INSPECTION REPORT

Inspection Dates:	April 6-7, 2022	Inspection Announced: Yes
Time:	Entry: 8:30 AM	Exit: 3:30 PM
Media:	Wastewater	
Statute (s)/Program(s):	Clean Water Act, NPDES	
Type of inspection:	CEI - Compliance Evaluation Inspection	
Access:	Granted	
Permittee Name:	Village of Sauget	
Facility or Site Name:	American Bottoms Regional Wastewater Treatment Facility	
Facility/Site Physical Address:	1 American Bottoms Road	
(City, State, Zip Code)	Sauget, Illinois 62201	
County/Parish:	St. Clair County	
Permit Number:	IL0065145	
SIC or NAICS:	4952	

Inspector Signature and Date: Flatebo, Theodore Digitally signed by Flatebo, Theodore Date: 2022.05.24 08:16:25 -05'00'

Approver Name and Title: Ryan J. Bahr, Section 2 Supervisor,
Water Enforcement and Compliance Assurance Branch

Approver Signature and Date: Bahr, Ryan Digitally signed by Bahr, Ryan Date: 2022.05.24 14:30:49 -05'00'

Persons Participating in Inspection:					
Organization/Title	**Name**	**Phone**	**Email**	**Present at Opening Conference**	**Present at Closing Conference**
EPA, Environmental Engineer	Ted Flatebo	(312) 886-9402	flatebo.ted@epa.gov	Yes	Yes
EPA, Physical Scientist	Dean Maraldo	(312) 353-2098	maraldo.dean@epa.gov	Yes	Yes
EPA, Environmental Scientist	Joan Rogers	(312) 886-2785	rogers.joan@epa.gov	Yes	Yes
Illinois EPA, Inspector	Gregg Sanders	(618) 346-5120	gregg.sanders@illinois.gov	Yes	Yes
American Bottoms, Executive Director	Heather Faragher	(618) 337-9746	heatherf@ americanbottoms.com	Yes	Yes
American Bottoms, Senior Process Engineer	Sandy Bernard	(618) 337-9776	sandyb@ americanbottoms.com	Yes	Yes
American Bottoms, Operations and Maintenance Manager	Kelly Smith	(618) 337-9709	kellys@ americanbottoms.com	Yes	Yes
American Bottoms, Laboratory and Pretreatment Manager	Josh Kathrinus	(618) 337-9725	joshk@ americanbottoms.com	No	Yes

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SECTION I – INTRODUCTION

Site Entry and Inspection Objectives

EPA Inspectors Ted Flatebo, Dean Maraldo, and Joan Rogers, and Illinois Environmental Protection Agency (IEPA) inspector Gregg Sanders, arrived at the American Bottoms Regional Wastewater Treatment Facility (the "Site" or "Facility"), located at 1 American Bottoms Road, Sauget, Illinois 62206, at 08:30 AM on April 6, 2022 for an announced inspection. The inspectors presented their credentials to site representatives Heather Faragher, Sandy Bernard, and Kelly Smith and informed them that this was an EPA Region 5 (EPA) inspection to determine compliance with the Clean Water Act (CWA) and the National Pollutant Discharge Elimination System (NPDES) permit program. The inspection was conducted under the authority of the CWA NPDES permit program and Section 308 of the CWA. The table above identifies the attendees who participated in the inspection.

This report is based on information supplied by Facility representatives, observations made by the EPA inspectors, and records and reports maintained by the permittee, IEPA, and EPA Region 5. These include the following: direct observations made by the EPA inspectors, photographs taken by EPA inspectors, and verbal or written statements made or supplied by Facility representatives (the permittee) during or subsequent to the on-site inspection, and materials, processes, data, photographs, or documents shown, demonstrated, or submitted to the EPA inspectors by Facility representatives during or subsequent to the on-site inspection. In addition, information gathered prior to or subsequent to the inspection from a review of EPA, IEPA, and public records may be included in this report. Facility representatives were asked if any information provided during the inspection was considered confidential business information (CBI). Ms. Faragher stated that no information provided was CBI.

Background Information

Mr. Flatebo, Mr. Maraldo, Ms. Rogers, and Mr. Sanders confirmed the following Facility information:

The Facility is covered by NDPES permit number IL0065145. This permit was issued by IEPA and became effective September 1, 2009 and was scheduled to expire on August 31, 2014. IEPA has administratively extended this permit and therefore it still in effect.

The Village of Sauget owns both the American Bottoms Regional Wastewater Treatment Facility (American Bottoms) and the Physical-Chemical Treatment (P-Chem) Plant but contracts the operations and maintenance of the plants to the Sauget Sanitary Development and Research Association (SSDRA). SSDRA is a not-for-profit organization which employs 64 people for the operation and administration of the two plants. American Bottoms and P-Chem have operators staffed 24 hours per day. Operators work 12 hour shifts with three operators per shift. One

operator is assigned to American Bottoms, one to P-Chem, and one to float between the plants as necessary. The SSDRA board of directors is composed of seven members, including the Mayor of Sauget and six representatives from Sauget industries. The Village of Sauget also owns its collection system which the Village's Public Works Department maintains. Sauget's collection system is composed of sections of both combined sewer and separated sewer. Satellite communities that contribute flow to American Bottoms own their own collection systems and are responsible for their maintenance and operation.

American Bottoms accepts influent from four sources:

-East St. Louis Pump Station: Combined waste (sanitary sewage and stormwater) from the City of East St. Louis and portions of Cahokia Heights;
-Cahokia Pump Station: Sanitary sewage from the City of Cahokia Heights;
-Jerome Pump Station: Sanitary sewage from the City of Cahokia Heights; and
-Physical-Chemical Plant (P-Chem) Effluent: Industrial wastewater from facilities in Sauget

American Bottoms is a regional treatment facility which accepts wastewater from surrounding satellite communities. The primary satellite communities are the City of East St. Louis and the City of Cahokia Heights, with a small portion of the City of Belleville also included in the service area. Cahokia Heights is a new municipality formed in May 2021 from the former Village of Cahokia, Village of Alorton, and City of Centreville.

The Village of Sauget signed an intergovernmental agreement (IGA) with the satellite communities in 1977 that provided funding and coordination for the construction of American Bottoms. The IGA was amended 1982 and American Bottoms began operation in 1986. In September 2021, Cahokia Heights Mayor Curtis McCall Senior signed an updated IGA outlining that Cahokia Heights will abide by the original agreement the dissolved communities had previously agreed to.

The P-Chem plant accepts high strength industrial wastewater and provides primary treatment and pH adjustment before it is sent to American Bottoms for additional treatment. The cost of operating and maintaining the P-Chem plant is paid solely by the industrial partners who discharge to it. SSDRA conducts all of its own billing for P-Chem and for American Bottoms, including billing individual residents for its services. Residential bills are calculated based on potable water usage, the data for which is provided by the water provider. There are two water providers in the American Bottoms service area: Illinois American Water and the City of Cahokia Heights. Billing for P-Chem industrial partners is based on 5 parameters: dry weather flow, pH, oil and grease, sludge generation, and wet weather flows. Industrial partners are billed retroactively for the actual cost of treatment incurred by P-Chem.

The Village of Sauget is an approved Control Authority under the NPDES Pretreatment Program. This authority has been further delegated to SSDRA. SSDRA staff conduct inspections and collect effluent samples from significant industrial users (SIUs) and categorical industrial users (CIUs) within the service area, including in the satellite communities. Pretreatment program compliance was not evaluated as the scope of this inspection focused on the treatment process at American Bottoms and P-Chem.

American Bottoms discharges effluent to the Mississippi River through a single outfall, labeled Outfall 002. According to EPA's Enforcement and Compliance History Online (ECHO) website, which compiles information from facility submitted discharge monitoring reports (DMRs), from January 1, 2019 to April 7, 2022 American Bottoms has not had any reported effluent violations.

SECTION II – INSPECTION

P-Chem Plant

The P-Chem plant is designed to provide primary treatment for high strength industrial wastewater before the water is sent to American Bottoms for additional treatment. See treatment process diagram in Appendix 2. The industries that contribute flow to P-Chem are serviced by a combined sewer that collects sanitary waste, industrial wastewater, and storm water. The plant began operating as a treatment facility in 1964 and underwent various process upgrades between 1973 and 1986. The most recent upgrade was the addition of a 9-million-gallon stormwater storage basin which was completed in 1992.

The stormwater storage basin allows the plant to accept higher flows during wet weather. P-Chem is designed to handle up to 26 million gallons per day (MGD) of wastewater, which can be expanded to 50 MGD with the use of the stormwater storage basin. If the capacity of the plant and the stormwater storage basin are exceeded, the excess flow will be diverted to American Bottoms outfall in the Mississippi River, resulting a combined sewer overflow (CSO). According to Ms. Faragher, the most recent CSO from P-Chem occurred in 1998. When the stormwater storage basin is used but a CSO is not initiated, SSDRA staff will empty the water from the basin to the P-Chem headworks to go through the treatment process. Water from this basin cannot be sent to American Bottoms for treatment without passing through the P-Chem treatment process first.

SSDRA staff provided the following information on the use of the stormwater storage basin:

Year	Days in Use	Days with Water Storage Over 4.5 Million Gallons	Days with Water Storage Over 8.0 Million Gallons
2017	71	0	0
2018	107	7	1
2019	141	3	0
2020	112	0	0
2021	78	0	0

Average daily flow data for P-Chem is summarized in Appendix 1.

The inspection team which included Mr. Flatebo, Mr. Maraldo, Ms. Rogers, Mr. Sanders and Facility representatives Ms. Faragher, Mr. Smith, and Ms. Bernard began their walkthrough of the P-Chem plant at approximately 1:40 PM on April 6, 2022. They first observed the headworks where all influent enters the plant. Mr. Smith explained that depending on the need, raw influent, treated effluent, or a combination of two can be sent to the stormwater storage basin for storage. There is a large underground pipe connecting the headworks to the storage basin. Additionally, there are above ground connections where temporary pumps can be connected to send water to the storage basin if necessary. The stormwater storage basin is schedule for a cleaning/sludge removal in the summer of 2022.

The headworks are divided into two halves, northern and southern. There are three 36-inch pipes that bring influent into the plant; two to the south headworks and one to the north headworks. The two sides of the headworks can be isolated from each other if necessary but at the time of the inspection the gate between them was open. According to Mr. Smith, the headworks and bar screens were renovated over the past five years, and the project is now complete. The bar screens must be cleaned manually. The headworks also acts as a grit settling chamber. Grit is removed every 3-6 months.

After entering the headworks, oil is removed from the influent using oil ropes. The water and oil mixture collected by these ropes is sent to a tank for storage. Operators decant the excess water from the tank back into the treatment system and the oil is sent to a second tank for storage. When that tank reaches capacity, the oil is taken off site by a contractor.

Influent pH readings are taken after the bar screens, grit removal and oil removal. At the time of inspection, the influent pH was 2.32. Continuous gas monitoring is also conducted in the headworks area for hydrogen sulfide, lower explosive limit (LEL) and higher explosive limit (HEL).

The next step in the treatment process is pH adjustment. Mr. Smith stated that the typical pH for influent is between 2-2.5. Calcium oxide is used to increase the pH. Calcium oxide is delivered to the plant as dry pellets via truck. The pellets are mixed into a slurry before being added to the wastewater. There are three points where the slurry is added to the wastewater. Between each slurry addition there is a mixer and a pH probe. Each pH probe is connected to its corresponding slurry pump to control the rate of addition. Mr. Smith stated that the set point for the third slurry addition is to bring the pH of the water to 7.0.

Following pH adjustment, wastewater is sent to a clarifier for solids removal. Ms. Bernard explained that P-Chem has the ability to add polymer to assist the settling process but has not needed to add it for at least a few years. The clarifier has a rake that runs on a track to collect settled solids. The rake frequency can be changed as necessary. On the day of the inspection, the rake was programed to run six times per day. P-Chem has two clarifiers; at the time of inspection only one clarifier was in use.

Solids from the clarifier are dewatered using two belt presses. The residual solids from the belt presses are placed in 20 cubic yard dumpsters and hauled off site. The belt presses are located inside a building that is monitored for hydrogen sulfide and ammonia. At the time of inspection, the hydrogen sulfide alarm inside the building was activated and therefore inspectors did not observe the belt presses. There is a camera mounted above the belt presses so an operator can make adjustments to the process from a remote area as needed.

In the event that the stormwater storage basin reaches capacity and a CSO is required, there are a few steps operators must take, including opening a valve adjacent to the stormwater storage basin and opening a valve at the effluent pump station. The CSO water would then mix with American Bottoms' treated effluent and would be discharged through the outfall in the Mississippi River. Mr. Kelly provided inspectors a copy of the Facility's standard operating procedure (SOP) used to document the steps that need to be taken before a CSO can occur.

P-Chem also accepts hauled wastewater from approved customers. Before accepting any waste from a new customer, the Facility develops an initial characterization of the wastewater to ensure it will not interfere with its treatment process. After that, Facility staff conduct spot checks on loads as they are brought in. Customers are charged per gallon of capacity of the truck delivering the wastewater.

American Bottoms' NPDES permit does not contain any effluent limitations on the water leaving P-Chem before it is sent American Bottoms for further treatment. There are a number of internal sample locations used to monitor the treatment process at P-Chem, but these are not reported on the Facility's discharge monitoring reports (DMRs) which are submitted to IEPA. Internal

samples are analyzed for biochemical oxygen demand (BOD), total suspended solids (TSS), and pH.

Pump Stations

City of East St. Louis Pump Station

The inspection team arrived at the City of East St. Louis pump station at 10:50 AM on April 6, 2022. This pump station is operated and maintained by SSDRA staff. The pump station was built in 1982 and has a design capacity of 30 MGD. The station pumps combined wastewater, wastewater containing both sanitary sewage and stormwater, to American Bottoms through a force main. The pump station contains two bar screens with automated cleaners and a total of four pumps: two pumps each rated at 15 MGD and two pumps each rated at 7.5 MGD. One of the 15 MGD pumps is always offline to serve as a backup in the event one of the other pumps fails. All four pumps are variable frequency drive (VFD) which means they can speed up and slow down to match the flow of the water coming into the pump station. All the components of the pump station are connected through a SCADA system which allows operators to remotely monitor that equipment is functioning and make adjustments remotely as necessary. The force main contains air relief valves which are inspected by SSDRA staff annually.

The flow to the pump station arrives through a single 12.5-foot box sewer from the City of East St. Louis. Under normal operating conditions, all the water from this box sewer hits a diversion wall and is directed into the pump station to be sent to American Bottoms. If the capacity of the pump station is exceeded, water will overtop the diversion wall, which has a height of 5 feet, and continue to flow through the box sewer to a separate pump station maintained by the Metro East Sanitary District (MESD). MESD will pump the combined sewer overflow (CSO) water through levies to a constructed CSO outfall in the Mississippi River. When water overtops the diversion wall and the flow goes to the Mississippi River without treatment, that is considered a CSO. The CSO outfall is permitted by an IEPA NPDES permit issued to the City of East St. Louis (IL0033472).

Because SSDRA maintains this pump station and SCADA records data on the pump run times and speeds, SSDRA is able to determine the frequency and duration of CSOs from the City of East St. Louis. Below is a summary of the information provided to EPA.

Year	Total Days of CSOs	Cumulative Hours of CSOs
2017	22	286
2018	34	229
2019	51	249
2020	32	241
2021	35	166

Between March 2017 and March 2022, there were two instances when the bar screens at the pump station became clogged and the station was not able to accept flow at its full capacity. In these instances, SSDRA was responsible for contributing additional CSO volume compared to if the pump station was operating at its full capacity. After each occurrence, SSDRA staff filed a report with IEPA explaining the circumstances of the event. The information provided below is from the reports submitted to IEPA. The volumes listed are what SSDRA estimated its operations problems caused, not the total volume of the CSO during that occurrence. There is no flow meter at the diversion wall to provide an actual volume for any CSO.

SSDRA CSO Volume at the East St. Louis Pump Station:

September 8, 2018: 4.9 million gallons
May 16, 2020: 1.7 million gallons

SSDRA collects process samples from the pump station to determine if the composition of the influent is changing significantly and adjustments need to be made to the treatment process. Samples are analyzed for BOD, TSS, and pH.

Average daily flows through the East St. Louis pump station are summarized in Appendix 1.

Cahokia Pump Station

The inspection team arrived at the Cahokia pump station at 11:45 AM on April 6, 2022. This pump station is also maintained by SSDRA staff and services sanitary waste from portions of the City of Cahokia Heights. This pump station was built in 1981 and has a capacity of 7.8 MGD. The station has two automated bar screens and a total of 3 pumps. There are two VFD pumps rated at 4.8 MGD; and one constant speed pump rated at 3.4 MGD. The constant speed pump is the back-up pump. Water from this pump station is sent to American Bottoms through a force main. The force main contains air relief valves which are inspected annually by SSDRA staff.

In the event that the capacity of this pump station is exceeded, water will over top a diversion wall and flow through a ‘duck bill’ check valve into Dead Creek. In this situation, the water would be considered a sanitary sewer overflow (SSO). Water from this ditch would be pumped by the same MESD pump station in the event of an East St. Louis pump station CSO. According to Mr. Smith, the last SSO to occur at this pump station was in approximately 1995.

Average daily flows through the Cahokia pump station are summarized in Appendix 1.

Jerome Pump Station

The Jerome pump station is maintained and operated by the City of Cahokia Heights. SSDRA does not have access to the pump station. Inspectors were unable to obtain access to the pump station during this inspection.

Mr. Smith explained that SSDRA does not have any SCADA connectivity to this pump station but that they are able to calculate the total daily flow from the pump station by taking the total influent into American Bottoms and subtracting the known flows from the East St. Louis pump station and the Cahokia pump station. The Jerome pump station only handles sanitary sewage, and that waste is pumped to American Bottoms via force main.

Average daily flows through the Jerome pump station are summarized in Appendix 1.

American Bottoms Plant

The American Bottoms plant began operations in 1986. The plant has a design average flow of 27 MGD and a design maximum flow of 52 MGD. All influent is treated to secondary standards before being discharged through an outfall to the Mississippi River. The average flows through the plant in the past 5 years have been less than the design average flow, meaning the plant is not near its operational capacity. Average daily flows through American Bottoms are summarized in Appendix 1.

Inspectors began their walk through of the American Bottoms plant at approximately 9:15 AM on April 7, 2022. Influent arrives at the plant via the three force mains from the three pump stations. The water exits the force mains and enters the headworks rising well. This well is designed to be elevated above the plant so water will flow by gravity though the treatment system. As the water exits the rising well, it passes through a Parshall Flume which measures the total influent flow from the three pump stations. American Bottoms does not have bar screens because all influent passes through bar screens at the pump stations.

After passing through the flume, the water enters the primary clarification chambers. The plant has four primary clarifiers and on the date of inspection, all four were in service. Ms. Smith stated that the primary clarification chambers serve to grit removal as well. He explained that American Bottoms does have separate grit settling chambers on site, but they are no longer in service because the primary clarifiers functioned better for grit removal than these chambers did. Following primary clarification, treated P-Chem effluent is lifted using screw lifts and is mixed with the American Bottoms influent. The facility has three screw pumps that are each rated for approximately 8.3 MGD.

The water is treated using an activated sludge Modified Ludzack-Ettinger (MLE) process. This process consists of modifying a conventional activated sludge process by allowing the water to pass through an anoxic zone and then an aerobic zone. The plant has 8 chambers of identical volume involved in this process forming two treatment trains of four chambers each running in parallel. The first chamber for each treatment train was designed to be an anoxic chamber but it is no longer in use. The anoxic zone has been moved to the channel that connects the screw pump mixing area to these chambers. On the date of the inspection, both anoxic chambers were empty and out of service. The next three chambers in each treatment train are aeration chambers, which were observed to be in use.

The facility has a total of five blowers that provide air to the aeration basins. There are two 350 horsepower (HP) blowers that were installed in 2021, a blower which contains two 300 HP units installed in 2010, and two blowers with 900 HP that are original to the plant from 1986.

Following the aeration basins, the water passes through the secondary clarifiers. The plant has four secondary clarifiers and all four were in service on the date of inspection. The sludge collected at the bottom of the secondary clarifiers that is not returned to anoxic zone of the MLE process is sent to the secondary thickeners. Supernatant from the secondary thickeners can either be sent to the headworks downstream of the influent flow meter or can be directed to the screw pumps. On the date of inspection, the secondary thickener supernatant was being sent to the headworks. The settled solids from the secondary thickener are sent to the primary thickener. The primary thickener handles both the secondary thickener solids and the solids from primary clarification. Similar to the secondary thickener, supernatant from the primary thickener can be sent to the headworks or screw pump area. Solids from the primary thickener are sent to the belt presses.

Similar to the P-Chem plant, the American Bottoms plant has two belt presses which dewater solids for disposal. The atmosphere around the presses is also continuously monitored for hydrogen sulfide and ammonia concentrations. At the time of the inspection, the alarms were not activated, and the inspectors were able to see the presses although they were not in operation.

After water leaves the secondary clarifiers, it has completed the treatment process. The water then flows through a Parshall flume to determine total effluent volume. This flume was historically open to the atmosphere and sunlight, but Facility staff covered the flume in a structure to reduce direct sunlight and algae growth. Mr. Smith explained that the Facility also installed a turbidity meter adjacent to the flume as a process indicator. Operators can use SCADA to observe the effluent turbidity as a point of reference to determine if adjustments need to be made in the treatment system. At the time of the inspection, effluent turbidity was 5.0 Nephelometric Turbidity Units (NTU).

After flow is measured, the effluent is sent to the effluent pump station which is located at the P-Chem plant. This structure is designed to lift the water up vertically to provide it with enough hydraulic head so it will flow by gravity through the outfall and into the Mississippi River. Depending on the water level of the Mississippi River, the pump station can be turned on and off based on the hydraulic head needed. The structure has two halves which are connected with a pipe. During normal operating conditions, the gate between the two halves is open. In the event that P-Chem exceeds capacity and a CSO needs to be initiated, the two halves will be isolated. This provides staff the ability to collect water samples from the CSO before it is mixed with American Bottoms effluent for compliance purposes (sample point A02).

There is a single outfall in the Mississippi River for all flows originating from the American Bottoms plant and the P-Chem plant. The outfall consists of a submerged 72-inch pipe with an attached diffuser. Mr. Smith stated that the outfall and diffuser are inspected annually by contract divers. Under normal operating conditions, the Outfall is referred to as 002. During a CSO event the outfall is designated A02 in the facility's NPDES permit.

Laboratory

At approximately 11:40 AM, inspectors began a walkthrough of the lab with Mr. Kathrinus, the laboratory and pretreatment manager. The lab employs six chemists, two supervisors, one quality control chemist, and a manager. The lab is in operation Monday through Saturday and is accredited by the National Environmental Laboratory Accreditation Program (NELAP). Mr. Kathrinus stated the lab's next NELAP accreditation inspection is scheduled for June 2022. The lab is used to analyze a variety of water samples from American Bottoms, P-Chem, hauled wastewater, and SIU/CIUs in the service area.

Mr. Kathrinus provided inspectors an overview of how samples are logged in the lab, how samples move through analysis, where the lab staff can look up SOPs for how various analysis are conducted, and how samples are stored. The scope of this inspection did not include a detailed inspection of all lab procedures, but inspectors did review a variety of compliance reports produced by the lab.

Stormwater

Inspectors asked SSDRA staff if either plant was covered by a stormwater permit. Ms. Faragher stated that the plants do not have a stormwater permit and are not required to obtain one because no rainwater that falls on the plants flows off site. Each plant has storm drains throughout the facility and that water is directed to the headworks of its respective facility.

Ms. Faragher provided inspectors with a copy of a letter SSDRA sent to IEPA dated April 13, 2018, which outlined SSDRA's stance that they should not be subject to a general NPDES permit for stormwater discharges from industrial activities or a no exposure certification.

The St. Louis Downtown Airport weather station recorded 0.31 inches of precipitation on April 5, 2022, the day before the inspection. At the P-Chem plant, inspectors did observe a small amount of standing water along the north fence line. SSDRA staff stated that some storm water flows onto their property from the Ameren facility on the other side of the fence line. There was some erosion in the ground which indicated the consistent flow of water from this facility onto the P-Chem plant. Similarly, inspectors noted the high likelihood of stormwater flowing onto the American Bottoms facility from the Veolia property which is located immediately west of the plant.

SECTION III – OBSERVATIONS

Observations may not be in sequential order.

Unique Identifying No.	Observation	Area of Concern?
TF-OB-001	At the P-Chem plant belt press building, there are red and blue warning lights that when illuminated indicate high concentrations of hydrogen sulfide and ammonia respectively. On the door of the building there is a sign stating that if the red light it illuminated, do not enter due to elevated hydrogen sulfide levels but there is no sign to indicate the meaning if the blue light is illuminated.	No
TF-OB-002	Inspectors observed erosion indicative of repeated stormwater flows from Ameren onto the P-Chem plant along the facility's north fence line.	Yes
TF-OB-003	Inspectors observed the high likelihood of stormwater flowing from the Veolia facility onto the American Bottoms facility along its west fence line.	Yes
TF-OB-004	At the P-Chem plant, return water from clarifier skimmers is reintroduced to the headworks before influent volume is measured using a Parshall flume. This practice means that some water is measured as influent twice.	Yes

SECTION IV – RECORDS REVIEW

Records may not be in sequential order.

Unique Identifying No.	Record Review	Area of Concern?
TF-RR-001	The standard operating procedure for how to handle a combined sewer overflow at the P-Chem plant did not include instructions on how to estimate or measure the volume of the CSO.	Yes
TF-RR-002	Per the intergovernmental agreement the Village of Sauget has with the City of East St. Louis and the City of Cahokia Heights, there should be a technical committee with representatives from each municipality to help coordinate regional wastewater treatment activities. This committee does not currently exist.	Yes
TF-RR-003	Attached to many discharge monitoring reports (DMRs) submitted by SSDRA to IEPA, there is a qualification report that identifies the fact that many carbonaceous biochemical oxygen demand (CBOD) and biochemical oxygen demand (BOD) sample blanks analyzed have results greater than 0.20 mg/L. Analytical blanks should have a BOD/CBOD result of zero or close to zero.	Yes
TF-RR-004	Following operation and maintenance issues at the East St. Louis pump station, when SSDRA staff submit reports to IEPA, the volume of water discharged is often missing the appropriate units. For example, in the May 16, 2020 report for a CSO that occurred at the East St. Louis pump station, the report states that 1.7 gallons were discharged. When asked for clarification, Ms. Faragher stated that the report should have indicated it was 1.7 million gallons discharged.	Yes
TF-RR-005	Throughout the reports reviewed during this inspection, the stormwater storage basin was referred to as the stormwater holding tank and the wet weather storage basin. For clarity, a single name should be used across all reports.	No
TF-RR-006	Based on review of SSO reports submitted by the facility in the past 5 years, inspectors noted repeated overflows from the pipe that connects the P-Chem headworks to the stormwater storage basin. There were four separate reports from July 2019 to May 2020.	Yes

SECTION V – SAMPLING ACTIVITIES AND ANALYTICAL RESULTS

No samples were collected as part of this inspection.

SECTION VI - AREAS OF CONCERN

The presentation of areas of concern does not constitute a formal compliance determination or violation.

Unique Identifying No.	Area of Concern
TF-OB-002	Inspectors observed erosion indicative of repeated stormwater flows from Ameren onto the P-Chem plant along the facility's north fence line.
TF-OB-003	Inspectors observed the high likelihood of stormwater flowing from the Veolia facility on to the American Bottoms facility along its west fence line.
TF-OB-004	At the P-Chem plant, return water from the clarifier skimmers is reintroduced to the headworks before influent volume is measured using a Parshall flume. This practice means that some water is measured as influent twice.
TF-RR-001	The standard operating procedure for how to handle a combined sewer overflow at the P-Chem plant did not include instructions on how to estimate the volume of the CSO.
TF-RR-002	Per the intergovernmental agreement the Village of Sauget has with the City of East St. Louis and the City of Cahokia Heights, there should be a technical committee with representatives from each municipality to help coordinate regional wastewater treatment activities. This committee does not currently exist.
TF-RR-003	Attached to many discharge monitoring reports (DMRs) submitted by the facility to IEPA, there is a qualification report that identifies the fact that many carbonaceous biochemical oxygen demand (CBOD) and biochemical oxygen demand (BOD) sample blanks analyzed have results greater than 0.20 mg/L. Analytical blanks should have a BOD/CBOD result of zero or close to zero.
TF-RR-004	Following operation and maintenance issues at the East St. Louis pump station, when SSDRA staff submit reports to IEPA the volume of water discharged is often missing the appropriate units. For example, in the May 16, 2020 report for a CSO that occurred at the East St. Louis pump station, the report states that 1.7 gallons were discharged. When asked for clarification, Ms. Faragher stated that the report should have indicated it was 1.7 million gallons discharged.

Unique Identifying No.	Area of Concern
TF-RR-006	Based on review of SSO reports submitted by the facility in the past 5 years, inspectors noted repeated overflows from the pipe that connects the P-Chem headworks to the stormwater storage basin. There were four separate reports from July 2019 to May 2020.

SECTION VII – CLOSING CONFERENCE AND FOLLOW UP

Closing Conference

Mr. Flatebo, Mr. Maraldo, Ms. Rogers, and Mr. Sanders held a closing conference with Facility personnel beginning at approximately 2:15 PM on April 7, 2022. During the closing conference, inspectors discussed the observations and Areas of Concern identified during the inspection. Observations and Areas of Concern have not yet been evaluated for a formal compliance determination.

SECTION VIII – LIST OF APPENDICES

Appendix 1 – Historical Average Daily Flow Data
Appendix 2 – American Bottoms and P-Chem Treatment System Diagrams
Appendix 3 – Photo Log

APPENDIX 1

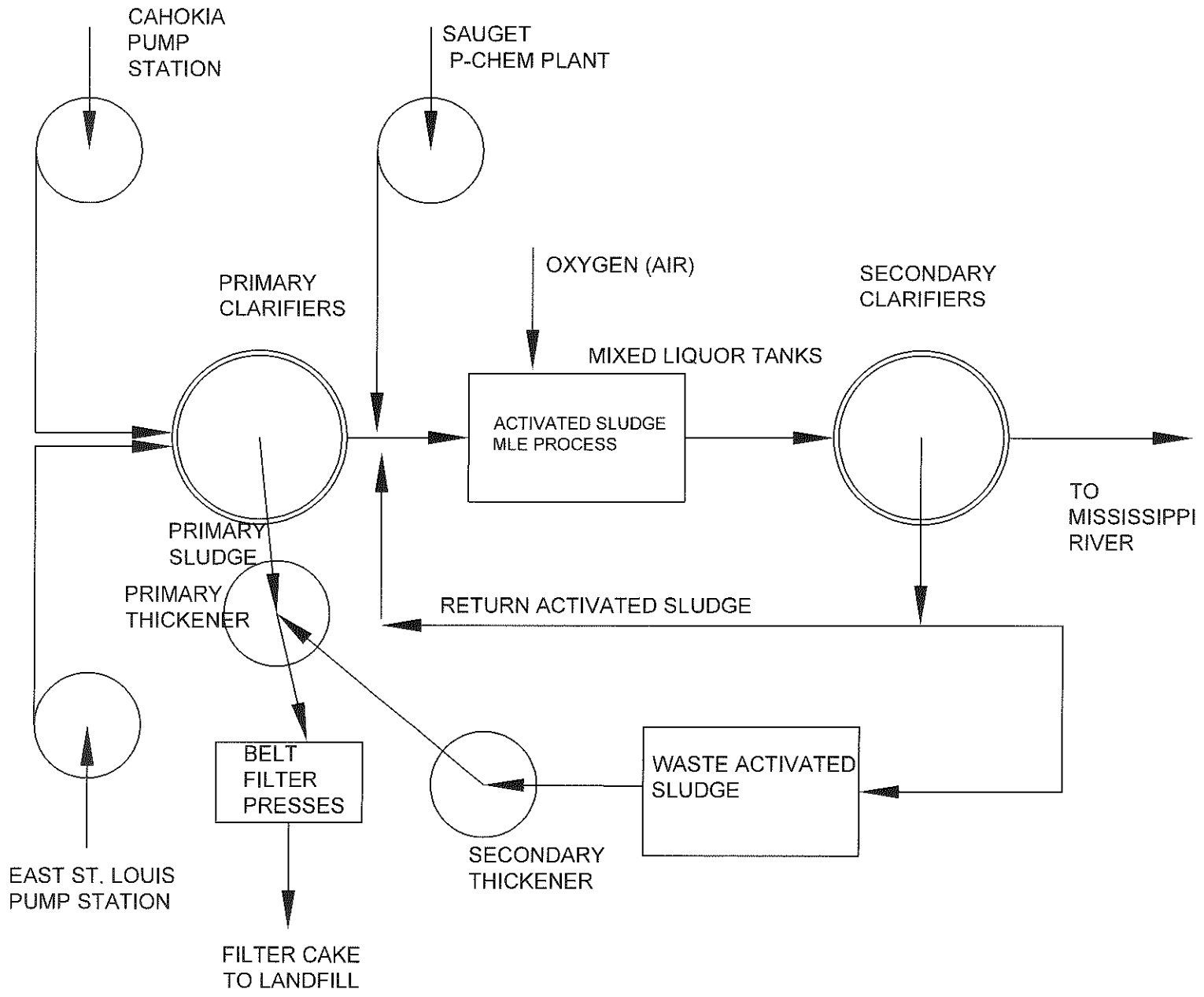
Average daily flow data provided by SSDRA staff, values are reported in MGD:

Location	2017	2018	2019	2020	2021
P-Chem Plant	2.6	2.4	4.0	3.4	2.8
East St. Louis Pump Station	6.1	6.0	11.6	9.8	6.9
Cahokia Pump Station	1.1	1.0	2.6	1.8	0.8
Jerome Pump Station	0.56	0.62	0.91	0.96	0.66
American Bottoms Plant	10.3	10.2	19.2	16.0	11.2

APPENDIX 2

American Bottoms and P-Chem Treatment System Diagrams

AMERICAN BOTTOMS TREATMENT PLANT
PROCESS FLOW DIAGRAM



REVISED BY	DATE

NOT TO SCALE

S.S.D.R.A.

SAUGET SANITARY DEVELOPMENT & RESEARCH ASSOCIATION

AMERICAN BOTTOMS REGIONAL WASTEWATER TREATMENT FACILITY

DESIGNED BY:

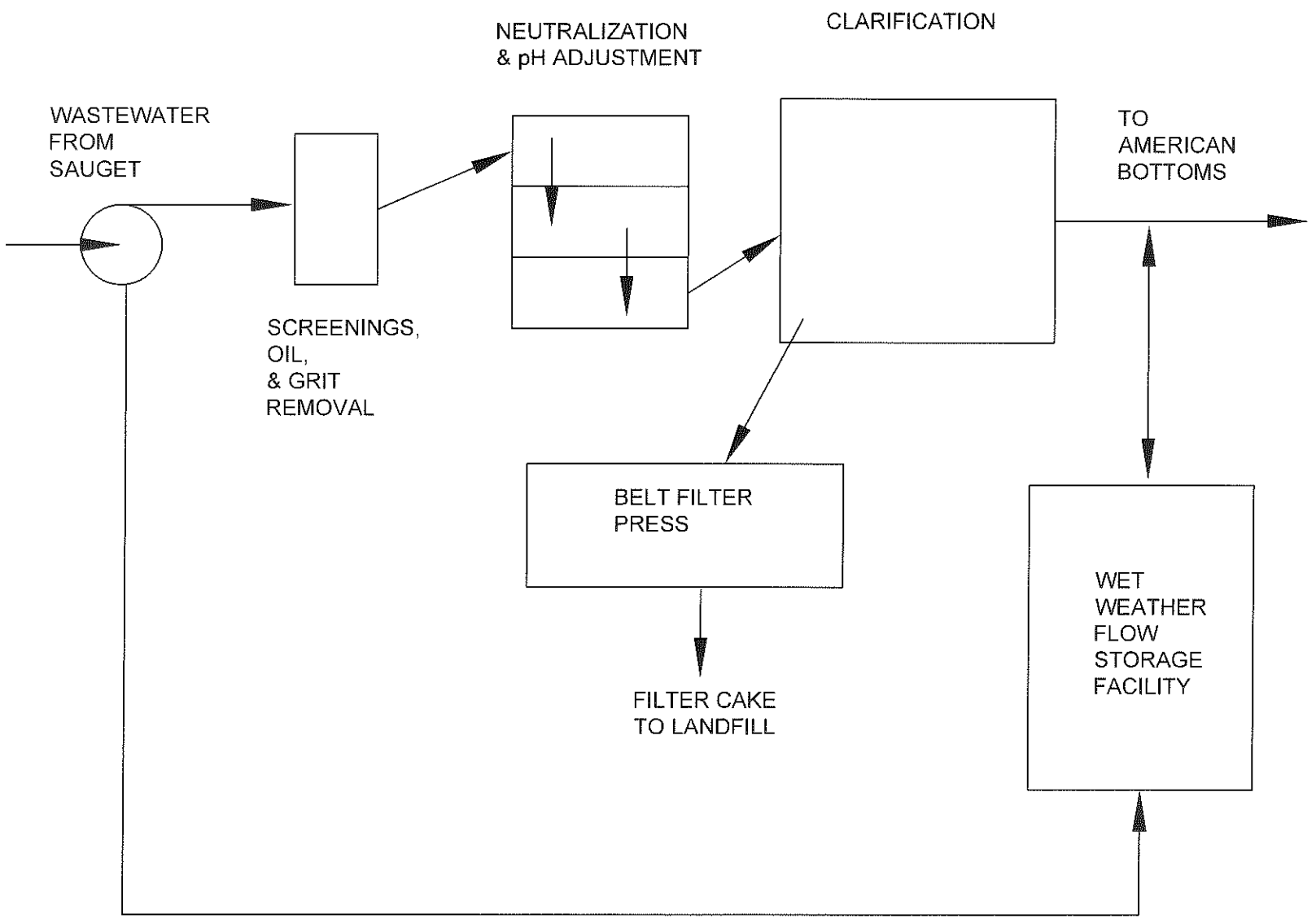
DRAWN BY:

CHECKED BY:

PROCESS FLOW DIAGRAM

SHT: 1 OF 1

PHYSICAL- CHEMICAL (P-CHEM) WASTEWATER TREATMENT PLANT PROCESS FLOW DIAGRAM



REVISED BY	DATE

NOT TO SCALE

S.S.D.R.A.

SAUGET SANITARY DEVELOPMENT & RESEARCH ASSOCIATION

AMERICAN BOTTOMS REGIONAL WASTEWATER TREATMENT FACILITY

DESIGNED BY:

DRAWN BY:

CHECKED BY:

PROCESS FLOW DIAGRAM

SHT: 1 OF 1

APPENDIX 3

Photo Log

American Bottoms Regional Wastewater Treatment Facility
EPA Inspection April 6, 2022 - April 7, 2022
All photos taken by Joan Rogers, Environmental Scientist/Inspector, U.S. EPA
Camera: Olympus Tough TG-4

1: P4060164
Description: Four pumps in the East St. Louis Pump Station.
Location: East St. Louis Pump Station.
Camera Direction: Down
Date/Time: April 6, 2022/10:54 A.M.

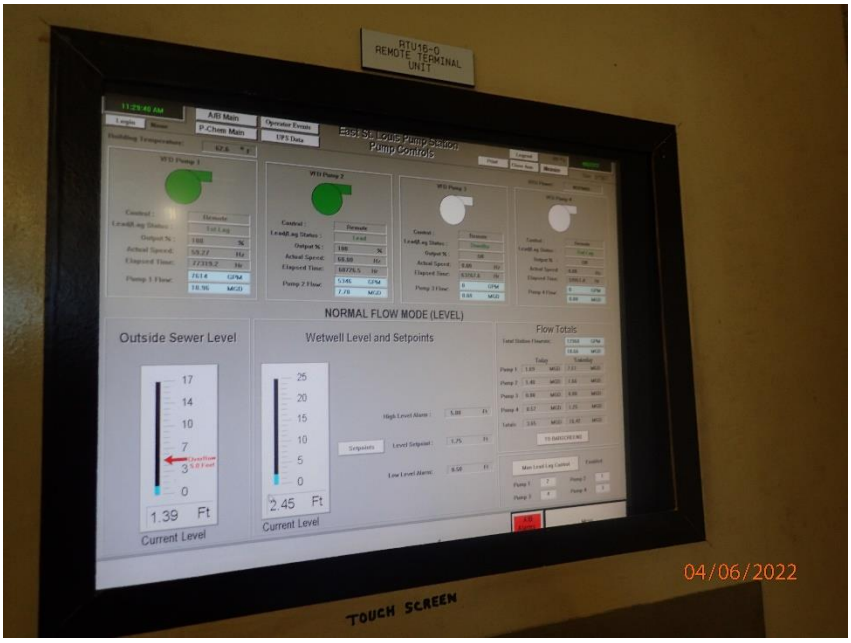
2: P4060165
Description: Section of blue pipe is where the electromagnetic flow magmeters are located for each pump.
Location: East St. Louis Pump Station.
Camera Direction: Down
Date/Time: April 6, 2022/10:57 A.M.

3: P4060166
Description: Two automatic bar screens in the East St. Louis Pump Station.
Location: East St. Louis Pump Station.
Date/Time: April 6, 2022/11:04 A.M.

4: P4060167
Description: The two wet wells for the East St. Louis Pump Station are located under the grating.
Location: East St. Louis Pump Station.
Camera Direction: Down
Date/Time: April 6, 2022/11:09 A.M.

5: P4060168
Description: The flow from the City of East St. Louis' 12.5 foot sewer line enters the East St. Louis Pump Station below this structure. The sewer line is below grade just to the right of the structure and a five-foot diversion wall directs flow to the pump station.
Location: East St. Louis Pump Station.
Date/Time: April 6, 2022/11:21 A.M.

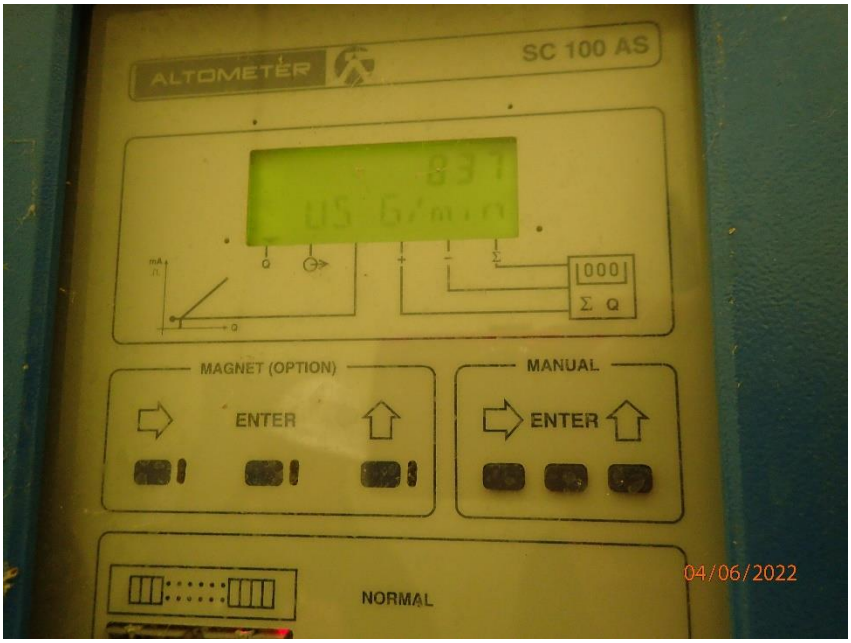
6: P4060169
Description: The total flow in Pump #1 since the last time the totalizer was zeroed out is 4.182E09 gallons.
Location: East St. Louis Pump Station.
Date/Time: April 6, 2022/11:24 A.M.



7: P4060170
Description: The SCADA summary screen for the East St. Louis Pump Station.
Location: East St. Louis Pump Station.
Date/Time: April 6, 2022/11:28 A.M.

8: P4060171
Description: Two automatic bar screens at the Cahokia Pump Station.
Location: Cahokia Pump Station.
Camera Direction: Southeast
Date/Time: April 6, 2022/11:50 A.M.

9: P4060172
Description: Three pumps in the Cahokia Pump Station. Pump #3 is the nearest to the camera.
Location: Cahokia Pump Station.
Date/Time: April 6, 2022/11:55 A.M.



10: P4060173
Description: Pump #1 is pumping 837 gallons per minute at the time of the photo.
Location: Cahokia Pump Station.
Date/Time: April 6, 2022/11:57 A.M.

11: P4060174
Description: The blue boxes contain flow meters that are installed for each pump.
Location: Cahokia Pump Station.
Date/Time: April 6, 2022/11:57 A.M.

12: P4060175
Description: The water level in the outside sewer was at 2.36 feet at the time of insepction.
Location: Cahokia Pump Station.
Date/Time: April 6, 2022/12:00 P.M.

13: P4060176
Description: The label for the meter Photo 12.
Location: Cahokia Pump Station.
Date/Time: April 6, 2022/12:00 P.M.

14: P4060177
Description: Influent flow structure at the Cahokia Pump Station. Flow enters the wet well below this structure and then flows to the bar screens. Flow in excess of the pump station capacity flows toward the manhole behind the influent flow structure and then to Dead Creek.
Location: Cahokia Pump Station.
Camera Direction: Northwest
Date/Time: April 6, 2022/12:01 P.M.

15: P4060178
Description: Duck bill at the end of the overflow pipe to Dead Creek.
Location: Levin Road near Cahokia Pump Station.
Camera Direction: Northeast
Date/Time: April 6, 2022/12:11 P.M.

16: P4060179
Description: Duck bill at the end of the overflow pipe to Dead Creek. Flow in Dead Creek goes to the southwest to a lift station controlled by Metro East Sanitary District (MESD).
Location: Levin Road near Cahokia Pump Station.
Camera Direction: Northeast
Date/Time: April 6, 2022/12:12 P.M.

17: P4060180
Description: MESD lift station.
Location: Levin Road near Cahokia Pump Station.
Camera Direction: Southwest
Date/Time: April 6, 2022/12:12 P.M.

18: P4060181
Description: Looking down at the influent to the P-Chem plant. The center weir is a 6 foot weir. There is a 4 foot weir to the right and set back out of view to the left is a 12 foot weir.
Location: Raw influent channel at P-Chem plant.
Camera Direction: Down
Date/Time: April 6, 2022/1:47 P.M.

19: P4060182
Description: North side influent only receives wastewater from Veolia.
Location: North side influent channel at P-Chem plant.
Camera Direction: North and down
Date/Time: April 6, 2022/1:51 P.M.

20: P4060183
Description: Storm water flow runs onto the P-Chem plant from the north.
Location: P-Chem plant.
Camera Direction: East
Date/Time: April 6, 2022/1:57 P.M.

21: P4060184
Description: Six oil skimming ropes grab oil and lift to the troughs above.
Location: P-Chem plant.
Camera Direction: South and down
Date/Time: April 6, 2022/2:01 P.M.

22: P4060185
Description: Oil skimming ropes are looped to a trough where the oil is scraped off falls into the trough. The oil is sent to a tank and then decanted when full. It is then manually transferred to a storage tank.
Location: P-Chem plant.
Camera Direction: Down
Date/Time: April 6, 2022/2:03 P.M.

23: P4060186
Description: Two white tanks in back are the decant tank (on left) and storage tank (on right).
Location: P-Chem plant.
Camera Direction: Southeast
Date/Time: April 6, 2022/2:13 P.M.

24: P4060187
Description: Calcium oxide tank on right and old Veolia lime tank that is not in use anymore.
Location: P-Chem plant.
Camera Direction: South
Date/Time: April 6, 2022/2:17 P.M.

25: P4060188
Description: Inside the auto-sampler in the influent sample building. Temperature inside sampler is 3.0°C.
Location: Influent sample building at P-Chem plant.
Date/Time: April 6, 2022/2:19 P.M.

26: P4060189
Description: Influent flow meters inside the influent sample building.
Location: Influent sample building at P-Chem plant.
Date/Time: April 6, 2022/2:23 P.M.

27: P4060190
Description: Inside the influent sample building at P-Chem plant. Influent is sampled after screening, grit removal, and oil removal.
Location: Influent sample building at P-Chem plant.
Date/Time: April 6, 2022/2:23 P.M.

28: P4060191
Description: Two influent pipes to the south side influent well. One pipe is facing down and has no flow from it. The other has flow coming from it. This flow is coming from the clarifier skimmers. The pipe facing down is from the stormwater storage basin.
Location: P-Chem plant - south side influent well.
Camera Direction: Down
Date/Time: April 6, 2022/2:29 P.M.

29: P4060192
Description: Influent pH reading is 2.32.
Location: P-Chem plant.
Date/Time: April 6, 2022/2:37 P.M.

30: P4060193
Description: Lime is added to the influent to increase pH.
Location: P-Chem plant.
Date/Time: April 6, 2022/2:39 P.M.

31: P4060194
Description: The pH is 5.64 after the first addition of lime.
Location: P-Chem plant.
Date/Time: April 6, 2022/2:39 P.M.

32: P4060195
Description: One of two rectangular clarifiers which is empty and scheduled for cleaning. Influent enters from the rectangular hole at the bottom and the trough for the oil skimmer is on top.
Location: P-Chem plant.
Camera Direction: South
Date/Time: April 6, 2022/2:56 P.M.

33: P4060196
Description: Sludge is dragged to the pit at the end of the chain.
Location: Clarifiers at P-Chem plant.
Camera Direction: Southeast
Date/Time: April 6, 2022/2:57 P.M.

34: P4060197
Description: Sludge pits in the empty north clarifier.
Location: Clarifiers at P-Chem plant.
Camera Direction: South
Date/Time: April 6, 2022/2:58 P.M.

35: P4060198
Description: Weirs for the effluent around the clarifier basin. The effluent flows to the far side for discharge.
Location: Clarifiers at P-Chem plant.
Camera Direction: Southeast
Date/Time: April 6, 2022/2:58 P.M.

36: P4060199
Description: Nine million gallon stormwater storage basin. Overflow would flow into the green weirs under the yellow railings and then piped to the Trapezoid Vault which directs the flow to the north side influent well.
Location: North of the clarifiers at the P-Chem plant.
Camera Direction: East
Date/Time: April 6, 2022/3:04 P.M.

37: P4060200
Description: There is a drain in the floor of the stormwater storage basin that can take flow from the stormwater storage bain to the south side influent well.
Location: Stormwater storage basin at the P-Chem plant.
Camera Direction: Northwest
Date/Time: April 6, 2022/3:06 P.M.

38: P4060201
Description: Elbow pipe over the wall of the stormwater storage basin allows flow from the P-Chem effluent to flow to the Storm Tank. Trapezoid Vault is to the right of the Storm Tank in the photo, below the yellow fencing.
Location: Stormwater storage basin at the P-Chem plant.
Camera Direction: East
Date/Time: April 6, 2022/3:07 P.M.

39: P4060202
Description: Effluent weir in the south clarifier.
Location: Northeast corner of south clarifier at the P-Chem plant.
Camera Direction: South
Date/Time: April 6, 2022/3:16 P.M.

40: P4060203
Description: Skimmer on the south clarifier.
Location: South clarifier at the P-Chem plant.
Camera Direction: South
Date/Time: April 6, 2022/3:19 P.M.

41: P4060204
Description: The sludge after being pressed on the filter press.
Location: Filter building at the P-Chem plant.
Camera Direction: South
Date/Time: April 6, 2022/3:28 P.M.

42: P4060205
Description: Floor drain by the filter building directs any flow to the influent bay.
Location: Filter building at the P-Chem plant.
Camera Direction: Down
Date/Time: April 6, 2022/3:29 P.M.

43: P4060206
Description: Two pH monitors for two 36” pipes to the efflluent chamber.
Location: East of clarifiers at P-Chem plant.
Camera Direction: North/Northwest
Date/Time: April 6, 2022/3:37 P.M.

44: P4060207
Description: Parshall flume used to measure effluent flow.
Location: East of clarifiers at P-Chem plant.
Camera Direction: North
Date/Time: April 6, 2022/3:37 P.M.

45: P4060208
Description: Effluent auto-sampler has an internal temperature of 2.4°C.
Location: East of clarifiers at P-Chem plant.
Date/Time: April 6, 2022/3:38 P.M.

46: P4060209
Description: Pipe to stormwater storage basin from effluent chamber in the foreground. Hauled waste receiving building in background.
Location: East of clarifiers at P-Chem plant.
Camera Direction: Northeast
Date/Time: April 6, 2022/3:44 P.M.

47: P4060210
Description: The Trapezoidal Vault for flow from the stormwater storage basin overflow to the north side influent well.
Location: P-Chem plant - south of stormwater storage basin.
Camera Direction: Down
Date/Time: April 6, 2022/3:49 P.M.

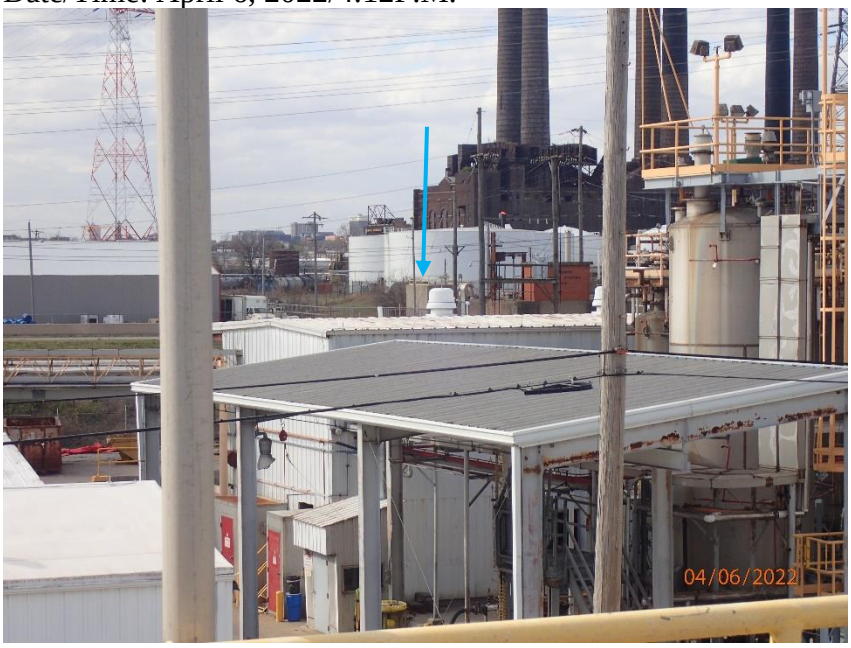
48: P4060211
Description: The gate must be manually opened to allow flow from the Trapezoidal Vault to flow to the north side influent well.
Location: Influent chambers at P-Chem plant.
Camera Direction: Down
Date/Time: April 6, 2022/3:54 P.M.

49: P4060212
Description: Influent chamber below the grating.
Location: Influent chambers at P-Chem plant.
Camera Direction: Down
Date/Time: April 6, 2022/3:54 P.M.

50: P4060213
Description: Influent chamber and window to flow from the Trapezoidal Vault.
Location: Influent chambers at P-Chem plant.
Camera Direction: Down
Date/Time: April 6, 2022/3:54 P.M.

51: P4060214
Description: The effluent from American Bottoms flows into the wet well and is lifted to the tank if head is needed to push flow to the outfall. The gate needs to be manually opened to allow a CSO to flow from the P-Chem plant to the American Bottoms Effluent Station and flow with the effluent from American Bottoms to the outfall.
Location: American Bottoms Effluent Station.
Camera Direction: Northwest
Date/Time: April 6, 2022/4:04 P.M.

52: P4060215
Description: Flow from the American Bottoms Effluent Station flows through Control Structure 1 (blue circle) before flowing to Control Structure 2 and then out the outfall.
Location: On top of the American Bottoms Effluent Station.
Camera Direction: Northwest
Date/Time: April 6, 2022/4:12P.M.



53: P4060216
Description: Control Structure 2 is barely visible (location denoted with a blue arrow).
Location: On top of the American Bottoms Effluent Station.
Camera Direction: Northwest
Date/Time: April 6, 2022/4:13 P.M.

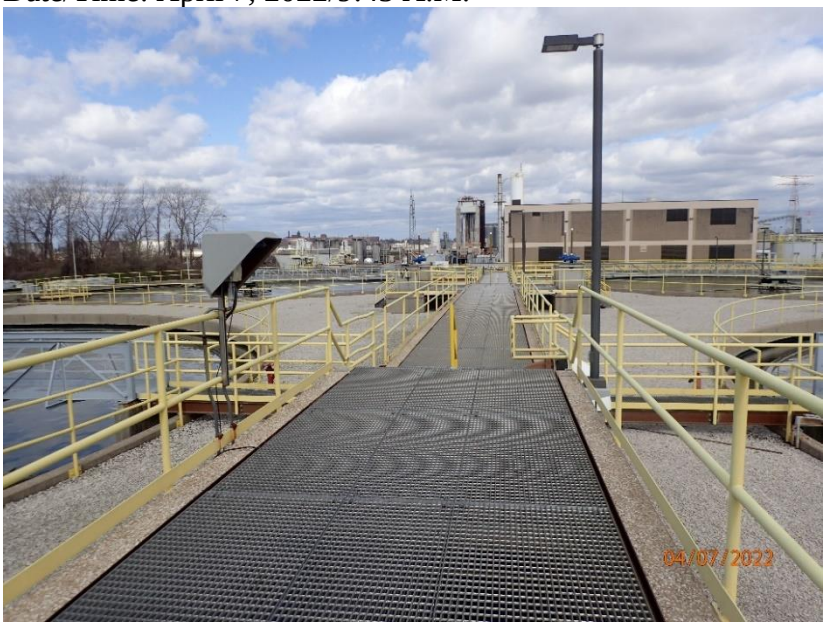
54: P4060217
Description: Five pumps are available to lift flow from American Bottoms to the top of the American Bottoms Effluent Station. Usage depends on the head needed to push the flow out the outfall.
Location: On top of the American Bottoms Effluent Station.
Camera Direction: Southeast
Date/Time: April 6, 2022/4:15 P.M.

55: P4060218
Description: Looking down into the Effluent Station at the 72” line out of the station.
Location: On top of the American Bottoms Effluent Station.
Camera Direction: Down
Date/Time: April 6, 2022/4:16 P.M.

56: P4060219
Description: The gate is open for the 72” line out of the station.
Location: On top of the American Bottoms Effluent Station.
Date/Time: April 6, 2022/4:16 P.M.

57: P4060220
Description: Gate and valve for flow from American to the American Bottoms Effluent Station.
Location: On top of the American Bottoms Effluent Station.
Camera Direction: Northwest
Date/Time: April 6, 2022/4:16 P.M.

58: P4070221
Description: The Jerome force main flows to the Cahokia force main and enters the East St. Louis force main at American Bottoms. There is a valve to isolate the force main in the white hut.
Location: Southern fenceline of American Bottoms Plant.
Camera Direction: Northwest
Date/Time: April 7, 2022/9:45 A.M.



59: P4070222
Description: Four primary clarifiers at the American Bottoms plant.
Location: South side of American Bottoms Plant.
Camera Direction: Northwest
Date/Time: April 7, 2022/9:57 A.M.

60: P4070223
Description: Influent flow meter shows an instantaneous flow measurement of 12.79 million gallons per day.
Location: South side of the American Bottoms plant.
Date/Time: April 7, 2022/9:58 A.M.

61: P4070224
Description: Parshall flume for influent flow.
Location: South side of American Bottoms Plant.
Date/Time: April 7, 2022/9:59 A.M.

62: P4070225
Description: Storm drain map on the wall in the Sludge Building.
Location: American Bottoms - Sludge Building.
Date/Time: April 7, 2022/10:15 A.M.

63: P4070226
Description: Belt press in the Sludge Building. Not in operation at the time of observation.
Location: American Bottoms - Sludge Building.
Date/Time: April 7, 2022/10:24 A.M.

64: P4070227
Description: Lime Slaker in the creating the lime slurry.
Location: American Bottoms - Sludge Building.
Date/Time: April 7, 2022/10:29 A.M.

65: P4070228
Description: Lime Storage Tank and four diaphragm pumps.
Location: American Bottoms - Sludge Building.
Date/Time: April 7, 2022/10:32 A.M.

66: P4070229
Description: Blowers for aeration. New blower in foreground was installed in March 2021. Original Hoffman's blowers from 1985 behind.
Location: American Bottoms - Sludge Building.
Date/Time: April 7, 2022/10:36 A.M.

67: P4070230
Description: Powdered Activated Carbon (PAC) Silo. PAC is not used anymore.
Location: American Bottoms - Outside the Sludge Building.
Camera Direction: Northeast
Date/Time: April 7, 2022/10:42 A.M.

68: P4070231
Description: Screw pumps bring flow from P-Chem plant into the American Bottoms plant.
Location: American Bottoms - North of the primary clarifiers.
Camera Direction: West
Date/Time: April 7, 2022/10:45 A.M.

69: P4070232
Description: Screw pumps.
Location: American Bottoms - North of the primary clarifiers.
Camera Direction: West
Date/Time: April 7, 2022/10:47 A.M.

70: P4070234
Description: Note the debris along the side of the screw pump.
Location: American Bottoms - North of the primary clarifiers.
Camera Direction: West
Date/Time: April 7, 2022/10:48 A.M.

71: P4070235
Description: Two of the aeration basins, #2 and #3.
Location: American Bottoms - North of the screw pumps.
Camera Direction: Northwest
Date/Time: April 7, 2022/10:59 A.M.

72: P4070236
Description: Effluent from aeration basin #8 leaves the basin.
Location: American Bottoms - Between aeration basin #4 and #8.
Camera Direction: East
Date/Time: April 7, 2022/11:03 A.M.

73: P4070237
Description: Effluent from final clarifier.
Location: American Bottoms - North of final clarifiers.
Camera Direction: East
Date/Time: April 7, 2022/11:05 A.M.

74: P4070238
Description: Two return activated sludge pumps and two waste pumps.
Location: American Bottoms - East Return Activated Sludge (RAS) Building.
Camera Direction: Down
Date/Time: April 7, 2022/11:12 A.M.

75: P4070239
Description: Secondary thickener levels are kept low.
Location: American Bottoms - Secondary Thickener #2.
Camera Direction: Down
Date/Time: April 7, 2022/11:19 A.M.

76: P4070240
Description: Parshall flume in final effluent. Channel is covered with a roof to keep algal growth to a minimum.
Location: American Bottoms - Final Effluent.
Camera Direction: Northeast
Date/Time: April 7, 2022/11:25 A.M.

77: P4070242
Description: Slight amount of discoloration on final sampler tubing.
Location: American Bottoms - Final Effluent.
Date/Time: April 7, 2022/11:32 A.M.

78: P4070243
Description: Auto-sampler stated that pump tubing needed to be changed.
Location: American Bottoms - Final Effluent.
Date/Time: April 7, 2022/11:32 A.M.

79: P4070244
Description: Mistake photo.
Location: American Bottoms - Final Effluent.
Date/Time: April 7, 2022/11:34 A.M.

80: P4070245
Description: Final Effluent flow meter.
Location: American Bottoms - Final Effluent.
Date/Time: April 7, 2022/11:34 A.M.

81: P4070246
Description: pH of the final effluent is 6.85.
Location: American Bottoms - Final Effluent.
Date/Time: April 7, 2022/11:34 A.M.

82: P4070247
Description: Old service area map on conference room wall.
Location: American Bottoms - Conference room.
Date/Time: April 7, 2022/1:44 P.M.