

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

2019 Quarter 3 Report

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



October 2019

2019 QUARTER 3 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 3 Report. The report summarizes the status and progress of the projects and programs required by the Consent Order from July through September 2019.

SECTION 1— FACILITY OPERATIONS

We continue to operate in CEPT mode. Settling Tanks 7, 8, 9 and 10 have been taken off-line in preparation for work to be completed. Flow has been reduced to receive a maximum 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. A major push was made to complete the secondary process train construction by August 31, 2019. Flow was diverted through PST 7-10, SIPS, CN Cells 1-8, DN Cells, and UV on August 29, 2019. Kruger continued to operate their equipment for the secondary process treatment as they continued checking out and verifying the performance of the computerized equipment they provided. CEPT was not put into service until after we were able to allow the plant to use up the remaining ferric and until after the leak detection system was verified by the team on September 9, 2019. BAF Backwash Treatment was put into service by Kruger on September 16, 2019, but there was no real need for the Actiflo until the backwashes were providing sufficient solids to use the Actiflo process.

The temporary disinfection in chlorine contact tank #2 is redundant for the 35 MGD that is able to be processed through CN Cells 1-8 until the UV system bioassay analysis is complete. Flow is discharged from the UV treatment system through the existing chlorine contact tank #2, and is then discharged through parallel temporary discharge lines to the permanent 72" outfall pipe.

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 began installing the permanent grating at CN Cells 1-8, influent channel, DN gallery, UV, and methanol. 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. PC completed the mechanical work in the CN 1-8 gallery, and DN gallery. Kruger has completed the majority of their system demonstration testing for CN Cells 1-8, DN Cells, SIPS, BAF Backwash, and BAF Backwash tank this quarter. Flow was diverted through the new secondary process systems on August 29, 2019. In the meeting with the DEC on September 10, 2019, they confirmed that the project had met the intentions of the August 31, 2019 completion requirements regarding the Phase 1.

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. PC completed the functional testing of the overhead doors at the Headworks, which is allowing the odor controls system to be operated. NYDOL was onsite this quarter and confirmed that the H₂S levels are within allowed standards for occupancy of the building.

Kruger completed the startup requirements sufficiently to allow flow through CN Cells 1-8. They continued optimizing the program and systems in September. PC provided a temporary repair of the expansion joint failure at the CN Effluent Channel in September. They have submitted a repair plan for consideration by the Owner and GHD. The plan will be evaluated, and the Owner will decide which option is acceptable in PC's plan. The PC plan includes a bypass pumping plan to allow the repairs to be made without a long term outage of the CN cells. Kruger continued testing their control systems. PC completed the backwash drain pipe for CN 1-8 Cells and the DN Cells.

PC finally began installing the structural supports and grating for the CN Effluent channel and in the DN gallery. PC continued working on the backwash header in the CN Cells 9-14. Again, this is Phase 2 work and did not impact startup of the secondary process systems by the August 31, 2019 DEC Milestone date. The mechanical trades completed installing the stainless steel pipe in the DN Building and DN Gallery. PC completed installing the grating in the DN gallery in August. Matco completed the electrical work for DN system this quarter.

PC put PST 7-10 on-line August 29, 2019.

The new Chemical Building is nearing completion and was put into service this quarter. The CEPT and Actiflo were put into service in September. Kruger continued adjusting the Actiflo system to improve operation of the system.

PC continued their process pipe installation for air and backwash pipe in the CN gallery for Cells 9-14 this quarter.

PC completed work in the Methanol area to replace the non-compliant American Iron and Steel (AIS) fittings. 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 this quarter.

Matco has completed the testing of the generators in the Generator Building. J&K is complete with the installation of the louvers for the startup of the generators.

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.

No significant change at the new Administration Building this quarter. PC paved the Administration Building parking lot. PC had a problem with the installation of several sections of the curb that are being replaced this quarter.

PC completed the south flood wall and has started installing the decorative fencing on the south side of the facility. All storm water pump stations are also now operational from permanent power.

3 Month Look Ahead: PC Construction will complete installation of the sludge thickener distribution box this quarter. PC/Kruger will continue optimizing the system and will complete testing of the UV system. Startup of CN Cells 1-8, DN Cells, UV, and methanol will be completed this quarter.

PC will complete rehabilitation of thickener #3 and begin rehabilitation of thickener #2. 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 the DEC for the Milestone date in the Consent Order.

The contractor is now nearly fourteen months behind schedule for meeting Phase I and 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: 93% Complete through September 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, the contractor completed the work in the BAF Backwash Treatment Facility, DN Cells, UV, and Methanol Building. Matco has completed all distribution electrical work and is nearing completion of the fiber optic cable installation for SCADA Control, and will continue working on the electrical work for CN Cells 9-14 this Quarter. The two new 2MW generators are complete.

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 this quarter. They continue to support the electrical work around the site and will be progressing with the work in the CN 9-14 area and PST 1-6.

Contract Status: 97% Complete through September 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 working on the HVAC systems for CN Cells 1-8, DN Cells, and Thickener Pump Stations. J&K completed the odor control system work in the Headworks this quarter.

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

Contract Status: 99% Complete through September 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.

This quarter they continued the installation of the plumbing, the sampling system at both CN and DN, and will complete the plumbing next 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: 96% Complete through September 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. Architectural work for the new Solids Handling Building is now complete. Functional Demonstration Testing of the new centrifuges is underway and should be completed by the middle of October. We were finally successful in getting the STP staff moved from the existing lab area to the newly renovated lab area. We have started renovation of the existing lab area, and should be complete with the renovation next quarter.

Quandel has completed installing the mechanical systems in the Solids Handling Building. Matco completed the electrical work so that Quandel could begin pre-functional testing and Functional Demonstration Testing of the equipment. After Quandel completed the Functional Demonstration Tests, they began the 7-day System Demonstration Test. Matco has completed the control wiring for the centrifuges on the Solids Handling Building this quarter. This work was done as a change to the

contract as the control wiring for the Centrifuges was inadvertently left off the bid documents when they were designed. After the new centrifuges are fully functional, the existing Centrifuges can be removed to make way for the new Mechanical Thickeners that are to be installed in the current centrifuge room.

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 would have been Quandel's obligation. Koester is nearly 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 this quarter. The Digester gas safety equipment for Digesters #1 and #2 could not be completed until after Quandel completed the installation of the covers for Digesters #1 and #2.

We believe that Quandel has a contractual obligation to prepare a startup plan for all three digesters. Because Quandel refused to prepare the plan, Jacobs prepared the plan for the Owner. Implementation of that plan for Digester #3 was successful. Digester #3 is operating as intended and is providing the sludge to the new centrifuges for processing. Quandel provided the 270,000 gallons of seed sludge for startup of Digester #3.

3 Month Look Ahead: Quandel will work with the STP to demolish the existing centrifuges after the new centrifuges are fully operational. We are currently planning to start up Digesters #1 and #2 with seed sludge from Digester #3. Work with renovation for the existing lab should complete this quarter.

Contract Status: 94% Complete through September 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 nearing completion with the work for the Solids Handling and Digester Control Building. Matco will proceed with the work in the thickener pump station this quarter.

3 Month Look Ahead: Matco has stated that they will complete all electrical work for the Solids Handling Building project this quarter. They will begin work on the electrical work for the mechanical thickeners in the fourth quarter.

Contract Status: 92% Complete Through September 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 fired up the heat exchanger and boilers for Digesters #1 and #2 this quarter.

3 Month Look Ahead: J&K should complete installing the HVAC equipment for the Solids Handling Project next quarter.

Contract Status: 97% Complete through September 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 continued work on the interior piping in the Solids Handling Building, Digester Complex, and Sludge Thickener Buildings this quarter.

3 Month Look Ahead: Danforth is nearly complete with their contract work. They will continue the work in the Digester Control Building, Solids Handling Building and Sludge Thickener Buildings to support the effort during startup.

Contract Status: 90% Complete through September 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 will 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 September 2019

Consent Order Compliance Table

DEC #	Description	Consent Order Date	Status
7	Flood Mitigation to Elevation 845	February 28, 2019	March 1, 2019
3f	Begin SIPS Commissioning	April 30, 2019	Completed before April 30, 2019. Fully operational August 29, 2019.
3e	Backwash Waste Treatment Construction	June 30, 2019	Complete August 31, 2019. The BAF Backwash Treatment Facility was operational on September 16, 2019.
3h	Hydraulic Testing of new BAF Backwash Tank	June 30, 2019	June 30, 2019
3j	Retrofit of two sludge thickeners. 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	Requested variance June 30, 2019	March 31, 2020
4d	Complete construction of anaerobic digesters. Digester #3 will be complete before June 30, 2019. Digesters #1 and #2 will be complete by August 31, 2019. Digester #1 and #2 cover installation was delayed to allow for coatings and crack repairs to be done in Digester #1 and #2. 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. The only remaining construction work as of August 31, 2019 was the installation of the gas mixing compressors which were waiting on delivery of a vendor requested added expansion tank.	Requested variance 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.	Completed 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. Insufficient sludge being produced to startup a second digester until BAF is processing sludge.
5b	Interim Operating Strategy for equipment from August 31, 2019	July 31, 2019	Completed July 31, 2019
3g	Complete construction and commence start-up of the plant Headworks, including the new bar screens and grit removal system, in accordance with the approved engineering design documents	August 1, 2019	Completed June 26, 2019
3i	Construction Complete on PST 7-10	August 31, 2019	Completed and operating August 29, 2019

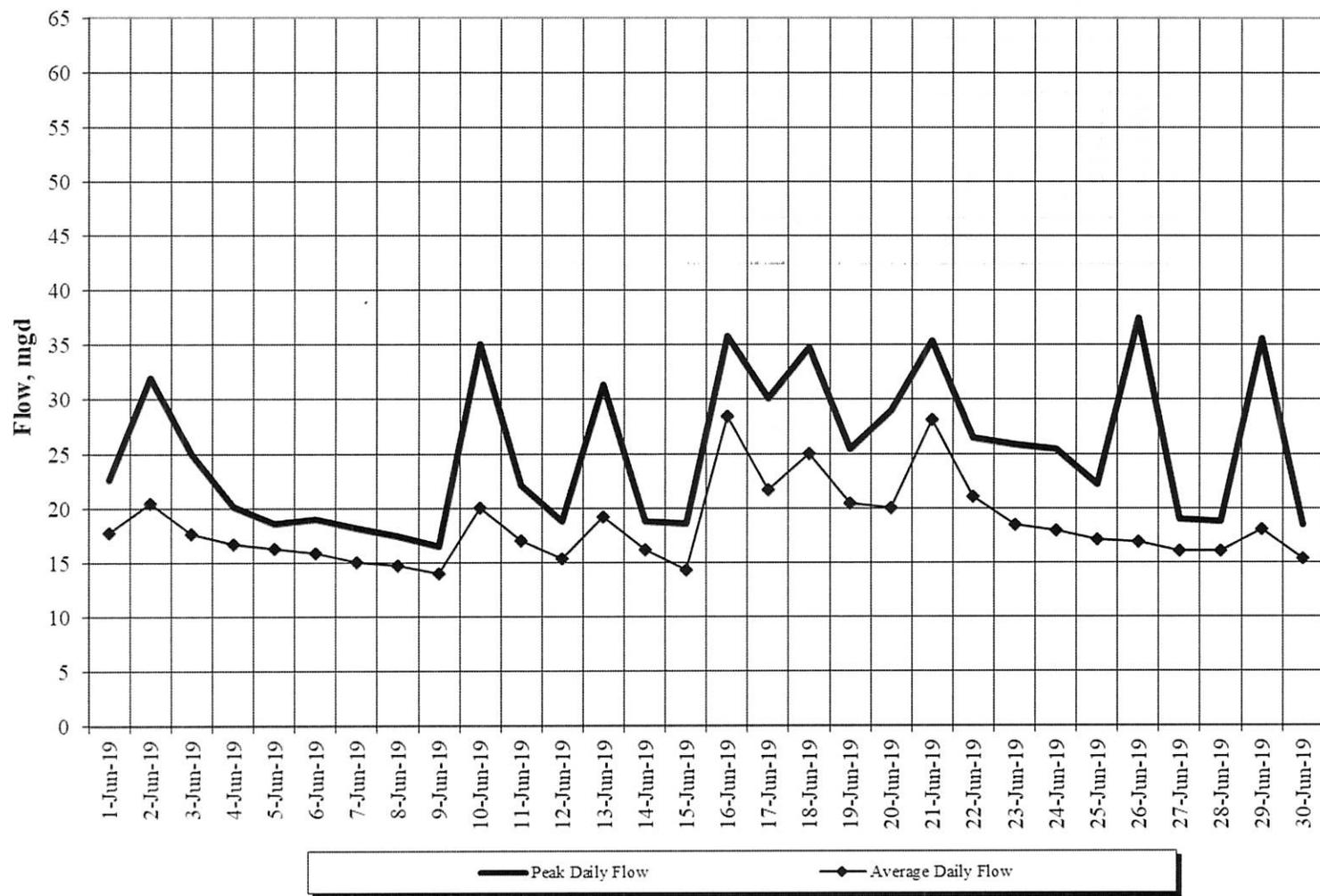
3k	Complete Construction of CN 1-8 and DN.	August 31, 2019	Completed and operating August 29, 2019
3l	Commence Operation of BAF Backwash Tank, BAF Backwash Treatment, Headworks, PST 7-10, CEPT, UV, Sludge Thickeners and appurtenances.	August 31, 2019 Request a variance for the sludge thickeners as they 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
4e	Operation of digesters 1-3. (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.	August 31, 2019	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 2 nd digester in the near future to handle increased solids loading.
3m	BAF CN Cells 9-14 Construction Complete	January 1, 2020	January 1, 2020. If we can finish sooner, we will push PC to do so.
3n	Operation in Compliance with SPDES	April 1, 2020	April 1, 2020
Schedule B-1	Compliance with Interim Operating Permit Limits	November 30, 2019	November 30, 2019

APPENDIX A

Facility Operations

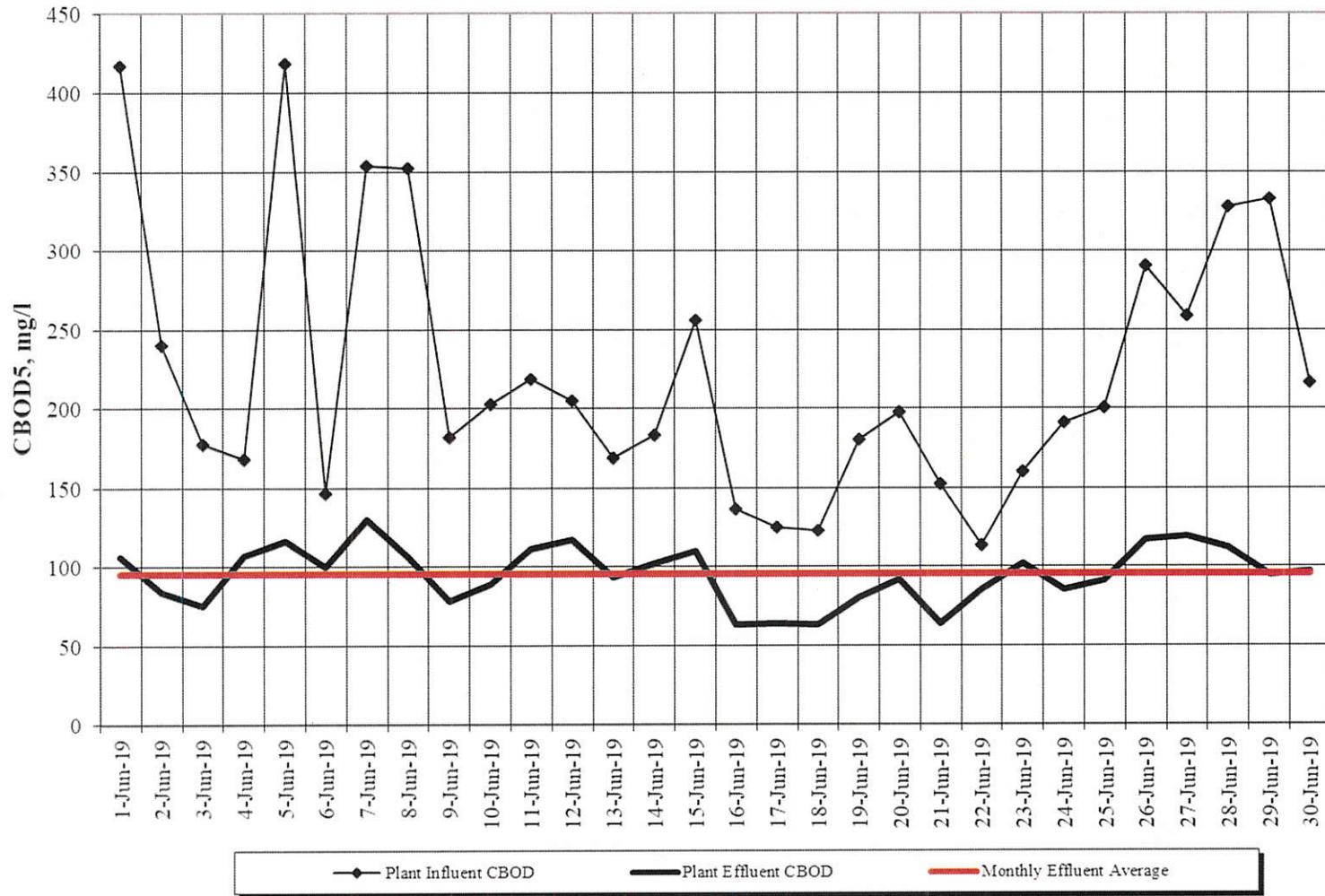
Daily Flows

Binghamton - Johnson City JSTP



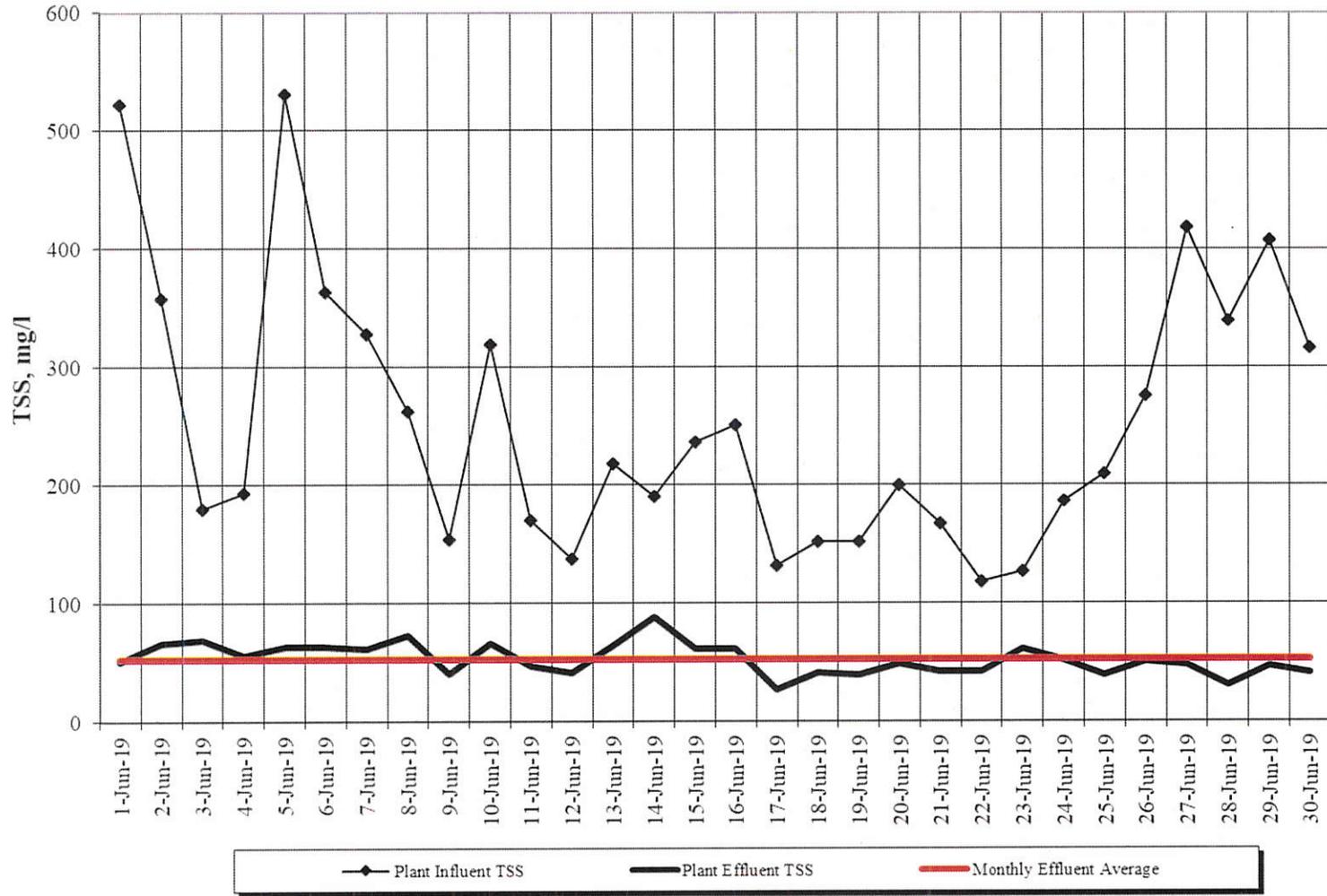
CBOD5 Concentrations

Binghamton - Johnson City JSTP



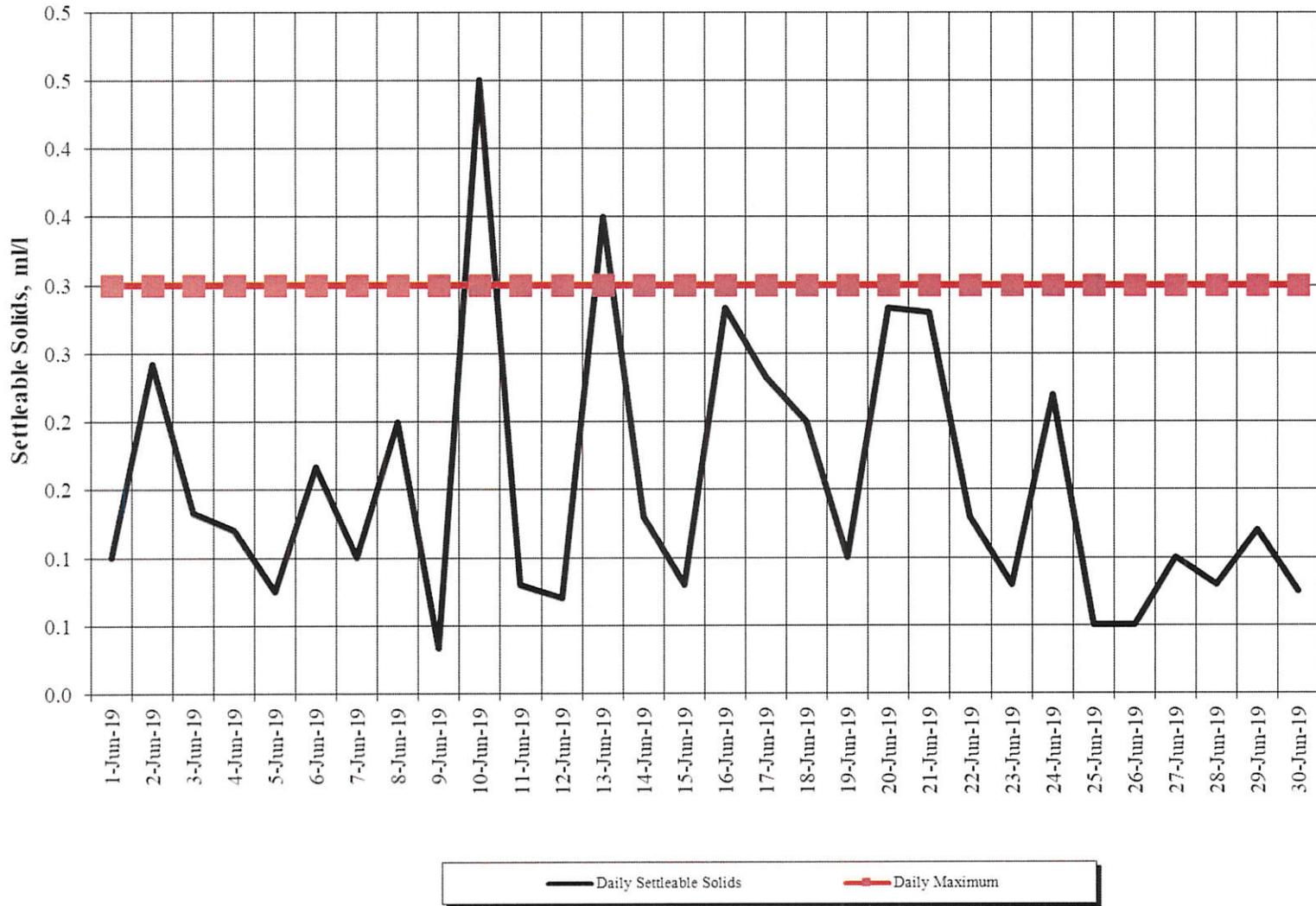
TSS Concentrations

Binghamton - Johnson City JSTP



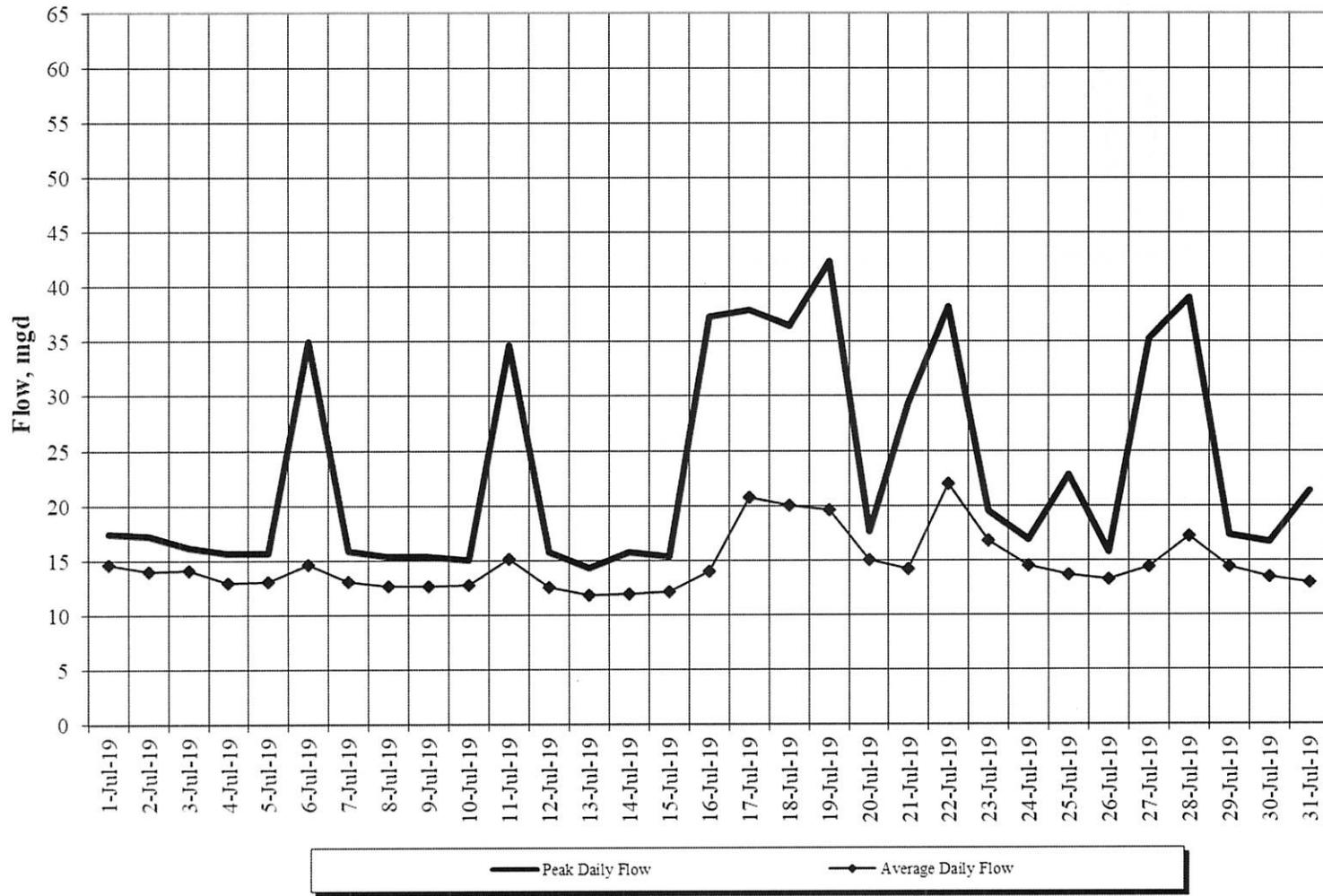
Settleable Solids

Binghamton - Johnson City JSTP



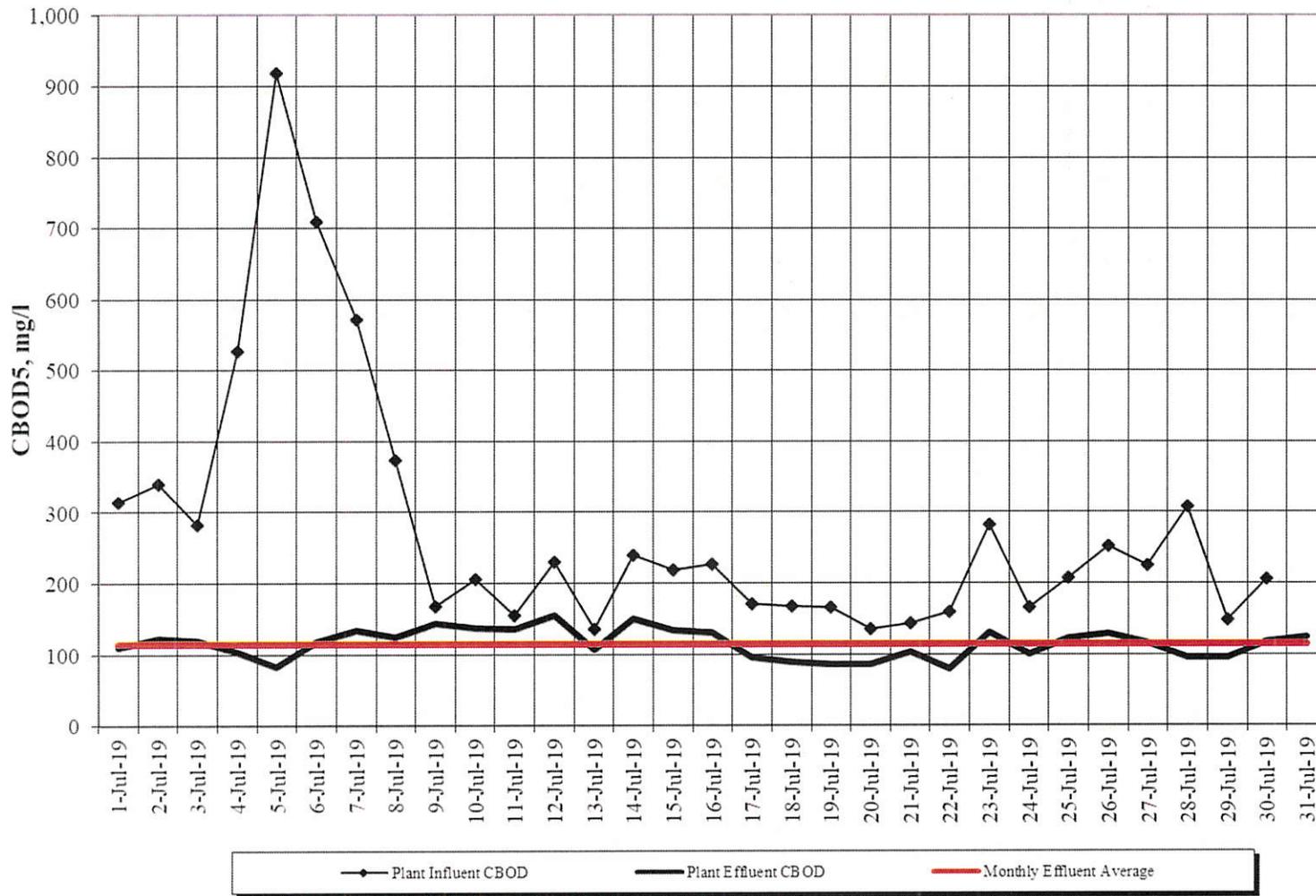
Daily Flows

Binghamton - Johnson City JSTP



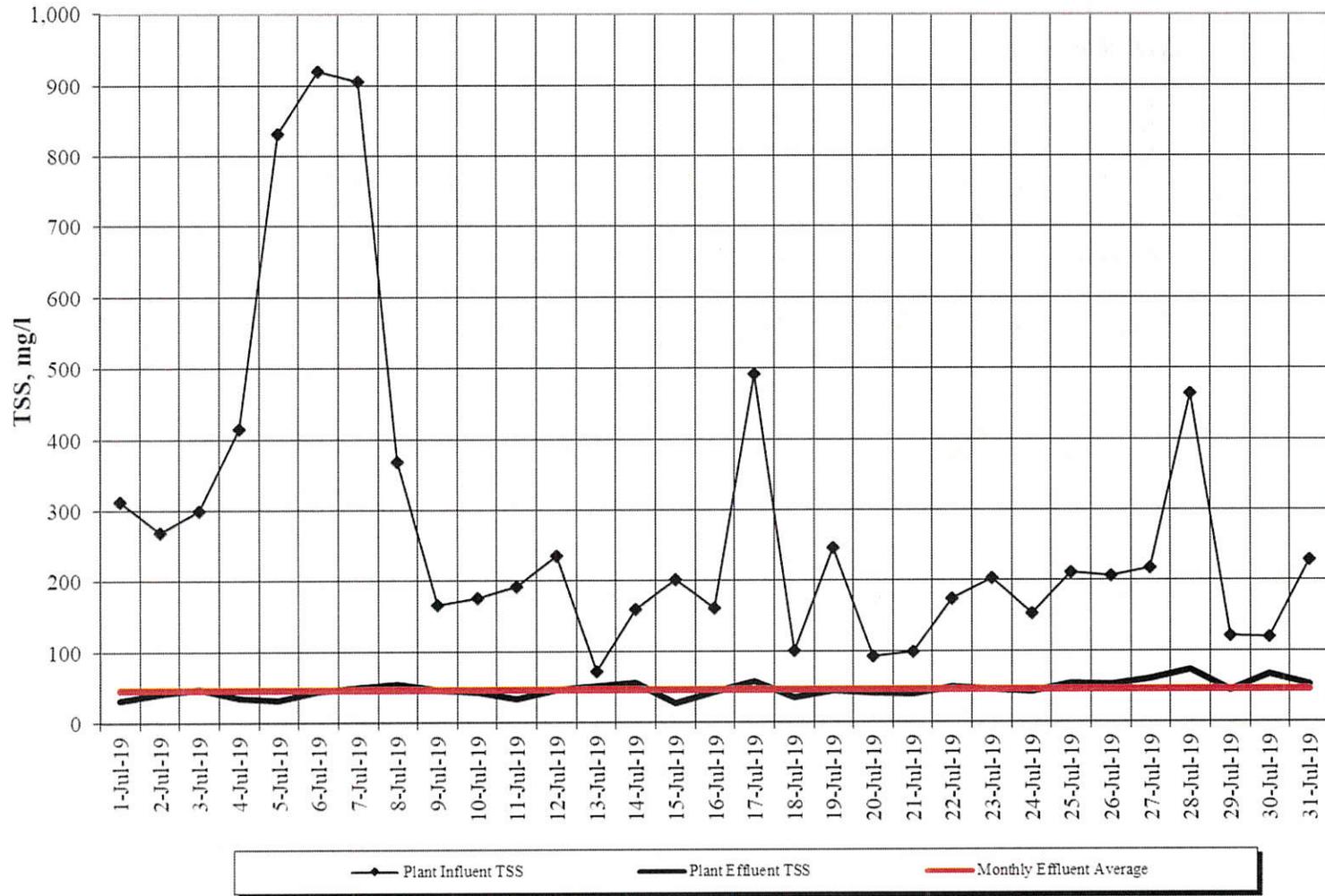
CBOD5 Concentrations

Binghamton - Johnson City JSTP



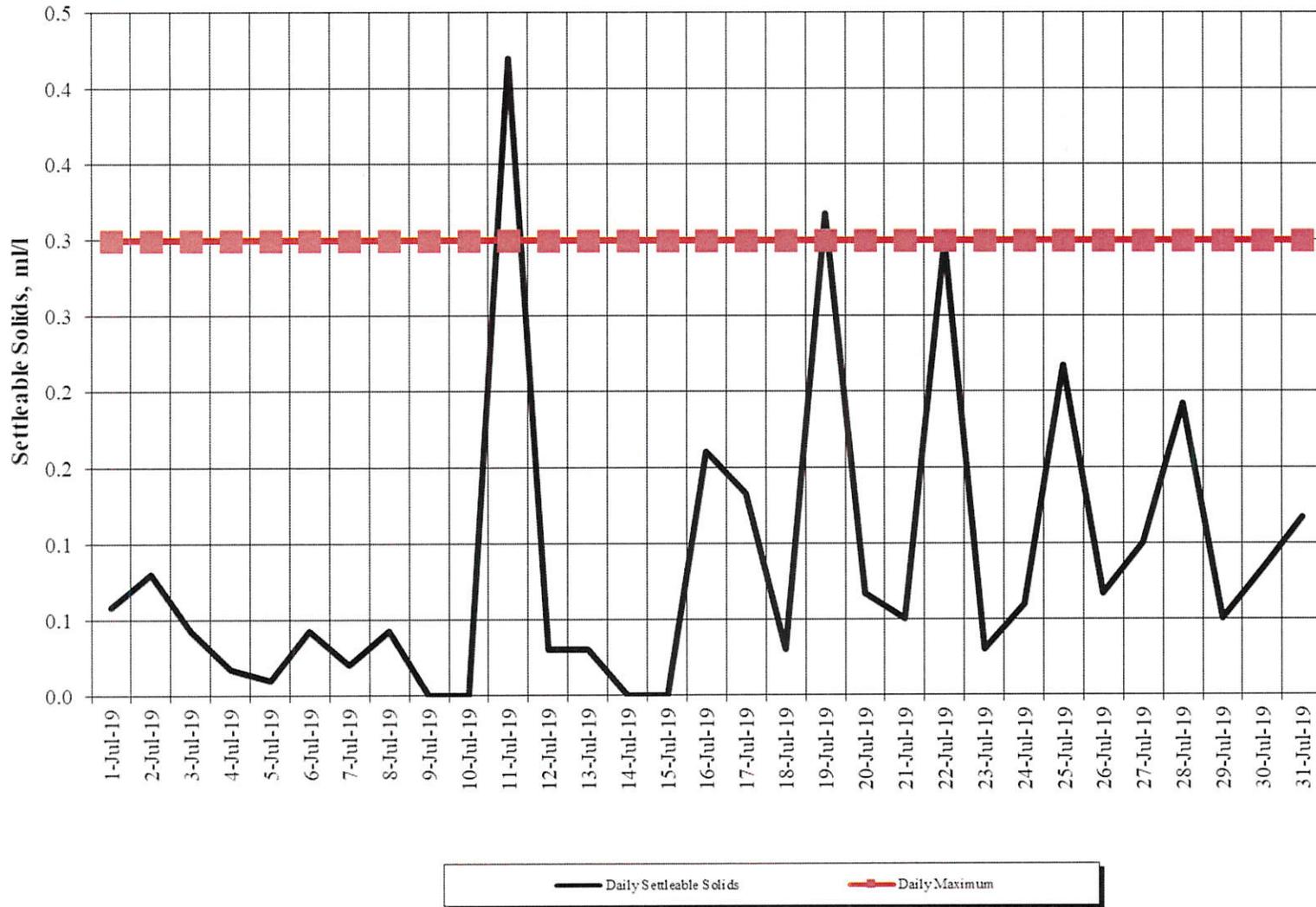
TSS Concentrations

Binghamton - Johnson City JSTP



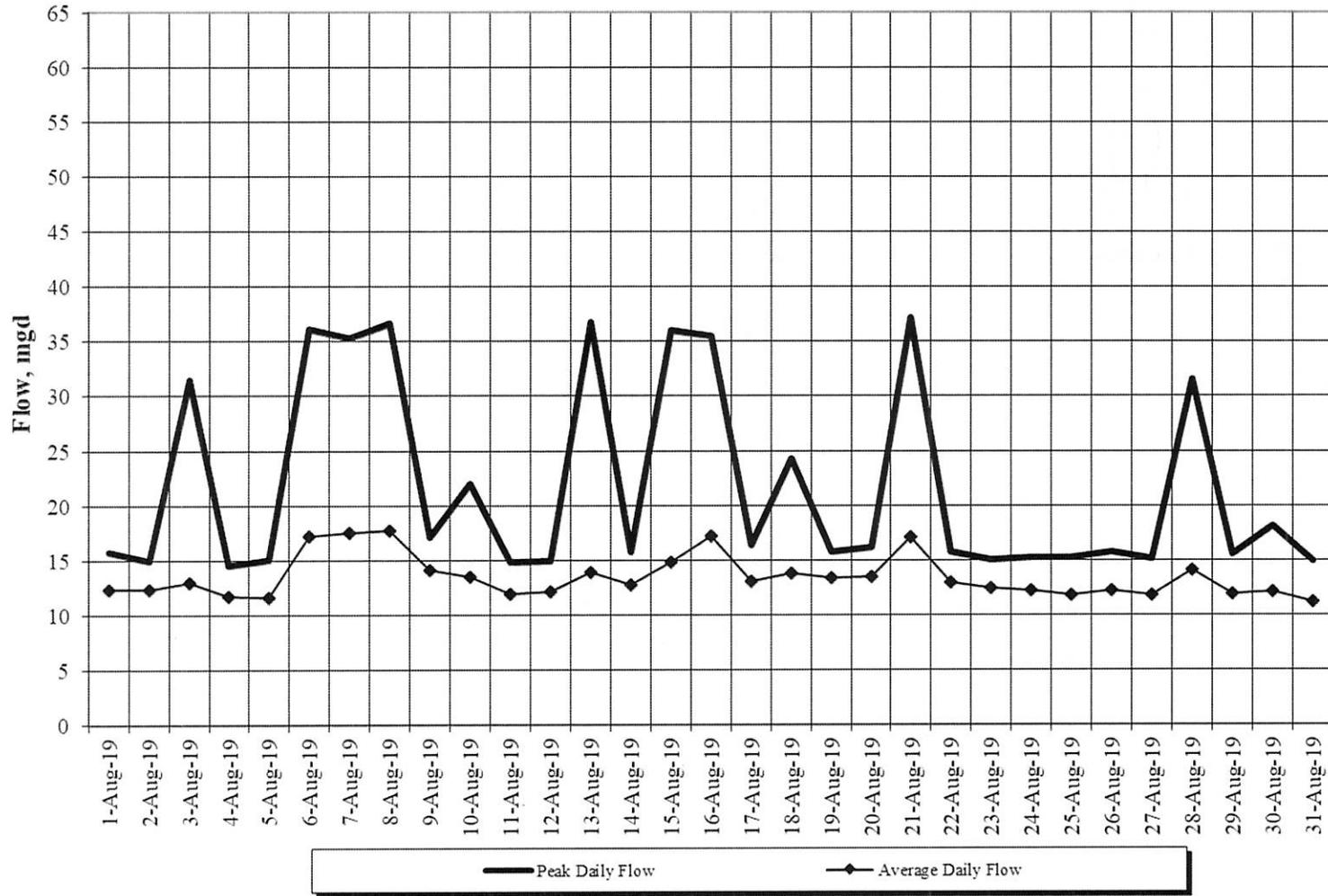
Settleable Solids

Binghamton - Johnson City JSTP



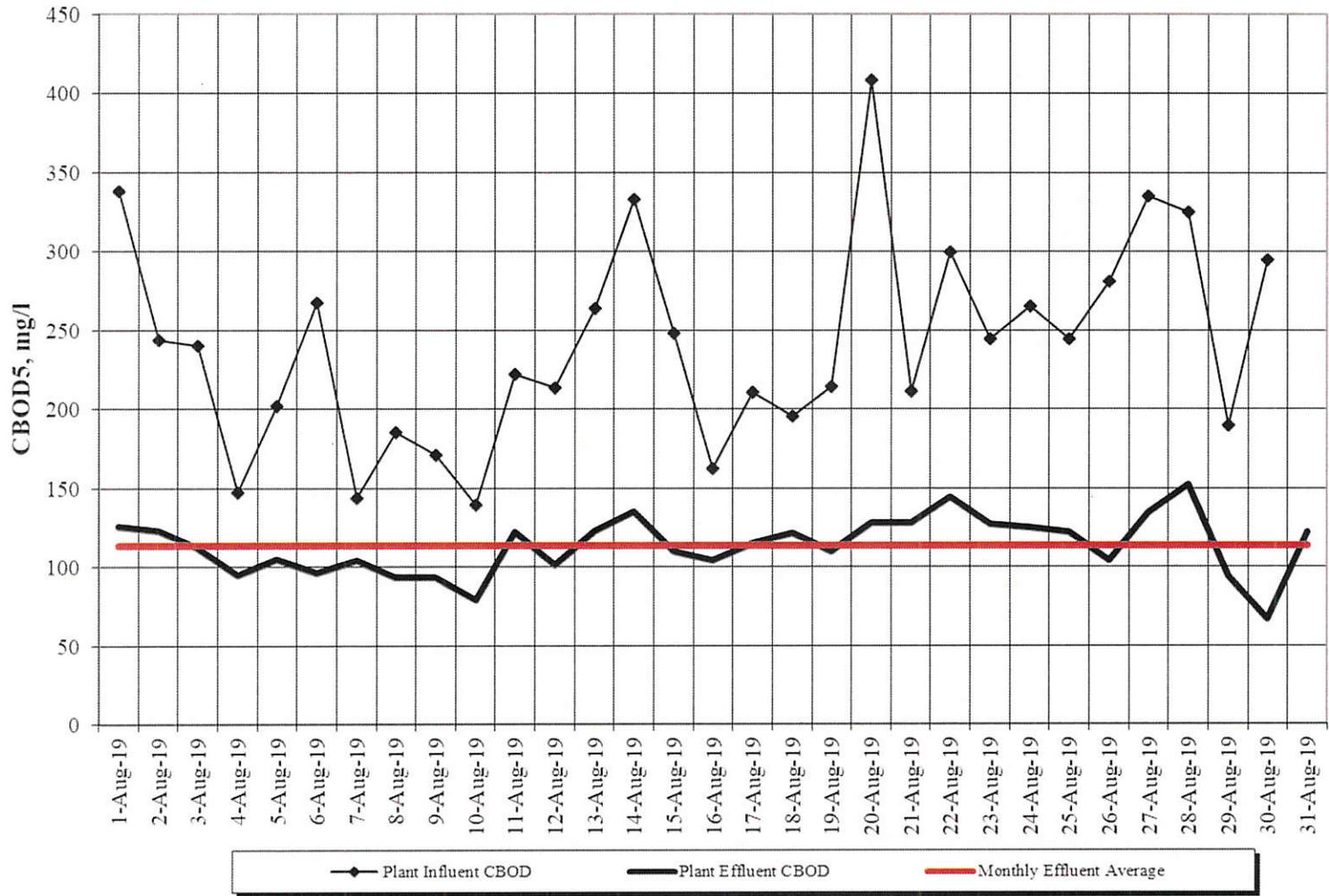
Daily Flows

Binghamton - Johnson City JSTP



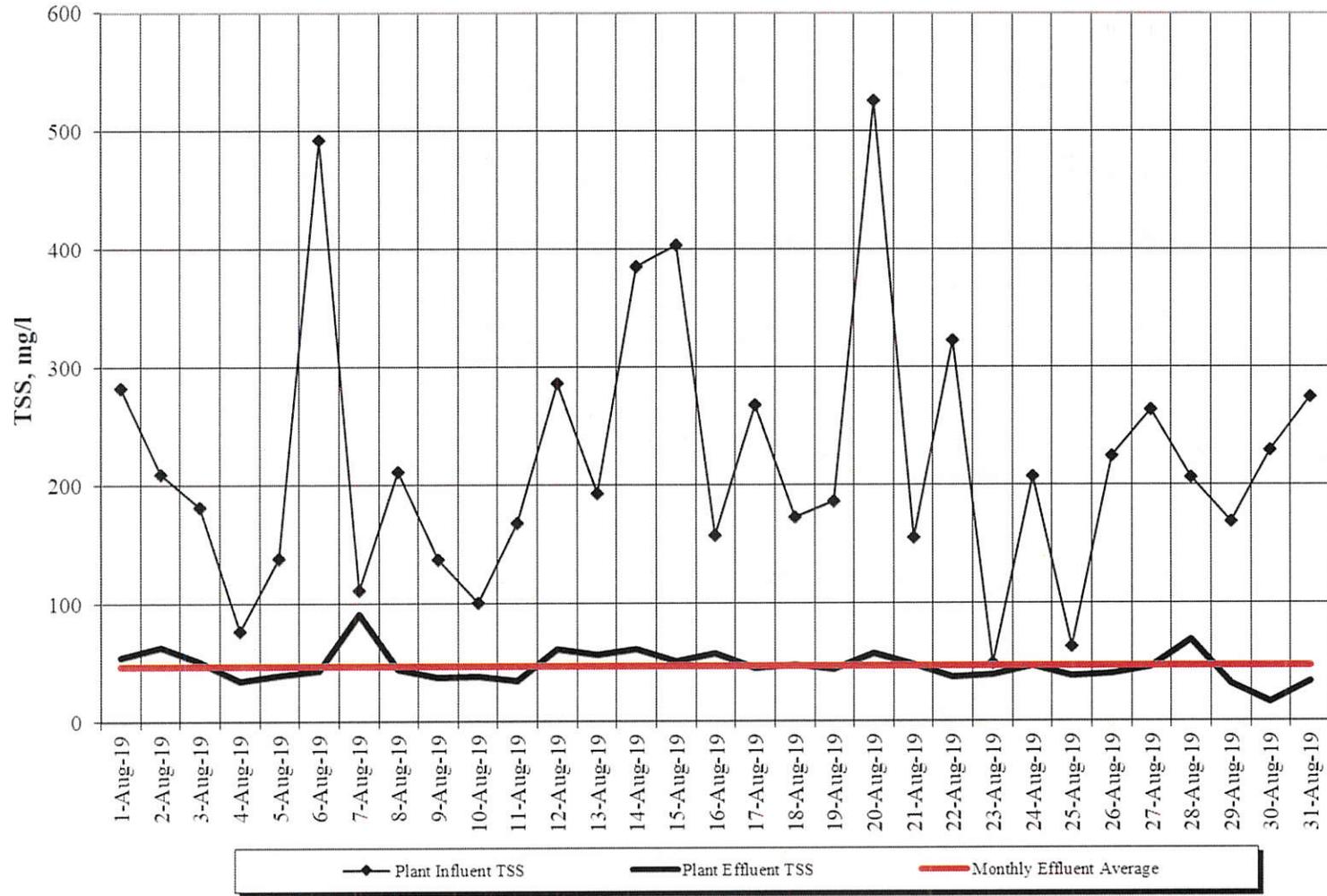
CBOD5 Concentrations

Binghamton - Johnson City JSTP



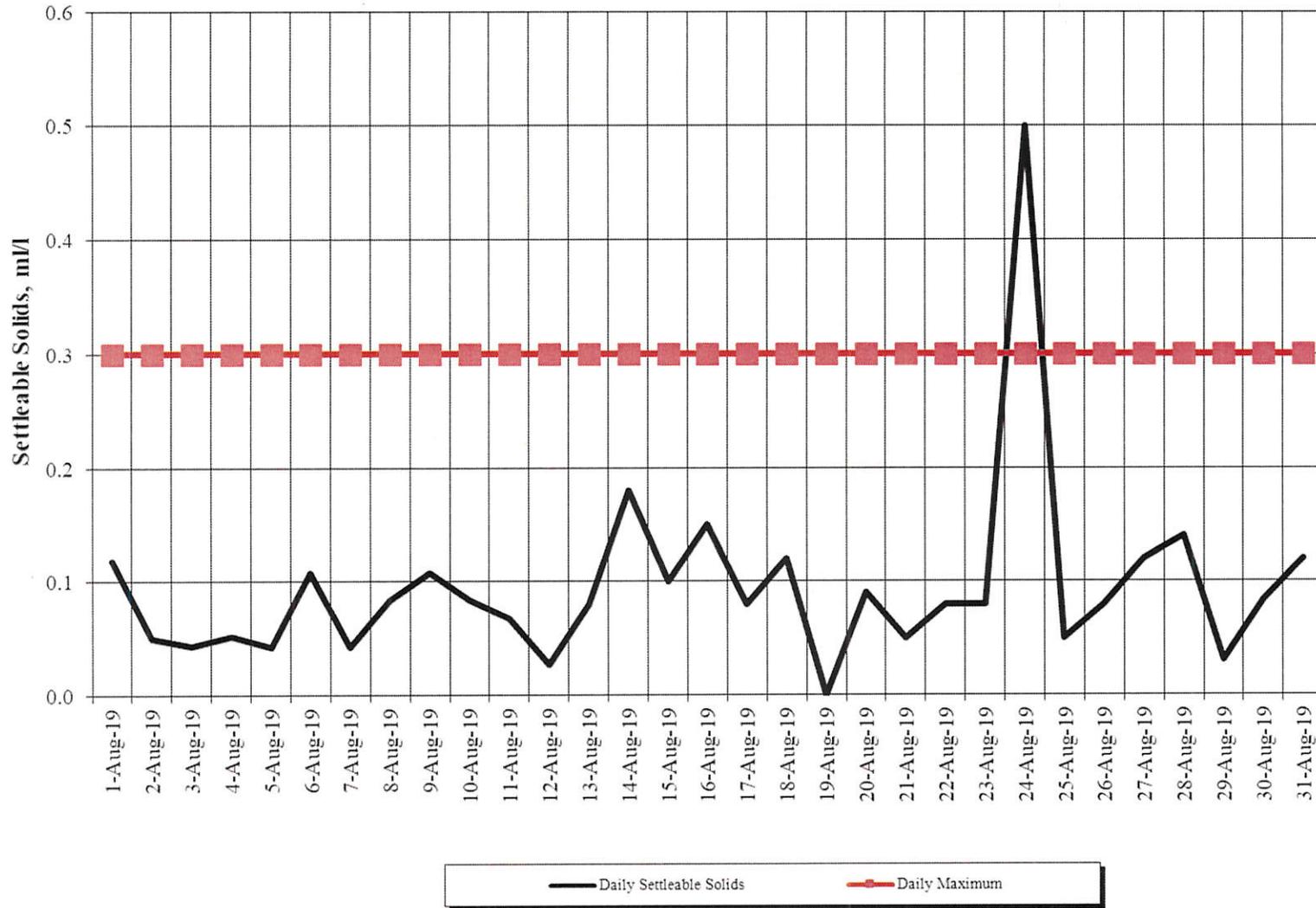
TSS Concentrations

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-Jun-19	17.71			9.0	28.4	1.01	10					
2-Jun-19	20.46			6.7	11.2	1.05	10					
3-Jun-19	17.65			10.9	9.7	1.39	10					
4-Jun-19	16.72	10.4	9.5	14.4	11.1	1.2	10	2.1	2.7	4.55	16.72	634
5-Jun-19	16.26			17.7	24.7	1.01	10					
6-Jun-19	15.85			16.3	21.1	1	10			5.02	15.85	664
7-Jun-19	15.07			13.9	26.2	1.16	5					
8-Jun-19	14.75			11.1	23.4	1.22	5					
9-Jun-19	14.02			8.8	12.5	1.01	5					
10-Jun-19	20.03			11.6	14.2	1.25	1209.8					
11-Jun-19	16.98	9.8	10.5	7.3	14.1	1.13	5	2.7	3.9	4.18	16.98	592
12-Jun-19	15.33			10.3	9.7	1.23	74					
13-Jun-19	19.15			6.0	11.0	1.21	43			4.71	19.15	752
14-Jun-19	16.19			8.6	9.7	1.23	5					
15-Jun-19	14.35			8.0	14.5	1.24	5					
16-Jun-19	28.42			5.5	8.5	1.51	1538					
17-Jun-19	21.69			9.8	10.6	1.31	5					
18-Jun-19	25.03	5.9	6.6	6.4	8.1	1.12	172.5	1.4	2.3	3.14	25.03	655
19-Jun-19	20.44			12.7	17.1	1.13	10					
20-Jun-19	20.07			15.3	16.2	1.25	10			3.82	20.07	639
21-Jun-19	28.11			11.6	16.0	1.32	10					
22-Jun-19	21.03			11.1	14.1	1.13	10					
23-Jun-19	18.46			15.3	14.8	1.14	21					
24-Jun-19	17.90			16.6	11.7	1	15					
25-Jun-19	17.16	9.3	8.0	16.7	19.3	1.05	31.5	2.4	4.4	4.43	17.16	634
26-Jun-19	16.92			15.2	22.4	1.05	5					
27-Jun-19	16.12			14.7	20.4	1	5			2.03	16.12	273
28-Jun-19	16.04			14.7	22.6	1.17	26					
29-Jun-19	18.04			12.5	22.0	1.2	5					
30-Jun-19	15.37			14.9	22.4	0.93	5					
	18.38	8.85	8.7	11.79	16.3	1.51	14.80	2.15	3.35	3.99	18.39	611
	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-Jul-19	14.64			16.0	21.7	1.13	5					
2-Jul-19	14.04	11.6	10.4	17.2	29.3	0.85	10	2	5.7	2.96	14.04	347
3-Jul-19	14.14			14.5	25.3	1.31	15.5					
4-Jul-19	12.95			12.9	22.4	0.88	26			2.35	12.95	254
5-Jul-19	13.02			17.9	64.4	1.07	5					
6-Jul-19	14.61			16.2	69.7	1.01	5					
7-Jul-19	13.02			19.4	15.8	1.04	5					
8-Jul-19	12.67			16.5	29.3	0.86	5					
9-Jul-19	12.65	16	11.4	20.4	52.4	0.99	5	2.2	3.3	3.90	12.65	411
10-Jul-19	12.73			16.1	18.1	0.98	5					
11-Jul-19	15.09			19.0	17.1	0.98	5			3.06	15.09	385
12-Jul-19	12.50			17.6	17.5	0.83	5					
13-Jul-19	11.79			12.4	14.4	0.87	5					
14-Jul-19	11.94			15.8	19.2	1.08	5					
15-Jul-19	12.12			18.5	18.1	1.20	5					
16-Jul-19	14.04	12.4	10.5	11.9	16.2	0.88	5	2.4	3.7	2.86	14.04	335
17-Jul-19	20.77			12.0	13.4	1.38	5					
18-Jul-19	20.07			12.9	16.6	1.19	10			3.60	20.07	603
19-Jul-19	19.63			12.0	20.1	1.19	5					
20-Jul-19	15.06			14.2	15.7	1.02	15.5					
21-Jul-19	14.16			16.1	15.8	0.88	5					
22-Jul-19	22.02			10.5	14.6	1.27	109					
23-Jul-19	16.79	9.5	11.1	15.3	18.9	1.09	5	2.2	2.8	2.67	16.79	374
24-Jul-19	14.51			15.8	19.5	1.01	87.5					
25-Jul-19	13.72			21.1	21.2	0.85	15			4.24	13.72	485
26-Jul-19	13.25			32.6	25.8	0.89	49					
27-Jul-19	14.41			15.5	21.7	0.98	10					
28-Jul-19	17.21			13.7	19.9	0.80	5					
29-Jul-19	14.42			9.0	17.6	1.16	5					
30-Jul-19	13.45	14.1	13.3	17.3	20.0	1.09	10	2.4	3.5	4.12	13.45	462
31-Jul-19	12.94			17.8	21.2	0.84	893					
	14.66	12.72	11.3	23.6	23.6	1.38	9.91	2.24	3.81	3.31	14.66	404
	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-Aug-19	12.34			14.00	17.2	1.08	5			4.25	12.34	437
2-Aug-19	12.37			16.20	17.3	0.81	5					
3-Aug-19	12.93			14.50	22.4	1.21	67.5					
4-Aug-19	11.68			14.00	15.4	0.88	5.0					
5-Aug-19	11.62			16.80	18.8	0.93	5.0					
6-Aug-19	17.22	9.3	6.9	16.20	16.8	1.41	60.0	1.8	3.3	2.7	17.22	388
7-Aug-19	17.53			16.20	15.3	1.17	5.0					
8-Aug-19	17.74			14.50	15.3	1.14	5.0			3.29	17.74	487
9-Aug-19	14.06			12.00	20.1	1.22	835.0					
10-Aug-19	13.50			11.50	18.1	1.11	42.0					
11-Aug-19	11.95			10.70	14.1	0.98	5.0					
12-Aug-19	12.12			15.70	64.4	0.95	5.0					
13-Aug-19	13.85	12.3	12.1	17.90	22.3	1.24	5.0	2.8	4.8	3.23	13.85	373
14-Aug-19	12.73			19.00	32.9	1.13	5.0					
15-Aug-19	14.80			15.40	23.4	1.10	15.5			3.58	14.80	442
16-Aug-19	17.25			17.10	18.7	1.10	10.0					
17-Aug-19	13.08			18.00	23.2	1.01	5.0					
18-Aug-19	13.77			18.90	22.6	0.85	5.0					
19-Aug-19	13.38			19.60	26.6	0.96	5.0					
20-Aug-19	13.49	14.3	10.9	29.60	31.0	1.25	114.0	3.1	5.9	3.18	13.49	358
21-Aug-19	17.10			18.60	24.4	1.11	5.0					
22-Aug-19	12.92			19.30	26.5	0.98	5.0			3.54	12.92	381
23-Aug-19	12.41			18.30	20.4	1.10	73.0					
24-Aug-19	12.25			17.40	21.0	1.04	5.0					
25-Aug-19	11.76			18.00	18.1	0.89	5.0					
26-Aug-19	12.19			26.40	26.1	0.89	10.0					
27-Aug-19	11.78	19.0	16.6	35.70	34.0	0.91	5.0	2.3	5.5	2.99	11.78	294
28-Aug-19	14.09			27.20	35.2	0.92	5.0					
29-Aug-19	11.88			19.80	24.7	0.50	5.0			1.63	11.88	161
30-Aug-19	12.11			14.20	32.9	0.71	5.0					
31-Aug-19	11.18			17.60	34.2	0.90	10.0					
	13.45	13.7	11.6	18.07	24.3	1.41	9.96	2.50	4.85	3.15	14.00	368
	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

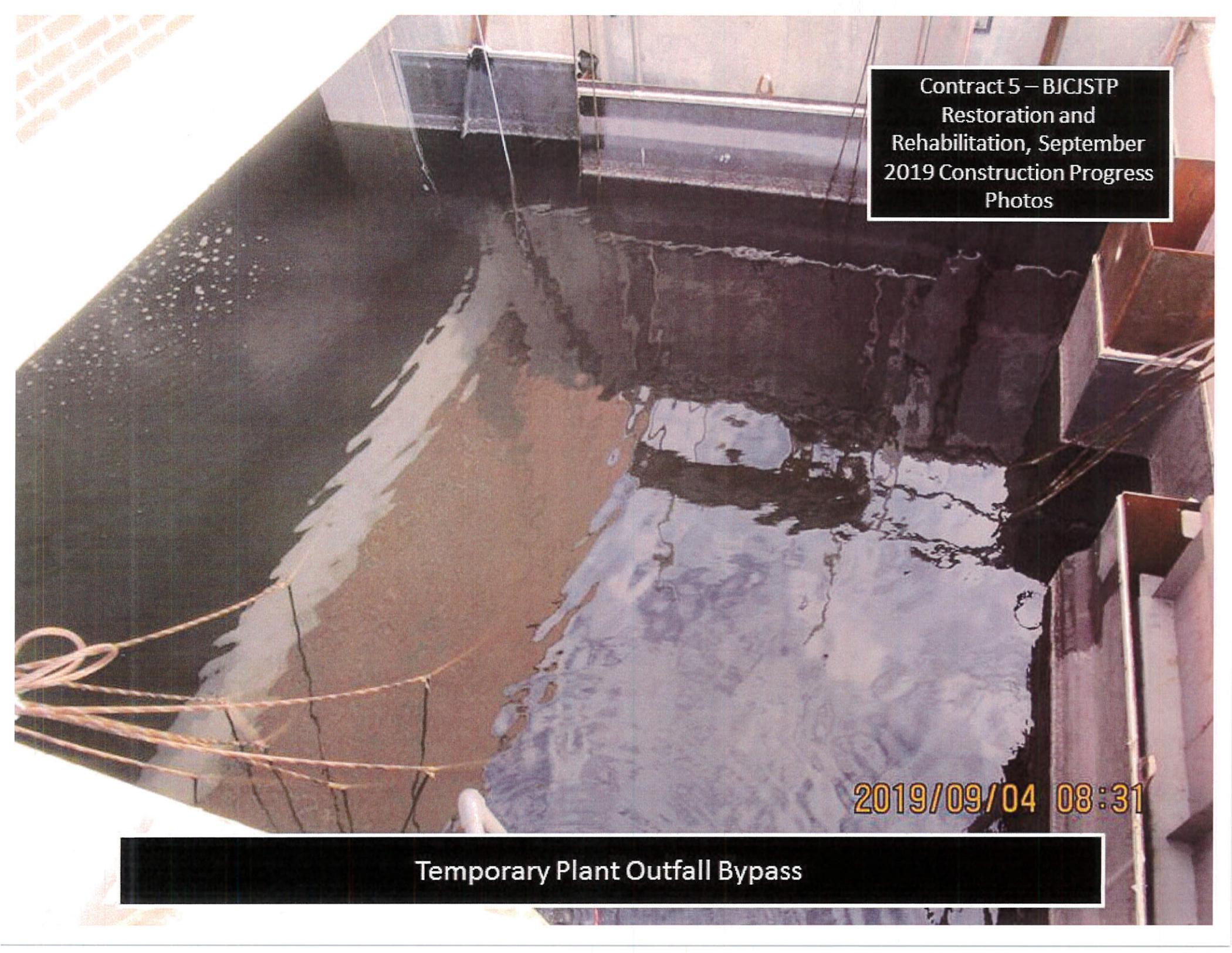
APPENDIX B

Photos

Contract 5 – BJCISTP
Restoration and
Rehabilitation, September
2019 Construction Progress
Photos



Administration Building Parking and Vegetative Roof Aerial Photo



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

2019/09/04 08:31

Temporary Plant Outfall Bypass

Contract 5 – BICJSTP
Restoration and
Rehabilitation, September
2019 Construction Progress
Photos

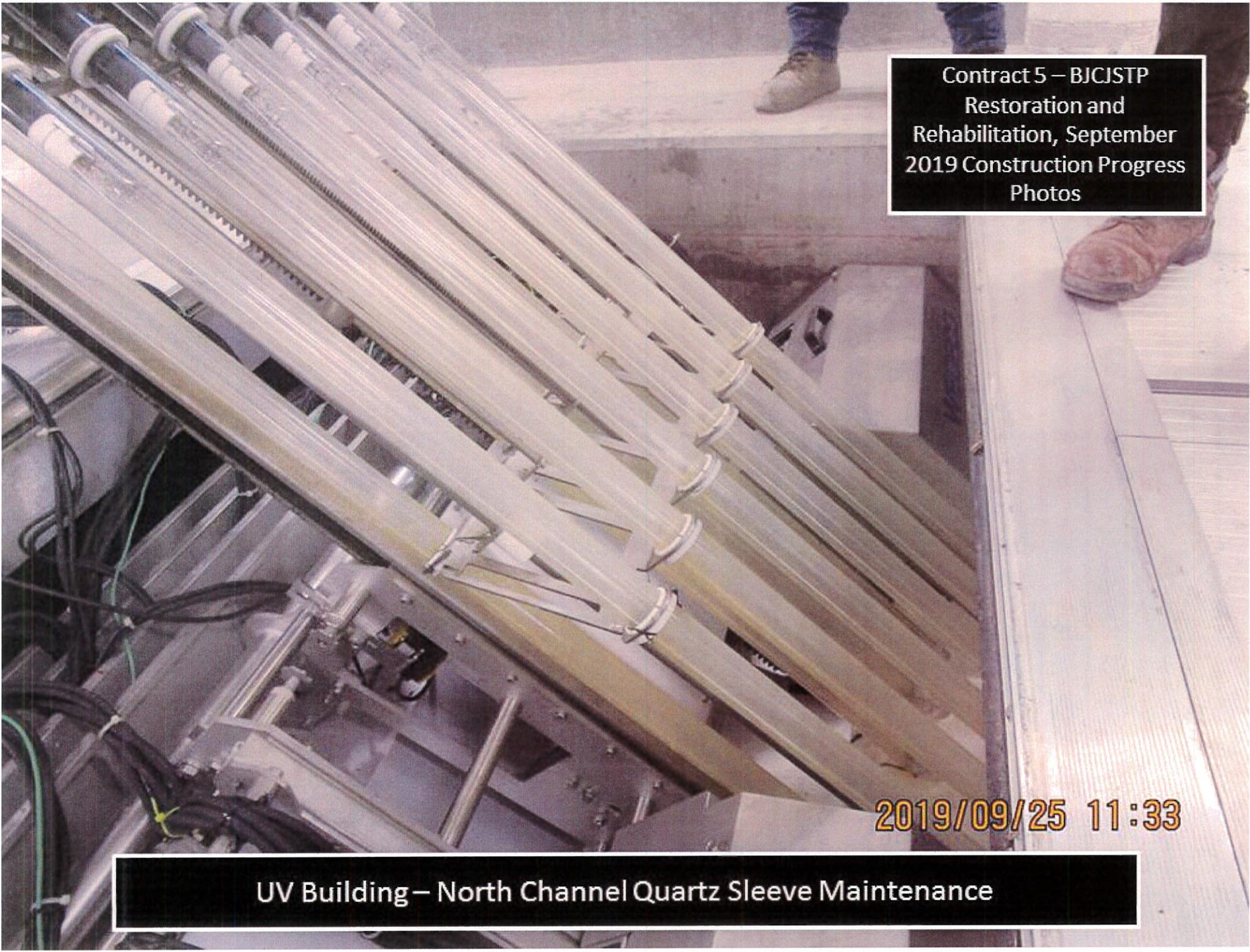


Methanol Storage Facility – Lower Grating Installation Progress Photo

Contract 5 – BICISTP
Restoration and
Rehabilitation, September
2019 Construction Progress
Photos

2019/09/25 11:33

UV Building – North Channel Quartz Sleeve Maintenance

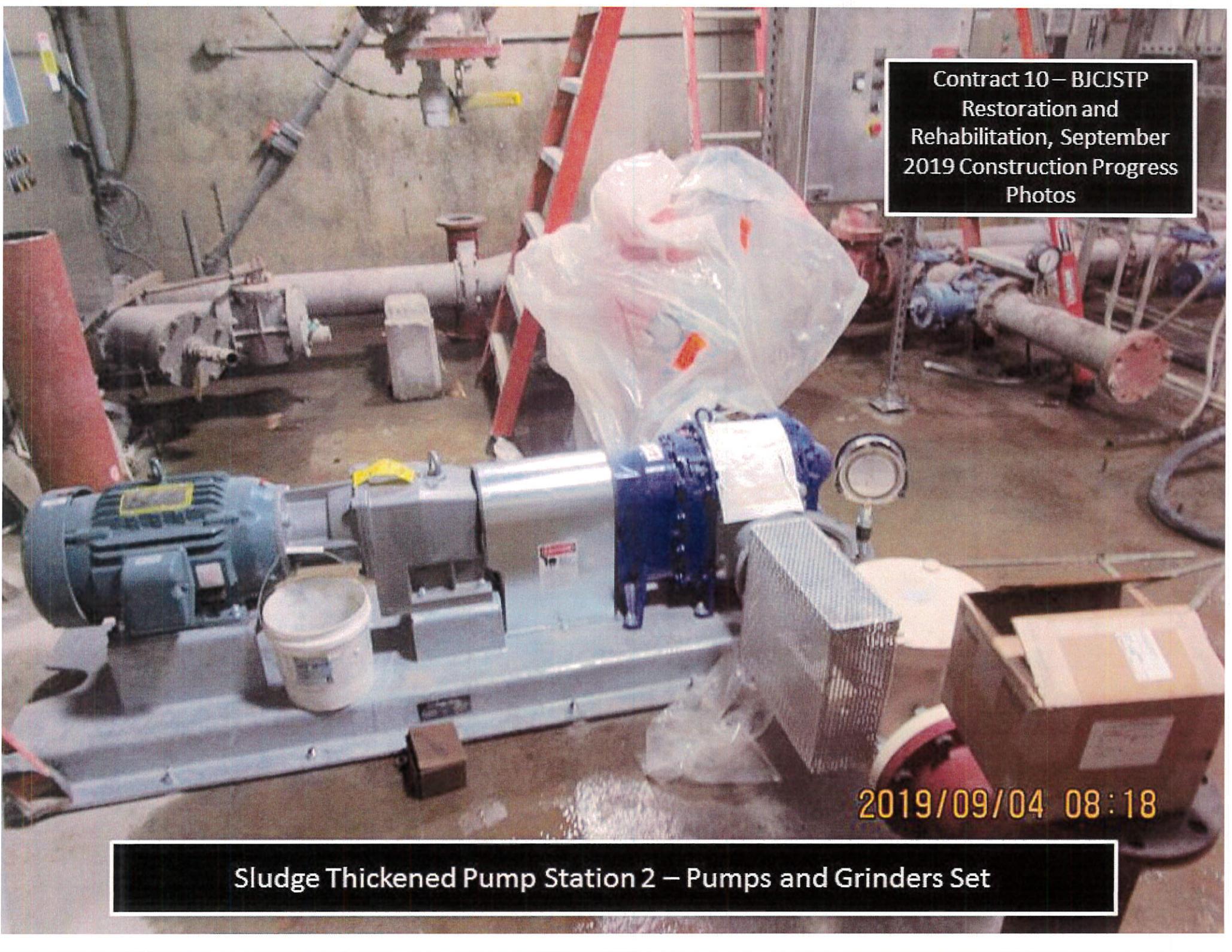


Contract 7 – BICISTP
Restoration and
Rehabilitation, September
2019 Construction Progress
Photos

2019/09/04 08:34

UV Building – Piping to Outdoor HVAC Units

Contract 10 – BJCJSTP
Restoration and
Rehabilitation, September
2019 Construction Progress
Photos



2019/09/04 08:18

Sludge Thickened Pump Station 2 – Pumps and Grinders Set

Contract 11 – BJCJSTP
Restoration and
Rehabilitation, September
2019 Construction Progress
Photos

2019. 9.30 8:09

Sludge Processing Building – Electrical Conduit Labeling

Contract 12 – BJCJSTP
Restoration and
Rehabilitation, September
2019 Construction Progress
Photos

2019/09/04 08:20

Sludge Thickened Pumping Station 2 – HVAC Duct Through Floor Slab