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

2019 Quarter 2 Report

City of Binghamton
Village of Johnson City
Joint Sewage Board

July 2019

2019 QUARTER 2 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 2 Report. The report summarizes the status and progress of the projects and programs required by the Consent Order from April through June 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 is in progress to complete the secondary process train construction by August 31, 2019.

The temporary disinfection is in service in chlorine contact tank #2, and flow is being 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 requires 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 completed placing 785 CY of concrete. This leaves them about 100 CY of structural concrete to place for the project. Their progress was controlled by reduced manpower by the concrete and rebar subcontractors. The bulk of the concrete placed this quarter was phase 2 concrete and the remaining structural concrete is all phase 2 concrete. PC completed the grating and mechanical work in the CN 1-8 gallery, and has completed loading all filter media in for the CN Cells 1-8 and DN Cells this quarter.

PC completed the process work in the Headworks this quarter, and the Headworks is now on line. The fine screens and grit removal equipment is operational. PC should complete their System Demonstration Test of the Equipment in the Headworks in July. Backfill around the Headworks is nearing completion and the STP staff has access to all parts of the Headworks. PC completed installing the brick work at the Headworks this quarter. Electrical and process systems installation have been completed in the Headworks, and are nearing completion in the BAF Treatment Facility. PC has finally completed and tested the Primary Influent Pipes to the PST's. The Primary Distribution Box is now officially in operation. Work on CN Cells 1-8 is being advanced. Now that the electrical work for all process equipment in the CN 1-8 gallery and Blower building is complete, Kruger is testing their control systems. Testing of the control systems by Kruger should be completed by the end of July 2019. PC has completed concrete work for all the CN cells 1-8.With the exception of the coating of the repaired wall on M Line in Cell No. 2. All CN Cells have passed the leak test. The coatings have been completed in all cells CN 1-8 and DN Cells. The coating for the existing concrete effluent channel at CN Cells 1-8 is also complete. Coatings for the existing channels at DN are nearing completion. Air piping to CN Cells 1-8 and DN Cells is complete and is in operation. PC continues to work on the backwash drain pipe for CN 1-8 Cells and the DN Cells. The pipe in the DN gallery did not originally fit as fabricated by PC, so they have proposed using a commonly used method for correcting the misfit joints. GHD is reviewing PC's proposal. PC has finally installed the structural members for the grating in the DN Gallery and has also installed the instrumentation and control panels so that Matco can begin wiring the electrical components in the DN Gallery.

CN Cells 9-14 walls are also being advanced. PC is nearing completion of the concrete work for the influent channel for CN 9-14. PC continued working on the backwash header in the CN Cells 9-14. PC's subcontractor missed their projected May completion date for concrete work for the CN Cells 9-14. They had projected completing the concrete work by the middle of May, 2019, but now will more likely complete by the end of July 2019. Again, this is Phase 2 work, so while we remain skeptical, the work is not impacting startup of the secondary process systems by the August 31, 2019 DEC Milestone date. Mechanical and electrical trades are sufficiently complete to allow Kruger to do their system

checkout of all systems associated with CN Cells 1-8, and the blowers for the CN Cells.

The mechanical trades continued installing the stainless steel pipe in the DN Building and DN Gallery. PC began installing the grating supports in the DN gallery in June, and have provided temporary access to allow Matco to do their electrical work in the gallery. Electrical equipment such as the variable frequency drives have been installed in the upper level of DN, and Matco is nearing final completion on the electrical work for process equipment in the DN system with the exception of the electrical systems in the lower level of DN. Matco is committed to finishing the electrical work in the DN Gallery before the end of July, 2019. This will allow Kruger to roll into the system tests in DN at the end of the Systems Tests for CN 1-8. Kruger will have all of August to complete system tests and startup of the DN Cells, and still comply with the DEC Milestone for August 31.

PC has completed work in the PSTs 7-10, and will complete the final leak tests in July. The Primary Setting Tanks 7-10 are sufficiently complete such that they could be placed into service if the CN, DN Cells, and UV were sufficiently complete to receive flow. Operation of the chain and flights in the PST 7-10 has been demonstrated to the Owner and the Engineer.

PC completed the Primary Influent Pipe this quarter. PC also completed installing miscellaneous yard piping in the area of the Headworks this quarter in anticipation of startup of the new headworks facility.

Construction of the new Chemical Building is nearing completion, and PC is asking GHD to do the chemical system inspection so that the tanks can be registered for use with the DEC. No significant activity was done in this building for months. Work in the East Odor Control Building is complete, with the exception of some minor change order work on the control systems.

Matco continued electrical work in the Blower Building this quarter. The blowers are operational to allow the air pipe installation in all cells with the exception of CN Cell 8. PC continued their process pipe installation for air and backwash pipe in the CN gallery for Cells 9-14 this quarter. PC has completed the concrete work for the SIPS area. PC is nearing completion of erecting the metal SIPS Pump Building. Two of the four pumps have been run, and the other two pumps have had the preliminary check out completed. All four pumps could be made to operate if the downstream flow stream were complete. Matco is nearing completion in the SIPS area.

PC suspended work in the Methanol area, pending a resolution on their American Iron and Steel (AIS) Compliance issue. PC submitted a request for a variance from the EPA requirements for five types of fittings and valves that did not comply with AIS. The EPA granted variances on four of the five requests. The stainless steel flanges grant was denied because the EPA determined that these flanges are domestically available. PC will have to remove and replace the noncompliant stainless steel flanges to complete the system. PC is developing alternate plans to provide for the time to remove and replace the noncompliant fittings.

Matco has completed the conduit work and has pulled the wire to various locations in the Generator Building. PC has finally completed squaring the existing openings for the new louvers to be installed on the North wall of the Generator Building. They have also cut the openings for the upper louvers on the North wall. The upper openings were delayed to abate lead based paint discovered on the existing structural steel at the openings. J&K is nearing completion of the installation of the louvers required to startup 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-primes and subcontractors to advance the secondary treatment process and meet the DEC Phase 1 Milestone date of August 31, 2019. 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 is currently preparing for pavement of the Administration Building parking lot. They are projecting paving the east half of the plant in July and August. The City decided to increase the width of the parking lot to meet Vestal Code. The parking lot will now be 60 feet wide from North to South.

PC has completed the south flood wall and completed the concrete placements at CN 9-14 to meet the Consent Order requirements for flood protection to elevation 845. In addition to the concrete work, Matco has completed the electrical power to storm water pump station 4. All storm water pump stations are also now operational from permanent power.

3 Month Look Ahead: PC Construction will complete the functional demonstration testing for BAF Backwash Treatment Facility, CN Cells 1-8, DN Cells, UV, Plant Water Pump Station, and will begin the System Demonstration Test for these facilities by August 31, 2019. PC should be able to complete the functional demonstration test on all systems except DN by the end of July. PC has developed a plan to perform the System Demonstration Test for all pumps by the end of July. PC will complete leak testing the remaining PST Basins 7-10. The Chemical Storage Building will be complete and ready for chemicals as soon as GHD can perform the final inspection.

Concrete work will be completed on the CN Cells 9-14 and the Thickener Distribution Box next quarter. PC will continue rehabilitation of Thickener #3. We will continue pushing PC to complete the thickener renovation as soon as possible. The thickener rehabilitation had a milestone completion date of June 30, 2019 in the DEC Consent Order. 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. .

Electrical and mechanical work for the new methanol system, UV, and Plant Water Pump Station and DN Cells will be completed next quarter. PC should complete installing yard piping throughout the site. We anticipate the contractor completing structural concrete for all structures with the exception of PST 1-6 by the end of the next quarter.

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: 89% Complete through May 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 was bid and awarded in compliance with the May 27, 2016 milestone for issuing the NTP in the Consent Order.

This quarter, the contractor completed working in the BAF Backwash Treatment Facility, DN Cells, UV, and Methanol Building. Matco has completed all distribution electrical work, 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 nearing completion. PC finally completed their work on the north wall of the Generator Building, and Matco is connecting conduit and wire to the louvers to allow the generator testing to begin.

MATCO is providing input for the Project CPM baseline schedule.

3 Month Look Ahead: MATCO will complete wiring for the DN Cells, UV, and BAF Backwash Treatment Facility this quarter. They anticipate completing the installation of the new 2MW generators and ancillary electrical equipment in the new Generator Building during the next quarter. The only remaining work that Matco should have at the end of next quarter would be associated with the renovation of the PST's 1-6. That work is all Phase 2 work, and cannot begin until PST's 7-10 are in service.

Contract Status: 93% Complete through June 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.

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: 96% Complete through June 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 in compliance with the May 27, 2016 milestone for issuing the NTP 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 in the Headworks Building, and the new Generator Building was completed. Installation of the sampling system at both CN and DN is being done. This work will be completed by the end of July.

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: 95% Complete through June 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 handlings systems including the existing Digester Control Building, existing digesters, solids dewatering systems, and all ancillary equipment.

Status: Architectural work for the new Solids Handling Building is now complete. Concrete work for the Gas Conditioning Equipment Building was completed several months ago. Renovation for the first side of the Lab at the Headhouse is nearing completion. The Town of Vestal refuses to do a code inspection until all work in the building is complete. The attorney for the BJCJSTP Sewer Board sent a letter stating they would not allow STP Staff to move into the newly renovated facility until they had a Certificate of Occupancy. This had caused a significant delay in getting the existing portion of the lab relocated so that the renovation can be done on the existing lab area.As soon as we can get the existing lab emptied, we can allow Quandel to begin work on the west half of the lab renovation. It should take Quandel about a month to complete the lab renovation after they are able to move the WTP staff from the west half of the laboratory to the renovated east half.

Quandel has completed installing the mechanical systems in the Solids Handling Building. They are largely waiting on Matco to complete the electrical work so they can begin pre-functional testing and functional Demonstration Testing of the equipment. After they complete the Functional Demonstration Tests, they can begin the 7 day System Demonstration Test. Matco is working on the control wiring for the centrifuges on the Solids Handling Building. This work is being 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. Now that PC has completed the headworks, and grit removal has been achieved, we should soon be able to deliver sludge to the Solids Handling for Processing. Matco has indicated that they should be complete with electrical work in the Solids Handling before the end of July. As soon as we can complete the System Demonstration Test on the equipment in the Solids Handling Building, we can divert sludge to the new centrifuges for processing. After this diversion, 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.

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. We initially believed we would be able to get the covers installed in June, but the manufacturer was not available to return to site to install the covers until July. The Digester gas safety equipment for Digester #1 and #2 is schedule for installation in July. Digester Cover #3 is installed

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 cannot begin until the Headworks is complete and functional. The startup plan is complete, Headworks is operational, and startup was underway before the June 30, 2019 milestone. Quandel is scheduled to deliver 270,000 gallons of seed sludge on July 8, 2019 for startup of digester #3.

Quandel was able to do the System Demonstration Test in thickener #1 Pump Station during the filling of Digester #3. The segment of buried digester gas pipe that was leaking has been replaced. We developed and executed a plan that saved the City in excess of $400K from the price quoted by the Contractors to clean the Digester Gas Pipe and Sludge Pipe in the Digester Control Building. The cleaning of the existing lines is now complete.

3 Month Look Ahead: Quandel has scheduled the sludge delivery for Digester #3 to begin on July 8. The plan to start up Digester #1 and #2 was originally planned to seed these two digesters from Digester #3. Digester covers for 1 and 2 will now be installed in July. The digester gas safety equipment and digester mixing equipment should be completed for Digester #1 and #2 should be completed in July.

Quandel should be complete installing doors and windows in the building next quarter. Quandel is now stated that they do not believe they will complete the Milestone 1 or 2 until the third quarter of

2019 due to issues encountered with the gas processing equipment. Quandel and the City have agreed to treat milestones 1 and 2 as intermediate milestones as long the equipment gets installed by the original milestone 3 date is met.

Assuming the issue with relocating the lab, the work to rehab the existing portion of the lab should be completed this quarter.

When the new centrifuges and solids handling equipment go online, we can decommission the existing centrifuges and begin installing the new mechanical thickeners in the place of the existing centrifuges. The mechanical thickeners are not required to meet the sludge processing needs for the Phase 1 Operations. Quandel will begin this work in the third quarter.

Contract Status: 93% Complete through June 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 continued installing conduit and cable tray in the Digester Complex and Solids Handling Building this quarter. Matco is nearing completion of the control wiring and systems for the Centrifuges in the new Solids Handling Building. This work was inadvertently left out of the design for the building during the design phase. It is being done as change order work authorized on a T&M basis.

3 Month Look Ahead: Matco has stated that they will complete all electrical work in the Solids handling Building in July. MATCO will continue electrical work as needed to complete the new digester equipment. They will begin work on the electrical work for the mechanical thickeners in the third quarter.

Contract Status: 84% Complete Through June 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 completed installing the boilers and heat exchangers for the digesters. They have completed startup of the boilers and heat exchangers to support startup of Digester #3. The boilers and heat exchangers brought the temperature of the Primary Effluent put into Digester #3 up from 63 degrees to 98 degrees in less than a week. There appears to be an issue with the boilers not being able to fire in the high fire mode at this time. We are requesting the technician return to site to do some additional diagnostic work to help determine what the cause of the problem could be.

3 Month Look Ahead: J&K should complete installing the HVAC equipment in the Digester Complex as well as the Solids Handling Building next quarter.

Contract Status: 88% Complete through June 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 have performed change order work to replace the defective gas line this quarter. 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: 89% Complete through June 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 anticipate deleting the removal of the heavy stone that will be used as the haul road for the WQIP Project from Streeter's contract, and we also anticipate having the WQIP contractor remove the stone and complete the storm drain installations adjacent to storm drain pump stations 1 and 2.

3 Month Look Ahead: Streeter has some punch list work and some repairs on the installation of the gate in the sampling manhole. We should be able to get final completion for the Floodwall contract by the end of the third quarter 2019.

Contract Status: 98% Complete through June 2019

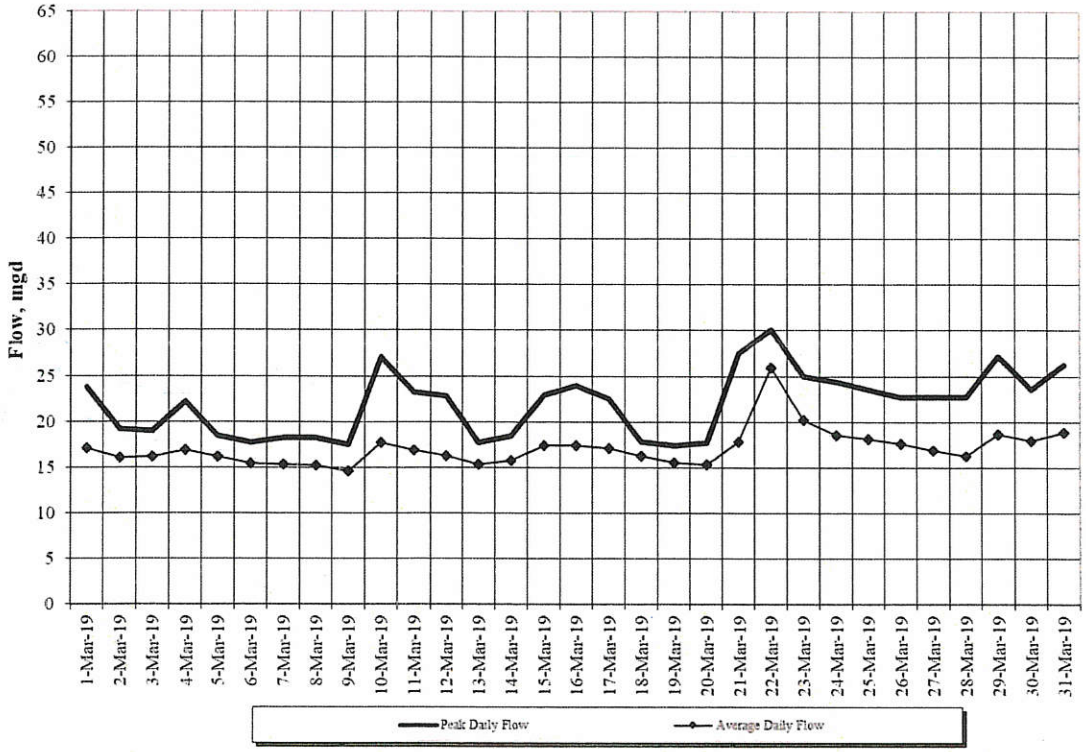
Consent Order Compliance Table

DEC #	Description	Consent Order Date	Status
7	Flood Mitigation to Elevation 845	February 28, 2019	Complete
3f	Begin SIPS Commissioning	April 30, 2019	April 30, 2019
3e	Backwash Waste Treatment Construction Complete	June 30, 2019	A variance will be submitted to change the milestone date due to a late change by the equipment manufacture.
3h	Hydraulic Testing of new BAF Backwash Tank	June 30, 2019	Complete
3j	Retrofit of two sludge thickeners, (1 is complete, the second should be complete by August 31, 2019. Two thickeners will be available for use at all times.	June 30, 2019	A variance request has been submitted to DEC. Based on comments by DEC, we will work with DEC to determine what date they can be completed.
4d	Complete construction of anerobic digesters. (Digester #3will be complete before June 15, 2019, and it can handle the entire sludge load during the interim construction period,)	June 30, 2019	Digester 3 completed June 30, 2019/ Digester 1&2 completed August 31, 2019
5b	Interim Operating Strategy for equipment from 8/31/19 through 1/1/20.	July 31, 2019	July 31, 2019
3i	Construction Complete on PST 7-10	August 31, 2019	July 31, 2019
3k	Commence Operation of CN 1-8, DN, BAF Backwash Tank, BAF Backwash Treatment, Headworks, and PST 7-10.	August 31, 2019	August 31, 2019
3l	Commence Operation of CEPT, UV, Sludge Thickeners, and appurtenances.	August 31, 2019	August 31, 2019
4e	Operation of Digesters 1-3. (Digester 3 is scheduled to be operational in June 2019.)	August 31, 2019	Digester #3 was in startup June 27, 2019/ Digester #1 or 2 startup will begin on August 31, 2019. The final Digester cannot begin startup until the STP is producing sufficient feed sludge to support three digester operation.
3m	BAF CN Cells 9-14 Construction Complete	January 1, 2020	October 30, 2019
3n	Operation in Compliance with SPDES	April 1, 2020	April 1, 2020

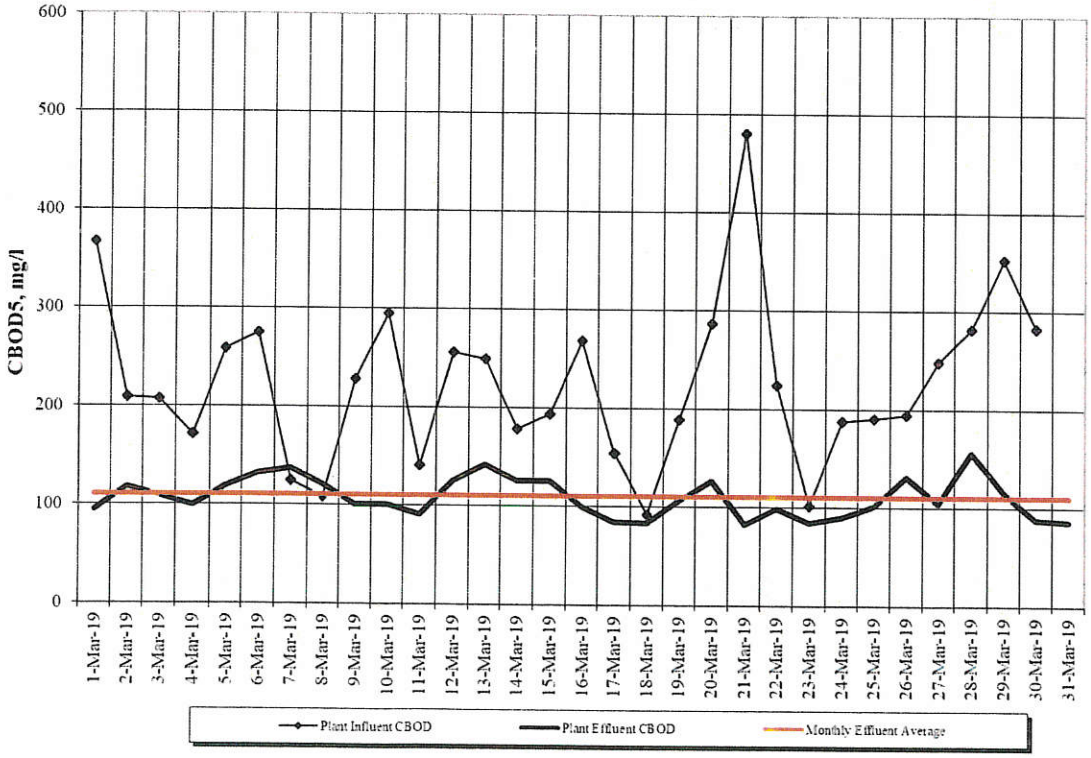
APPENDIX A

Facility Operations

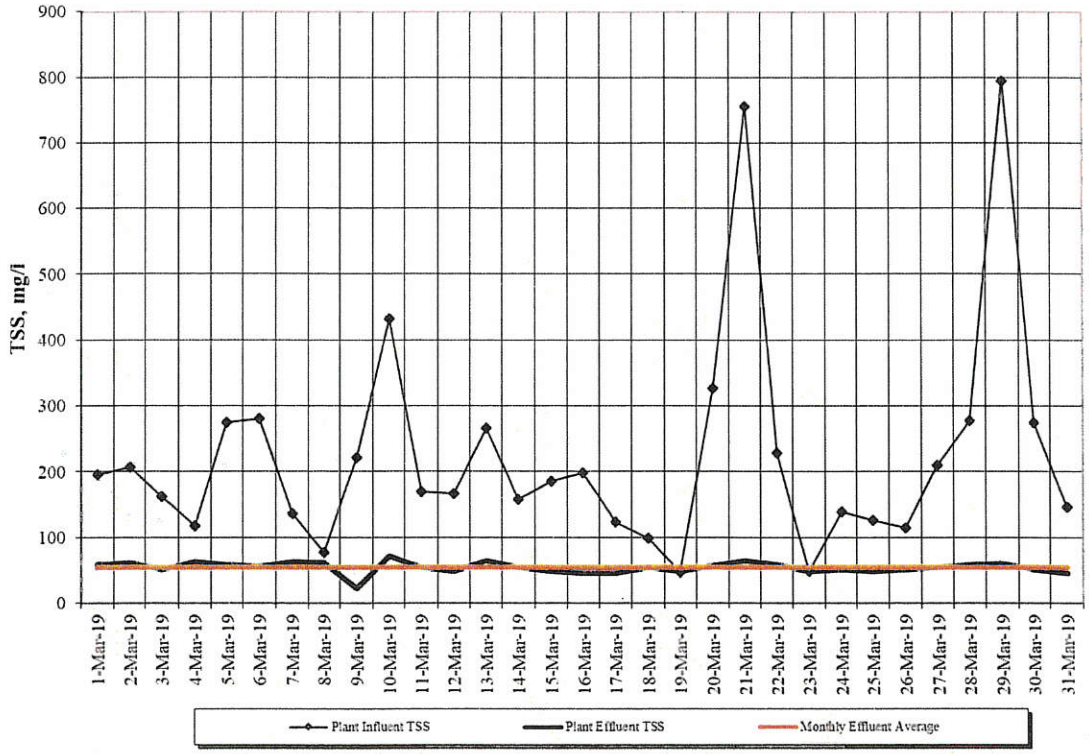
Daily Flows
Binghamton - Johnson City JSTP



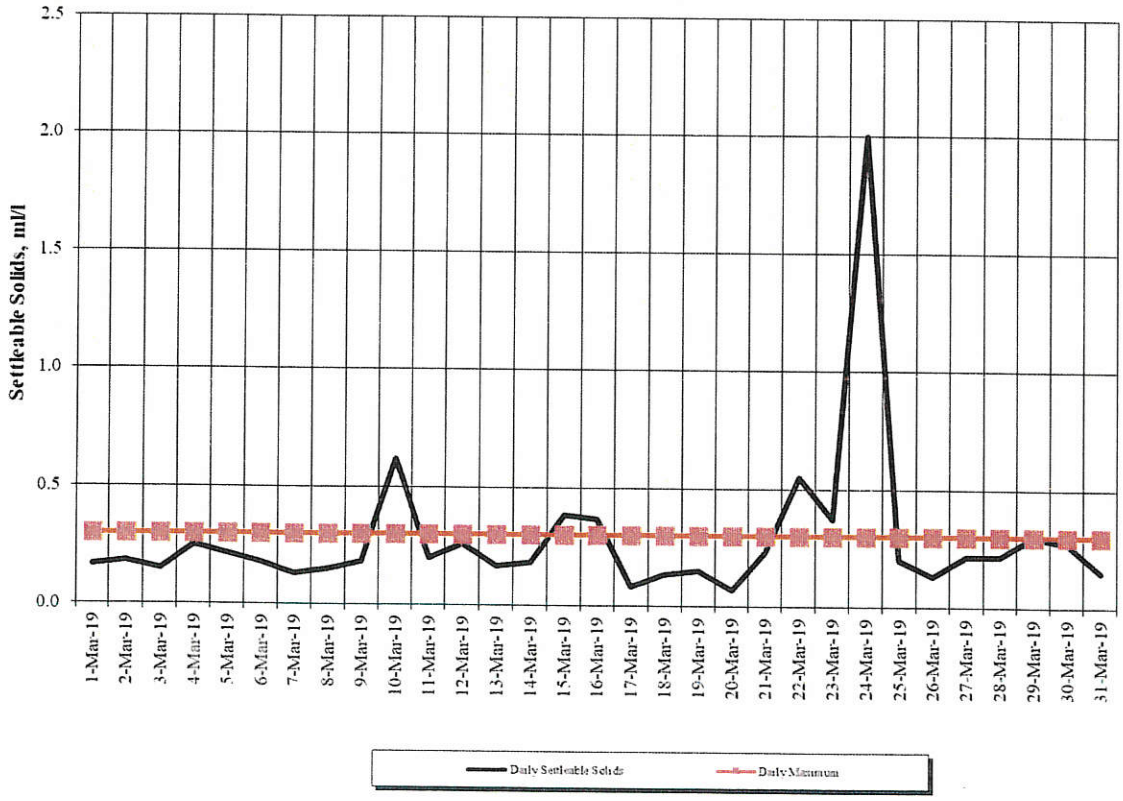
CBOD5 Concentrations
Binghamton - Johnson City JSTP



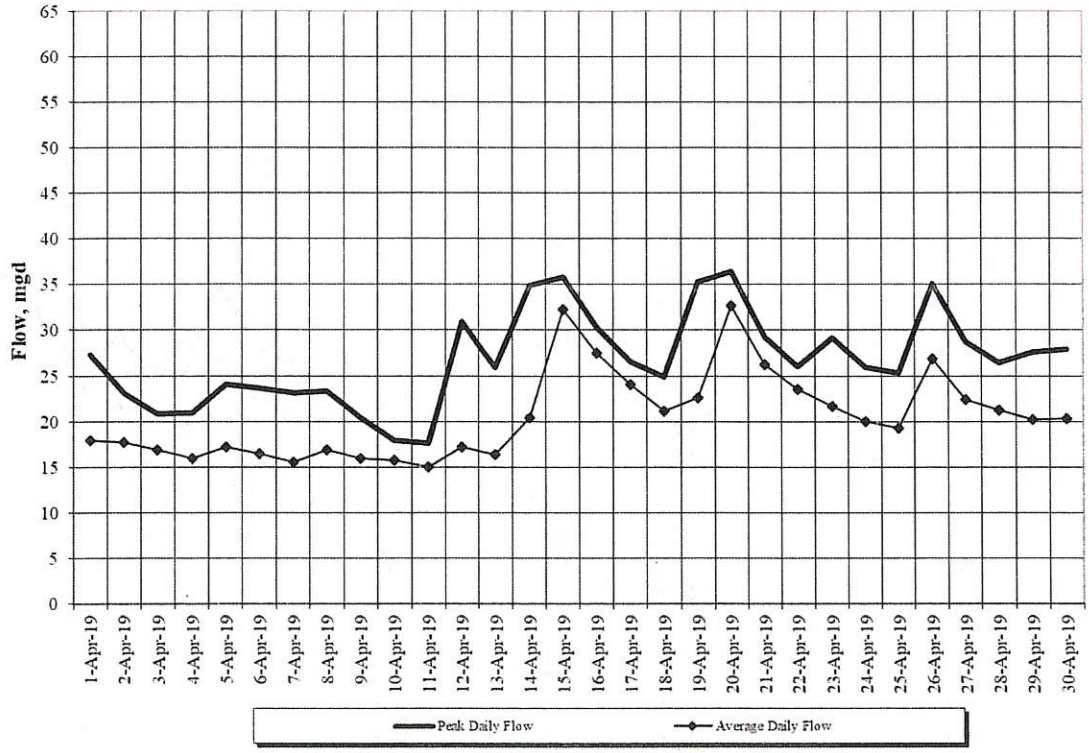
TSS Concentrations
Binghamton - Johnson City JSTP



Settleable Solids
Binghamton - Johnson City JSTP



Daily Flows
Binghamton - Johnson City JSTP



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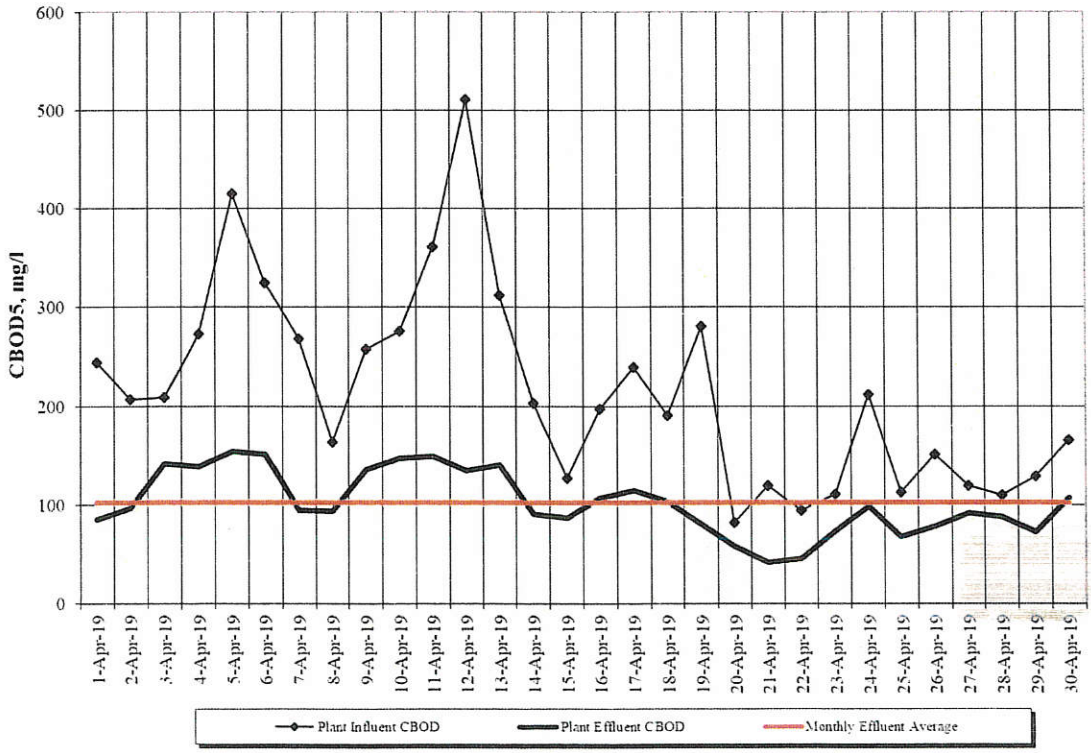
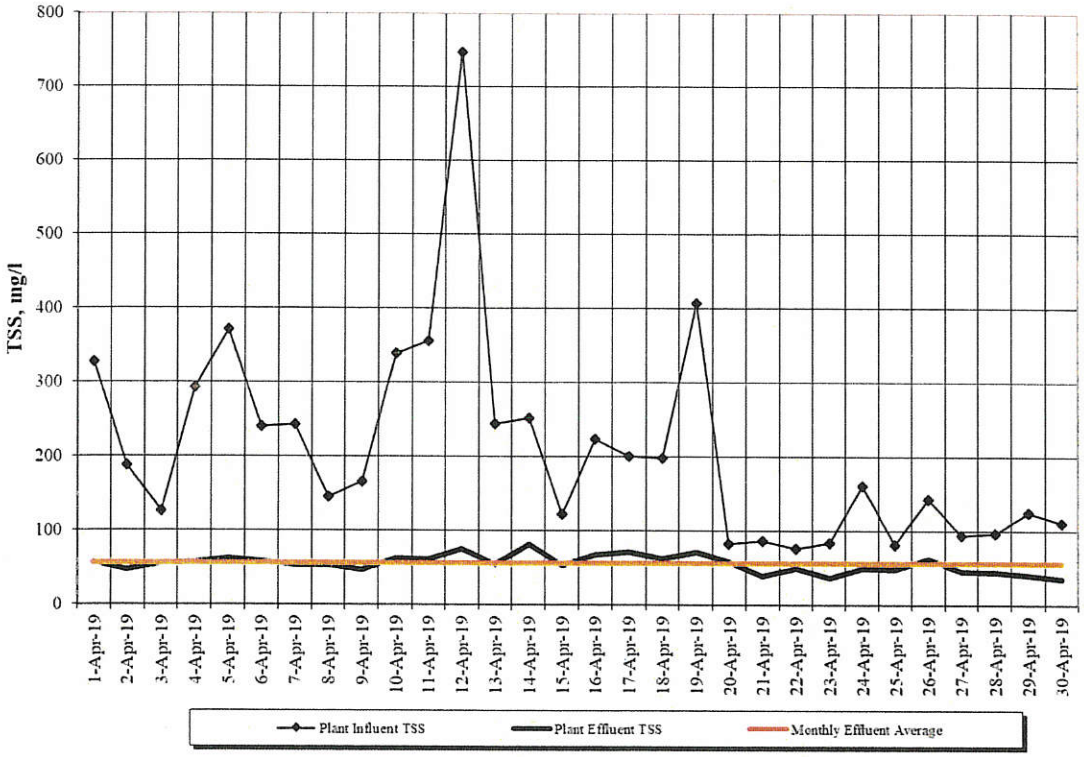
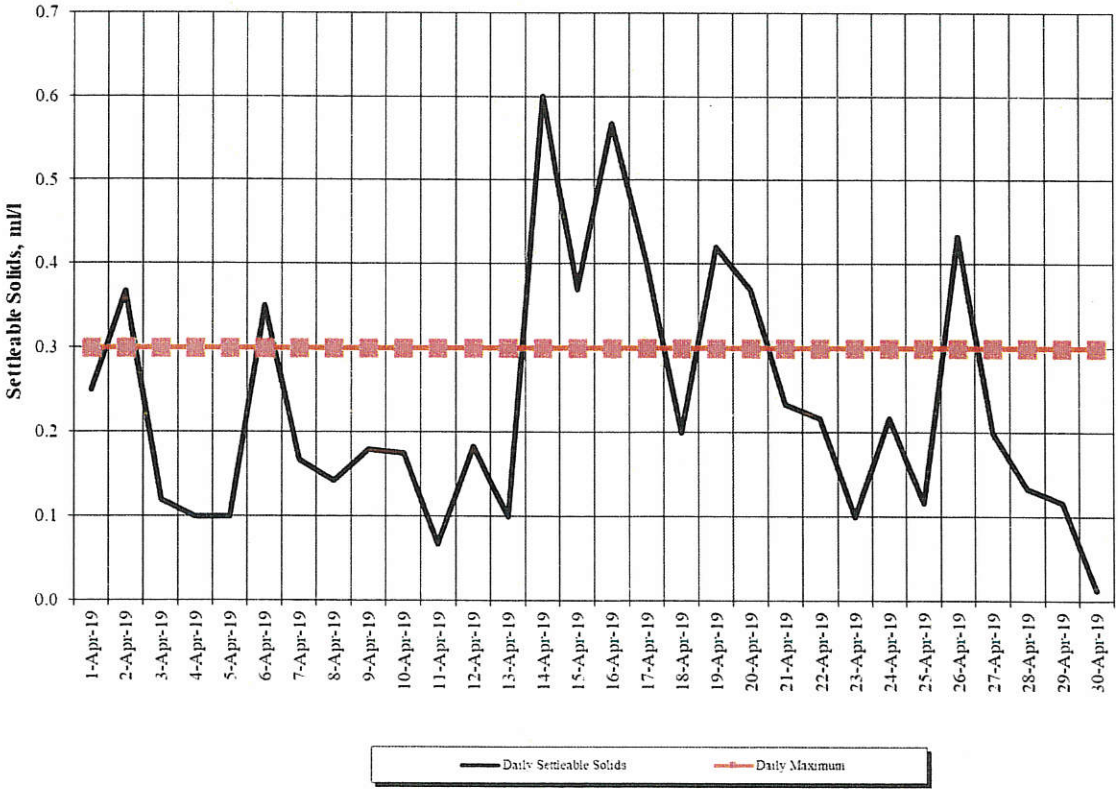
Binghamton - Johnson City JSTP



TSS Concentrations
Binghamton - Johnson City JSTP

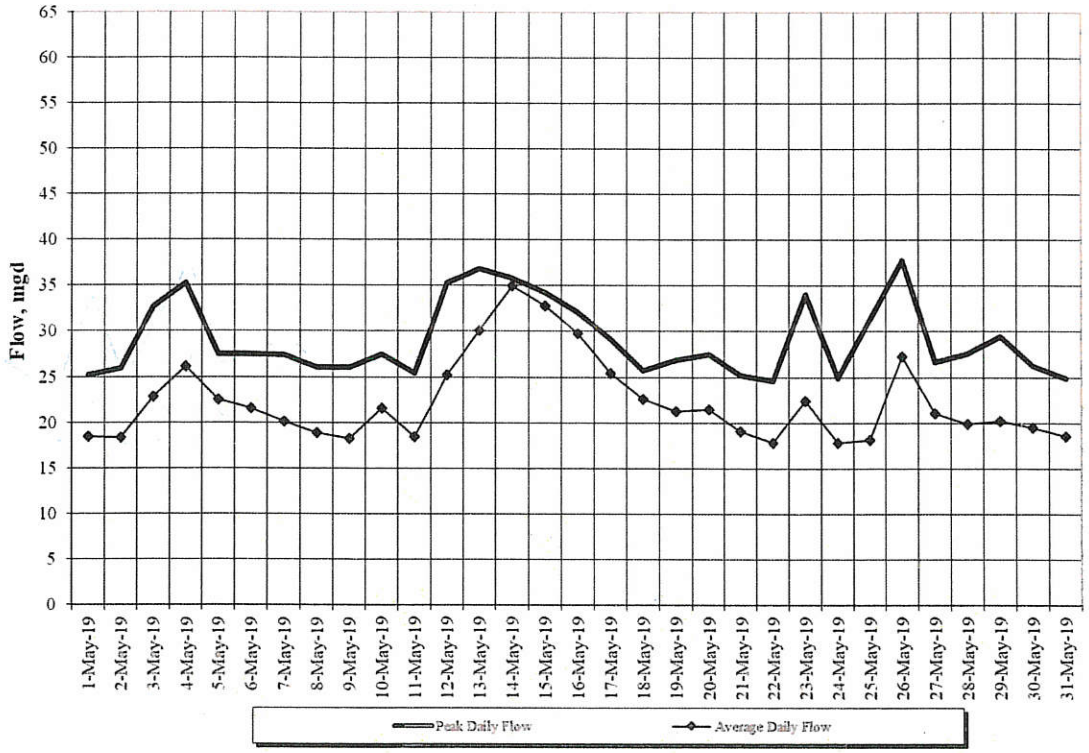


Settleable Solids
Binghamton - Johnson City JSTP



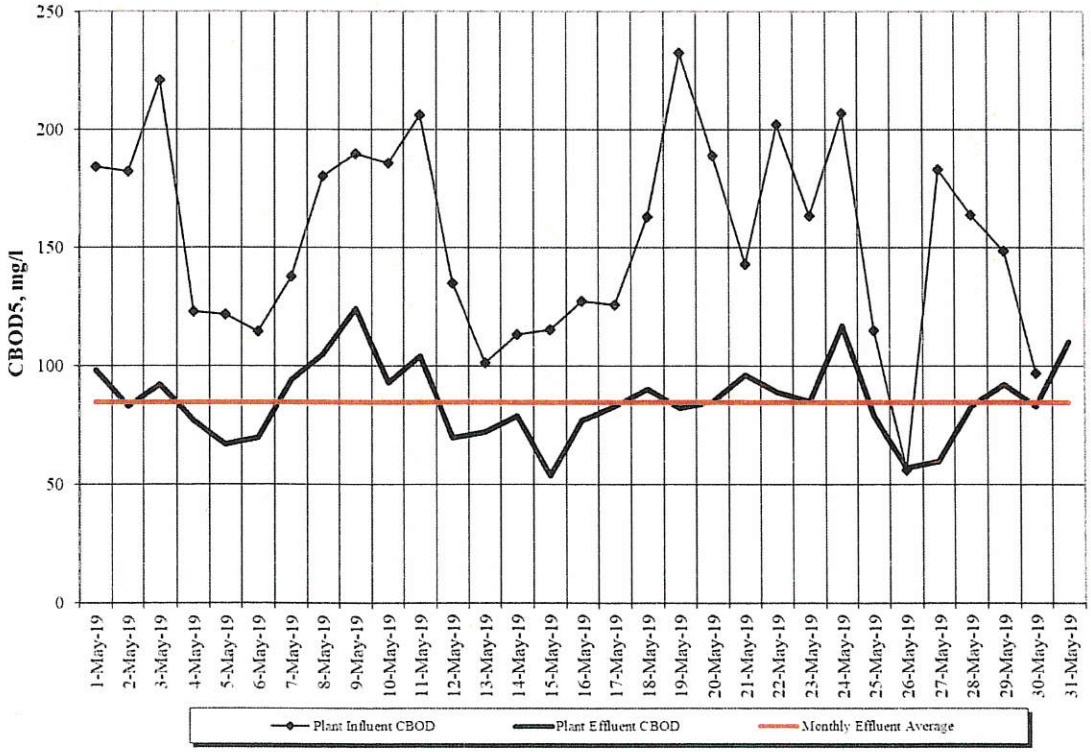
Daily Flows

Binghamton - Johnson City JSTP

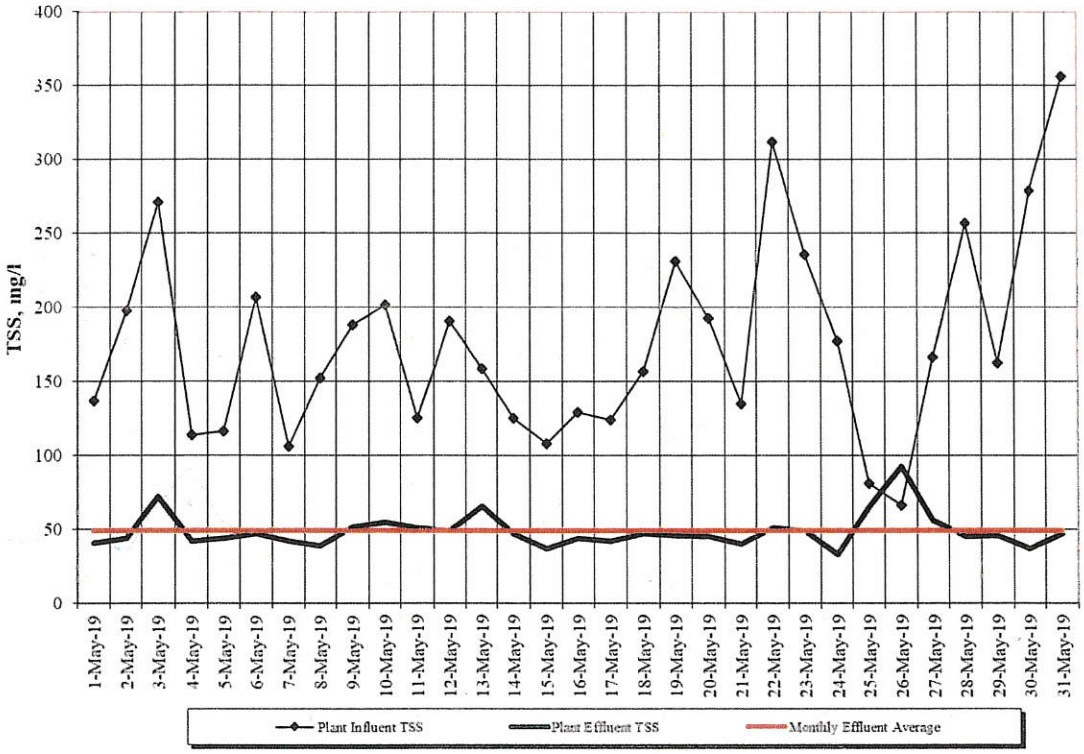


CBOD5 Concentrations

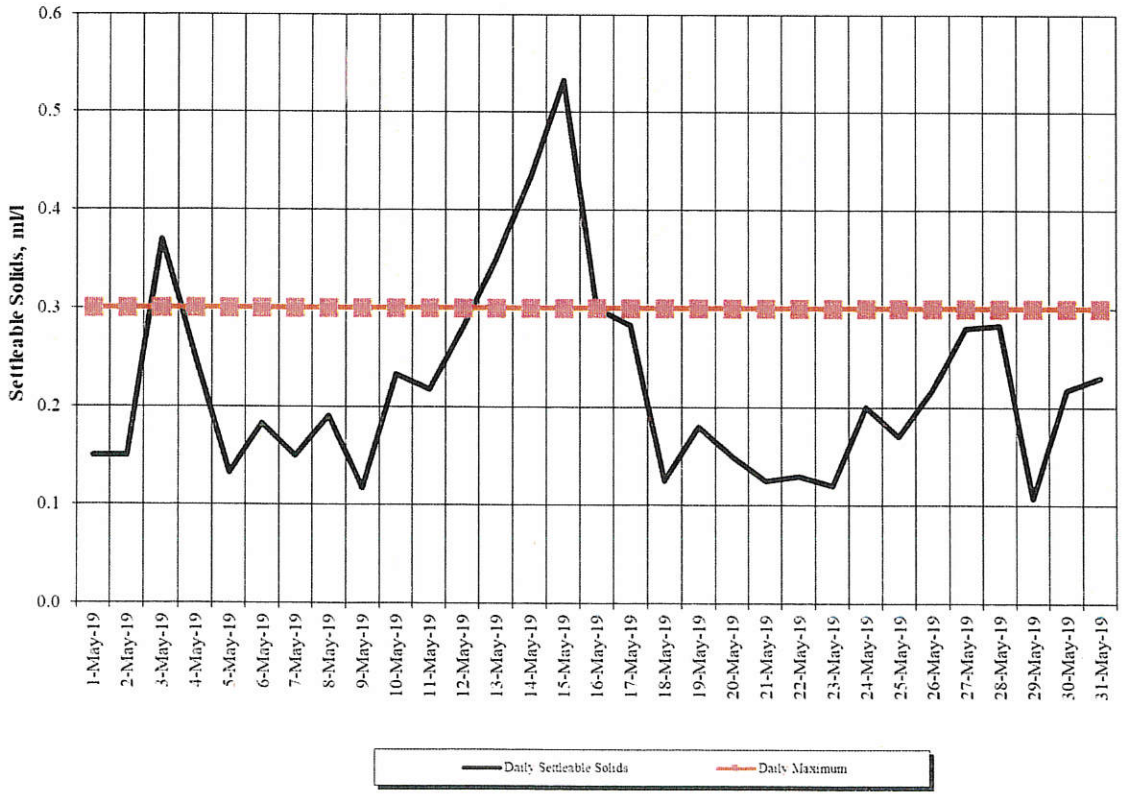
Binghamton - Johnson City JSTP



TSS Concentrations
Binghamton - Johnson City JSTP



Settleable Solids
Binghamton - Johnson City JSTP



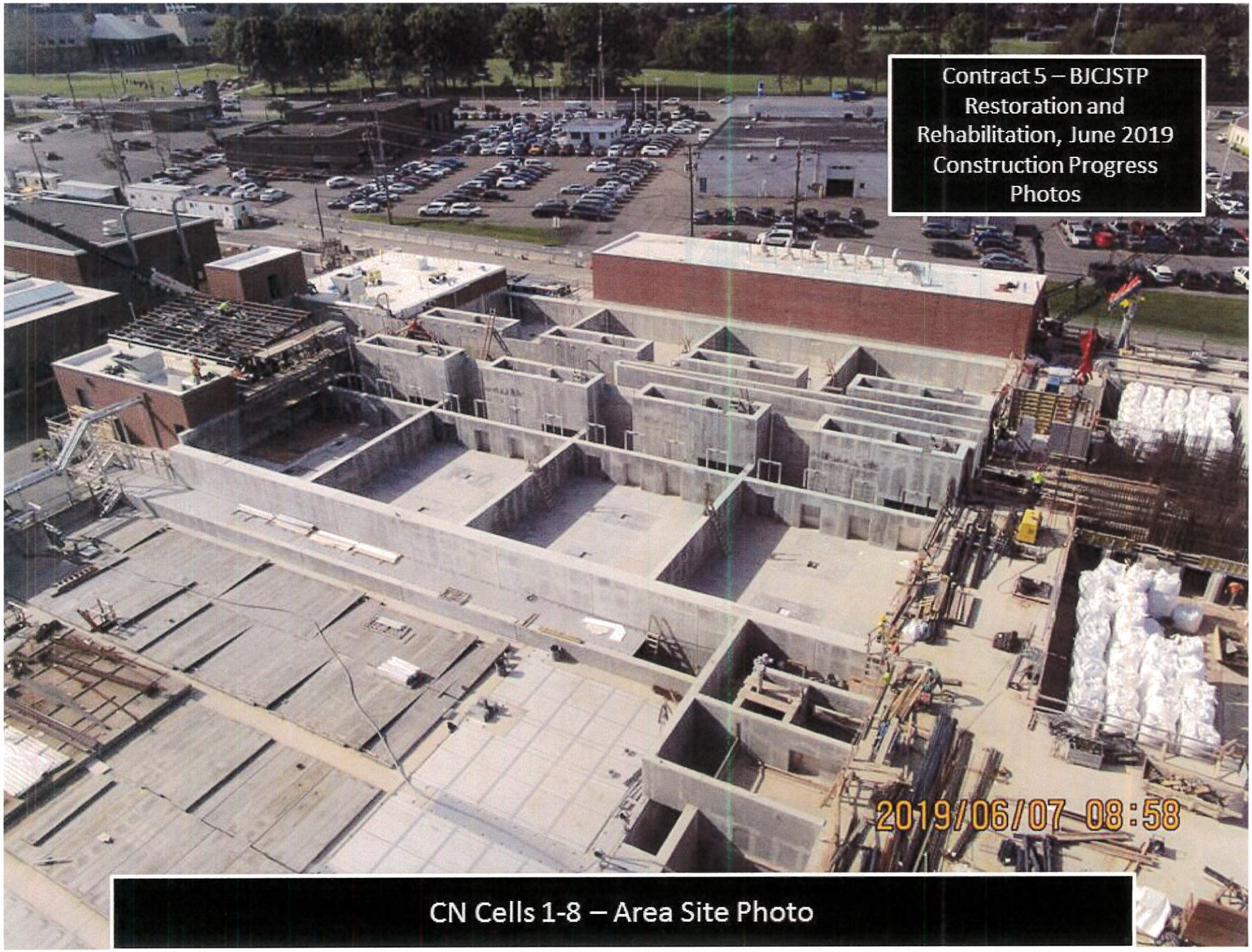
DATE	TOTAL FLOW	Final Eff Amm. Avg	FW Amm. Avg	Final Eff TKN	FW TKN	CL 2 AVG	Fecal Coli mg/l	Eff. Phos.	FW Phos. Avg	Eff. Total Iron	Daily Total Q	Iron (Fe) lbs/day
1-Mar-19	17.07			18.4	18.4	1.43	10					0
2-Mar-19	16.10			6.7	18.4	1.39	41					0
3-Mar-19	16.13			8.8	12.4	1.48	10					0
4-Mar-19	16.85			26.6	13.7	1.08	41					0
5-Mar-19	16.18	13.6	13.6	7.3	16.5	1.09	10	3.0	4.5	5.59	16.18	754
6-Mar-19	15.40			25.8	29.3	1.12	10					0
7-Mar-19	15.38			28.4	17.2	1.23	10			6.53	15.38	838
8-Mar-19	15.28			24.9	17.3	1.16	10					0
9-Mar-19	14.59			25.3	26.9	1.18	10					0
10-Mar-19	17.72			18.0	27.0	1.31	10					0
11-Mar-19	16.92			18.1	17.7	1.24	10					0
12-Mar-19	16.30	14.9	12.0	24.3	22.9	1.32	10	2.1	3.0	6.21	16.30	844
13-Mar-19	15.32			24.4	27.2	1.26	10					0
14-Mar-19	15.77			20.9	23.9	1.35	10			6.31	15.77	830
15-Mar-19	17.37			18.8	22.1	1.08	10					0
16-Mar-19	17.45			12.5	23.0	1.31	10					0
17-Mar-19	17.10			15.1	19.9	1.27	10					0
18-Mar-19	16.25			19.2	19.8	1.16	10					0
19-Mar-19	15.54	11.4	10.7	21.0	17.4	1.1	10	2.3	3.7	6.12	15.54	793
20-Mar-19	15.34			17.7	25.4	1.25	10					0
21-Mar-19	17.83			16.2	28.1	1.25	10			5.61	17.83	834
22-Mar-19	25.94			15.2	18.6	1.41	31					0
23-Mar-19	20.24			11.3	11.1	1.12	10					0
24-Mar-19	18.57			14.5	16.3	1.35	10					0
25-Mar-19	18.16			18.5	17.8	1.43	10					0
26-Mar-19	17.66	11.7	11.6	22.7	20.3	1.09	10	2.5	3.3	5.52	17.66	813
27-Mar-19	16.95			17.8	23.1	1.37	20					0
28-Mar-19	16.28			25.0	33.7	1.2	10			5.76	16.28	782
29-Mar-19	18.62			21.7	39.4	1.34	10					0
30-Mar-19	17.92			20.7	29.8	1.45	10					0
31-Mar-19	18.85			19.9	23.3	1.31	10					0
	17.13	***12.90***	***12.0***	***18.89***	***21.9***	***1.48***	***11.62***	***2.48***	***3.64***	***5.96***	***16.37***	***813***
	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-Apr-19	17.90			23.1	31.6	1.16	10					0
2-Apr-19	17.77	11.2	12.9	19.8	28.2	1.32	20	1.7	2.7	4.95	17.77	734
3-Apr-19	16.87			33.5	27.0	1.5	10					0
4-Apr-19	15.98			27.8	34.6	1.22	10			5.54	15.98	738
5-Apr-19	17.20			32.6	33.9	1.05	10					0
6-Apr-19	16.45			25.8	31.0	1.24	10					0
7-Apr-19	15.51			16.7	31.7	1.43	10					0
8-Apr-19	16.95			17.2	20.5	1.36	10					0
9-Apr-19	15.97	14.3	15.6	24.7	35.1	1.37	10	4.0	4.9	5.45	15.97	726
10-Apr-19	15.72			28.3	32.9	1.12	10					0
11-Apr-19	15.03			31.8	45.0	1.07	10			5.97	15.03	748
12-Apr-19	17.20			19.6	52.3	1.27	10					0
13-Apr-19	16.37			22.7	30.6	1.09	51					0
14-Apr-19	20.42			14.8	18.9	1.28	10					0
15-Apr-19	32.27			13.8	12.4	1.24	41					0
16-Apr-19	27.49	7.0	7.6	8.8	10.3	1.31	10	1.6	1.5	4.67	27.49	1071
17-Apr-19	24.02			17.3	16.5	1.27	10					0
18-Apr-19	21.12			16.4	21.4	1.15	10			5.11	21.12	900
19-Apr-19	22.62			15.0	22.5	1.19	31					0
20-Apr-19	32.70			12.0	10.2	1.28	30					0
21-Apr-19	26.30			11.5	14.3	1.27	10					0
22-Apr-19	23.54			13.6	13.5	1.23	10					0
23-Apr-19	21.63	9.3	8.5	17.7	17.8	1.21	10	2.2	2.7	4.28	21.63	772
24-Apr-19	20.06			16.4	13.0	1.18	10					0
25-Apr-19	19.32			16.9	19.2	1.1	10			4.24	19.32	683
26-Apr-19	26.83			13.2	15.7	1.06	1112					0
27-Apr-19	22.38			13.6	15.0	1.31	20					0
28-Apr-19	21.24			12.4	14.6	1.29	10					0
29-Apr-19	20.20			14.4	16.6	1.25	10					0
30-Apr-19	20.33	10.4	12.0	16.7	17.5	1.35	10	0.9	1.5	4.58	20.33	777
	20.58	***10.44***	***11.3***	***18.94***	***23.5***	***1.50***	***13***	***2.08***	***2.66***	***4.98***	***19.40***	***805***
	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-May-19	18.45			15.6	17.9	1.13	10					
2-May-19	18.40			18.4	19.9	1.07	10			4.20	18.40	645
3-May-19	22.84			15.4	19.1	1.15	573					
4-May-19	26.16			13.1	14.5	1.07	20					
5-May-19	22.47			14.9	15.3	1.25	10					
6-May-19	21.56			13.1	14.3	1.12	10					
7-May-19	20.11	10.1	11.5	53.7	20.1	1.31	10	2.3	3.4	4.16	20.11	698
8-May-19	18.90			17.8	16.6	1.24	20					
9-May-19	18.27			16.6	17.9	1.33	41			3.78	18.27	576
10-May-19	21.54			16.6	10.6	1.21	317					
11-May-19	18.44			14.8	18.0	1.09	30					
12-May-19	25.19			8.6	11.2	1.37	10					
13-May-19	30.12			8.6	9.9	1.31	464					
14-May-19	34.95	4.7	4.9	9.7	9.8	1.21	20	1.2	1.2	3.02	34.95	880
15-May-19	32.82			7.3	10.8	1.26	10					
16-May-19	29.80			13.7	12.8	1.31	10			3.58	29.80	890
17-May-19	25.40			14.1	14.8	1.03	31					
18-May-19	22.66			12.7	16.8	1.15	20					
19-May-19	21.24			12.7	16.3	1.15	10					
20-May-19	21.48			13.6	17.1	1.31	62					
21-May-19	19.11	8.9	7.8	14.6	19.8	1.1	85	1.6	2.3	3.86	19.11	615
22-May-19	17.86			15.3	18.3	1.37	10					
23-May-19	22.44			14.6	16.7	1.18	10			4.47	22.44	837
24-May-19	17.79			17.4	19.9	1.02	10					
25-May-19	18.16			11.5	12.0	1.39	10					
26-May-19	27.29			8.3	7.5	1.17	10					
27-May-19	21.03			12.4	14.3	1.11	10					
28-May-19	19.92	8.0	8.0	25.9	16.1	1.19	998	1.8	3.0	5.34	19.92	887
29-May-19	20.22			11.4	11.8	1.21	41					
30-May-19	19.49			0.82	13.9	1.16	10			4.15	19.49	675
31-May-19	18.52			11.5	14.8	1.09	10					
	22.34	***7.93***	***8.1***	***14.67***	***15.1***	***1.39***	***24***	***1.73***	***2.48***	***4.06***	***22.50***	***762***
	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 PHO S.	Eff. Total Iron	Daily Total Q	Mthly Avg Iron lbs/day

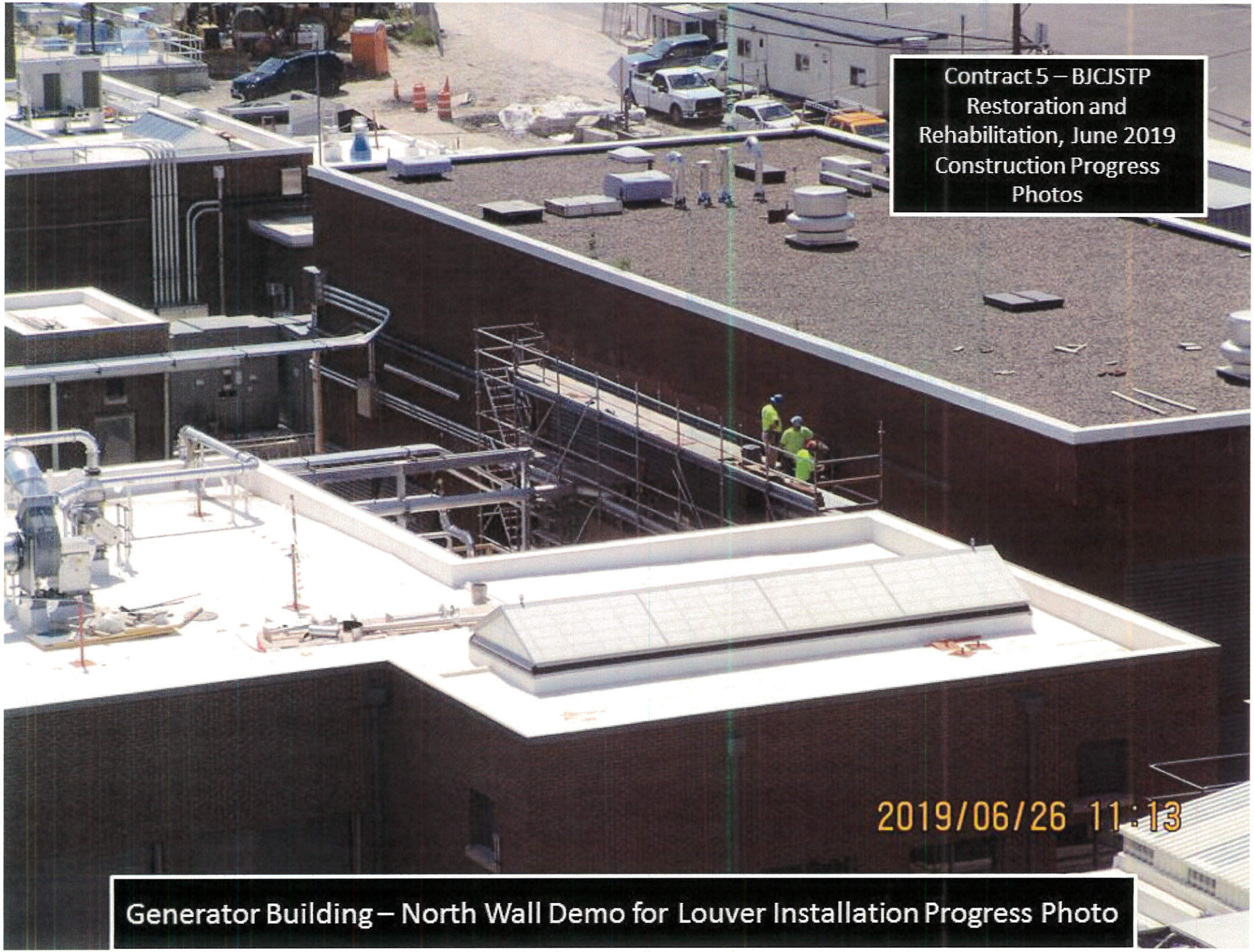
APPENDIX B

Photos

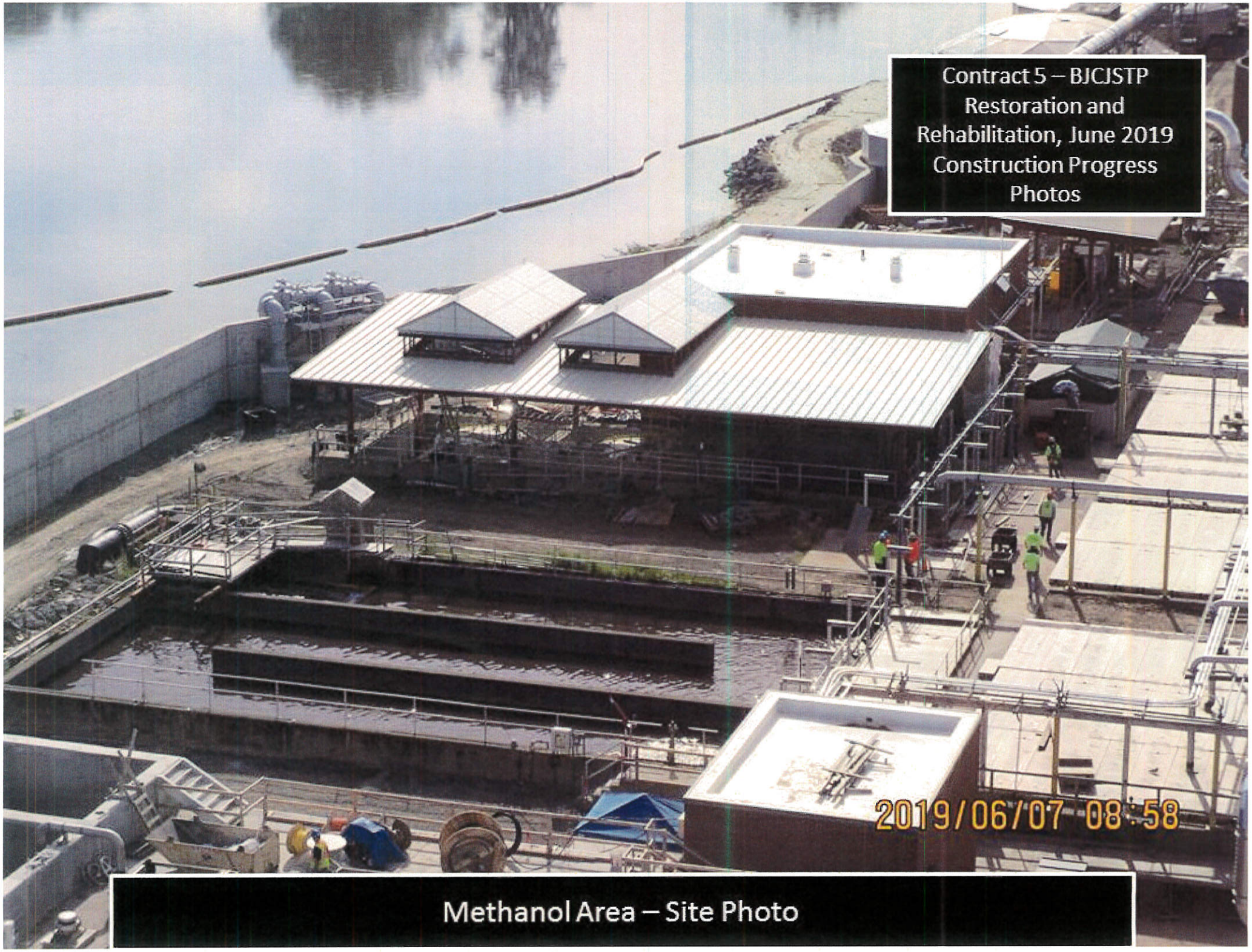


Contract 5 – BJCJSTP Restoration and Rehabilitation, June 2019 Construction Progress Photos

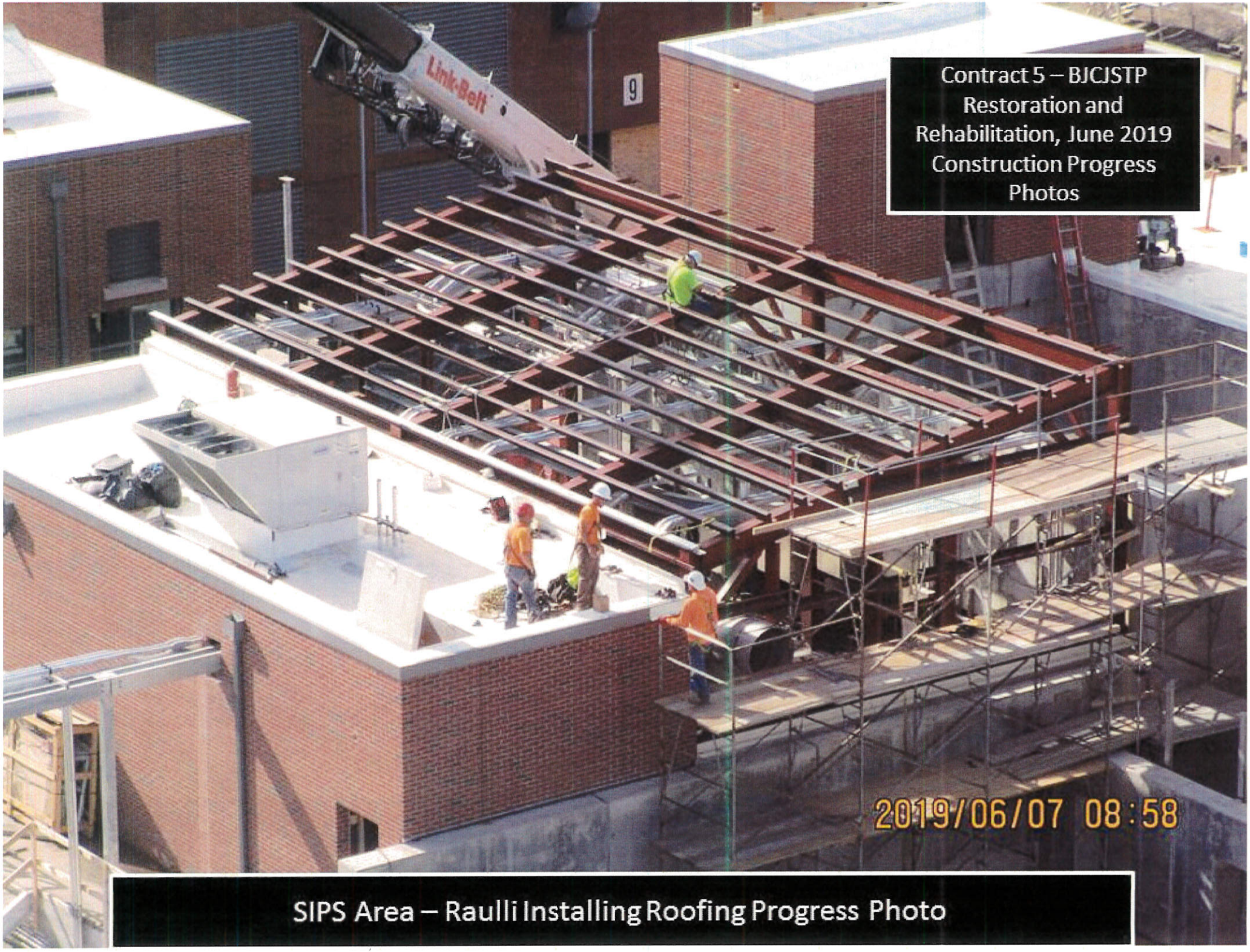
CN Cells 1-8 – Area Site Photo



Generator Building – North Wall Demo for Louver Installation Progress Photo

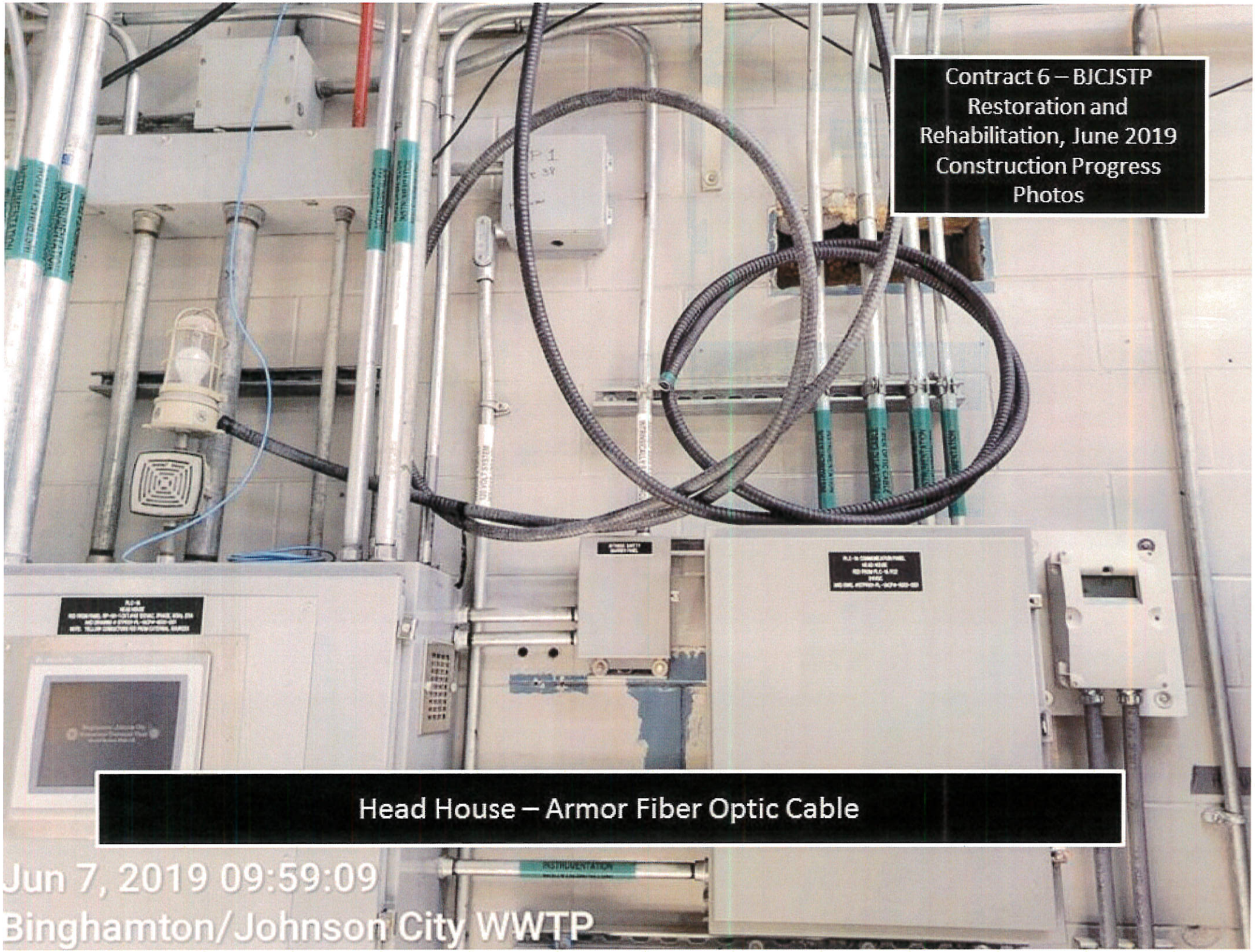


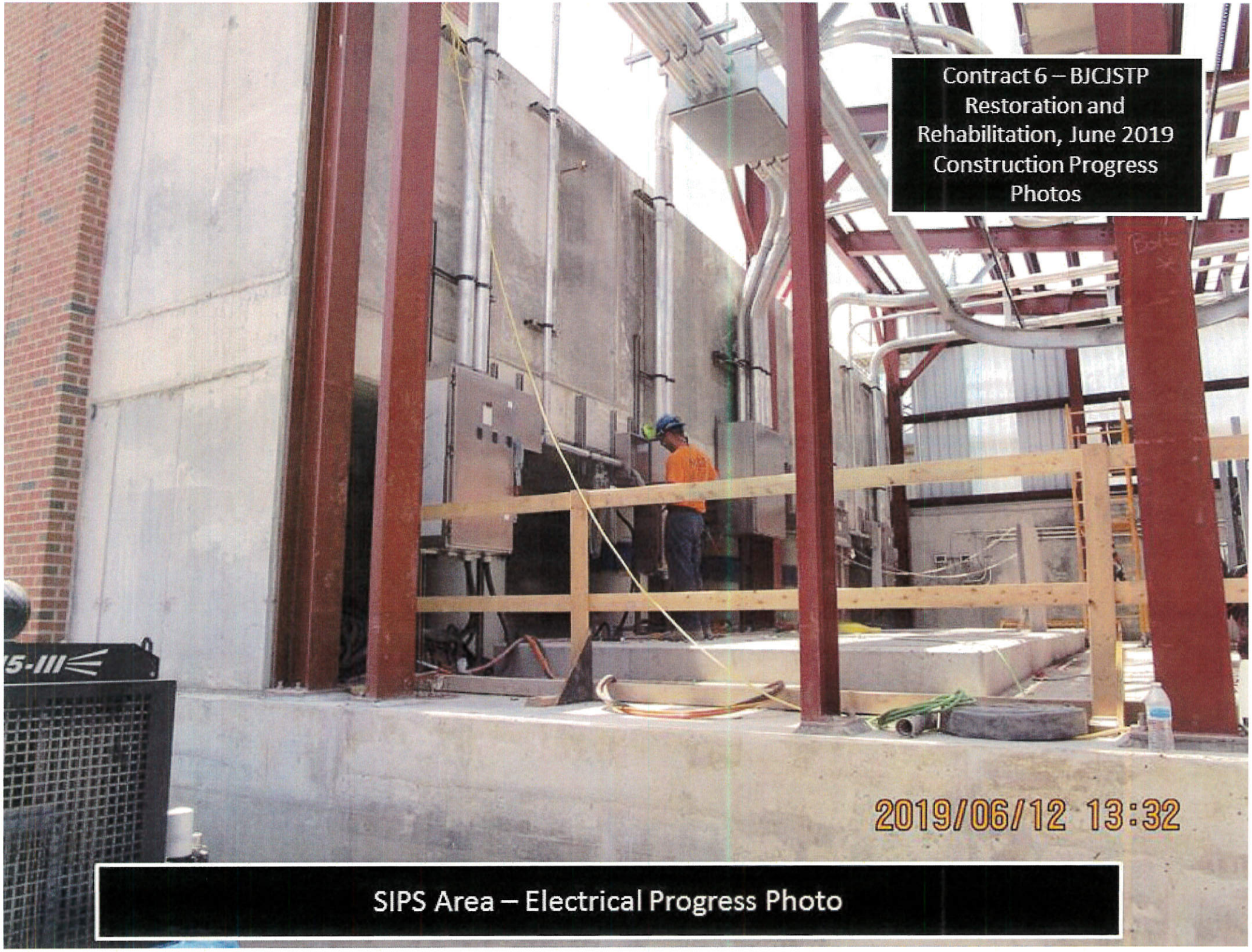
Methanol Area – Site Photo

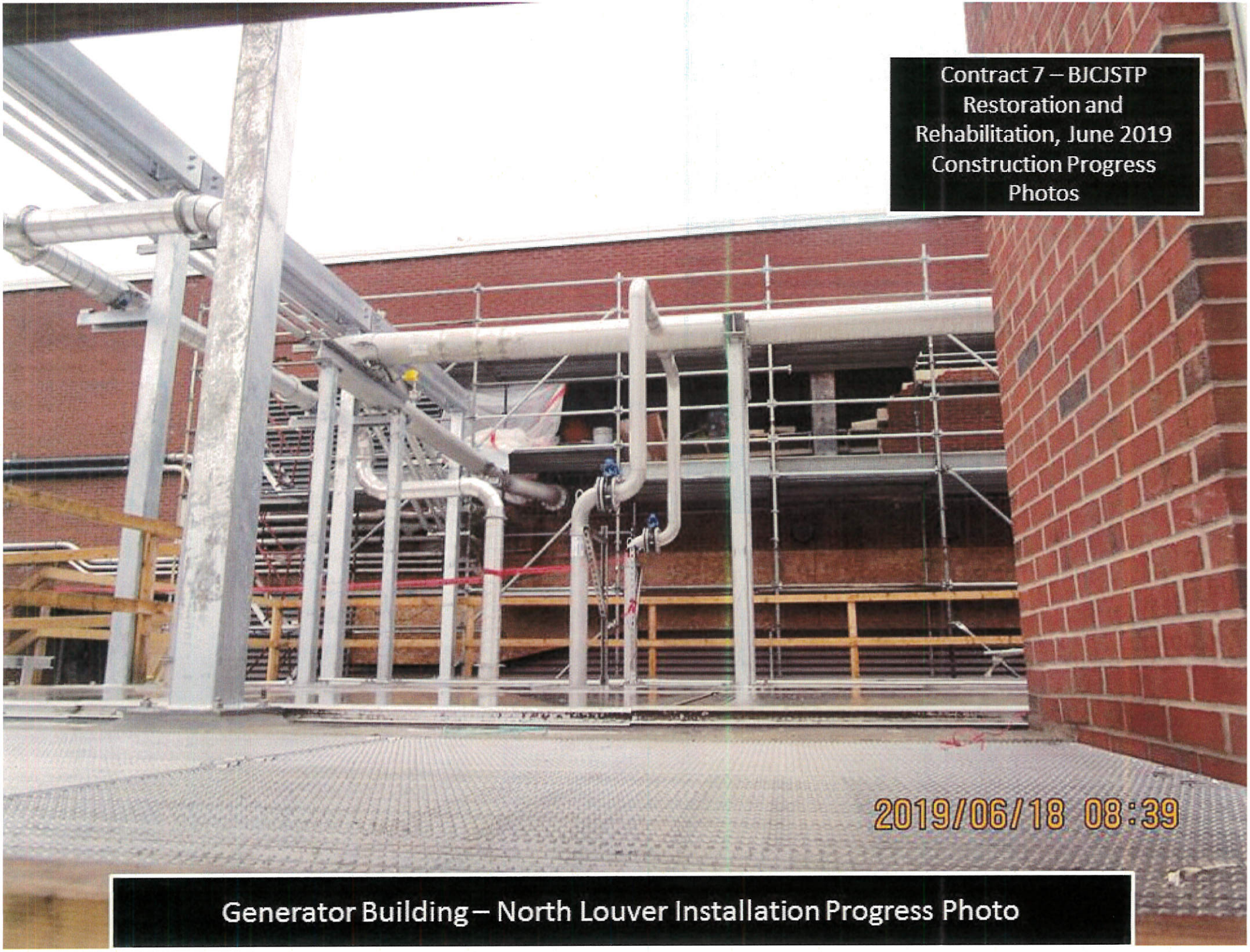


Contract 5 – BJCJSTP Restoration and Rehabilitation, June 2019 Construction Progress Photos

SIPS Area – Raulli Installing Roofing Progress Photo

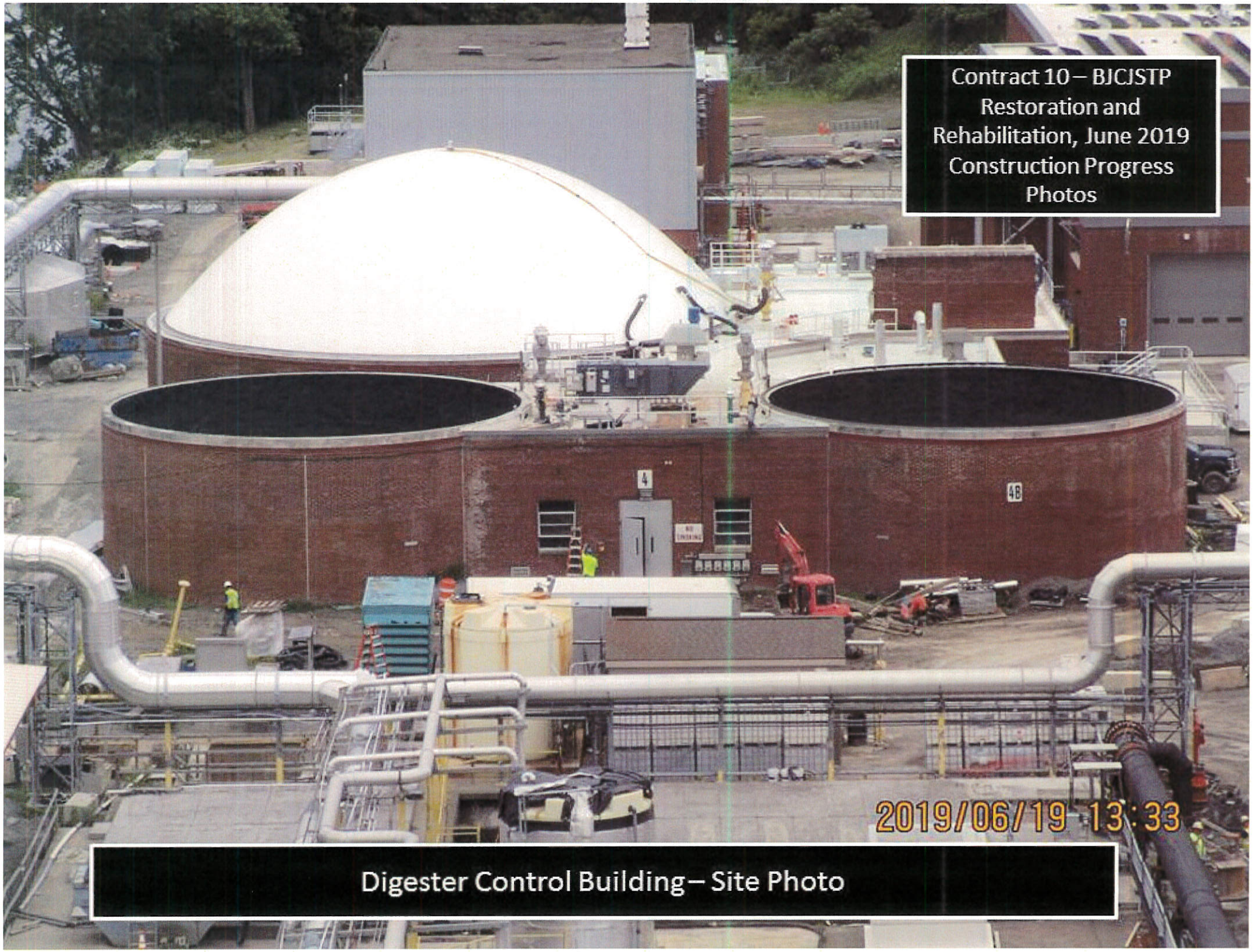

Contract 6 – BJCJSTP Restoration and Rehabilitation, June 2019 Construction Progress Photos
Head House – Armor Fiber Optic Cable
Jun 7, 2019 09:59:09
Binghamton/Johnson City WWTP


Contract 6 – BJCJSTP Restoration and Rehabilitation, June 2019 Construction Progress Photos
2019/06/12 13:32
SIPS Area – Electrical Progress Photo



Generator Building – North Louver Installation Progress Photo

DN Building Roof – Painted 2 inch Gas Line to AHU Progress Photo


Contract 10 – BJCJSTP Restoration and Rehabilitation, June 2019 Construction Progress Photos
4
4B
2019/06/19 13:33
Digester Control Building – Site Photo

Digester Control Building– Separation of Gas Line and Conduit Installation Progress Photo

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

Sludge Processing Building – Installation of Micro Turbine Breeching

2019-06-07 09:13:26

Contract 13 – BJCJSTP Restoration and Rehabilitation, June 2019 Construction Progress Photos

Gas Conditioning Room – Gas Pipe Installation Progress Photo