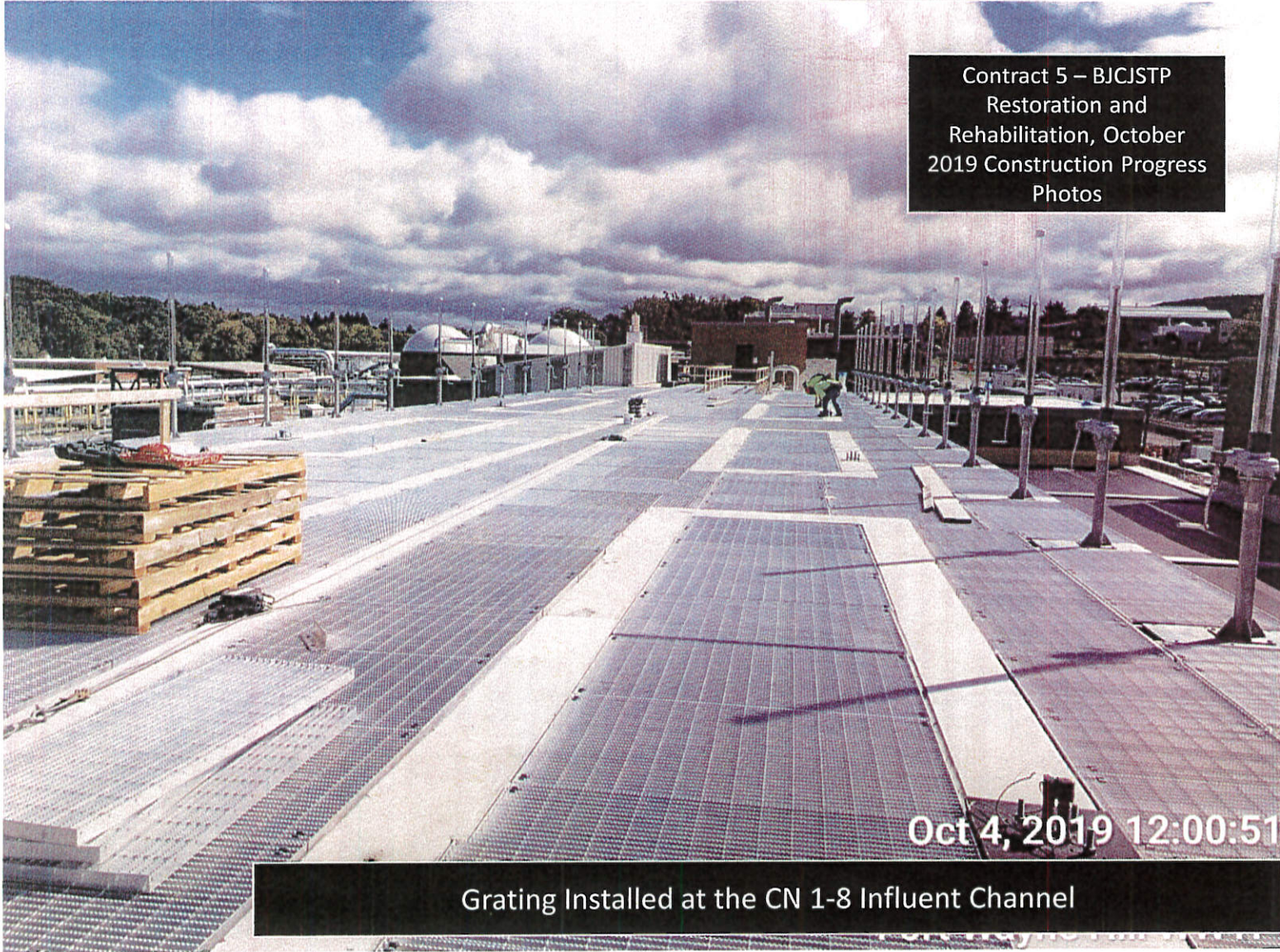
Photos



Contract 5 – BJCSTP
Restoration and
Rehabilitation, December
2019 Construction Progress
Photos

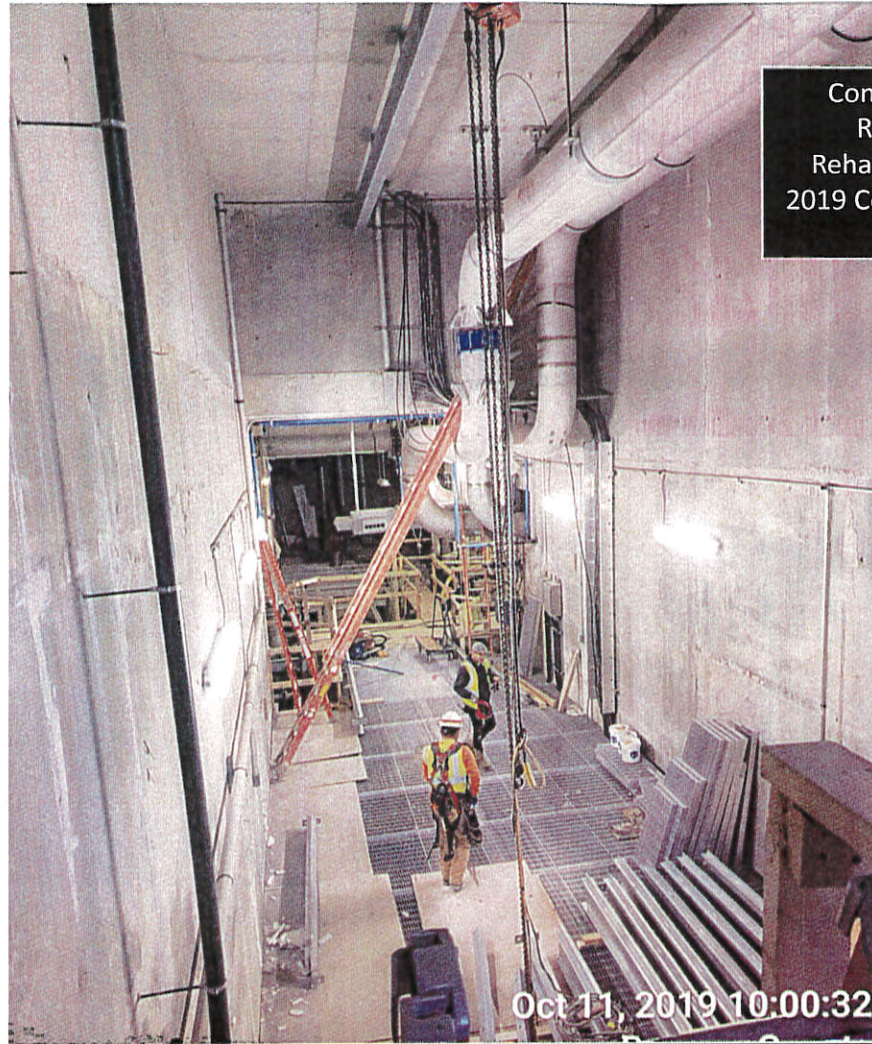
Site Photo

Contract 5 – BJCSTP
Restoration and
Rehabilitation, October
2019 Construction Progress
Photos



Oct 4, 2019 12:00:51

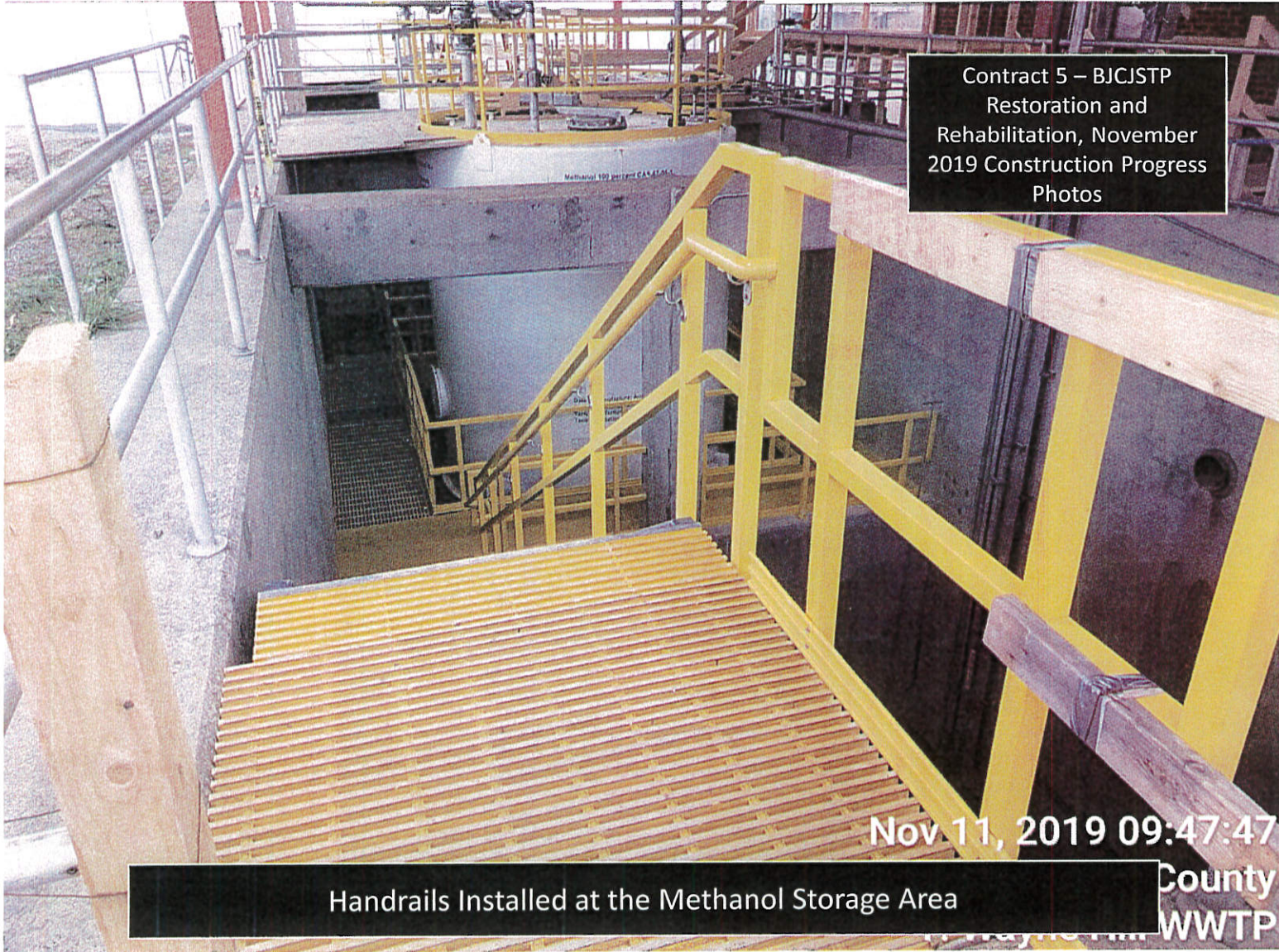
Grating Installed at the CN 1-8 Influent Channel



Contract 5 – BJCJSTP
Restoration and
Rehabilitation, October
2019 Construction Progress
Photos

Oct 11, 2019 10:00:32

CN North-South Utility Corridor Progress



Contract 5 – BJCJSTP
Restoration and
Rehabilitation, November
2019 Construction Progress
Photos

Nov 11, 2019 09:47:47

Handrails Installed at the Methanol Storage Area

County
WWTP

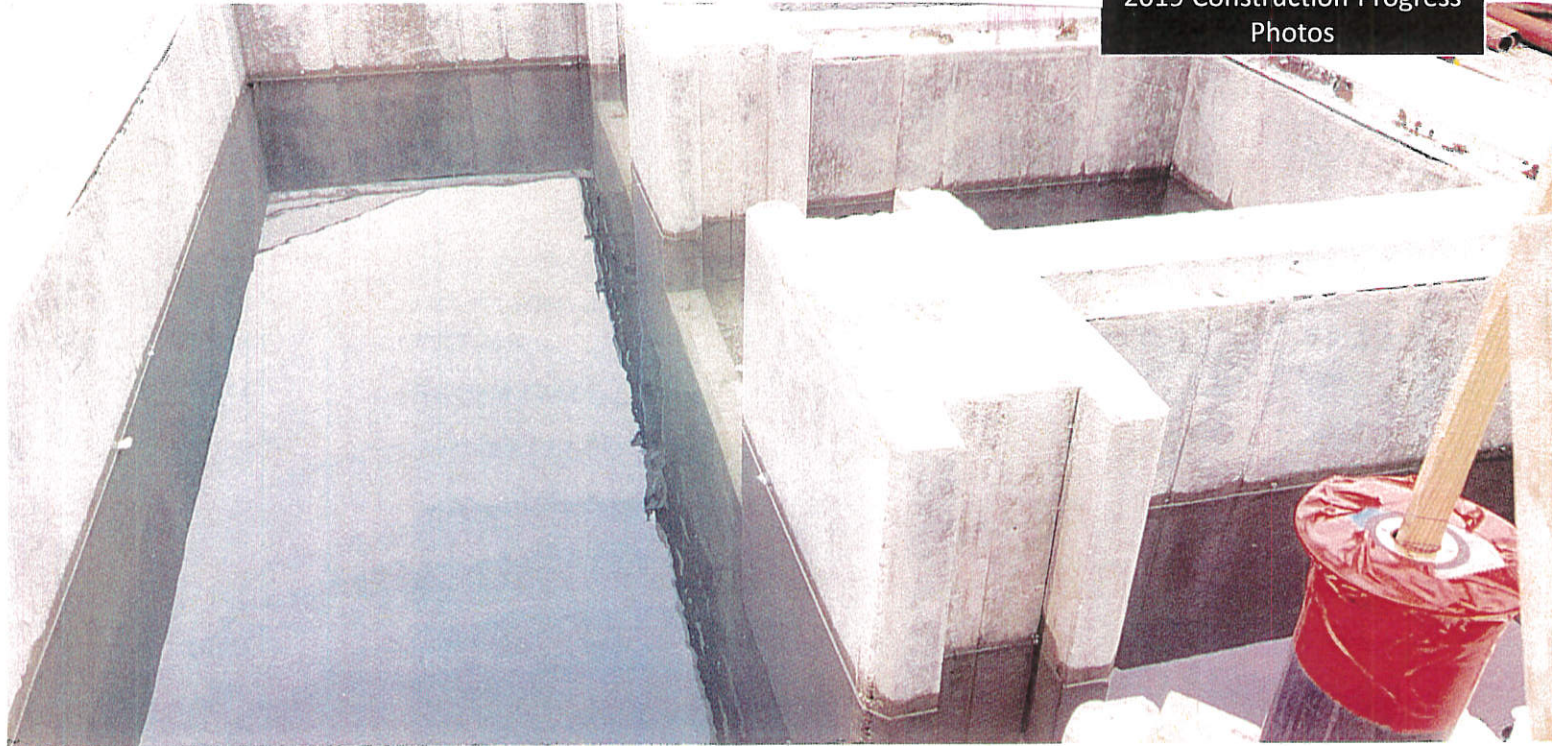
Contract 5 – BJCJSTP
Restoration and
Rehabilitation, December
2019 Construction Progress
Photos



Dec 6, 2019 09:04:30
42.09766N 75.96418W
4551 Vestal Road
Binghamton/nson City WWTP

DN to UV Building Walkway Installation

Contract 5 – BJCJSTP
Restoration and
Rehabilitation, December
2019 Construction Progress
Photos



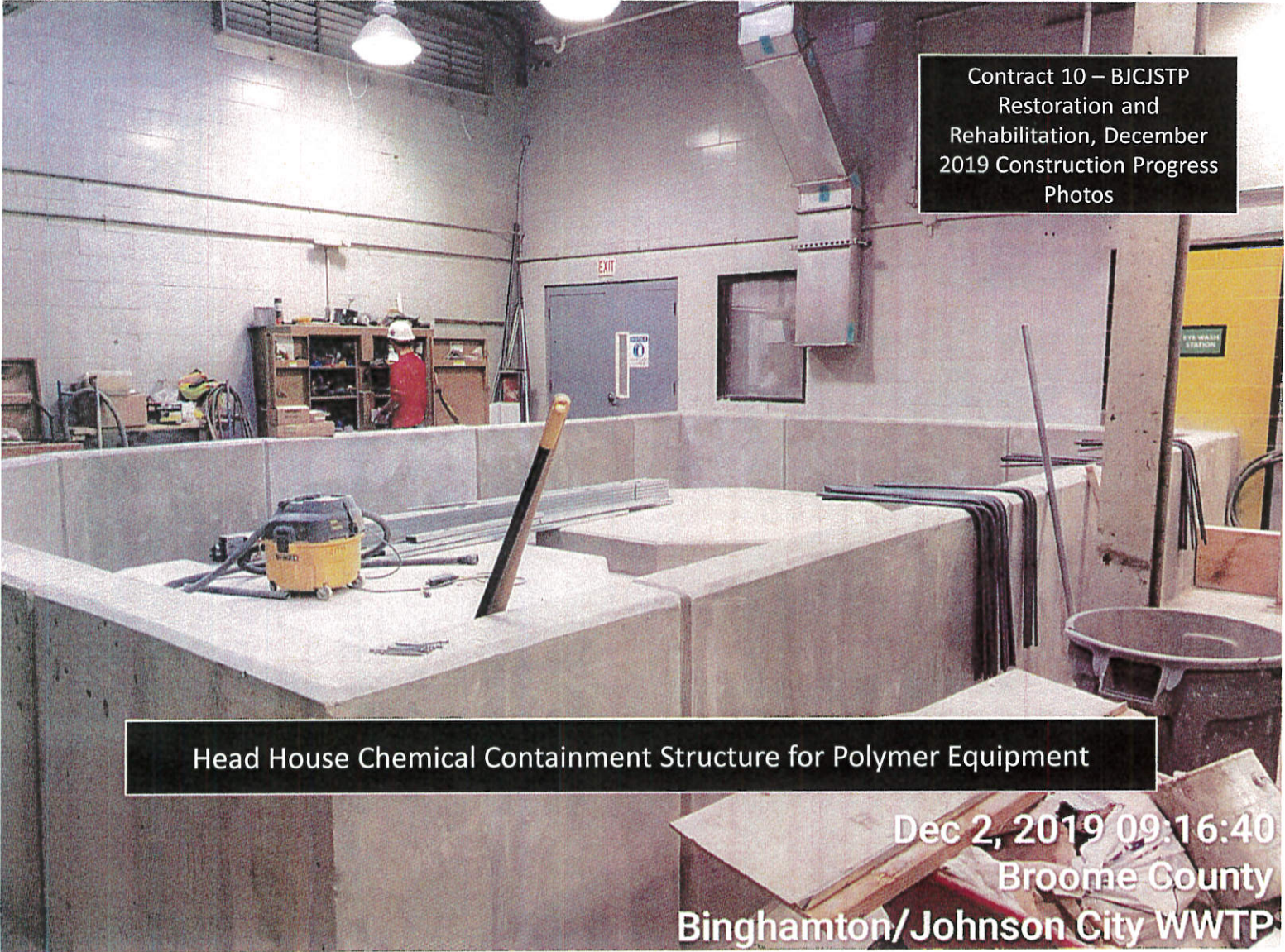
Sludge Thickener Distribution Box Leak Testing



Contract 6 – BJCSTP
Restoration and
Rehabilitation, December
2019 Construction Progress
Photos

Conduit Installation from the Headworks Facility to the PSTs 1-6

Dec 2, 2019 10:16:31
Binghamton/Johnson City WWTP



Contract 10 – BJCISTP
Restoration and
Rehabilitation, December
2019 Construction Progress
Photos

Head House Chemical Containment Structure for Polymer Equipment

Dec 2, 2019 09:16:40
Broome County
Binghamton/Johnson City WWTP