FINAL/APPROVED/UPDATED

Metropolitan Syracuse (Metro) Wastewater Treatment Plant

Wet Weather Operating Plan

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Section 1 – Introduction and Overview

This *Wet Weather Operating Plan* has been prepared to fulfill the requirements detailed in the New York State Pollutant Discharge Elimination System (SPDES) permit (# NY0027081) for the Metropolitan Syracuse Wastewater Treatment Plant (Metro). The Metro WWTP serves the City of Syracuse and other Onondaga County communities in the Consolidated Sanitary District. The plant is serviced by both sanitary and combined sewers**.** Consequently, during periods of rain and/or snowmelt, Metro is subjected to flows above the design of 84.2 million gallons per day (MGD).

Metro provides primary, secondary, and tertiary treatment of incoming wastewater, up to 126.3 MGD, prior to being discharged to Onondaga Lake. The plant is divided into two (2) identical treatment trains, Side A and Side B. Wastewater flow is split equally between the two trains; the facility is typically operated in conventional activated sludge mode. Major treatment units include mechanical bar racks and screens, aerated grit chambers, low-lift pumping station, primary clarifiers, aeration tanks (with diffused air), secondary clarifiers, chlorination facilities for bypasses**,** secondary effluent pump station, Biostyr® biological aerated filter (BAF), ACTIFLO® System (High Rate Flocculating System, or HRFS), gravity sludge thickeners, gravity belt thickeners, sludge blending, anaerobic digesters, ultraviolet disinfection, and centrifuges for sludge dewatering and processing.

The SPDES discharge permit requires that flows up to 126.3 MGD receive full tertiary treatment. There are several points within the facility where wastewater can be bypassed with varying degrees of treatment. For organizational purposes, the bypass points will be discussed in order of progressive treatment:

- *Influent (Headworks) Bypass* - Flows in excess of 240 MGD are bypassed as a combined wastewater bypass through outfall 001. During the NYSDEC mandated disinfection period [April 1 through October 15] this bypassed wastewater is chlorinated, but receives little or no other treatment prior to discharge. It should be noted that this type of bypass rarely occurs.

- *Secondary Bypass* - All flows up to approximately 240 MGD receive primary treatment. Flows in excess of 126.3 MGD bypass the secondary treatment system by routing flow to the Bypass Chlorine Contact Tank (BCCT), and ultimately through outfall 002. During the NYSDEC mandated disinfection period [April 1 through October 15] this bypass wastewater is chlorinated and dechlorinated.

- *SEPS Bypass* – As previously stated, all flows up to approximately 240 MGD receive primary treatment, and flows in excess of 126.3 MGD bypass the secondary treatment system by routing flow to the bypass tanks (Secondary Bypass). During extended periods of high flow, flows in excess of the SEPS capacity (approximately 130 MGD) are routed to the old Tertiary Pump Station overflow and discharged to outfall 001. Any SEPS Bypass that exceeds 30 minutes is sampled using the Bypass Sampling Protocol every 4 (four) hours. This bypassed wastewater receives no chlorination.

- *Tertiary Bypass* – As previously stated, all flows up to approximately 240 MGD receive

primary treatment, and flows in excess of 126.3 MGD bypass the secondary treatment system by routing flow to the bypass tanks (Secondary Bypass). In the event of an emergency, a complete shutdown of the Secondary Effluent Pump Station (SEPS) or Tertiary Process (BAF/HRFS) would result in flow being routed to the old Tertiary Pump Station Overflow and discharged to outfall 001. Bypasses of this type are rare and will be sampled using the effluent sampling protocol. This Bypass wastewater receives no chlorination.

Onondaga County also utilizes a tunnel system (Erie Boulevard Storm Sewer, EBSS), two (2) Regional Treatment Facilities (Hiawatha and Midland RTFs), and storage facilities/tanks (Clinton, Lower Harbor Brook, Liverpool Pump Station and Village of East Syracuse) to store [and treat (RTFs)] combined stormwater and wastewater during wet weather events. These combined sewer overflow (CSO) abatement facilities were designed and built with several objectives in mind:

- Intercept any combination of sewer overflows that negatively impact receiving waters.
- Provide storage for the intercepted flows and diminish the amount of excessive flows that impact the Metro's treatment capacity. The ultimate goal is to store the flow until the plant is capable of giving the incoming flow additional treatment before being discharged to Onondaga Lake.
- Provide in-line relief for some of the larger diameter tributary surface sewers. This would help maintain capacity and prevent sewer backups in the basements of local properties.

Following a wet weather event; after influent flow rates have subsided to acceptable rates, combined sewage is pumped from the EBSS and the RTFs and sent to the Metro for treatment. The EBSS and RTF systems have significantly reduced the frequency and volume of combined sewer overflows that would have otherwise been directly discharged to the receiving waters. Refer to Appendix B for the Metro WWTP Storage Facility Dewatering Approval Flow Chart/Guidance document.

<u>Performance Goals</u>

The overall goal of the wet weather operating plan is to prevent and minimize CSOs and bypasses when possible, and reduce the impact of CSOs and bypasses for the protection of receiving waters. The primary goals for protection of receiving waters during high flow storm events are divided into three groups:

- Protection of Onondaga Lake.
  - Prevent or minimize overflows at Spencer Street CSO which relieves the Main Interceptor Sewer (MIS)
  - Prevent or minimize influent (Headworks) Bypass overflows from the METRO Influent diversion weir.
  - Minimize secondary bypasses.
  - Minimize Secondary Effluent Pump Station (SEPS) and tertiary (BAF/HRFS) bypasses.
- Protection of Onondaga Creek.
  - Maximize flows to the plant as early as possible to avoid CSOs.
- Protection of Harbor Brook.
  - Maximize flows to the plant as early as possible to avoid CSOs.

Utilization of the Manual

The purpose of this manual is to provide a set of operating guidelines to assist the Metro WWTP and collection system staff in making operational decisions which will best meet the performance goals and the requirements of the SPDES discharge permit.

During a wet weather event, numerous operational decisions must be made to effectively manage wastewater in the collection system in order to optimize wastewater treatment at Metro. Due to multiple control structures, present condition of specific treatment processes, and the anticipated storm/snow melt intensity and duration, each wet weather event provides potentially unique situations and combination of influent flows that influence plant operations. No manual can describe the decision making process for every possible operating scenario. However, this manual will serve as a useful reference for both new and experienced operators to utilize during wet weather events. Specifically, preparing for a pending wet weather event, a source of ideas for controlling specific processes during the event, and a checklist to avoid missing critical steps in monitoring and controlling processes during an event.

This manual is designed to allow use as a quick reference during wet weather events. It is broken down into sections which cover major unit processes at the METRO facility, influent stream pump stations, satellite and storage facilities, and Floatable Control Facilities (FCF). Each section includes the following information:

- Operational Description – Overview of the designated treatment process and associated equipment.
- Pre-Wet Weather Event Activities – Activities to be performed in anticipation of pending wet-weather event.
- During Wet Weather Activities – Major activities to be performed during the wet-weather event.
- Post Wet Weather Activities – Activities to be performed following the wet weather event, and in anticipation of future events.

This manual is a living document. Users of the manual are encouraged to identify new steps, procedures, and recommendations to improve the overall utility of the manual. All recommendations shall be submitted to the user's immediate supervisor for consideration for inclusion in the manual.

Section 2 - Wet Weather Operational Strategy

In general, prior to any wet weather events, the operational staff monitors storm development via internet access to assist in predicting the onset of a wet weather event. This allows both the head operator and principal operator(s) the ability to review the personnel roster to ensure adequate staff is available and call in additional personnel as required. In addition, the monitoring of storm development allow the operational and maintenance staff to begin pre-wet weather activities as identified herein, and including the preparation and stocking of all sampling bottles necessary to monitor a wet weather event. Specific details regarding the SPDES permit compliance sampling

procedures for bypass events can be found in Appendix D, Standard Operating Procedure (SOP) titled, *Metropolitan-Syracuse WWTP Wet Weather Operating Plan By-pass Sampling and Point Source Discharge Control (Doc. No. 10).*

At this time, the Department does not have a policy, mechanism or corresponding procedure for issuing wet weather related advisories to the municipalities that discharge to the County's collection system. The current inter-municipal agreement does not grant the Department authority to minimize, reduce, or even require the implementation of Best Management Practices (BMPs) by the municipalities that discharge to the Metro service area.

a. Permitted User Notification

In accordance with the Standard Operating Procedure (SOP) titled, *Metropolitan-Syracuse WWTP Wet Weather Operating Plan By-pass Sampling and Point Source Discharge Control (Doc. No. 10),* Metro Board personnel shall contact the ETS Primary Contact or designated back-up to initiate shut down of any interim Point Source Discharges as part of the Wet Weather Operating Plan. The trigger point will be a flow of 115 MGD. For additional information regarding this SOP, please refer to Appendix D, Doc. No. 10, Section VII.

b. Existing (Old) Screen & Grit Building

Operational Description

The Existing Screen & Grit Building (ESG) receives wastewater from the four (4) force main inputs to Metro; Ley Creek, Liverpool, Westside and wet weather flow from Kirkpatrick pump station. Wastewater flow into the ESG is split into three (3) separate channels, each having an automatic climber screen rake and bar rack with ¾" spacing, which directs flow to three (3) aerated grit chambers. Three (3) of the four (4) blowers [one (1) serving as backup] supply air at a constant rate to the grit chambers. Grit removal in each chamber is accomplished using a 12-inch diameter auger conveyor system to move settled grit from the grit collection channels at the bottom of each grit chambers to the suction inlet of a 4-inch grit pump. The three (3) grit pumps run continuously and discharge to three (3) [one spare] cyclone washing and dewatering unit's in the grit loading room. Three (3) of the four (4) cyclone units run continuously and receive grit from a corresponding grit chamber. The fourth unit is standby. These units deposit the solid grit in 1 cubic yard containers. Note: The facility has the ability to chlorinate the effluent from this treatment unit, however, this is rarely utilized.

Pre-Wet Weather Event Activities

- Make sure all channels are in operation.
- Verify all grit pumps are operational.
- Verify grit collections screws are operational.
- Verify grit cyclones are operational.
- Verify adequate dumpster capacity.

During Wet Weather Activities

- Screen rakes are set to run at a more frequent rate. Screen rake operation is more frequent if the Bypass gate at the influent diversion chamber is opened to allow some of the NSG volume flow into ESG to prevent [or delay] a combined sewerage bypass.
- Grit Cyclones are monitored continuously for plugging and cleared as necessary.

Post Wet Weather Activities

- Inspect auger conveyor system, grit pump and slurry line, and cyclone units.
- Return all equipment to dry weather operation.

c. New Screen & Grit Building

Operational Description

The New Screen and Grit Building (NSG) receives wastewater from the Main Intercepting Sewer (MIS) and the Harbor Brook pump station (located on-site). Wastewater flow entering this facility is split between two (2) parallel channels and proceeds through two (2) automated cleaning bar racks (1½" openings). These racks can be operated via automated timing mechanism, manually, and by an ultrasonic level monitor differential system. After passing the bar screens, the wastewater flows to distribution box that divides flow between the two (2) aerated grit chambers. Typically, both chambers operate with both slide gates fully open to permit flow to enter at the north end of the grit chambers and to discharge at the south end of the chambers over the flow weirs. If a chamber needs to be bypassed, flow can be stopped by closing the slide gate in the distribution box that leads to the affected chamber. Each chamber is capable of handling up to 75 MGD. The effluent from the aerated grit chamber passes through [in parallel] two (2) bar screens (¾" openings) and then to the Low-Lift pump station.

Three (3) turbo variable speed blowers supply air to the aerators. Typically, two (2) blowers operate, one (1) for each grit chamber. Grit is removed from the grit collection channels at the bottom of each of the grit chambers by a 12-inch diameter auger conveyor system. The conveyor moves the accumulated grit along the side of each grit chamber to a 4-inch grit pump located at the midpoint of each tank. The grit pump is located in a drywell on the opposite side of the grit chamber baffle. The two (2) grit pumps in each channel run continuously. The grit pumps discharge to four (4) large classifiers; these units deposit the solid grit in roll-off containers.

Pre-Wet Weather Event Activities

- Verify all Influent Screen Machines are operational.
- Verify all Grit Pumps are operational.
- Verify Grit Collection Screws are operational.
- Verify Grit Classifiers are operational.

- Verify all Effluent Screen Machines are operational.
- Verify adequate roll-off capacity.

During Wet Weather Activities

- Adjust Influent Screen rake Run timers to accommodate demand.
- Adjust Influent Screen rake Drain timers to zero (0) seconds.
- Adjust Effluent Screen rake Run timers to accommodate demand.
- Adjust Effluent Screen rake Drain timers to zero (0) seconds.
- Adjustments are made to the cleaning frequency of the bar racks and screens. Specifically, cleaning of the bar racks is increased to prevent combined sewerage bypasses, and to address any "first-flush" effects from the combined sewer system.
- Acceptance of hauled wastes, which discharge wastewater to this pretreatment unit, are excluded from dumping during influent (headworks) bypasses.
- During periods of high flow (depending on plant capacity and the amount of influent debris) the Bypass gate located at the influent diversion chamber may be opened to allow some of the NSG volume flow into ESG to prevent [or delay] a combined sewerage bypass. This increases the amount of screenings at the ESG racks and will require more frequent run cycles on the rakes.

Post Wet Weather Activities

- Inspect auger conveyor system, grit pump and slurry line, and cyclone units.
- Clean and wash down the floors near screen rakes in ES&G.
- Clean and wash floors near automatically cleaned bar rack (NSG).
- Return all equipment to dry weather operation.

d. Low-Lift Pump Station

Operational Description

The Low Lift Pump Station delivers both the NSG and ESG de-gritted wastewater flow to the two (2) Primary Distribution Structures which split flow equally to eight (8) primary clarifiers for treatment (four (4) clarifiers for each side). Five (5) pumps are located in the Low Lift Pump Station. Under normal conditions, de-gritted wastewater flows by gravity from both screen & grit buildings and enters the low lift pump wet well through the influent channel. When in the automatic mode of operation, the pump operation depends on the wastewater level in the wet well. Any of the three (3) level transmitters in the wet well may be used by selecting the desired signal at the raw waste control panel.

Pre-Wet Weather Event Activities

- Verify all pumps are operational.

During Wet Weather Activities

- During wet weather periods, the automatic pump sequence rotation may be disabled to allow the appropriate pumps to run. Ideally, Pumps #5 and #1 would be lead and lag, and the center wet well level transmitter (#3) would be online to control the pumps.
- Monitor pump operation.

Post Wet Weather Activities

- None.

e. Primary Treatment System

Operational Description

Eight (8) primary clarifiers are arranged in two (2) groups of four (4). Each group is served by a Primary Distribution Structure labeled "A" or "B" to correspond with the two sides of the plant. The primary clarifiers were designed to treat flows between 40 MGD average flow and 60 MGD peak flow per set of four (4) clarifiers under normal conditions. This equates to a total treatment capacity of 80 MGD to 126.8 MGD. The design intent was for any flow above 126.8 MGD to bypass the primary clarifiers to the aeration tanks. However, plant operations staff has found that almost all flow conditions experienced at the plant to date have been adequately treated by the primaries, and the primary bypass has only been used on limited occasions. Floatable scum and foam is collected by the skimmer mechanism mounted on the same rotating arm that drives the sludge collector. The primary scum pit is dewatered frequently and emptied regularly to prevent material buildup, odors, and potential sulfide gas generation, which can corrode the concrete.

Pre-Wet Weather Event Activities

- Verify all sludge pumps are operational.
- Dewater grease pits.

During Wet Weather Activities

- Increase sludge pumping rates to approximately 100 gpm. Monitor sludge discharge for plugging at the pumps.
- Increase operator monitoring of scum accumulation on scum ramps (beaches). Assist scum removal with scraper, shovel or hose.

Post Wet Weather Activities

- Dewater and/or empty scum pit.

- Return sludge pump rate to 70 gpm.

f. Activated Sludge System

Operational Description

Under normal operating conditions, primary clarifier effluent flows to the two (2) secondary distribution structures, which serve four (4) aeration tanks each allowing flow into the two (2) north aeration tanks per side. Weirs and sluice gates in the distribution structures allow for control or isolation of flow to any aeration tank. Under storm flow conditions, the primary clarifiers still treat all the flow under almost all conditions. At the secondary distribution structures, any flow above 63.4 MGD to either distribution structure overflows a bypass weir and is diverted to the Bypass Chlorine Contact Tank (BCCT).

Pre-Wet Weather Event Activities

- None.

During Wet Weather Activities

- No adjustments are made to the ferric chloride dosing (for phosphorus removal) which is injected into the Return Activated Sludge (RAS). Ferric chloride dosing in the aeration tanks are a constant feed, and does not vary with changes in flow.
- RAS rates remain constant regardless of the incoming flow; approximately 6 MGD.

Post Wet Weather Activities

- None.

g. Secondary Treatment System

Operational Description

Aeration tank effluent flows to the clarifiers (one (1) clarifier per treatment train) and enters in the center influent well. Return sludge and waste sludge are drawn from the clarifier underflow, and treated liquid effluent overflows the clarifier weirs to the Secondary Effluent Pump Station (SEPS) and tertiary treatment.

Pre-Wet Weather Event Activities

- None.

During Wet Weather Activities

- Treatable flow is maximized to a flow of 126.3 MGD.
- As needed, increase sludge withdrawal rates, RAS and shut off Waste Activated Sludge (WAS).
- Increase monitoring (e.g., sludge depth gauging), collect floatables where feasible.

Post Wet Weather Activities

- None.

h. Tertiary Treatment System

Operational Description

The Biostyr® Biological Aerated Filter (BAF) process is an aerobic biological treatment system. Influent wastewater is first pumped to a common feed channel above the filters eighteen (18) cells and is evenly distributed to each active cell by influent distribution weirs. Influent to each cell is conveyed by piping to the bottom of the cells and flows up through the filter media bed. Two (2) centralized blower stations provide process air. Each blower station consists of four (4) multi-stage centrifugal blowers. The system is monitored and controlled via a PLC control panel, which is connected to the plant SCADA system.

BAF effluent wastewater enters a split and common effluent channel that directs the flow to the ACTIFLO® process (BAF Cells 1-9 are split from 10-18 with an open gate between the split channels). The ACTIFLO® System consists of four (4) separate treatment trains. Each is comprised of a coagulation tank with mixer, an injection tank with mixer, a maturation tank with mixer, a settling tank with a sludge scraper, lamella modules, effluent collection troughs, coagulant feed equipment, polymer feed equipment, micro-sand injection system, and micro-sand recirculation circuits with pumps, piping, valves, hydrocyclones and ancillary equipment such as pressure gauges and pressure switches. The system is also monitored and controlled via a PLC control panel, which is connected to the plant SCADA system.

Pre-Wet Weather Event Activities

- Ensure all routine maintenance for the BAF cells or ACTIFLO® trains are completed to allow the complete system to be operational during a wet weather event.

During Wet Weather Activities

- In the event of a rapidly increasing flow, the Biostyr® Biological Aerated Filter (BAF) process may be put into “Constant Cell Mode” with all available cells online. This is to prevent overwhelming the Biostyr® Biological Aerated Filter (BAF) process before the PLC can react.

- During very high flows (125 to 130 MGD to the tertiary process) the ACTIFLO® process polymer addition dose may be adjusted down from 0.6 ml/min to 0.5 ml/min due to the time required to make up and age a batch.
- Postpone any scheduled cleaning of the lamella tubes until the flows are below 90 MGD.

Post Wet Weather Activities

- Initiate manual backwashes to prevent clogging.

i. Ultraviolet Disinfection

Operational Description

The ultraviolet (UV) disinfection system, specifically the UV contact unit, includes UV lamps, reaction chamber, cooling jacket, pivot beams, power supply, and controls. Effluent flows through the reaction chamber and is disinfected as it flows by the lamps and is exposed to the UV light. Lamp cleaning is fully automatic and the frequency is programmed to operate once per hour. Disinfection is not disrupted during the cleaning process. When the UV system is operating in "auto" mode the flow and percent ultraviolet transmittance (UVT) readings are continuously read and evaluated by the controller, as flow and effluent quality change, the required dose to achieve disinfection is automatically adjusted. During "hand' mode, the lamp output is set by the operator.

Pre-Wet Weather Event Activities

- Check bulb "out" count, and write work order as necessary.

During Wet Weather Activities

- No major operational adjustments are made during periods of wet weather.

Post Wet Weather Activities

- Check bulb "out" count, and write work order as necessary.

j. Bypass Disinfection Tanks

Operational Description

The Bypass Disinfection system receives treated effluent from the primary clarifiers when there is a wet weather event in excess of Metro's secondary wastewater treatment system capacity. The bypassed flow is disinfected using Sodium Hypochlorite and dechlorinated with Sodium Bisulfite, then discharged through Outfall 002 to Onondaga Lake. The Bypass Disinfection system consists of chemical storage and containment

systems, chemical feed building, influent flowmeter and mixers, three (3) bypass chlorine contact tanks in series, one (1) dechlorination tank, auto flushing gates, sample pumps, and effluent flow meter.

Pre-Wet Weather Event Activities

- Ensure adequate supply of disinfection chemicals, Sodium Hypochlorite and Sodium Bisulfite, during the disinfection season.
- Ensure the tanks are pumped down as low as possible.
- Configure Bypass Disinfection for use.
- Prepare Log Sheets for bypass.
- Prepare sampling needs.

During Wet Weather Activities

- Start bypass sampling and continue throughout bypass monitoring event.
- Document floatables as best as possible.
- Administer Sodium Hypochlorite for chlorination and Sodium Bisulfite for dechlorination throughout the bypass event, monitoring the automatic disinfection system for proper operation.

Post Wet Weather Activities

- Complete Bypass Report.
- Restock sample containers and Chain of Custodies, as needed.
- Flush disinfection system.

k. Sludge Dewatering Facilities

Operational Description

WAS is pumped to the Gravity Belt Thickeners, then the thickened WAS is pumped to the Blend Building. Primary sludge and the ACTIFLO waste HRFS sludge are pumped to the gravity thickeners. The gravity thickened sludge is pumped to the Blend Building where it is mixed with thickened WAS and tankered sludge from Oak Orchard, Brewerton and Meadowbrook Limestone WWTPs and then pumped to the Anaerobic Digesters. After digestion, the biosolids are dewatered via centrifuge to >30% solids and conveyed to container for landfill disposal.

Pre-Wet Weather Event Activities

- None.

During Wet Weather Activities

- During wet weather, sludge flows entering the Gravity Thickeners are greatly increased, and screenings must be removed more often. To avoid rising sludge blankets in the Gravity Thickeners, pumping to the Blend Building is also increased, resulting in more biosolids being sent to the Centrifuges.

Post Wet Weather Activities

- None.

Section 3 – Metro Influent Stream Pump Stations

a. Westside Pump Station

Operational Description

The pump station includes two (2) mechanical bar screens and six (6) submersible wastewater pumps located in the wet wells. Pumped wastewater is conveyed through 36-inch and 24-inch diameter force mains to Metro. The capacity of the pump station is approximately 40 MGD. The station includes an emergency wet-weather bypass, where flow passes over a weir wall, through a trash rack, and discharges into Onondaga Lake.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Facility is monitored through SCADA.

During Wet Weather Activities

- Monitor SCADA to ensure proper operation of facility.
- Check pump operation, bar screens and trash rack.
- Monitor flows; if bypass occurs begin notification procedures.

Post Wet Weather Activities

- Clean facility and trash rack as necessary.
- Immediately following a bypass event, complete an overflow report and submit to superintendent per notification procedures.

b. Liverpool Pump Station

Operational Description

The pump station includes a mechanical bar screen, a chemical storage and feed system, a 1 MG storage tank, a 2 MG storage tank, an influent channel with two (2) pumps to divert wastewater into the storage tanks as needed and three (3) centrifugal vertical dry-pit non-clog pumps. Wastewater is conveyed through an 18-inch force main to Metro. The Liverpool Pump Station (LPS) design capacity is 8 MGD. However, due to the capacity restriction of the downstream force main, the LPS has a capacity of approximately 6 MGD. A pressure relief valve controls the LPS discharge to the downstream force main. The pressure relief valve needs to be adjusted during wet weather events to keep the force main pressure at an optimum pressure of approximately 70 psi. Flows that exceed the force main capacity are diverted to the storage tanks until the flows recede below the capacity of the downstream force main.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Facility is monitored through SCADA.

During Wet Weather Activities

- Monitor SCADA to ensure proper operation of facility.
- Adjust pressure relief valve to maintain optimum pressure of approximately 70 psi.
- Check pump operation, bar screen and chemical system.
- Monitor pump operation.

Post Wet Weather Activities

- Reset pressure relief valve to "normal" position.
- Refer to Post Wet Weather Activities for Liverpool Storage (Section 4.d).

c. Ley Creek Pump Station

Operational Description

The pump station includes two (2) mechanical bar screens and three (3) centrifugal wastewater pumps in a wet well-dry well configuration. The pump stations set capacity is approximately 50 MGD. The wastewater is screened and conveyed through a 42-inch diameter force main to Metro.

Pre-Wet Weather Event Activities

- Routinely Inspect facility.
- Facility is monitored through SCADA.

During Wet Weather Activities

- Monitor SCADA to ensure proper operation of facility.
- Check pump operation, bar screens and trash rack; clean as necessary.
- Check dry well and ensure sump pumps are operating as necessary.
- Monitor flows; if bypass occurs begin notification procedures.

Post Wet Weather Activities

- Clean facility and trash rack as necessary.
- Immediately following a bypass event, complete an overflow report and submit to superintendent per notification procedures.

Section 4 – Satellite/Storage Facilities

In general, prior to any wet weather events, the Flow Control staff monitors storm development via internet access to assist in predicting the onset of a wet weather event. This allows management and supervisory staff the ability to review the personnel roster to ensure adequate staff is available and call in additional personnel as required. In addition, the monitoring of storm development allows the staff to begin pre-wet weather activities as identified herein.

Specific details regarding the SPDES permit compliance sampling procedures for the Midland RTF, Hiawatha RTF, Clinton Storage and Lower Harbor Brook Storage overflow sampling can be found in Appendix D. Public notification procedures are implemented as necessary for combined sewer overflows during wet weather events.

a. Midland Regional Treatment Facility (RTF)

Operational Description

Combined sewer overflow (CSO) is conveyed to the facility by the 144-inch diameter pipeline from the Midland Avenue upstream CSOs, the 86-inch diameter pipeline from the Tallman Street CSO, and/or the 66-inch diameter pipeline from the Bellevue Avenue CSO. The flow is directed into the 2.5 MG storage tank. At a set level, the PLC program logic calls for the influent pumps to run. The influent pumps lift the wastewater to the influent wet well, where two (2) sluice gates distribute flow to the two (2) vortex separators. As the flow rises and overflows the vortex separator weirs, the flow moves into the disinfection tank. The PLC logic calls for the chemical disinfection system to operate. As the flow fills the 1 MG disinfection tank, eventually overflowing the weir, and discharges to Onondaga Creek. The storage capacity of the facility and ancillary pipe is approximately 5 MG.

Pre-Wet Weather Event Activities

- Routinely inspect facility.

- Facility is monitored through SCADA.

During Wet Weather Activities

- Monitor SCADA to ensure proper operation of facility.
- Fully automated system that is monitored through SCADA; respond to any alarms as necessary.

Post Wet Weather Activities

- Check Main Interceptor Sewer (MIS) level and coordinate with Metro Board as applicable to dewater the facility.
- Check chemical supplies and order as necessary.
- Schedule cleaning and grit removal as necessary.
- Close all dewatering sluice gates as necessary.

b. Hiawatha Regional Treatment Facility (RTF)

Operational Description

Combined sewer overflow (CSO) is conveyed to the facility via a 54-inch influent pipeline, to the influent diversion structure, through a coarse-screen bar rack and into the swirl concentrator. Once the flow reaches the swirl concentrator, settleable solids are conveyed to the underflow pumps and discharged to the Ley Creek Force Main. As the wastewater rises in the swirl concentrator and over the overflow weir, the flow passes into the routing structure to the storage tank. As the flow rises in the storage tank and reaches its capacity, the flow is routed into the disinfection tank and the automated chemical feed system is activated. After the event, the sluice gates in the flow routing structure are manually opened and the captured CSO within the swirl concentrator, storage tank, and disinfection tank are pumped back to the Metropolitan Syracuse Wastewater Treatment Plant (Metro).

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Facility is monitored through SCADA.
- Clean influent bar screen as necessary.
- Verify facility and chemical pumps are ready for operation.

During Wet Weather Activities

- Monitor SCADA for levels in vortex, storage, and disinfection tank.
- As levels rise, staff will be assigned to monitor facility, and as necessary, operate the disinfection system.

Post Wet Weather Activities

- Coordinate with Metro Board as applicable to dewater the facility.
- Clean the influent bar rack as necessary.
- Clean the vortex, storage tank, and disinfection tank as necessary.
- Check chemical supplies and order as necessary.

c. Erie Boulevard Storage System (EBSS)

Operational Description

The storage system is equipped with a series of automated sluice gates to store discharge from nine (9) separate CSO diversion manholes. The system temporarily stores wet weather flows until there is sufficient capacity at Metro; the system is drained to Metro via the Main Intercepting Sewer (MIS) once wet-weather flows have subsided.

The EBSS consists of three (3) storage units separated by gates (1, 3 and 4). The system control logic is designed to modulate the gates to maximize storage within the EBSS. Gate #1 remains closed unless the maximum storage capacity of the EBSS and MIS are reached, in which case the incoming CSO flows are discharged to Onondaga Creek to prevent flooding.

The EBSS system initiates gate closure once flow is observed at any one of the nine (9) CSO locations. The gates remain closed until flow has subsided at all nine (9) CSO entry points for a period of thirty minutes. The EBSS then enters into a two-hour drain-down sequence, discharging flow to Metro, before returning to normal operating mode.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Facility is monitored through SCADA.

During Wet Weather Activities

- Fully automated system that is monitored through SCADA; respond to any alarms as necessary.

Post Wet Weather Activities

- Fully automated system; monitor through SCADA to verify operation and automated drain down.
- Operate Gate Chamber No. 1 sump pump as necessary.
- Verify storage system is ready for the next rain event.

d. Liverpool Storage

Operational Description

The Liverpool Pump Station includes a 1 MG and 2 MG storage tank with two (2) programmed submersible pumps to divert wastewater from the influent channel into the storage tanks as needed. Flows that exceed the force main capacity are diverted to the storage tanks until the flows recede below the capacity of the downstream force main. The storage tanks may also receive flow from the Electronics Park Trunk Sewer if level is high enough to pass over the weir wall, through a trash rack into the storage tanks.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Facility is monitored through SCADA.
- Verify the storage tank valve is in open position to accept flow and that the drain valve is in the closed position.

During Wet Weather Activities

- Facility is monitored through SCADA; respond to any alarms as necessary.
- Check and adjust flow rate into the storage tank in order to maintain and acceptable pressure in the Liverpool force main.

Post Wet Weather Activities

- Open drain valve for storage tank and monitor pressure in force main (coordinate with Metro Board as applicable).
- Close drain valve when both storage tanks are empty.
- Schedule cleaning as necessary.

e. Clinton Combined Sewer Overflow (CSO) Storage Facility

Operational Description

Combined sewer overflow (CSO) is conveyed to the facility via the 96-inch diameter West Onondaga Street CSO Transmission pipeline, the 84-inch diameter West Jefferson Street CSO Transmission pipeline, and the 36-inch diameter West Street CSO Transmission pipeline. The flow enters the east and west influent channels. The flow is screened in the west influent chamber by the trash racks and then passes through into the tunnels sequentially so that during a low flow event, only a portion of the storage facility needs to be cleaned. If the storage volume exceeds 6.5 MG, the effluent pumps will activate through the PLC program logic and discharge the excess to Onondaga Creek. Following the event, the storage tunnels will be dewatered by operating the dewatering pumping station to the Main Interceptor Sewer for treatment at the Metropolitan Syracuse Treatment Plant.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Fully automated system monitored through SCADA.

During Wet Weather Activities

- Fully automated system that is monitored through SCADA; respond to any alarms as necessary.

Post Wet Weather Activities

- Check Main Interceptor Sewer (MIS) level and coordinate with the Metro Board as applicable to dewater the facility.
- Schedule facility cleaning and grit removal as necessary.

f. Lower Harbor Brook Combined Sewer Overflow (CSO) Storage Facility

Operational Description

Combined sewer overflow (CSO) is conveyed to the facility via a 60-inch diameter pipeline from CSOs 003 and 063, and a 54-inch diameter pipeline from CSO 004. Flows from these pipelines are combined in the facility junction chamber and enter the storage tank through an 84-inch diameter pipeline. Once the storage volume of 4.9 MG is reached, additional flow will be discharged to Harbor Brook. Following the event, the storage facility will be dewatered by operating the dewatering pumps to the Harbor Brook Intercepting Sewer for treatment at the Metropolitan Syracuse Treatment Plant.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Fully automated system monitored through SCADA.

During Wet Weather Activities

- Fully automated system that is monitored through SCADA; respond to any alarms as necessary.

Post Wet Weather Activities

- Check Harbor Brook Interceptor Sewer (HBIS) level and coordinate with the Metro Board as applicable to dewater the facility.
- Schedule facility cleaning and grit removal as necessary.

g. Village of East Syracuse Storage Facility

Operational Description

The Village of East Syracuse owns an above ground wet weather storage tank of approximately 530,000 gallons along with a submersible pumping station and related appurtenances. The diversion manhole contains an overflow weir with associated 15-inch outlet to discharge to the submersible pump station wet well. The wet well contains two (2) submersible pumps delivering flow into the above ground storage tank via a 12-inch diameter force main. The pumps operate automatically through the use of a level transducer. The tank will normally be empty and only utilized during wet weather conditions. The tank is drained when there is capacity within the collection system. The facility is integrated into the Department of Water Environment Protection's SCADA system.

Pre-Wet Weather Event Activities

- Per Village of East Syracuse Engineer; Facility Plan submitted to NYSDEC.

During Wet Weather Activities

- Per Village of East Syracuse Engineer; Facility Plan submitted to NYSDEC.

Post Wet Weather Activities

- Drain storage tank when the Ley Creek Trunk Sewer, Ley Creek Pump Station and Metro have capacity available to accept.
- Coordinate with the Metro Board as applicable to dewater the facility.
- Schedule facility cleaning as necessary.

Section 5 – Floatable Control Facilities and Vortex Regulator

a. Butternut (Floatable Control Facility)

Operational Description

This in-line facility is designed to catch floatable debris including rags, paper, leaves, sticks, plastics, and sanitary material. Flow from the 72-inch trunk sewer enters the upstream vault; when the level within the upstream vault reaches 2.2 feet, PLC program logic calls for the sluice gate to close. Once the sluice gate is closed, flow is forced through a row of eight (8) net bags. The net bags are retained with stainless steel sleds anchored into the vault structure. The net bags trap the floatable debris, allowing screened flow to pass through the bags into the downstream vault and re-enter the 72-inch trunk sewer. An overflow weir is located downstream of the net bags. When flow within the 72-inch trunk exceeds 1.6 feet, it overtops the weir and is discharged to

Onondaga Creek via a 72-inch overflow. During a wet-weather event, the sluice gate remains closed until the flow level within the upstream vault remains at or below 1.1 ft for a period of 45 minutes. Once satisfied the PLC initiates the gate opening sequence which opens the gate in five step increments over a period of 120 minutes.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Fully automated system monitored through SCADA.

During Wet Weather Activities

- Monitor through SCADA for proper gate position and operation.
- Check flow through net bags and verify integrity of nets bags.

Post Wet Weather Activities

- Facility is automated and gate opens when flow levels drop to a set position.
- Check condition of net bags and sleds, schedule net bag removal and replacement as necessary.
- Check outfall.
- Clean bar screens, holding tank area well, and walls as necessary.
- Schedule grit removal from channel as necessary.

b. Burnet (Floatable Control Facility)

Operational Description

This in-line facility is designed to catch floatable debris including rags, paper, leaves, sticks, plastics, and sanitary material. Flow from the 72-inch trunk sewer enters the upstream vault; when the level within the upstream vault reaches 2.2 feet, PLC program logic calls for the sluice gate to close. Once the sluice gate is closed, flow is forces through a row of six (6) net bags. The net bags are retained with stainless steel sleds anchored into the vault structure. The net bags trap the floatable debris, allowing screened flow to pass through the bags into the downstream vault and re-enter the 72-inch trunk sewer. An overflow weir is located downstream of the net bags. When flow within the 72-inch trunk exceeds 1.6 feet, it overtops the weir and is discharged to Onondaga Creek via a 72-inch overflow. During a wet-weather event, the sluice gate remains closed until the flow level within the upstream vault remains at or below 1.1 ft for a period of 45 minutes. Once satisfied the PLC initiates the gate opening sequence which opens the gate in five (5) step increments over a period of 120 minutes.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Fully automated system monitored through SCADA.

During Wet Weather Activities

- Monitor through SCADA for proper gate position and operation.
- Check flow through net bags and verify integrity of nets bags.

Post Wet Weather Activities

- Facility is automated and gate opens when flow levels drop to a set position.
- Check condition of net bags and sleds, schedule net bag removal and replacement as necessary.
- Check Outfall.
- Clean bar screens, holding tank area well, and walls as necessary.
- Schedule grit removal from channel as necessary.

c. Harbor Brook (Floatable Control Facility)

Operational Description

This in-stream facility is designed to catch floatable debris including rags, paper, leaves, sticks, plastics and sanitary material from Harbor Brook. The pontoon structure is set in a fixed position within Harbor Brook and is equipped with a coarse bar rack and three (3) net bags.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Clean bar rack and change net bags as necessary.

During Wet Weather Activities

- Clean bar racks as necessary and as conditions allow.

Post Wet Weather Activities

- Check condition of net bags and sleds, schedule net bag removal and replacement as necessary.
- Clean bar racks as necessary.
- Schedule removal of any cleared bar rack debris as necessary.

d. Teall Brook (Floatable Control Facility)

Operational Description

The facility utilizes a Copa bar screen, which is fully automatic and remains idle during dry weather. An ultrasonic level detector mounted within the sewer, monitors the water

level as it rises to the storm weir level and initiates the raking mechanism. The start level is set at 2-inches below the underside of the bar screens. Once the water overtops the storm weir, flow passes through the bar screens, which are continuously kept clean by the raking mechanism. Debris is retained on the sewer side of the bar screens. The stop level is set at 2.5 inches below the underside of the bar screens. As the water levels subsides, and then drops below the storm weir and below the underside of the bar screens, the raking mechanism shuts down.

Pre-Wet Weather Event Activities

- Routinely inspect facility.
- Fully automated system monitored through SCADA

During Wet Weather Activities

- Monitor SCADA for operation and status of Copa Screen.

Post Wet Weather Activities

- Check facility and Copa Screen operation.
- Check Outfall.
- Schedule cleaning of mechanical Copa Screen and underground facility as necessary.

e. Maltbie Street (Floatable Control Facility)

Operational Description

This end-of-pipe facility is designed to catch floatable debris including rags, paper, leaves, sticks, plastics and sanitary material. Flow from the 30-inch outfall enters an influent chamber and is pushed through a row of three (3) net bags allowing screened flow to pass through an effluent vault that discharges directly to Onondaga Creek. The net bags are retained by stainless steel frames with stainless steel hooks. Since this facility is installed at the outfall pipe, all the flow is conveyed to Onondaga Creek.

Pre-Wet Weather Event Activities

- Routinely inspect facility.

During Wet Weather Activities

- Check flow through net bags and verify their integrity.

Post Wet Weather Activities

- Check upstream regulator structure.
- Check condition of net bags and sleds, schedule net bag removal and replacement as necessary.

- Check outfall.
- Clean outfall trash rack as necessary.

f. Newell Street (Vortex Regulator)

Operational Description

The Newell Street facility is a vortex separator serving CSO 067. During dry weather, sewage is directed into the swirl concentrator, routed into a wet well and pumped into a 6- inch force main across Newell Street. During wet weather, the flow directed into the swirl concentrator rises, eventually overflows the weir, into the sump and is discharged through a 24-inch diameter outfall pipe to Onondaga Creek.

Pre-Wet Weather Event Activities

- Routinely inspect facility
- Check proper pump operation.
- Check vortex and remove debris as necessary.

During Wet Weather Activities

- Monitor facility to verify proper operation.

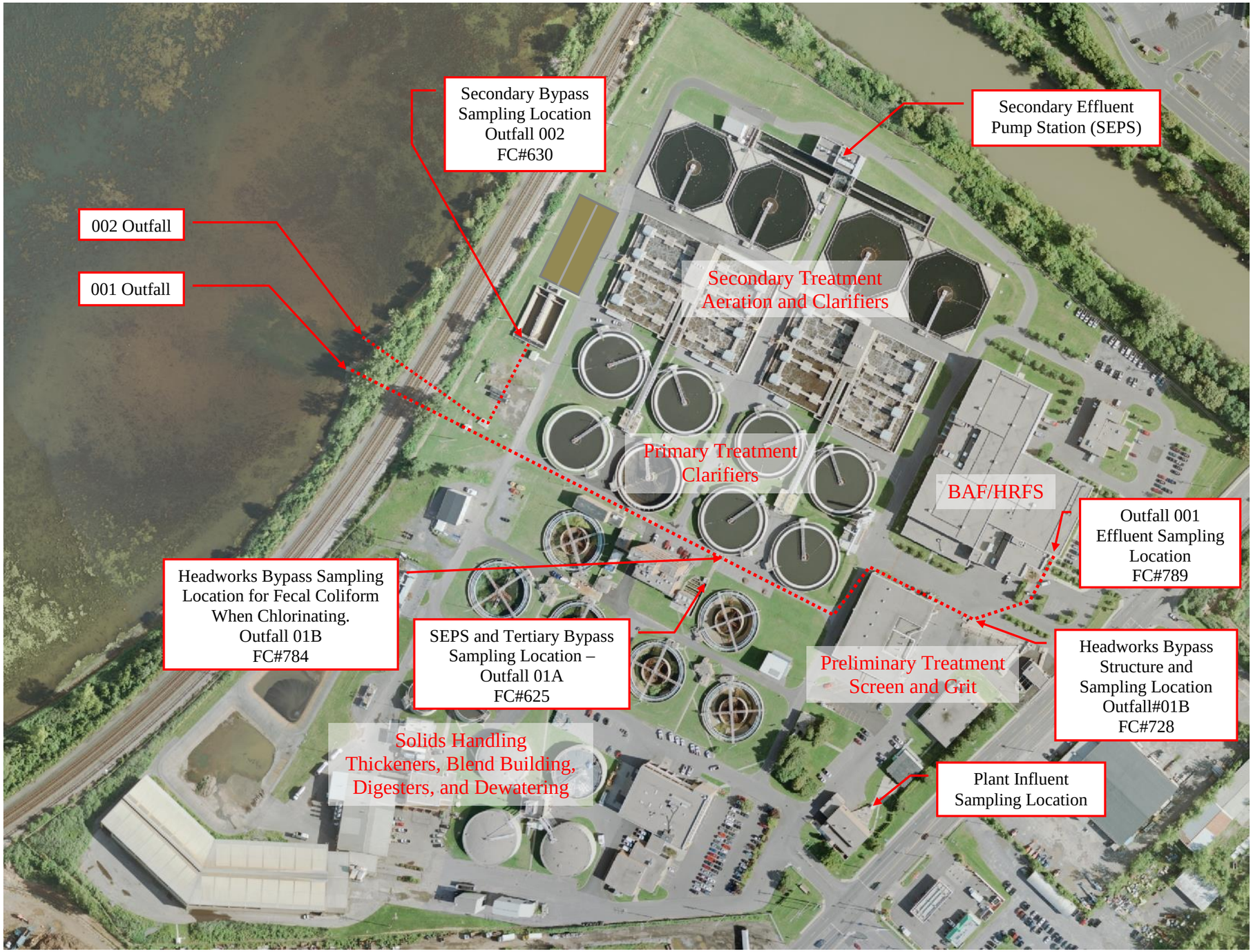
Post Wet Weather Activities

- Check outfall.
- Clean the vortex separator and as necessary.
- Schedule cleaning of the pump wet well as necessary.
- Schedule cleaning of discharge wet well as necessary.

Appendix A

Metro Site Plan with Bypass and Sampling Locations

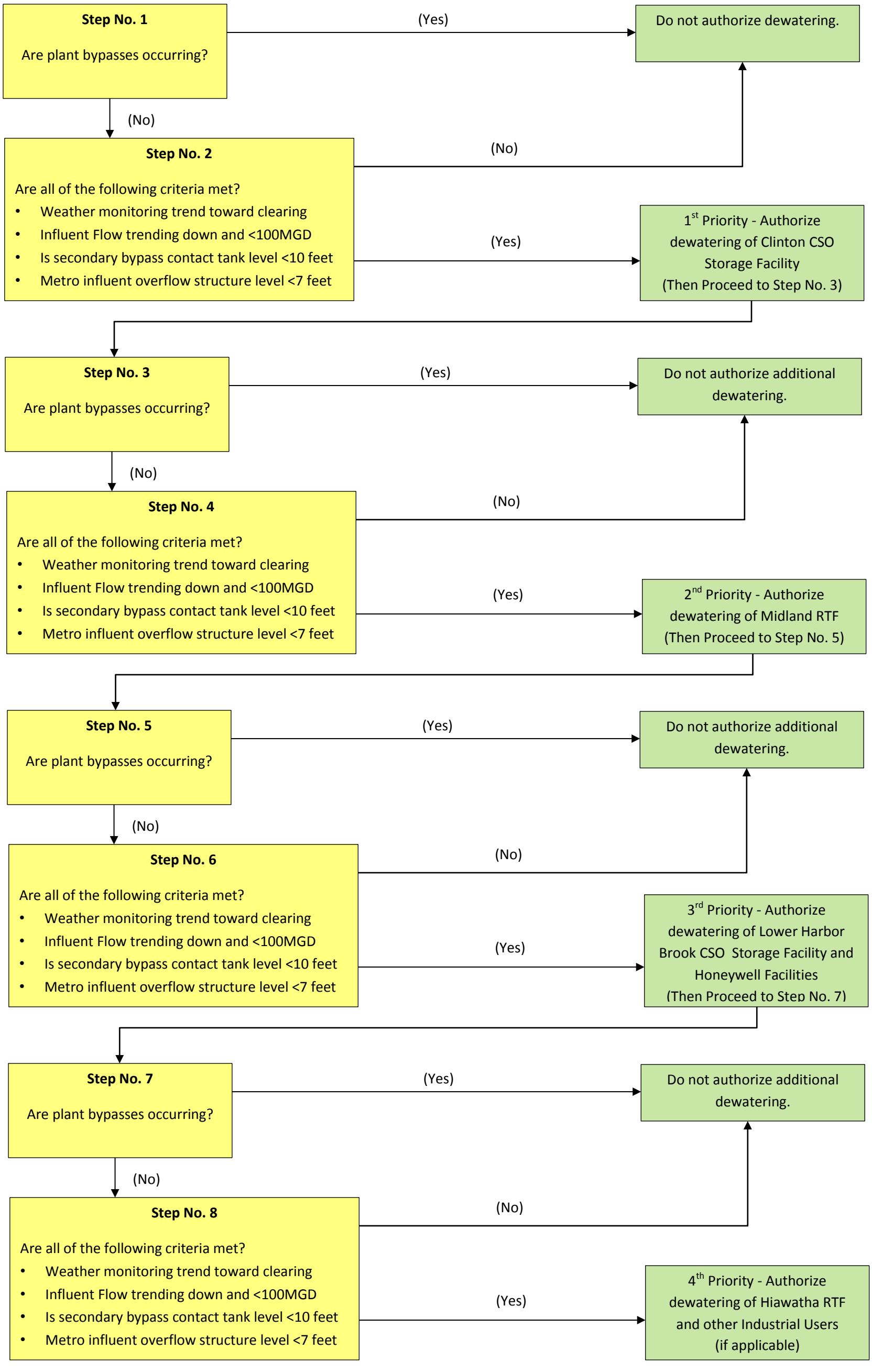
Attachment: Metro Site Plan with Bypass and Sampling Locations



Appendix B

Metro WWTP - Storage Facility Dewatering Approval Flowchart/Guidance

Metro WWTP WWOP – Storage Facility Dewatering Approval
Flowchart/Guidance



Note: Erie Boulevard Storage System (EBSS) is automated, and Liverpool and Village of East Syracuse Storage dewatering are based on their respective force main capacities for handling the additional volume.

Appendix C

Metro WWTP Operations SOP Summary

The following is a list of Metro Operations Standard Operating Procedures (SOPs) to be used as a reference to supplement the Wet Weather Operating.

- Standard Operating Procedure for Chlorination of the Metro Influent Combined Sewage Overflows (Influent Bypass), (Doc. No. M001).
- Standard Operating Procedure for Preliminary Treatment WWOP, (Doc. No. M002)
- Standard Operating Procedure for Primary Treatment WWOP, (Doc. No. M003).
- Standard Operating Procedure for Secondary Treatment WWOP, (Doc. No. M004).
- Standard Operating Procedure for Advanced Treatment WWOP, (Doc. No. M005).
- Standard Operating Procedure for Tertiary Bypass WWOP, (Doc. No. M006).
- Standard Operating Procedure for Secondary Bypass Chlorine Contact Tank, (Doc. No. M007).

Standard Operating Procedure

1. Purpose

The purpose of this SOP is to generally describe the system components, define the primary operational controls and procedures, and list any monitoring logs associated with the Chlorination of the Influent Combined Sewerage Overflows (Influent Bypass) at the Metropolitan Syracuse Wastewater Treatment Plant.

2. Scope

The Scope of this SOP is to document routine activities such as proper valving, pump startup and shutdown, wastewater sampling and record keeping associated with the Chlorination of the Influent Combined Sewerage Overflows (Influent Bypass) at the Metropolitan Syracuse Wastewater Treatment Plant.

3. System Components

Chlorination of the Influent Combined Sewerage Overflows (Influent Bypass)

1. Headworks
    a. Main Interceptor Sewer
    b. Influent Diversion Structure
    c. Influent Overflow Weir
    d. Hypochlorite Feed to NS+G Influent
    e. Hypochlorite Feed to Combined Sewerage Overflows (Influent Bypass)
    f. Combined Sewerage Overflows (Influent Bypass) Bar Rack

2. Existing Screen and Grit Building
    a. 3 Channel Sluice Gates
    b. 3 IDI Climber Screen Rakes
    c. 1 Serpentine Conveyor (w/ dumpster)
    d. 3 Grit Channels
        i. 3 Grit Pumps
        ii. 3 Grit Screws
        iii. 4 Grit Cyclone Degritters (1 Spare)
        iv. Odor control ducting
            1. 3 Bar Rack Ducts
            2. 3 Grit Channel Ducts
    e. 4 Grit Blowers
    f. Hypochlorite Solution Pipe
        i. Hypochlorite Feed to Influent or Bypass
        ii. Hypochlorite Feed to Effluent of ES+G

3. New Screen and Grit Building
    a. 2 Influent Sluice Gates
    b. 2 Influent automatic Climber screens
    c. 3 Grit Channel Slide Gates
    d. 2 Grit Channels
        i. 4 Grit Pumps
        ii. 4 Grit Screws
        iii. 4 Grit Classifiers
    e. 2 Effluent Climber Screens
    f. 3 Neuros Turbo Blowers

4. System Operational Controls

Chlorination of the Influent Combined Sewerage Overflows (Influent Bypass)

1. Shortly before the Bypass Overflows, start the Influent Bypass Chlorination System
2. Every four (4) hours during the 24 hour Bypass Event, the following samples must be collected:
    a. 1 half gallon plastic for Conventional analysis
    b. 1 500 ml TKN
    c. 2 Oil and Grease glass jars (4 jars for first sample)
    d. 1 125 ml plastic Coli (during disinfection season)
    e. 1 half gallon plastic for Operator's Settleable solids and Cl_2 Residual
    f. Visual Observation of Bypass flow
3. All samples except Coli are taken from small covered hole over overflow weir.
4. Coli sample taken from small hole in grating in road east of POB.

5. Operating Procedures

Chlorination of the Influent Combined Sewerage Overflows (Influent Bypass)

1. Startup of Chlorination of Influent Bypass: When the level at the Metro overflow structure exceeds 8.34 feet, a **Metro Influent Combined Sewage Overflow** (Influent Bypass) has begun. It is critical during the disinfection season (4/1/xx to 10/15/xx) to chlorinate the outfall at the head works for the duration of the bypass. It is highly recommended that operations staff initiate this SOP prior to flow exceeding 8.34 feet when possible. The following is a series of steps based on the default valve settings (appendix A)
    a. Headworks
        i. Verify bypass chlorination valve to outfall at the headworks is open and the valve to influent to NS&G is shut. Both valves are located at the west

end of the overflow structure on the waste hauler side (see figures 6-7). Bypass valve is labeled with a tag, influent valve is labeled with a tag as well.

b. ES+G

i. Verify the valving at ES&G (default valving is set to feed effluent of ES&G). If the event has already started the valve feeding the headworks should be opened and the valve feeding effluent ES&G shut. If it is prior to the start of an influent bypass event leave the valves in the default position until the actual start of the bypass.

c. Chemical Building A

i. In Chemical Building A verify that the Header splitter valve is closed and open the valve on the line labeled "Head of Plant".

ii. Valve hypo pump to feed the line labeled "Head of Plant", and start hypo pump at 1 gpm.

d. **Basement of the POB**

i. Verify valving in big blue galley way is set to go to head of plant (default settings see appendix A).

ii. Open the suction line and discharge valve on effluent pump 4 (or pump 3) and start pump.

2. At this point a chlorine solution is being pumped to ES&G. Based on the valving it is either going to the effluent of ES&G or the outfall at the headworks depending on whether or not you are actually bypassing.

3. **Appendix A**

Default Valve Settings

The following is a list of default valve settings. The valves should be left in these positions or changed to these positions when not in use.

Headworks

The northern most T-handle (tagged as NS&G) goes to the influent channel and should be in the closed position. The other valve (tagged as outfall/bypass) goes to the outfall and should be open. See figure 1.

ES&G

The valves on the line going to ES&G should be open and the valve going to the line labeled headworks shut. See figure 2.

Chemical Building A

The header splitter valve should be in the closed position. See figure 3. The valve on the Line labeled "Head of Plant" should also be closed. See figure 3. The suction and discharge lines on hypo pumps 3 and 4 should be shut.

Big Blue Galley

As you enter the big blue galley way off of the basement of the POB the line from Chemical Building A going to the "Head of Plant" is on the left side of the galley over head level. See figure 4. The lower valve on the pipe labeled "Head of Plant" should be open (valve handle appears closed but handle is backwards). The valve on the line going over the top of the galley should be open (valve handle in line with pipe).

Basement of POB

The suction and discharge lines on effluent pumps 3 and 4 should be shut.

4. Figures

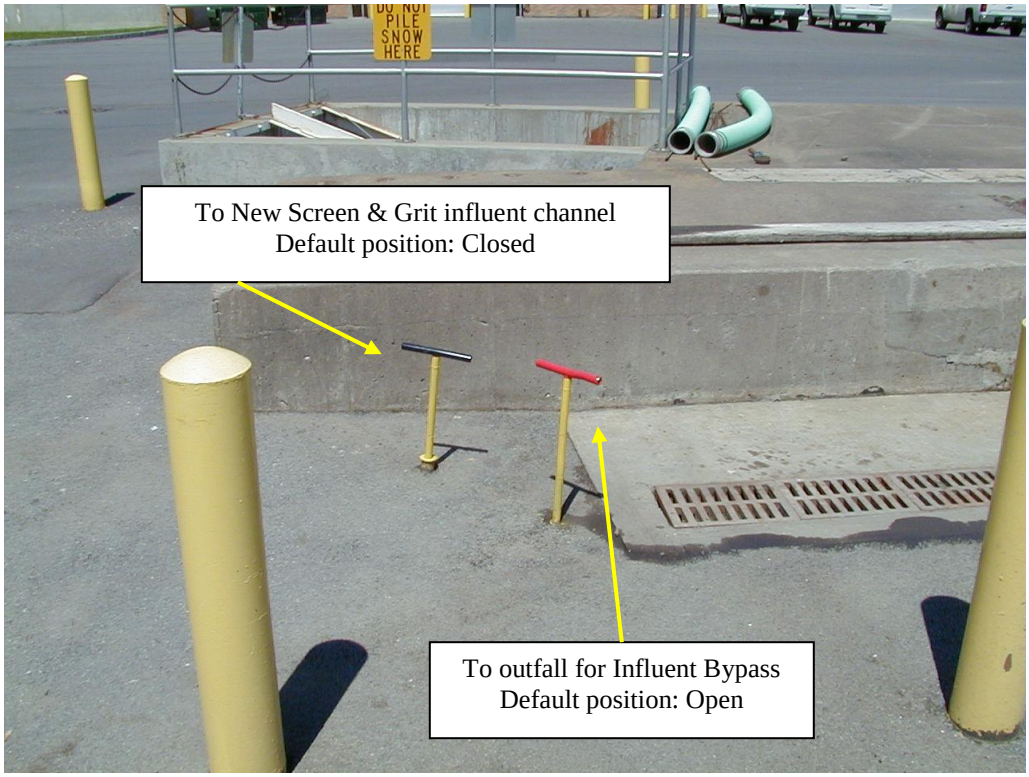


Figure 1: Headworks

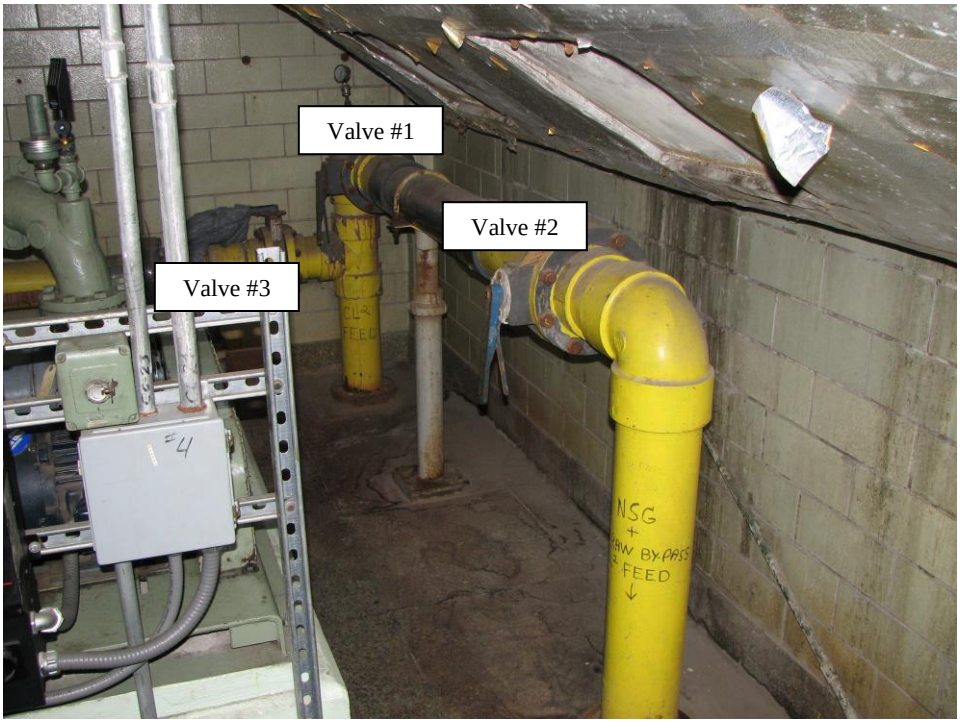


Figure 2: Blower room ES&G: Chlorine solution line to headworks, valves 1 & 2 default position closed. Valve 3 to effluent side of Existing Screen & Grit open.

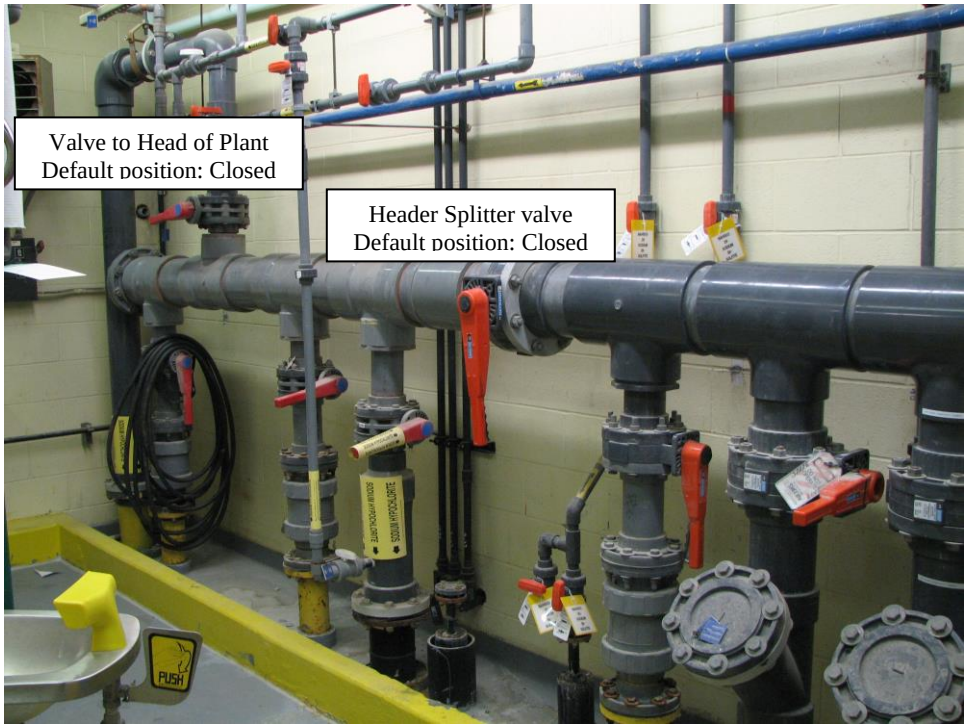


Figure 3: Chemical Building A

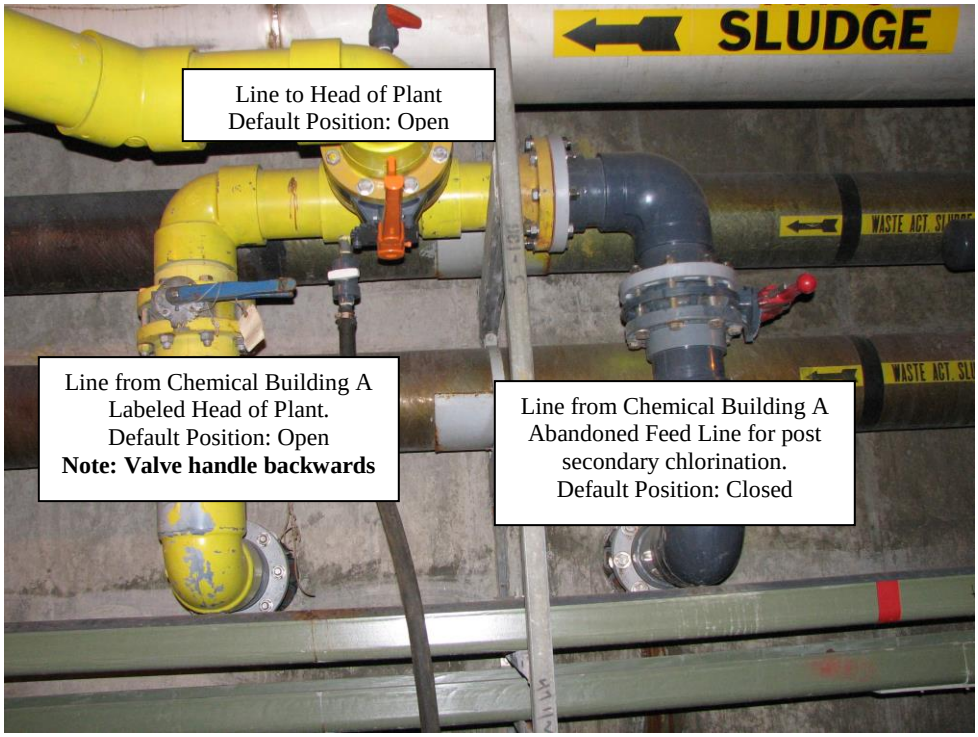


Figure 4: Big Blue Galley

6. Shutdown Procedures

Chlorination of the Influent Combined Sewerage Overflows (Influent Bypass)

1. Isolate Hypo pumps that were used from Hypochlorite supply and open flush water valve half way.
2. Flush pump with water for 20 minutes.
3. Close flush water valve and turn off pump
4. Turn off carrier water pump and Isolate

7. Preventative Maintenance

Chlorination of the Influent Combined Sewerage Overflows (Influent Bypass)

PMs are the responsibility of the HVAC Crew of METRO Mechanical Maintenance

8. Regulations

9. Responsibility

HVAC Maintenance Crew Leader has responsibility for repairs and maintenance Principal Operator, Senior Operator or Operator titles have responsibility for startup, shut down and operation of the system

10. Related Documents

1. Bypass Event Log

3. Change Record

Revision No.	Date	Responsible Person	Description of Change
0	**06/29/2009**		**Initial Release**
1	**07/30/2011**	**Thomas Littlefield**	**Change Valve Picture**
2	**11/06/2015**	**Jim Jones**	**T-handle tags, equip changes in ESG& NSG**
3	**05/02/2019**	**Dean Ellsworth**	**Review/Update**

Standard Operating Procedure

1. Purpose

The purpose of this SOP is to generally describe the system components, define the primary operational controls and procedures, and list any monitoring logs associated with the Wet Weather Operation of the Preliminary Treatment Processes.

2. Scope

The Scope of this SOP is to document routine activities such as proper valving, pump startup and shutdown, wastewater sampling and record keeping associated with the Wet Weather Operation of the Preliminary Treatment Processes.

3. System Components

3.1 **Harbor Brook Pump Station**

- 3.1.1 Influent Sluice Gates (3)
- 3.1.2 Screw Pumps (3)
- 3.1.3 Greaser System (3)

3.2 **Diversion Gate**

3.3 **New Screen and Grit Building**

- 3.3.1 Influent Sluice Gates (2)
- 3.3.2 Influent Bar Racks (2)
- 3.3.3 Grit Channel Influent Gates (2)
- 3.3.4 Grit Channels (2)
- 3.3.5 Grit Collection Screws (4)
- 3.3.6 Grit Pumps (4)
- 3.3.7 Grit Cyclones (3)
- 3.3.8 Effluent Bar Screens (2)
- 3.3.9 Grit Diffuser Blowers (4)

3.4 **Existing Screen and Grit**

- 3.4.1 Influent Sluice Gates (3)
- 3.4.2 Grit Channels (3)
- 3.4.3 Manual Bar Racks (3)
- 3.4.4 Grit Collection Screws (3)
- 3.4.5 Grit Pumps (3)
- 3.4.6 Grit Cyclones (4)
- 3.4.7 Grit Diffuser Blowers (4)

3.5 **Low Lift Pump Station**
- 3.5.1 Raw Waste Pumps (5)
- 3.5.2 Pump Discharge Butterfly Valves (5)
- 3.5.3 Pump Discharge Isolation Valves (5)
- 3.5.4 Pump and Wet Well Control PLC

4. System Operational Controls

Wet Weather Operational Control of the Preliminary Treatment Process is by monitoring the SCADA system for alarm conditions and responding to PLC generated information.

5. Operating Procedures

5.1. HBPS

- 5.1.1. Prep
  - 5.1.1.1. Verify all pumps available
- 5.1.2. Wet Weather Operation
  - 5.1.2.1. Verify all necessary pumps are operating
- 5.1.3. Post
  - 5.1.3.1. None

5.2. Diversion Gate

- 5.2.1. Prep
  - 5.2.1.1. Verify Diversion Gate is operational
- 5.2.2. Wet Weather Operation
  - 5.2.2.1. Open / Close / Adjust Diversion Gate as necessary to control or prevent an Influent Bypass (CSO)
- 5.2.3. Post
  - 5.2.3.1. Verify Diversion Gate is closed

5.3. New Screen + Grit

- 5.3.1. Prep
  - 5.3.1.1. Verify all Influent Screen Machines are operational
  - 5.3.1.2. Verify all Grit Pumps are operational
  - 5.3.1.3. Verify Grit Collection Screws are operational
  - 5.3.1.4. Verify Grit Cyclones are operational
  - 5.3.1.5. Verify all Effluent Screen Machines are operational
  - 5.3.1.6. Verify enough dumpster space
- 5.3.2. Wet Weather Operation
  - 5.3.2.1. Adjust Influent Screen rake Run timers according to demand (minimum 300 seconds, otherwise run in hand)
  - 5.3.2.2. Adjust Influent Screen rake Drain timers to zero (0) seconds

5.3.2.3. Adjust Effluent Screen rake Run timers according to demand (minimum 300 seconds, otherwise run in hand)
5.3.2.4. Adjust Effluent Screen rake Drain timers to zero (0) seconds
5.3.2.5. Increase grit pump flow to 250 gpm
5.3.2.6. Monitor grit classifiers for proper grit removal (no short circuiting)
5.3.3. Post
5.3.3.1. Return all equipment to dry weather operation

5.4. Existing Screen + Grit

5.4.1. Prep
5.4.1.1. Verify all Grit Pumps are operational
5.4.1.2. Verify Grit Collection Screws are operational
5.4.1.3. Verify Grit Cyclones are operational
5.4.1.4. Verify enough dumpster space for screenings and grit
5.4.1.5. Verify Screen rakes are operational
5.4.2. Wet Weather Operation
5.4.2.1. Lower timers on screen rakes as needed (60 minutes, to 30, then 5, then "hand".)
5.4.2.2. Monitor grit cyclones for plugging – clear as necessary – **It may become necessary to lower the blower speeds if grit appears to be exiting the process downstream.**
5.4.3. Post
5.4.3.1. Return all equipment to dry weather operation

5.5. Low Lift PS

5.5.1. Prep
5.5.1.1. Verify all pumps are operational
5.5.2. Wet Weather Operation
5.5.2.1. Monitor pump operation
5.5.3. Post
5.5.3.1. Return wet well set point to 4.5 ft. Enable Auto Alternation.

6. Startup/Shutdown Procedures

There are no Wet Weather Related Startup/Shutdown Procedures

7. Preventative Maintenance

PMs are the responsibility of METRO Mechanical Maintenance.

8. **Regulations – It will be the responsibility of the ETS on-call to shut down SCA, Midland RTF, Hancock Lagoon, Clinton St., especially since the potential for influent bypasses will increase. Operations Board personnel to contact ETS.**

9. **Responsibility**
   Maintenance Crew Leader has responsibility for repairs and maintenance
   Principal Operator, Senior Operator or Operator titles have responsibility for startup, shut down and operation of the system.

10. **Related Documents**

11. **Change Record**

Revision No.	Date	Responsible Person	Description of Change
0	**07/30/2011**	**Thomas Littlefield**	**Initial Release**
1	**07/02/2013**	**James Jones**	**Interim**
2	**10/14/2014**	**James Jones**	**Interim-revision**
3	**11/05/2015**	**James Jones**	**Elimination of construction, Related Tasks**
4	**05/02/2019**	**Dean Ellsworth**	**Review/Update**

Standard Operating Procedure

1. Purpose

The purpose of this SOP is to generally describe the system components, define the primary operational controls and procedures, and list any monitoring logs associated with the Wet Weather Operation of the Primary Treatment Processes.

2. Scope

The Scope of this SOP is to document routine activities such as proper valving, pump startup and shutdown, wastewater sampling and record keeping associated with the Wet Weather Operation of the Primary Treatment Processes.

3. System Components

3.1. Primary Influent Cone Valves (2)
3.2. Primary Distribution Structure (2)
3.3. Primary Clarifiers (8)
3.4. Primary Scum Pits (8)
3.5. Primary Scum Pumps (8)
3.6. Primary Sludge Pumps (16)
3.7. Secondary Bypass Overflow Structure (2)
3.8. Automatic 30" Butterfly Valves (flow feed to primary clarifiers) (8)

4. System Operational Controls

Wet Weather Operational Control of the Primary Treatment Process is by monitoring the SCADA system for alarm conditions and responding to PLC generated information.

5. Operating Procedures

5.1. Primary Clarifier

5.1.1. Prep

5.1.1.1. Verify all 30" Butterfly valves are fully open
5.1.1.2. Verify all sludge pumps are operational
5.1.1.3. Dewater grease pits

5.1.2. Wet Weather Operation
- 5.1.2.1. Check sludge pumps frequently
- 5.1.2.2. Check grease troughs frequently
- 5.1.2.3. Increase sludge pump rate to 100 gpm

5.1.3. Post
- 5.1.3.1. Return all sludge pumping to normal (70 gpm set point)
- 5.1.3.2. Clear grease and floatables from top of tanks

5.2. Secondary Bypass

5.2.1. Prep
- 5.2.1.1. Configure Bypass Disinfection for use
- 5.2.1.2. Prepare sampling needs
- 5.2.1.3. Prepare Log Sheets for Bypass

5.2.2. Wet Weather Operation
- 5.2.2.1. Initiate Bypass Disinfection
- 5.2.2.2. Notify appropriate personnel
  - 5.2.2.2.1. ETS on-call
  - 5.2.2.2.2. Lab on-call
- 5.2.2.3. Complete sampling protocol
  - 5.2.2.3.1. Sample Collection
  - 5.2.2.3.2. Preservation
  - 5.2.2.3.3. Bottle Labeling
  - 5.2.2.3.4. Chain of Custody
  - 5.2.2.3.5. Record information on log sheets

5.2.3. Post
- 5.2.3.1. Complete Bypass Report
- 5.2.3.2. Restock Sample containers / chains of custody
- 5.2.3.3. Flush disinfection system
- 5.2.3.4. Clean carrier water strainers
- 5.2.3.5.Order chlorination/dechlorination chemicals if necessary

6. Startup/Shutdown Procedures

There are no Wet Weather Related Startup/Shutdown Procedures

7. Preventative Maintenance

PMs are the responsibility of METRO Mechanical Maintenance.

8. Regulations

9. Responsibility

Maintenance Crew Leader has responsibility for repairs and maintenance
Principal Operator, Senior Operator or Operator titles have responsibility for startup, shut down and operation of the system.

10. Related Documents

11. Change Record

Revision No.	Date	Responsible Person	Description of Change
0	**07/30/2011**	**Thomas Littlefield**	**Initial Release**
1	**11/05/2015**	**James Jones**	**New equip, Procedure change**

Standard Operating Procedure

1. **Purpose**
   The purpose of this SOP is to generally describe the system components, define the primary operational controls and procedures, and list any monitoring logs associated with the Wet Weather Operation of the Secondary Treatment Processes.

2. **Scope**
   The Scope of this SOP is to document routine activities such as proper valving, pump startup and shutdown, wastewater sampling and record keeping associated with the Wet Weather Operation of the Secondary Treatment Processes.

3. **System Components**
   3.1. **Aeration System**
      3.1.1. Aeration Tank Influent Sluice Gates (12)
      3.1.2. Aeration Tanks (8)
      3.1.3. Aeration Tank Center Sluice Gates (12)
      3.1.4. Aeration Blower Houses (16)
      3.1.5. Aeration Blowers (32)
      3.1.6. Aeration Tank DO Probes (16)
      3.1.7. Tertiary Bypass Relief Gates (2)
      3.1.8. Tertiary Bypass Isolation Gates (2)
   3.2. Secondary Clarifier System
      3.2.1. Secondary Clarifier
      3.2.2. Secondary Clarifier Blanket Probe

4. **System Operational Controls**
   Wet Weather Operational Control of the Secondary Treatment Process is by monitoring the SCADA system for alarm conditions and responding to PLC generated information.

5. **Operating Procedures Aeration System**
   5.1. Aeration Tanks
      5.1.1. Prep
         5.1.1.1. Ensure MLSS concentration is appropriate for increased loading
      5.1.2. Wet Weather Operation

5.1.2.1.RAS flows are kept constant at 6.0 MGD for conventional mode

5.1.3. Post

5.1.3.1. Monitor MLSS - increase/decrease wasting ASAP

5.2. Secondary Clarifier

5.2.1. Prep

5.2.1.1.None

5.2.2. Wet Weather Operation

5.2.2.1. Monitor sludge blanket, RAS adjustments may be necessary

5.2.3. Post

5.2.3.1. Clean weirs in longer sunlight months

6. Startup/Shutdown Procedures

There are no Wet Weather Related Startup/Shutdown Procedures

7. Preventative Maintenance

PMs are the responsibility of METRO Mechanical Maintenance.

8. Regulations

9. Responsibility

Maintenance Crew Leader has responsibility for repairs and maintenance
Principal Operator, Senior Operator or Operator titles have responsibility for startup, shut down and operation of the system.

10. Related Documents

11. Change Record

Revision No.	Date	Responsible Person	Description of Change
0	**07/30/2011**	**Thomas Littlefield**	**Initial Release**
1	**11/05/2015**	**James Jones**	**No contact/stab mode**
2	**05/02/2019**	**Dean Ellsworth**	**Review/Update**

Standard Operating Procedure

1. Purpose

The purpose of this SOP is to generally describe the system components, define the primary operational controls and procedures, and list any monitoring logs associated with the Wet Weather Operation of the Advanced Treatment Processes.

2. Scope

The Scope of this SOP is to document routine activities such as proper valving, pump startup and shutdown, wastewater sampling and record keeping associated with the Wet Weather Operation of the Advance Treatment Processes.

3. System Components

3.1. Secondary Effluent Pump Station (SEPS)

- 3.1.1. Secondary Effluent Pumps (4)
- 3.1.2. Secondary Effluent Pump Discharge Valves (4)

3.2. Biostyr® Biological Aerated Filter (BAF)

- 3.2.1. Influent Channel
- 3.2.2. BAF Cells (18)
- 3.2.3. Cell Inlet Valves (18)
- 3.2.4. Cell Backwash Valves (36)
- 3.2.5. Cell Process Air Valves (18)
- 3.2.6. Process Air Blowers (8)
- 3.2.7. Process Air Blower Inlet Valves (8)
- 3.2.8. Instrument Air Compressors (2)
- 3.2.9. Backwash 48” Control Valves (2)
- 3.2.10. Backwash Tanks (2)
- 3.2.11. Backwash Tank Dewatering Pumps (3)
- 3.2.12. Effluent Sluice Gates (72)
- 3.2.13. Effluent Channel
- 3.2.14. Efflluent Channel Sluice Gates (CIS (2)), (IWS (2))
- 3.2.15. Cross Channel

3.3. Actiflo® High Rate Flocculated Settling (HRFS)

- 3.3.1. Influent Channel
- 3.3.2. Influent Sluice Gates (4)
- 3.3.3. Train Drop Box (4)
- 3.3.4. Train Coagulation Tank (4)
- 3.3.5. Train Coagulation Tank Mixer (4)

3.3.6. Train Injection Tank (4)
3.3.7. Weir Gates (4)
3.3.8. Train Injection Tank Mixer (4)
3.3.9. Train Maturation Tank (4)
3.3.10. Train Maturation Tank Mixer (4)
3.3.11. Train Clarifier Tank (4)
3.3.12. Train Clarifier Tank Scraper Drive (4)
3.3.13. Sand Recirculation Pumps (12)
3.3.14. Sand Recovery Cyclones (12)
3.3.15. Polymer Feed Pumps (6)
3.3.16. Coagulant Feed Pumps (6)

3.4. UltraViolet Disinfection (UV)
3.4.1. UV Lamp Bank (2)
3.4.2. UV Transmittance Meter
3.4.3. Modulating Sluice Gates (2)

4. System Operational Controls

Wet Weather Operational Control of the Advanced Treatment Process is by monitoring the SCADA system for alarm conditions and responding to PLC generated information.

5. Operating Procedures

5.1. Secondary Effluent PS

5.1.1. Prep
5.1.1.1.None
5.1.2. Wet Weather Operation
5.1.2.1.Monitor flow rate – adjust to 126 mgd maximum as necessary
5.1.3. Post
5.1.3.1.None

5.2. BioStyr™ BAF

5.2.1. Prep
5.2.1.1.Ensure all BAF Cell filters are in “auto” and online.
5.2.2. Wet Weather Operation
5.2.2.1.Monitor filter hours- manually Backwash cells with 36+ hours.
5.2.3. Post
5.2.3.1.Initiate manual Backwashes as necessary

5.3. Actiflo™ HRFS

5.3.1. Prep
5.3.1.1.Verify all available HRFS Trains are in service

5.3.2. Wet Weather Operation
5.3.2.1.Monitor process
5.3.3. Post
5.3.3.1.Check Sand concentration – add sand as necessary
5.3.3.2.Hose Lamella tubes as necessary

5.4. UV Disinfection

5.4.1. Prep
5.4.1.1.Verify all UV modules are available
5.4.1.2.Verify no more than 6 bulbs out
5.4.2. Wet Weather Operation
5.4.2.1.Monitor UV system status
5.4.3. Post
5.4.3.1.Check bulb out count – write Work Order as necessary

6. Startup/Shutdown Procedures

There are no Wet Weather Related Startup/Shutdown Procedures

7. Preventative Maintenance

PMs are the responsibility of METRO Mechanical Maintenance.

8. Regulations

9. Responsibility

Maintenance Crew Leader has responsibility for repairs and maintenance
Principal Operator, Senior Operator or Operator titles have responsibility for startup, shut down and operation of the system.

10. Related Documents

11. Change Record

Revision No.	Date	Responsible Person	Description of Change
0	**07/30/2011**	**Thomas Littlefield**	**Initial Release**
1	**05/2/2019**	**Dean Ellsworth**	**Review/Update**

Standard Operating Procedure

1. Purpose

The purpose of this SOP is to generally describe the system components, define the primary operational controls and procedures, and list any monitoring logs associated with the Wet Weather Operation of the Tertiary Treatment Bypass.

2. Scope

The Scope of this SOP is to document routine activities such as proper valving, pump startup and shutdown, wastewater sampling and record keeping associated with the Wet Weather Operation of the Tertiary Treatment Bypass.

3. System Components

3.1. Tertiary Bypass Overflow to Outfall 001
3.2. 84" Diameter Gravity Main to Overflow

4. System Operational Controls

Wet Weather Operational Control of the Tertiary Treatment Bypass is by monitoring the SCADA system for alarm conditions and responding to PLC generated information.

5. Operating Procedures

5.1. Prep
- 5.1.1. Prepare sampling needs
- 5.1.2. Prepare Log Sheets for Bypass

5.2. Wet Weather Operation
- 5.2.1 Flow Control/Adjustment
  - 5.2.1.1. Monitor SEPS flow to ensure 126 MGD at full capacity
  - 5.2.1.2. Adjust Tertiary Relief Flow Gate level setpoints as necessary to prevent tertiary bypass
  - 5.2.1.3. Ensure Tertiary Relief Isolation Gates are open
- 5.2.2 Notify appropriate personnel
  - 5.2.2.1 ETS on-call
  - 5.2.2.2 Lab on-call
- 5.2.3.Complete sampling protocol
  - 5.2.3.1. Sample Collection
  - 5.2.3.2. Preservation
  - 5.2.3.3. Bottle Labeling

5.2.3.4. Chain of Custody
5.2.3.5 Record information on log sheets

5.3 Post
5.3.1.Complete Bypass Report
5.3.2.Restock Sample containers / chains of custody

6 Startup/Shutdown Procedures

6.1There are no Wet Weather Related Startup/Shutdown Procedures

6 Preventative Maintenance

7.1 PMs are the responsibility of METRO Mechanical Maintenance.

7 Regulations

8 Responsibility

9.1Maintenance Crew Leader has responsibility for repairs and maintenance

9.2 Principal Operator, Senior Operator or Operator titles have responsibility for startup, shut down and operation of the system.

9 Related Documents

11. Change Record

Revision No.	Date	Responsible Person	Description of Change
0	**07/30/2011**	**Thomas Littlefield**	**Initial Release**
1	**05/02/2019**	**Dean Ellsworth**	**Review/Update**

Standard Operating Procedure

1. Scope

In times of high flows during wet weather or when plant capacity is limited it may be necessary to send flow back to the BCCT to protect secondary treatment.
During normal operation the capacity of secondary treatment is 126.3 MGD. Each aeration train has a capacity of 31.6 MGD.

2. Structures/Equipment

Tertiary Bypass Relief Gates (SG-A, SG-B)

Secondary Bypass Isolation Gates (SG-1, SG-2)

Influent Chamber
- Influent Flow Meter FIT-001
- Influent Chamber Level Meter (LIT-001)
- Sodium Hypochlorite Mixers (3)

Secondary Bypass Contact Tank Chambers (4)
- Level Sensors LIT-002, 003, 004, 005
- Flush Gates FG-1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B
- Dewatering Gates SG-3, 4, 5, 6
- Bisulfite Mixers SBM-1, 2

Effluent Flow Meter FIT-100

Dewatering Pump Station
- Dewatering Pumps 1, 2 (DP-1, 2)
- Level Sensor LIT-006
- Dewatering Sump Pumps 1, 2 (DSP-1, 2)

Bypass Chemical Building
- Sodium Bisulfite Storage Tanks SBT-1, 2
- Level Sensor LIT-107, 108
- Sodium Hypochlorite Storage Tanks SHT-1, 2
- Level Sensors LIT-105, 106
- Sodium Bisulfite Pumps SBP-1, 2

Sodium Hypochlorite Pumps SHP-1, 2, 3, 4
Hypo Flow Meters FIT-115, 116
Bisulfite Flow Meter FIT 119
Plant Water Ball Valves

Tertiary Wet Well Level Sensor

3. Tools

SCADA

4. Operational Procedure(normal conditions)

Under normal conditions when plant influent flow is below 126.3 MGD the BCCT system is idle and either empty and flushed or dewatering for the next wet weather event.

5. Operating Procedure (wet weather)

As wet weather is anticipated the BCCT chambers must be dewatered and flushed, chemical tanks in the BCCT chemical building filled, and the Tertiary Relief Gate (SG-A, SG-B) Level Set points (SPs) checked through SCADA. When the increased plant influent flow arrives and full plant capacity (normally 126.3 MGD) is reached, the SG-A, SG-B SPs must be monitored and adjusted to keep the Tertiary Wet Well level below the overflow of 8.75'.

When full plant capacity is reached SG-A and SG-B will begin to open and allow flow to the BCCT Influent Chamber, and then to Chamber 1. During Disinfection Season (April 1-October 15th), when the level in Chamber 1 reaches 2' and conditions indicate that more flow will need to be sent to the BCCT, a sodium hypochlorite pump (SHP-1, 2, 3, or 4) must be turned on in SCADA Manual either through SCADA or the local HMI. Before starting pump ensure that the valving is opened to Dosing Point #1. The pump speed should be set at approximately 40% during the initial flush of flow and can be slowed down later. When the level in Chamber 1 reaches 7' the Sodium Hypochlorite Mixers (3) should turn on. This is crucial to proper chlorination, so mixers must be monitored to ensure they turn on.

Chamber 1 fills to approximately 20' and overflows into Chamber 2, which fills up simultaneously with Chamber 3. If an issue has occurred with the hypo feed system and not enough hypo has been dosed in the Influent Chamber, another SHP can be valved up to Hypo Dosing Point #2 through SCADA and turned on. Once Chamber #3 has filled up to approximately 17.7' it overflows to Chamber #4. At this point during Disinfection season a Sodium Bisulfite pump (SBP-1 or 2) must be

turned on through SCADA at approximately 25% speed to de-chlorinate the sewage. **Note: A general rule is that the bisulfite dose must be approximately 50% of the hypo dose to ensure adequate dechlorination.** Once the level in Chamber 4 reaches 4' the Sodium Bisulfite Mixers (1, 2) must turn on to adequately mix the bisulfite.

Chamber 4 fills to a level of 13.87', at which point a Secondary Bypass starts. This begins a sampling protocol which must be followed as long as the bypass endures. Operators must monitor the effluent for a chlorine residual of 0, meaning that the Bisulfite dosing has been adequate. Chamber #3 chlorine residual must also be monitored to ensure that adequate sodium hypochlorite dosing has occurred. A good goal residual in Chamber #3 is 5 mg/l to ensure adequate disinfection. The hypochlorite dosing can normally be lowered after the initial flush of strong wastewater.

Operators must also monitor the Tertiary wet well level to ensure that: A) there is not more flow being bypassed than necessary; and B) the wet well is not close to the overflow set point. Tertiary Relief Gates SG-1 and 2 must be adjusted as necessary.

During non-disinfection season (October 16-March 31) no chemical addition is required, and the mixers must be removed by maintenance to prevent damage due to cold weather.

Operators must monitor the Chamber #4 level and the Tertiary Relief Gates as flows decrease to signal the end of the bypass. Once the gates (SG-1, 2) close there is no flow going out to the BCCT and the Dewatering pumps (DP-1 or 2) can be placed into Auto through SCADA and begin dewatering Chamber #1. The Dewatering Gate for Chamber #1 (SG-3) always remains open to allow for dewatering. Once the level in Chamber #1 drops to approximately 17' the Dewatering gate (SG-6) for Chamber #4 can be opened through SCADA and this will drop the Chamber #4 level below 13.87' and officially end the bypass. Chemical pumps can now be turned off.

Chambers 2, 3 may also be dewatered at this point by opening Dewatering gates 4, 5. Total BCCT dewatering takes approximately 28-30 hrs, at which time chamber flushing may occur. To accomplish flushing the operator utilizes the flushing control panel in the BCCT control room and opens one flushing gate at a time to drain out the trapped sewage, then refills the flushing chambers with plant water via the outside hydrants. The chambers are then flushed with plant water until clean.

The utilized chemical pumps must also be flushed at the end of a bypass event. This can be accomplished remotely through SCADA by turning on the SHP and SBP and then opening the automatic plant water ball valves for approximately 5 minutes.

6. Operating Procedure for P/M(longer term shutdown)

7. Related Documents

Wet Weather SOP

8. Change Record

Revision No.	Date	Responsible Person	Description of Change
0	**05/02/2019**	**Dean Ellsworth**	**Initial Release**

Appendix D

Engineering and Technical Services (ETS)
Sampling and Notification SOPs

The following is a list of Engineering and Technical Services (ETS) Standard Operating Procedures (SOPs) to be used as a reference to supplement the Wet Weather Operating Plan.

- Standard Operating Procedure (SOP) for Metropolitan-Syracuse WWTP By-pass Monitoring (Outfall #002 – Secondary Bypass FC#630, Outfall #01A – Tertiary Bypass FC #625, Outfall 01B – Headworks Bypass FC #728, 784) (Doc. No. 10)
- Standard Operating Procedure (SOP) for Hiawatha Regional CSO Treatment Facility Overflow Sampling FC#1100 (Outfall No:074) (Doc. No. 51)
- Standard Operating Procedure (SOP) for Midland Regional CSO Treatment Facility Overflow Sampling Main RTF Outfall (MO1), Emergency Bypass Outfall (MO2) FC#820, 821,810,815 (Doc. No. 52)
- Standard Operating Procedure (SOP) for Lower Harbor Brook (LHB) CSO Storage Facility Overflow Sampling FC#2124 (Outfall No:04A) (Doc. No. 53)
- Standard Operating Procedure (SOP) Clinton CSO Storage Facility Overflow Sampling (Outfall No: 33A) FC#2125 (Doc. No. 54)
- Wet Weather Point Source Discharge Procedures (Doc. No. 66)

APPENDIX II-D

Standard Operating Procedure:

Metropolitan-Syracuse WWTP Bypass Monitoring

(Outfall #002 - Secondary Bypass FC# 630)

(Outfall #01A - Tertiary Bypass FC# 625)

(Outfall #01B - Headworks Bypass FC# 728, 784)

1. APPROVED: Michael Mulvihill M. Mulvihill 12/14/18
Author — Printed Name — Signature — Date

2. APPROVED: David Snyder D. Sn 12/14/18
Supervisor — Printed Name — Signature — Date

3. APPROVED: Jennifer L May J L May 1/8/19
QC Mgr. — Printed Name — Signature — Date

4. APPROVED: Joseph S. Denkenberger Joseph S Denkenberger 1/8/19
Lab. Dir. — Printed Name — Signature — Date

Change Record

Revision	Date	Responsible person	Description of change
21	11/25/15	Michael Mulvihill	Major Revision of Format
22	3/17/17	Michael Mulvihill	Contact / Notification /Removal of Wet Weather Point Source Discharges Procedures
23	11/30/18	Michael Mulvihill	Distribution List Revision; Change Record Revision; Scope, Purpose, Responsibilities Revision to Standard Format, including addition of Section 3.9 Notifications; updated contacts and Related Documents Section

Distribution List (via Meeting or circulation to individuals)

1) ORIGINAL – OCDWEP LAB
2) ALL WASTEWATER TECHNICIAN SOP REFERENCE NOTEBOOKS (HENRY CLAY)
3) PROCESS ENGINEERING SOP REFERENCE NOTEBOOK (METRO ADMIN)

1. SCOPE

State Pollution Discharge Elimination System (SPDES) permits are required by the New York State Department of Environmental Conservation (NYSDEC) for all wastewater treatment plants operating in New York State. The Onondaga County Department of Water Environment Protection (OCDWEP) owns and operates the Metropolitan Wastewater Treatment Plant (Metro WWTP) in Onondaga County. In accordance with the Metro WWTP SPDES permit, the department is required to collect representative samples of Raw Influent, Final Effluent, Biosolids and Bypasses on a routine basis, to verify compliance with permit limits. Samples are collected as either a composite of individual grab samples collected over a period of time (typically 4 hours during an event) or as individual grab samples (i.e., point in time).
To establish standard operating procedures for both Operations and ETS personnel to collect samples of wastewater that bypass all or part of the Metropolitan Syracuse WWTP treatment processes.

2. PURPOSE

The purpose of this SOP is to define and describe the sampling locations, types of samples collected, sampling schedule and acceptable procedures for sample collection, such that analysis can be performed to ensure regulatory compliance. Representative samples are collected at the Metro WWTP as required, by the SPDES permit. In accordance with SPDES Permit requirements (SPDES Permit # NY 002 7081 EDP 3/21/2012), all bypass events are to be documented and sampled. Onondaga Lake is the receiving water for the bypass discharges at this facility. The Metro WWTP is staffed 24 hours per day.

3. RESPONSIBILITIES

3.1 The laboratory director reviews all procedures, methods, SOP's, and relevant information associated with the quality assurance and sampling section of the laboratory.

3.2 The quality control officer reviews and revises the SOP's and procedures associated with the quality systems section of the laboratory.

3.3 The laboratory director and quality control officer must approve and validate this SOP and any future revisions. They must sign the front page acknowledging this validation.

3.4 The Sanitary Engineer III shall ensure that the SOP is reviewed on an annual basis and that the procedures and methods are accurate and acceptable for use by the Process staff.

3.5 The Sanitary Engineer II shall ensure that the SOP is reviewed on an annual basis and that the procedures and methods are accurate and acceptable for use by the Process staff. Additionally, they must ensure that the Technical staff is fully trained in the procedures and methods outlined in the SOP.

3.6 The Wastewater Technician II shall ensure that the Wastewater Technician I staff complies with the procedures and methods outlined in the SOP. In addition, the Wastewater Technician II shall ensure that

the technician staff is fully trained in the use of the SOP and that the SOP is available for reference and review. The Wastewater Technician II will participate in an annual review of the SOP.

3.7 The individual (Wastewater Technician I or II, and/or Sanitary Engineer I or II) performing the sampling shall be knowledgeable of the requirements of the SOP and shall adhere to the procedures and methods outlined within the SOP. The technicians will participate in an annual review of the SOP.

3.8 The individual (Wastewater Technician I or II, and/or Sanitary Engineer I or II) performing the sampling shall be knowledgeable in NYSDEC policy regarding composite sampling for Raw Influent and Final Effluent. In accordance with NYSDEC policy, a single missed sample in a composite program results in an invalid composite sample. If the validity of a composite or grab sample is in question, the individual shall notify their immediate Supervisor, and if required, follow the notification procedure listed below in section 3.9.

3.9 Notification Responsibility for Missed Sample Events

3.9.1 Wastewater Technician I's or II, performing Process sampling, in the event of a missed scheduled sample, shall immediately notify all of the following individuals: Head Operator of the facility (or the designee) before leaving the site, then Process Wastewater Technician II, or in their absence one of the other Wastewater Technician II's.

3.9.2 The Wastewater Technician II shall immediately coordinate the re-sample schedule and provide notification, that day, to their immediate Supervisor and other staff designated on the established email template. This notification will be made to the facility Head Operator, Laboratory staff and all Process Engineers. The notification shall include all pertinent information related to the event and all follow-up measures taken to ensure sample collection.

Name	Title	Home Phone	Cell Phone	Project Involvement
Jason Shaw	**Wastewater Tech II**	**315-435-5011**	**315-575-4860**	**ETS WWTII Primary Contact**
Dan Walpole	**Wastewater Tech II**	**315-435-5011**	**315-263-5237**	**ETS WWTII Primary Contact**
Mark Halbritter	**Wastewater Tech II**	**315-435-5011**	**315-399-3807**	**ETS WWTII Primary Contact**
Chris Gandino	Sanitary Engineer II	NA	315-383-5364	ETS Engineer Contact*
Tim O'Dell	Sanitary Engineer II	NA	315-391-4115	ETS Engineer Contact*
Janaki Suryadevara	Sanitary Engineer II	315-699-0467	315-420-7259	ETS Engineer Contact*
Daniel Jean	Operations Superintendent	315-436-3509	315-263-7467	Operations Superintendent
Metro Board	Metro Operators	315-435-3142		Make alarm notifications

*Monthly Rotation – refer to current ETS Wastewater Technician II and Engineer Monthly Rotational Lists.

4. METRO BYPASS MONITORING PROCEDURES

4.1 BY-PASS MONITORING LOCATIONS

Outfall # 002: **FC# 630 –SECONDARY TREATMENT BYPASS**
Bypass Tank Outfall - (downside of final overflow weir)

Outfall # 01A: **FC# 625 - TERTIARY SYSTEM BYPASS (downside of side weirs in Tertiary Wet Well)** Includes SEPS bypass.

Outfall # 01B: **FC# 728 -HEADWORKS BYPASS (NS&G Influent Bunker)**
Use small round access hatch located 15' upstream from bar racks.

Outfall # 01B: **FC# 784 - HEADWORKS CHLORINATED BYPASS (plant outfall channel)**
Located in roadway approximately 25' upstream from Tertiary A Outfall, opening in grate **(site for fecal coli and chlorine residual collection only).**

4.2 BYPASS DESCRIPTION:

A. **Outfall #002 Secondary Treatment Bypass** – A bypass starts at the moment wastewater overflows the final weir of the bypass tank and continues until the overflow of the final weir in the bypass tank stops. Sampling during each event shall occur within the first 30 minutes of the bypass and every four (4) hours thereafter. ***(If the bypass does not occur for more than 30 minutes, it is not necessary to continue sample collection).*** Following the end of any wastewater overflow: if wastewater begins to overflow the final weir in the bypass tank again, this will be considered the beginning of a new bypass event and shall be sampled as described above until the wastewater overflow stops. A flow meter will alert Metro Board personnel as to when an Outfall #002 bypass is imminent. Operations personnel shall define the start and end of each bypass event.

B. **Outfall #01A Tertiary System Bypass** - occurs when wastewater is prevented from entering the Tertiary treatment process building (BAF, HRFS, UV). A bypass starts at the moment wastewater overflows the bypass tank (Tertiary Wet Well weirs) and continues until the overflow from the bypass tank stops. Sampling during each event shall occur within the first 30 minutes of the bypass and every four (4) hours thereafter. ***(If the bypass does not occur for more than 30 minutes, it is not necessary to continue sample collection).*** Following the end of any wastewater overflow: if wastewater begins to overflow the bypass tank again, this will be considered the beginning of a new bypass event and shall be sampled as described above until the wastewater overflow stops. An ultrasonic level detector will alert Metro Board personnel as to when an Outfall #01A bypass is imminent. Operations personnel shall define the start and end of each bypass event.

C. **Outfall #01B Headworks Bypass** - occurs when there is an extended, heavy wet weather event and influent flow breaches the weir adjacent to the NS&G Influent Channel. A bypass starts at the moment wastewater overflows the NS&G Influent Channel Weir and continues until the overflow of the weir stops. Sampling during each event shall occur within the first 30 minutes of the bypass and every four (4) hours thereafter. ***(If the bypass does not occur for more than 30 minutes, it is not necessary to continue sample collection).*** Following the end of any wastewater overflow: if wastewater begins to overflow the weir again, this will be considered the beginning of a new bypass event and shall be sampled as described above until the wastewater overflow stops. An ultrasonic level detector will alert Metro Board personnel as to when an Outfall #01B bypass is imminent. Operations personnel shall define the start and end of each bypass event.

4.3 RESPONSIBILITIES: Once a by-pass event start has been established by Metro Board, responsibilities relating to notification and sample collection are as follows:

A. Notifications: Whenever a Metro Bypass is imminent during daytime hours (0730hrs -1430hrs), Metro Board personnel shall contact a Wastewater Technician II (ETS WWTII Primary Contact). **Do not just leave a message, actual voice communication with this individual must be made.** If contact cannot be made with any of the Wastewater Technician II's, then the ETS Engineer Contact must be contacted. See ETS Wastewater Technician II & Engineer Contact Monthly Rotational Lists.

B. Sampling Responsibilities:

1. **ETS Watewater Technician I (WWTI)- Daytime Hours (0730hrs to 1430hrs)**: During this time, ETS technicians shall be responsible for bypass sampling. Metro Operations personnel shall notify a Wastewater Technician II when a bypass event begins. If for any reason a Wastewater Technician II (Supervisor) cannot be contacted, the ETS Engineer Contact should be contacted. On weekends and holidays during working hours, Metro Board personnel shall notify the Wastewater Technician I on duty that day.

2. **Metro Operations Personnel – Evening Hours (1430 hrs-0730 hrs)**: During this time, Metro Operations personnel shall be responsible for bypass sampling. Due to holding times for F. coli samples, Metro Operations personnel shall notify the Lab Supervisor (refer to Call-in Schedule for OCDWEP Environmental Laboratory) to arrange for a lab technician to come in and pick up the samples being stored at the Metro Operations refrigerator for transport to the Henry Clay Lab facility. Bypass samples collected after 0300 hrs. or later maybe picked up by Wastewater Technician I's later that morning. **For any bypass event which occurs during the evening and/or samples have been collected, Operations personnel must make contact with one of the Wastewater Technician II's at 0700 hrs. Do not just leave a message, actual voice communication with this individual must be made. Metro Operations will provide information regarding bypass events and sample pick-up. See ETS Wastewater Technician II & Engineer Contact Monthly Rotation List, if necessary.**

3. If for any reason Metro Operations personnel are unable to collect bypass grab samples, the designated on-call Wastewater Technician II shall be contacted. If for any reason a

Wastewater Technician II (Supervisor) cannot be contacted, contact the on-call ETS Engineer Contact. **Do not just leave a message, actual voice communication with this individual must be made. The ETS Engineer contacted will then assume responsibility for arranging sample collection. See ETS Wastewater Technician II & Engineer Contact Monthly Rotation List, if necessary.**

4. **Weekends & Holidays**: During the hours between **1000-1430 hrs**, the Wastewater Technician I on duty shall be responsible for bypass sample collection. Metro Board personnel shall notify the on-duty Wastewater Technician I of any bypass event. If the Wastewater Technician I is unavailable, then Metro Operations will collect samples in a back-up role. Please note that the on-call ETS Wastewater Technician II (Supervisor) is available for emergency purposes. **See ETS Wastewater Technician II & Engineer Contact Monthly Rotation Lists.**

4.4 SAMPLING REQUIREMENTS

A. Collect the following grab samples **for all bypass** locations within the first 30 minutes from the start of a bypass event (any location) and every four (4) hours thereafter until transfer of duties.

METRO BYPASS OUTFALL SAMPLING
Outfalls # 002 (FC#630); 01A (FC#625); 01B (FC#'s 728 &784)

ANALYTES	SAMPLE TYPE	FREQUENCY
Conventional - ½ gallon Conv.	Grab (1)	Each Event (every 4 hr.)
SRP - 125 plastic - collect every 4hrs during ***Day Only***	Grab (1) (4)	Each Event (every 4 hr.) ETS Only
TKN/NH_3 - 1 L plastic	Grab (1)	Each Event (every 4 hr.)
Oil & Grease - 1 quart glass (O&G) Note: 1st grab requires QC sample	Grab (1)	Each Event (every 4 hr.)
Fecal Coliform - 125 ml plastic pre-preserved bottles	Grab (1)	Each Event (every 4 hr.) (2)
Chlorine Residual - 125 ml plastic container	Grab (1) (3)	Each Event (every 4 hr.) (2)
Settleable Solids - ½ gallon Conv.	Grab (1) (3)	Each Event (every 4 hr.)
Visual Observations (Floatable Materials)	Visual	Each Event (every 4 hr.)
Metals – ***Day Only, first event of month***	Grab (1) (4)	(1) event per month - ETS Only
Cyanides – ***Day Only, first event of month***	Grab (1) (4)	(1) event per month - ETS Only
Total Phenolics – ***Day Only, first event of month***	Grab (1) (4)	(1) event per month - ETS Only

FOOTNOTES

(1) Refer to current OCDWEP Environmental Laboratory-Field Preservation Guide.
(2) Samples to be collected during disinfection season (4/1 – 10-15) only.
Outfall #002 Secondary Bypass - FC# 630 - collect fecal coli and chlorine residual at this location
Outfall #01B Headworks Chlorin. Bypass - FC# 784 – collect only fecal coli and chlorine residual at this location
Outfall # 01A Tertiary Bypass – FC# 625 – collect fecal coli and chlorine residual at this location
(3) These samples are delivered to Metro Board for analysis. Use separate bottle for each parameter.
(4) Collect Mon.-Fri only; also exclude Holidays

NOTE- Wastewater Technicians: Additional Sampling during Tributary Event - samples are to be collected by ETS Wastewater Technicians from the Outfall # 002 Secondary Bypass location

(IC#630) by the assigned tributary crew as part of routine tributary sampling, see the Annual Sampling Schedule and AMP Sampling Schedule. Collect corresponding tributary parameters.

B. General Requirements: Sample Tracking Log/C of C Form/Floatables Form.

1. Grab Sample Tracking Log is stationed at Metro Board. During an event, this is updated after each (4-hour) inspection/sampling of the bypass tank. A C-of-C Form must be completed for each sample event/inspection. C-of-C Forms must accompany all samples to the Henry Clay Environmental Lab. Preserve all samples according to procedures listed on the most current OCDWEP Environmental Lab - Preservation Guide. All samples must be stored at 0-6^0 C prior to delivery to the Henry Clay Lab (keep in refrigerator at Board).

2. Floatables Description Form: this form must be completed by individual collecting the sample; this must be done every 4 hours of an active bypass and turned into OCDWEP Lab along with C of C Forms.

3. Composite Samples: Laboratory personnel will make up all composite samples from the 4-hour grabs sets collected during a bypass event.

4.5 LAB NOTIFICATION:

Metro Board must contact the designated Lab person between 1530-0300 hours if fecal coliform analysis is required, so that arrangements can be made to begin the analytical procedures (see attached Call-in Schedule for OCDWEP Environmental Laboratory). If the designated contact person is unavailable, call the Sr. Chemist as per memo. **Refer to Call-in schedule for OCDWEP Environmental Laboratory.**

5. RELATED DOCUMENTS

A. SOP # 00027 Process Control Wastewater Grab Sample Collection

B. OCDWEP Lab Preservation Guide – W:\ets\02_ETS_SOPs\Process_SOPs\Lab_Preservation_Guide

C. ETS Annual Sampling Schedule – W:\ets\02_ETS_SOPs\Process_SOPs\ETS_Annual_Schedule

D. Metro WWTP Bypass Sampling Site Plan (Attach. A) - W:\ets\02_ETS_SOPs\Process_SOPs\Attachments

E. Metro WWTP Bypass Floatables Form - W:\ets\02_ETS_SOPs\Process_SOPs\Attachments

F. OCDWEP Lab Call-In Schedule - W:\ets\02_ETS_SOPs\Process_SOPs\Attachments

6. TRAINING CERTIFICATION RECORD

I certify that the requirements of this SOP have been communicated to me and that I am trained in its use.

Employee Name (print)	Signature	Job Title	Date
Mark Halbritter		WWT-2	1/15/19
Jason Shaw		WWT-2	1/15/19
William Talucci		WWT-1	01/16/19
Melanie Kukla		WWT 1	1/16/19
Barb Yeager	Barb Yeager	WWT-1	1/16/19
Robert D'Argenio		WWT-1	1-17-19
Travis Henn		WWT1	1/17/19
Dan Aumell		WWT 1	1/17/19
Jeremy Lozier		WWT 1	1/18/19
Dan Wagrole		WWT1	1/18/19
Kim OBrien		WWT 1	1/18/19

7. ANNUAL AUTHOR/SUPERVISORY REVIEW

(Performed if document has not been revised in the past 12 months)

Signature	Printed Name	Date
M. Mulvihill	M. Mulvihill	1/24/19

Standard Operating Procedure (SOP):

HIAWATHA REGIONAL CSO TREATMENT FACILITY OVERFLOW SAMPLING FC# 1100 (Outfall No: 074)

1. APPROVED:

Author	Janaki Suryadevara (Janaki Suryadevara, SE II)	Signature	6/13/19 Date
Supervisor	Jeanne C Powers (Jeanne C. Powers, SE III)	Signature	6/13/19 Date
QC Manager	(Jennifer May)	Signature	6/18/19 Date
Laboratory Director	Joseph S. Denkenberger (Joseph S. Denkenberger, PhD)	Signature	6/17/19 Date

Change Record

Revision	Date	Responsible person	Description of change
0	07/20/05	Stephen Bray	Initial Release
1	07/25/06	Stephen Bray	Redefined Diversion Weir Level Alarm w/T. Morse, modified SOP (see Pg. 3/6 Section 4.3)
2	2/20/08	Stephen Bray	Minor updates to call procedures, sample routing, event records. Lab comments included.
3	8/25/09	Stephen Bray	Update contact names and any dated references; also changed sample frequency to 1/24 hrs. Added automated sampler component.
4	2/04/2010	Stephen Bray	Minor changes (Contact names; Division Name)
5	01/11/2011	Stephen Bray	Drop seasonal limitations re F. coli sample; collect every event. Added Lab changes re settleable solids analyses. Attached updated Lab Call-in Memo (01/04/2011)
6	3/23/2011	Stephen Bray	Updated Section 3 call numbers.
7	2/02/2012	Stephen Bray	Updated Section 3 call numbers.
8	4/04/2012	Stephen Bray	Updated to reflect new requirements in SPDES Permit #NY017081 EDP 3/21/2012 and Lab Call-in Memo 12/22/2012.
9	11/6/2012	Stephen Bray	Update On-call Personnel List
10	5/22/2013	Stephen Bray	On Pg. 4 & 8, Evenings chg'd 0130 hrs. to 0300 per Lab Req.
11	5/02/14	Stephen Bray	Changed Primary Contact listing (added Janaki); reference to latest (12/20/13) Lab Call-in List
12	06/13/2019	Janaki Suryadevara	Updated to reflect new requirements in SPDES Permit NY0027081, EDP: 07/01/2017.

Distribution List (via meeting or circulation to individuals)

1) Engineering and Technical Services (ETS) SOP Reference Book.

1. SCOPE

To establish a standard operating procedure (SOP) for collecting samples of excess flows (overflows) associated with the design storm from the Hiawatha Regional Treatment Facility (RTF) into receiving waters (Ley Creek) in accordance with the current Metro SPDES Permit # NY0027081.

2. PURPOSE

Under extreme weather conditions, it is possible that too much flow in a short period of time could result in a treatment facility overflow event. The County is required to monitor Combined Sewer Overflows (CSOs) and WWTP system by-pass/overflow discharge events as part of SPDES Permit requirements to determine the impact of such discharges on receiving waters.

3. RESPONSIBILITIES

Name	Title	Cell Phone	Project Involvement
Janaki Suryadevara	Sanitary Engineer II	(315) 420-7259	ETS Engineer Contact *
Chris Gandino	Sanitary Engineer II	(315) 383-5364	ETS Engineer Contact *
Tim O'Dell	Sanitary Engineer II	(315) 391-4115	ETS Engineer Contact *
Dan Walpole	Wastewater Technician II	(315) 263-5237	ETS WWT II Primary Contact*
Mark Halbritter	Wastewater Technician II	(315) 399-3807	ETS WWT II Primary Contact*
Jason Shaw	Wastewater Technician II	(315) 575-4860	ETS WWT II Primary Contact*
Technicians Group	Wastewater Technician I	NA	Collect samples.
Daniel Jean	Operations Superintendent	(315) 263-7467	Supervisor - Cty Operations x 309
Dean Ellsworth	Metro Head Operator	(315) 435-3142	Metro Operations Supervisor x 208
Flow Control Call-in Personnel	Call-in Personnel	(315) 435-3142	Metro Board Contact regarding any facility issues.
Metro Board	Metro Operators	(315) 435-3142	Make alarm notifications.

** Monthly Rotation – refer to the ETS Engineer/Wastewater Technician II Monthly Rotational Call-in List (Metro On Call Weekly Rotation – Google Sheet).*

4. PROCEDURE

4.1 Safety:

4.1.1 Required Personal Protective Equipment include: Safety glasses, Steel Toe Boots, Air Monitoring device, Gloves and Flashlight.

4.2 Monitoring Location:

4.2.1 **Permit Outfall FC# 1100 (Outfall No: 074)** - Hiawatha RTF Dechlorination Tank at point of overflow discharge to the receiving waters (see attached schematic).

4.3 **Overflow Event:**

As per the requirements of the Metro SPDES Permit:

- An overflow event starts once overflow out of the CSO Regional Treatment Facility begins to the receiving water (Ley Creek) and ends once the overflow stops.
- Sampling during each discharge and/or bypass event shall occur within the first 60 minutes of the bypass.
- **If the bypass does not occur for more than 30 minutes, it is not necessary to collect a sample.**
- If another storm occurs before stored water in the RTF is completely discharged to Metro, sampling shall occur within 30 minutes of commencing bypass and monitoring shall resume.

4.4 **Hiawatha RTF Site Access:**

If the gate to enter the back parking lot from the Regional Market main entrance that leads to the Hiawatha facility is locked, use the alternate back entrance road (see attached photos/map). Once the sampling crew reaches the Hiawatha RTF Entry Gate, a #3769 key is needed to open the lock on the gate to access the sampling location (be sure to re-lock the gate when leaving the facility).

4.5 **Facility Alarm:**

4.5.1 The trigger to initiate a response for sampling of the Hiawatha RTF will be based on a level alarm of 5 feet or greater in the facility's dechlorination tank. The level needed to overflow is 11.81 feet without **stop log in place at the Effluent Box Culvert (>12' w/stop log in place)**. When the level in the dechlorination tank rises to five feet (5'), the first alarm "**Hiawatha RTF - Diversion Weir High Level---Notify ELS Primary Contact**" will be triggered in the SCADA system at Metro Board. Metro Board personnel shall notify the ETS Engineer Contact (Primary) or designated Back-up (refer to the Metro On Call Weekly Rotation - Google Sheets). When the level in the dechlorination tank rises to ten feet (10'), the second facility alarm **"Hiawatha RTF - Diversion Weir Hi-Hi Level---Notify ELS Primary Contact"** is enacted.

4.6 **Response:**

4.6.1 During an alarm event (at any time), **Metro Board personnel** will notify the designated ETS Engineer Contact (Primary) first. If unavailable, the Board shall contact the ETS Engineer Back-up Contact; **do not just leave a message, actual voice communication with this individual must be made (refer to Section 3 herein for phone numbers).** The ETS Engineer contacted will then assume responsibility for arranging sample collection per SPDES Permit requirements. All samples will be collected by ETS Wastewater Technician staff. Once Metro Board informs the ETS Engineer Contact regarding the alarm, the ETS Engineer Contact shall notify the ETS WW Tech II (refer to the ETS Call-in Contact List) to arrange sample collection by calling in a 2-person sampling crew. **(NOTE: For safety reasons, the crew must be 2-person).**

4.6.2 Once a set of grab samples have been collected, Wastewater Technicians shall notify **Metro Board personnel between 1530 hrs. through 0300 hrs.** and request that they notify the Lab Supervisor Call-in to arrange for a Lab Technician to come in and analyze the collected samples due to holding times for Fecal Coliform. **(NOTE: It is important to verify the discharge(s) and collect sample(s) before holding over or calling in Lab personnel after hours).**

4.6.3 The ETS WW Technicians will transport all samples back to the OCDWEP Environmental Laboratory located at the Henry Clay Lab facility and call ETS the Engineer Contact, to inform him/her that samples were collected and to receive further instructions, prior to leave the Laboratory facility.

4.7 **Sampling:**

4.7.1 ETS Personnel exclusively:
Wastewater Technicians are to collect the following samples as grabs during RTF overflow event(s). **To confirm that a dechlorination tank effluent discharge is occurring, check the Stop Log at the Effluent Box Culvert and confirm that flow is discharging (see attached facility schematic).** Grab samples are to be collected for **all parameters** (including composite parameters).

4.7.1.1 Half-gallon Plastic (Conv) - Deliver grab sample to OCDWEP Environmental Lab for BOD_5 /TSS.

4.7.1.2 One-quart Glass (O&G) - Note: 1st grab requires QC sample; refer to the OCDWEP Environmental Lab Field Preservation Guide.

4.7.1.3 125ml Plastic (F. Coli) - Grab Sample (Note: needs Cl_2 Res - use Hach Colorimeter II at time of grabs; record on the C-of-C form). Collect during all overflow events every four hours per requirements (refer to note below for seasonal requirements).

Parameters include: Total Chlorine Residual (Cl_2), Monochloramine, Chloramines, Total Dichloramine, and Chlorine (per Chlorine DPD Colorimetric Method 4500-Cl G). Add results to C-of-C in space provided. Refer to Field Chlorine Calculations Form; use form to also record calculations and results; include w/C-of-C.
[NOTE: If the Cl_2 Residual is greater than 0.2 ppm, then Flow Control personnel on site at the time of sampling shall be notified; if no Flow Control personnel are on site, then call Metro Board and have them notify Call-in Flow Control personnel with the Cl_2 Residual information]. The effluent disinfection period runs seasonally from April 1 through October 15. Fecal Coliform samples must be collected only during this period.

4.7.1.4 One Liter Plastic (TKN/NH_3/TP) - deliver grab sample to OCDWEP Environmental Lab.

4.7.1.5 Half-gallon Plastic (Conv) - deliver to OCDWEP Environmental Lab w/C-of-C for Settleable Solids test.

4.7.1.6 Event Visual Observations (Overflow verification/grab times and floatables) - taken at time of grab sample; record on the C-of-C for grab samples. Visual observation of Floatables at the sampling location **MUST** be observed and noted on C-of-C.

4.7.2 Sampling Parameters:

HIAWATHA RTF OVERFLOW SAMPLING ANALYTES
(For OCDWEP Environmental Laboratory use only)

ANALYTES	SAMPLE TYPE	FREQUENCY
Conventional (BOD_5, TSS)	Composite [4]	Each Event (1 every 4 hrs)
TKN/NH_3/TP	Composite [4]	Each Event (1 every 4 hrs)
Oil & Grease [1]	Grab	Each Event (1 every 4 hrs)
Fecal Coliform [2]	Grab	Each Event (1 every 4 hrs)
Chlorine, Total Residual [2]	Grab	Each Event (1 every 4 hrs)
Settleable Solids [3]	Grab	Each Event (1 every 4 hrs)
Floatable Material	Visual	Each Event (1 every 4 hrs)

(1) Refer to OCDWEP Environmental Laboratory-Field Preservation Guide.

(2) F. Coli to be collected during every 4 hours during each event. Use the Hach Colorimeter II to determine chlorine residual requirements (see above) after dechlorination at the time of F. Coli grab; Record on C-of-C form. Effluent Disinfection required: seasonal from April 1 to October 15. Monitoring and analysis of these parameters is only required during the period when disinfection is required.

(3) Settleable Solids samples are delivered to HC Lab; Lab will perform analysis.

(4) Grab samples for each event will be collected every 4 hours for these parameters; these grab samples will be composited by the OCDWEP Environmental Laboratory and analyzed for the composite parameters.

5. GENERAL REQUIREMENTS

Overflow Event Tracking Log/Chain-of-Custody Form/Sample Preservation

5.1 Event duration will be determined by the ETS Engineer Contact based on data received from the SCADA Monitor and/or Flow Control Engineer(s).

5.2 Overflow Events are numbered and tracked by Flow Control Staff and recorded by the ETS sampling crew on the C-of-C forms.

5.3 C-of-C Forms must be completed for each sample set collected; include visual observations of sample and note if there are any floatables as well. C-of-C Forms must accompany all samples to the OCDWEP Environmental Lab. Completed data sheets recording observations/grab samples must also be delivered to the OCDWEP Environmental Lab.

5.4 Preserve samples according to procedures listed in the current version of the OCDWEP Environmental Lab - Field Preservation Guide. All samples must be delivered on ice to the OCDWEP Environmental Lab or store at ≤6°C without freezing.

NOTE: If samples are collected and delivered to the Lab outside of normal working hours, then store samples in the under-counter refrigerator located in the Lab sample Sign-in room. Leave appropriate C-of-C paperwork on counter for Lab notification.

5.5 The Fecal Coli containers are pre-preserved; do not rinse or overfill containers. Collect sample in one clean Fecal Coli bottle and then pour into a second clean Fecal Coli bottle. Deliver samples on ice to the OCDWEP Environmental Lab or store at ≤6°C without freezing.

6. LAB NOTIFICATION

6.1 Wastewater Technician responders will notify Metro Board and have them call the designated Lab Call-in contact person between 1530 - 0300 hours, when **Fecal Coliform** analysis is required, so that arrangements can be made to begin the analytical procedures for the samples. **Refer to Call-in schedule for OCDWEP Environmental Laboratory**. If the designated call-in person is unavailable, the Board will contact the Senior Chemist as per schedule in memo. If samples are delivered to the Lab outside of normal working hours, samples will be stored in the under-counter refrigerator located in the sample Sign-In room. Leave appropriate C-of-C paperwork on counter for Lab notification. Deliver samples on ice or store at ≤6°C without freezing.

6.2 During scheduled work hours, the Lab will be notified by the ETS WW Tech II and/or the ETS Engineer Contact.

7. REFERENCE DOCUMENTS

7.1. OCDWEP Environmental Laboratory Field Preservation Guide.

7.2. Metropolitan-Syracuse WWTP SPDES Permit#: NY0027081 dated May 13, 2017.

7.3. Call-in Procedures Memo OCDWEP Environmental Lab.

8. ATTACHMENT(S)

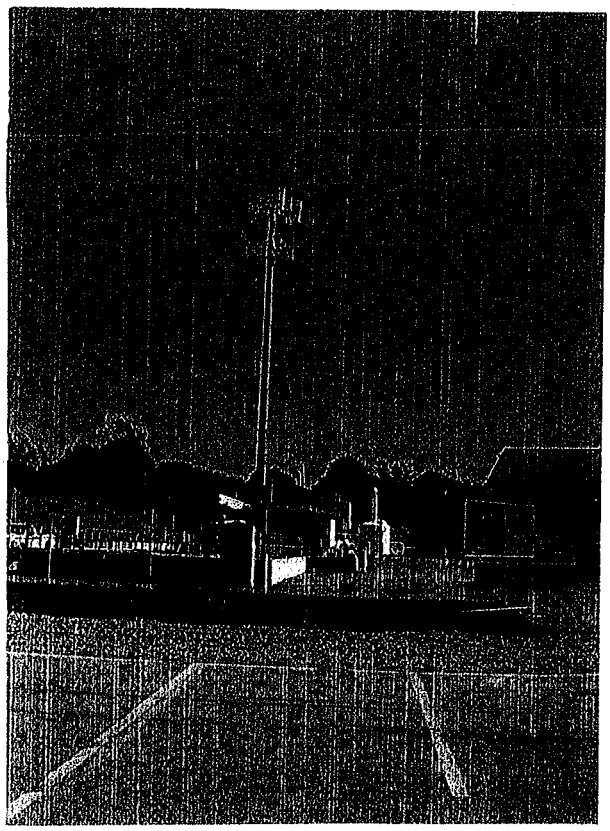
8.1. Hiawatha RTF Schematic (as-built); Map re back entrance if main gate to back lot is located. Also refer to Site Photos.

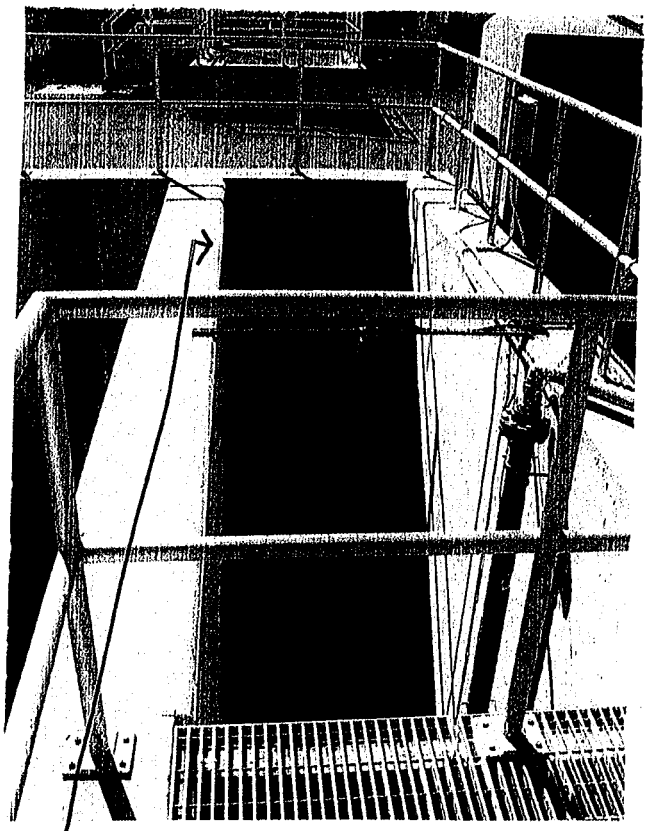
9. TRAINING CERTIFICATION RECORD

I certify that the requirements of this SOP have been communicated to me and that I am trained in its use.

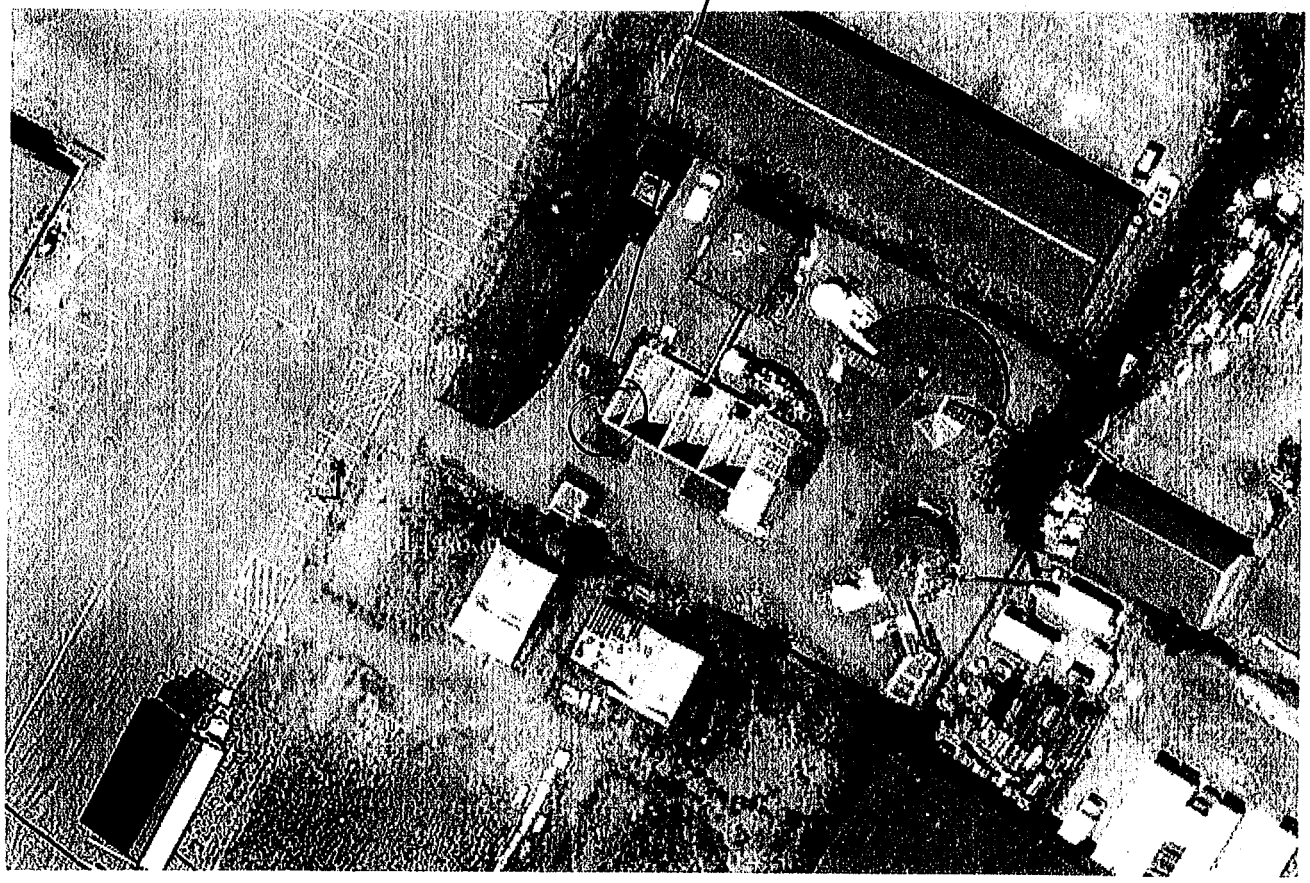
Employee Name (print)	Signature	Job Title	Date
Chris Gandlin	C Gan	SE II	6-19-19
Tom	Timpsell	SE II	6-17-19
Jason Shaw		WWT II	6/18/19
Mark Halbritter		WWT II	6/18/19
Kimberly OBrien		WWT I	6/18/19
Nathan Talucci		WWT-I	06/18/19
Dan Walpole		WWT-II	6/18/19
Jeremy Lopez		WWT I	6/18/19
Travis Henn		WWT-I	6/19/19
Robert D'Argenio		WWT-I	6-19-19
Melanie Kulcko		WWT I	6/18/19
Dan Aumell		WWT I	6/19/19
Barb Yeager		WWT I	6/19/19
Dean Ellsworth		Head Operator	6/20/19

HIAWATHA RTF (behind Regional Market)





GRAB SAMPLE LOCATION



Standard Operating Procedure (SOP):

MIDLAND REGIONAL CSO TREATMENT FACILITY OVERFLOW SAMPLING
Main RTF Outfall (MO1), Emergency Bypass Outfall (MO2)

FC# 820, 821, 810, 815

1. APPROVED:

Author — Janaki Suryadevara (Janaki Suryadevara, SEII) — Signature — 6/13/19 — Date

2. APPROVED:

Supervisor — Jeanne C. Powers (Jeanne C. Powers, SEIII) — Signature — 6/13/19 — Date

3. APPROVED:

QC Manager — (Jennifer May) — Signature — 6/18/19 — Date

4. APPROVED:

Laboratory Director — Joseph S. Denkenberger (Joseph S. Denkenberger, Ph.D.) — Signature — 6/17/19 — Date

Change Record

Revision	Date	Responsible person	Description of change
0	6/13/2008	Stephen Bray, SE II	First Issue
1	8/24/2009	Stephen Bray, SE II	Add alarm definition and procedures; call-in trigger criteria; update names/numbers.
2	03/23/2010	Stephen Bray, SE II	Update Names/numbers
3	01/11/2011	Stephen Bray, SE II	Drop seasonal limitations re F. coli sample; collect every overflow event. Added Lab comments re settleable solids. Attached Updated Lab Call-in Memo to 01/04/2011
4	03/23/2011	Stephen Bray, SE II	Change initial Alarm from Infl. Pump to Cell 4 level alarm. Add Flow Control on-call contact and safety reminders; Gate lock to lot.
5	02/02/2012	Stephen Bray, SE II	Changed ETS Backup to Chris Gandino
6	05/31/2012	Stephen Bray, SEII	Updated re new requirements in SPDES Permit # NY 02 7081 EDP 3/21/2012 and Lab Call-in Memo 09/19/2013.
7	11/5/20212	Stephen Bray, SEII	Updated Contact List
8	10/25/2013	Stephen Bray, SEII	Pg. 5 – Changed time from 0300 hrs. back to 0130 hrs to reflect new holding time re F. Coli samples.
9	10/25/2013	Stephen Bray, SEII	Added Cell #1 level indicator to initiate sampling response in addition to Cell # 4 indicator (Section 4.4). Update Responsibilities Section; Drop Raw Influent Sampling 4.2.1; drop Underflow Sampling 4.2.4. Incl. call to J. Powers and call back to Primary Contact by Crew at site; Added B. Burke as rotating contact and dropped C. Gandino; also modify CoC to include space for recording CL2 Res readings and floatables.
10	01/17/2014	Stephen Bray, SEII	Modified wording in Section 4.6.7 re collection of F. coli if auto sampler has collected a sample but there is no flow at time of arrival.
11	04/21/2014	Stephen Bray, SEII	Pg. 5 – Changed time range from 0130 hrs. to 0300 hrs. per new holding time criteria – F. Coli samples. Dropped info call to JCP. Change Primary Contact List – added Janaki,

12	3/08/16	Janaki Suryadevara	1. Section 4.2 (Monitoring locations): Added 2 new MO1 sampling locations – Midland RTF Outfall @ Creek and Midland RTF Outfall @ Sampler. 2. Section 4.6 (Required sampling) and 4.7 (Sampling Parameters): Revised F. Coli MO2 sample collection at IC#820 (Midland RTF Emergency Bypass Outfall) required sampling from all year to during the MO1 disinfection period (4/1-10/15 only).
13	6/13/19	Janaki Suryadevara	1. Updated to reflect new requirements in SPDES Permit NY0027081, EDP: 07/01/2017. 2. Deleted Monitoring Location Midland RTF Underflow (FC #822).

Distribution List (via meeting or circulation to individuals)

1) Engineering and Technical Services (ETS) SOP Reference Book.

1. SCOPE

To establish a standard operating procedure (SOP) for collecting samples of excess flows (overflows) associated with the design storm from the Midland Regional Treatment Facility (Emergency Bypass outfall MO2 and/or Main Outfall, MO1) into receiving waters (Onondaga Creek) in accordance with current SPDES Permit # NY 0027081.

2. PURPOSE

Under extreme weather conditions, it is possible that too much flow in a short period of time could result in a treatment facility bypass/discharge event. The County is required to monitor Combined Sewer Overflows (CSOs) and WWTP system by-pass/discharge events as part of SPDES Permit requirements to determine the impact of such discharges on receiving waters.

3. RESPONSIBILITIES

Name	Title	Cell Phone	Project Involvement
Janaki Suryadevara	Sanitary Engineer II	(315) 420-7259	ETS Engineer Contact *
Chris Gandino	Sanitary Engineer II	(315) 383-5364	ETS Engineer Contact *
Tim O'Dell	Sanitary Engineer II	(315) 391-4115	ETS Engineer Contact *
Dan Walpole	Wastewater Technician II	(315) 263-5237	ETS WWT II Primary Contact*
Mark Halbritter	Wastewater Technician II	(315) 399-3807	ETS WWT II Primary Contact*
Jason Shaw	Wastewater Technician II	(315) 575-4860	ETS WWT II Primary Contact*
Technicians Group	Wastewater Technician I	NA	Collect samples.
Daniel Jean	Operations Superintendent	(315) 263-7467	Supervisor - Cty Operations x 309
Dean Ellsworth	Metro Head Operator	(315) 435-3142	Metro Operations Supervisor x 208
Flow Control on-call Personnel	On-call Personnel	(315) 435-3142	Contact Metro Board regarding any facility issues.

Metro Board	Metro Operators	(315) 435-3142	Make alarm notifications.

** Monthly Rotation – refer to the ETS Engineer/Wastewater Technician II Monthly Rotational Call-in List Contact (Metro On Call Weekly Rotation – Google Sheet).*

4. PROCEDURE

4.1. Safety:

4.1.1 Safety Glasses, Steel Toe Boots, Air monitoring device, Flashlight.
Note: Although the facility has ventilation, **an air monitor must be carried at all times inside the facility** in case the ventilation system is not working (open sewer channels); do not enter the facility after hours unless absolutely necessary (the composite sampler in the facility can be serviced and reset during daylight hours).

4.1.2 When collecting grab samples from the Midland RTF Outfall location, i.e., Access hatch in Parking Lot (FC# 821 – Permit designation MO1), the orange man-catch grate must be in place (no exceptions); removing said grate creates a serious safety hazard (see attached site photo).

4.2 Monitoring Location(s):

4.2.1 **FC# 820 – Midland RTF Emergency Bypass Outfall (Permit Outfall MO2):** Sampling point to collect wastewater that is bypassing the treatment portion, i.e., bar rakes, swirl concentrators, disinfection process, and discharging untreated wastewater directly into Onondaga Creek (see attached schematic for sampling locations). All samples collected at this location are grab samples. (Emergency overflows are generally a result of influent pump failure or power shutdown; notify Flow Control).

4.2.2 **FC# 821 – Midland RTF Main Outfall @ Hatch (Permit Outfall MO1)** This is the **Primary** Sampling point where treated facility effluent wastewater overflows the disinfection tank final weir and discharges to the receiving waters, i.e., Onondaga Creek (see attached schematic). Grab samples are collected from this wastestream from either the Access Hatch in the parking lot (preferred) or the outfall at creek side (alternate). If access to the manhole is blocked due to a vehicle parked at this location, then samples will be collected at the alternate sampling location from MO1 Outfall @ Creek (FC#815).

4.2.3 **FC# 815 – Midland RTF Main Outfall @ Creek (Permit Outfall MO1)** – This is the **Alternate** sampling point where treated facility effluent is flowing out of the outfall and discharging to the receiving waters, i.e., Onondaga Creek (see attached schematic). Grab samples are collected from the top of the outfall behind the chain link fence that has been modified to

allow sampling access while keeping safety in mind. This alternate location is necessary when a vehicle is blocking access to the Hatch sampling location (FC Code# 821).

4.2.4 **FC #810 – Midland RTF Outfall @ Sampler (Permit Outfall MO1) – If the technicians are unable to get to the facility in time to collect grab samples during active facility discharge to the creek, a** back-up **sample must be picked up at the refrigerated automatic 24-bottle composite sampler with pH monitoring capability stationed in the Chemical Storage Area above the disinfection tank. This sampler is triggered to start when Sample Pump #2 activates as the water level in the disinfection tank reaches a preset level. This sampler must be checked and reset after each event.**

4.3 **Overflow Event:**

An Outfall event starts once flow out of the CSO RTF begins and ends when the overflow stops.

As per the requirements of the Metro SPDES Permit:

- **If the overflow/bypass does not occur for more than 30 minutes, it is not necessary to collect a sample.**
- Sampling during each discharge and/or bypass event shall occur within the first 60 minutes of the discharge.
- If another storm occurs before the stored water is completely discharged back to Metro, sampling shall occur within 30 minutes of commencing bypass and monitoring shall resume as per the SPDES Permit.
- If the initial discharge stops and another starts up before stored RTF water is completely pumped back to Metro WWTP, sampling shall resume within 30 minutes and can be considered part of the same event.

An ultrasonic level detector alarm will alert Metro Board personnel as to when an Outfall discharge event is imminent. Any discharge event **will be confirmed visually by responding ETS and/or Sewer Maintenance** personnel at the time of arrival. For Lab notification, refer to Section 6.0 of this document.

4.4 **Facility Alarms:**

4.4.1 The first facility alarm is **"Midland Ave. RTF – Storage cell #4 at 370 ft. – Contact ETS primary engineer contact."** This alarm is based on when the Storage Cell #4 level indicator in SCADA reaches a level of 370 feet. When this initial alarm is enacted, Metro Board personnel will call the **ETS Engineer Contact (Primary) or designated Backup** (refer to the Metro On Call Weekly Rotation – Google Sheets).

The second facility alarm is "**Midland Ave. RTF – Storage cell #1 at 370 ft. – Contact ETS primary engineer contact.**" This alarm is based on when the Storage Cell #1 level also reaches

370 ft. in the SCADA at Metro Board. These two alarms allow more time to mobilize wastewater technicians before the Influent pumps are activated and the treatment process starts. During this time the disinfection tank is empty and intense rain is needed for pumps to run.

4.4.2 The third alarm "**Midland RTF – Influent Pump #1 (or #2): Notify Midland AND ETS Engineer Contact.**" is triggered when the Influent pumps are activated and the treatment process starts.

4.4.3 A separate distinct alarm indicates when an Influent Emergency Bypass Outfall (MO2) event (Influent Sump Bypass) is imminent. This alarm is referred to as the "**Midland Ave. RTF - Diversion Weir High Level**," and indicates that a treatment by-pass discharge is near (this could be resulting from issues with influent pump(s) operation and subsequently cannot keep up with the influent flows or as a result of power failure at the facility). Sampling crew should check the overflow window to see if an influent bypass is occurring and collect a sample accordingly.

4.5 **Response:**

4.5.1 During an alarm event, **Metro Board personnel** will notify the designated ETS Engineer Contact (Primary) first; if unavailable, the Board shall contact the ETS Engineer Back-up Contact; **do not just leave a message, actual voice communication with this individual must be made (refer to Section 3 herein for phone numbers).**

Once the initial alarm has been received from Metro Board, the ETS Engineer Contact shall notify the eligible Wastewater Tech II (refer to WWT Tech II Monthly Rotational Contact List) to arrange sample collection by calling in a 2-person sample crew (**Note: for safety reasons, the crew must be 2-person**). Once a set of grab samples has been collected by said crew, Wastewater Technician responders shall notify the ETS WWTII supervisor or ETS Engineer Contact to confirm, if possible, that the duration of the overflow was greater than 30 minutes per SPDES. **NOTE: It is important to verify the overflow, and collect samples before calling in Lab personnel after hours; visually check the effluent weir and the outfall channel at creek side. Once the sampling event has ended, the ETS Wastewater Technicians who responded to said event will call the WWTII or ETS Engineer Contact regarding the status of the event, i.e., whether samples were collected; if the duration of overflow meets SPDES criteria; and to receive further instructions as necessary, before leaving the facility.**

4.5.2 If it is deemed a viable sample, i.e., over 30 minutes overflow duration, WW Technician responders shall notify **Metro Board personnel between 1530 hours through 0300 hrs.** and request that they notify the Lab Supervisor on-call (refer to the Lab Call in Procedures Memo) to arrange for a Lab Technician to come in to the OCDWEP Environmental Lab facility and analyze the collected samples based on holding times for F. coli samples. The WW Techs will then follow-up on any instructions as well as transport all field samples back to the OCDWEP Environmental Lab facility. If no lab personnel were called in (i.e., after 0300 hours), the WW

Technician(s) shall check with ETS supervisor (WW Tech II) or ETS **Engineer** Contact to make certain that the samples meet criteria and are placed in the Lab Sample Sign-in Room refrigerator; **WWT** Tech II should notify Lab personnel re samples collected overnight at **beginning of shift on the following day.**

4.5.3 **Midland RTF Site Access:** To enter through the access gate, a pass card must be used (Ley Creek Scan Card). Once through the main gate, take a right turn and go to side parking lot where the Access Hatch cover is located (IC# 821 - see schematic). **NOTE**: to drive to this parking lot, turn right after entering the Midland Compound Main Gate; there is a gate that may need to be unlocked before accessing said parking lot – tumbler lock code is 1.7.9.4. This lot is used by the bus company. Once the WW Technicians reach the Midland RTF Effluent Access Hatch, a tool is needed to open the hatch (this is stored at Final Effluent sampler at Midland and also at the Metro Waste Hauler Office (designated staging area – **refer to safety notice listed herein at 4.1.2**). The facility building can be entered using an AE1 Key at the main door opposite the entry gate. **BEFORE INITIALLY ENTERING THE BUILDING after hours, entry must be through the Main Door and Metro Board must be called first because the doors are alarmed (tell them to *DISREGARD* alarm before you open it). Once inside the building, the alarm must be deactivated; use the entry door key in the slot provided in the alarm box and turn to deactivate while you are in the building (To disarm, turn Key to activate Green Light); when leaving the facility, the alarms must be reactivated. Again, use key to activate the alarm (Turn Key to activate Red Light) and then leave immediately (make sure the door has fully latched). Finally, let Metro Board know the alarm has been re-armed, i.e., should now be *REGARDED*.**

4.6 **Sampling:**

4.6.1 **ETS Personnel exclusively:** Wastewater Technicians are to collect the following samples during an RTF overflow discharge event. **When arriving on site, WW Techs need to confirm that an overflow is occurring. To do this, open the access hatch in the parking lot and/or check the effluent outfalls (diversion weir and disinfection tank) near the stream bed and confirm that flow is discharging (see attached facility schematic).**

4.6.2 Half-gallon Plastic (Conv) – Grab sample: deliver to HC Lab for BOD_5/TSS.

4.6.3 One-quart Glass (O&G) - Grab sample. Note: 1st grab requires QC sample; refer to the OCDWEP Environmental Lab Field Preservation Guide.

4.6.3 125ml Plastic (F. Coli) - Grab Sample. Note: needs Cl_2 Res - use Hach Colorimeter II at time of grabs; record on the C-of-C. **Collect during all overflow events every four hours per requirements (refer to Note below for seasonal requirements). Parameters include: Total Chlorine Residual (Cl_2), Monochloramine, Chloramines, Total Dichloramine, and Chlorine (per Chlorine DPD Colorimetric Method 4500-Cl G). Add results to C-of-C in space provided.**

Refer to Field Chlorine Calculations Form attached; use form to also record calcs and results; include w/C-of-C. Note: If the Cl_2 Residual is greater than 0.2 ppm, then any flow control personnel on site at the time of sampling shall be notified; if no Flow Control personnel are on site, then call Metro Board and have them notify on-call Flow Control personnel with the Cl_2 Residual information. [Note: the disinfection period for IC#821 – Midland RTF Outfall (Permit Outfall MO1) runs from 4/1 through 10/15. During this period, F. coli samples must be collected. F. Coli samples for the Midland RTF Emergency Bypass Outfall (Permit Outfall MO2) FC Code #820 are also limited to the disinfection period from 4/1 through 10/15 only.

4.6.4 One Liter Plastic (TKN/NH_3/TP) Grab Sample: deliver to OCDWEP Environmental Lab.

4.6.5 Half-gallon Plastic (Conv) Grab sample: deliver to OCDWEP Environmental Lab w/C-of-C for Settleable Solids test. Lab will perform analysis.

4.6.6 Event Visual Observations (Overflow verification & start/stop time of 30 minute period, sample grab times, location, and sample descriptions) - taken at the time of sample collection; record on any Chain of Custody that accompanies a sample. Also, Floatables at both the sampling location and the receiving water **MUST** be observed and noted on C-of-C (important).

4.6.7 Collect grab samples for all parameters from the Final Effluent discharge location (IC# 821) during all overflow response events. Any samples from the automated Final Effluent refrigerated sampler will be collected for all listed parameters during the next available business day if needed (purpose of Isco sampler is to provide backup in case technicians are unable to get to the facility in time to collect grabs from the **active outfall discharge**).

4.6.8 If there is only minimal flow (small stream) at time of arrival to collect grab samples but the automated refrigerated sampler has collected samples, then make attempt to collect F. coli and O&G samples (grab) from remaining overflow stream if possible; if no minimal stream available, then note on C-of-C that there was no flow available to collect a grab sample. To ensure that sufficient volume is being collected for all analyses, the refrigerated sampler shall be set at 3 bottles per sample with a sample being collected every hour (only collect sample in bottles that conform to time of event; confirm actual period of event, which must be a discharge equal to or greater than 30 minutes (via SCADA information from supervisory contact; refer to Section 6.2 herein). The automated refrigerated sampler will need to be reset with clean set of 24 bottles on the following day after each event.

4.7 Sampling Parameters

MIDLAND RTF OVERFLOW/BYPASS SAMPLING ANALYTES (*For OCDWEP Environmental Laboratory use only*)		
ANALYTES	**SAMPLE TYPE**	**FREQUENCY**
Conventional (BOD_5, TSS)	Composite [4]	Each Event (1 every 4 hrs)
TKN/NH_3/TP	Composite [4]	Each Event (1 every 4 hrs)
Oil & Grease [1]	Grab	Each Event (1 every 4 hrs)
Fecal Coliform [2]	Grab	Each Event (1 every 4 hrs)
Chlorine Res./ Settleable Solids [3]	Grab	Each Event (1 every 4 hrs)
Visual Observations (Floatable Materials)	Visual	Each Event (1 every 4 hrs)

[1] Refer to current OCDWEP Environmental Laboratory-Field Preservation Guide.

[2] Samples to be collected at the weir outfall from the disinfection tank of the Midland RTF (see attached schematic & photo). Collect F. coli grabs every 4 hours during each event; use the Hach Colorimeter II to determine chlorine residual parameters after dechlorination at the time of F. coli grab; Record on C-of-C (use current method; refer to 4.6.3 and 5.6 herein). Disinfection Period for IC# 821 is from April 1 – October 15; *Also, F. Coli samples for FC #820 – Emergency Bypass Outfall will only be collected during the April 1-October 15 disinfection period only.*

[3] Settleable Solids samples are delivered to HC Lab; Lab will perform analysis.

[4] Grab samples will be collected every 4 hours for each event; these grab samples will be composited by the OCDWEP Environmental Laboratory and analyzed for the composite parameters.

5. GENERAL REQUIREMENTS (ETS Personnel and Metro Board):

Overflow Event Tracking Log/Chain-of-Custody Form/Sample Preservation

5.1. C-of-C Forms must be completed for each sample set collected; include visual observations of sample and note if there are any floatables as well (refer to 4.6.6 above). C-of-C Forms must accompany all samples to the OCDWEP Environmental Lab. Completed data sheets recording observations/grab samples must also be delivered to HC Lab.

5.2. Preserve samples according to procedures listed on the most current OCDWEP Environmental Laboratory - Field Preservation Guide. All samples must be delivered on ice to the OCDWEP Environmental Lab or stored at $\leq 6^0$ C without freezing.

NOTE: If the OCDWEP Environmental Lab is not staffed at the time of sample delivery (i.e. after 0300 hrs., store samples in the under-counter refrigerator located in the OCDWEP Environmental Lab sample sign-in room; keep C-of-C forms with the samples. When Lab personnel are called in after hours, they should check said refrigerator for samples; if samples are collected after 0300 hrs., Lab personnel need to be notified at start of shift next day.

5.3. The Fecal Coli containers are pre-preserved; do not rinse or overfill containers. Collect sample in one clean Fecal Coli bottle and then pour into a second clean Fecal Coli bottle. Deliver samples on ice at $\leq 6^0$ C without freezing prior to delivery to the OCDWEP Environmental Lab. (Refer to the OCDWEP Environmental Laboratory - Field Preservation Guide).

5.4. Note that the TKN/NH_3/TP grab samples are to be de-chlorinated in accordance with the OCDWEP Environmental Laboratory - Field Preservation Guide. Document de-chlorination in the space provided on the C-of-C Form.

5.5. Settleable Solids: Deliver a half-gallon plastic container with a C-of-C Form to the OCDWEP Environmental Lab; the Lab will perform analysis.

5.6. Cl_2 Residual test must be performed on all Emergency Bypass Outfall MO2 samples collected (FC# 820) and on any MO1 Outfall samples (#821) during the disinfection season (from April 1 – October 15). The Hach Colorimeter II tester shall be used (Record results on C-of-C form). SPDES Permit requires the following: Use Method Chlorine by DPD Colorimetric Method (4500-Cl G) for Total Chlorine residual and also for the four additional analytes: Monochloramine, Chloramines, Total Dichloramine and Chlorine. Add results to C-of-C in space provided and also record in logbook at Midland site.

5.7. Refer to procedures for Oil & Grease samples in the OCDWEP Environmental Laboratory - Field Preservation Guide.

5.8. Composite Samples: The grab samples collected at the time of arrival at the site are to be preserved and delivered to the Lab ASAP (all parameters **including composite parameters**). **Note: Lab will composite all grab samples.** Composite samples will be collected from the Refrigerated Automated 24 Bottle Composite Sampler, if needed, once the event has ended (qualifying period to be determined by ETS Engineer Contact) and delivered to the Lab.

6. LAB NOTIFICATION

6.1. Wastewater Technician responders will notify Metro Board and have them call the designated Lab call-in contact person between 1530 - 0300 hours, if **F. coliform** analysis is required, so that arrangements can be made to begin the analytical procedures for the samples. **Refer to the Call-in schedule for OCDWEP Environmental Laboratory.** If the designated call-in person is unavailable, the Board will contact the Senior Chemist as per memo. If samples are delivered to the Lab outside of normal working hours, then store samples in the under-counter refrigerator located in the sample Sign-In room. Leave appropriate C-of-C paperwork on counter for lab notification. Deliver samples on ice or store at ≤6°C without freezing.

6.2. During scheduled work hours, the Lab will be notified by the ETS WW Tech II and/or the ETS Engineer Contact on call. **The event period will be determined by the ETS Engineer Contact based on data received from SCADA monitor and/or Flow Control Engineer(s).**

7. REFERENCE

7.1. Call-in Procedures for OCDWEP Environmental Lab.

7.2. OCDWEP Environmental Laboratory Field Preservation Guide.

7.3. Metropolitan-Syracuse WWTP SPDES Permit# 0027081, dated May 13, 2017.

8. ATTACHMENTS

8.1. Attachment: Midland RTF Schematic.

8.2. Site Photos

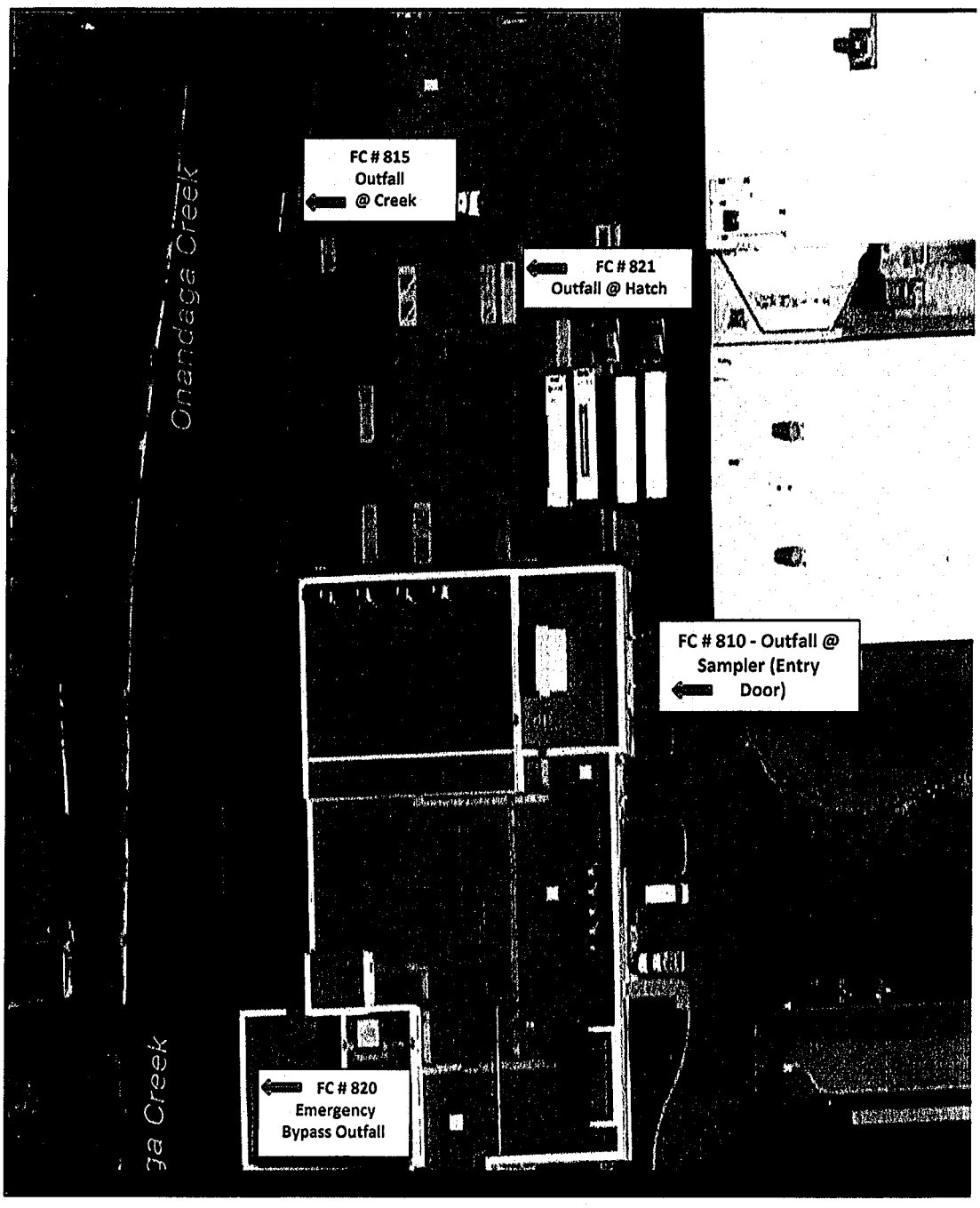
9. TRAINING CERTIFICATION RECORD

I certify that the requirements of this SOP have been communicated to me and that I am trained in its use.

Employee Name (print)	Signature	Job Title	Date
Tim O'Dell		SE II	6/14/19
Chris Gandine		SE II	6/14/19
Jason Shaw		WWT II	6/18/19
Mark Halbatter		WWT II	6/18/19
Kimberly OBrien		WWT I	6/18/19
Nathan Talucci		WWT-I	06/18/19
Dan Walpole		WWT-II	6/18/19
Jeremy Lopez		WWT-I	6/18/19
Travis Henn		WWT I	6/19/19
Robert D'Argenio		WWT-I	6-19-19
Melanie Kukka		WWT I	6/19/19
Dan Aumell		WWT I	6/19/19
Barb Yeager		WWT I	6/19/19
Dean Ellsworth		Head Operator	6/20/19

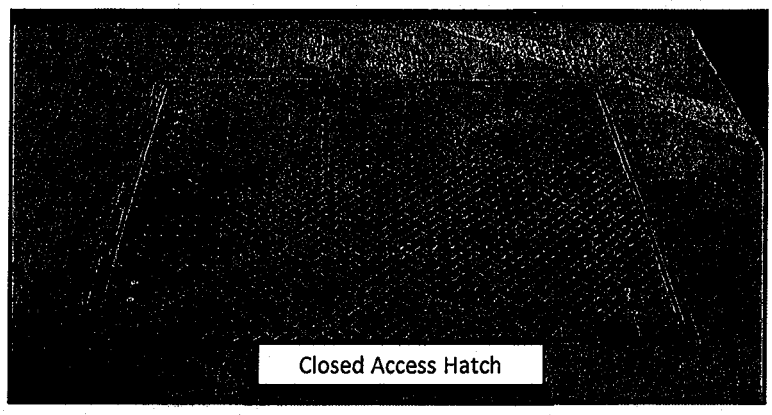
3/18/2016

Midland Avenue RTF Sampling Locations

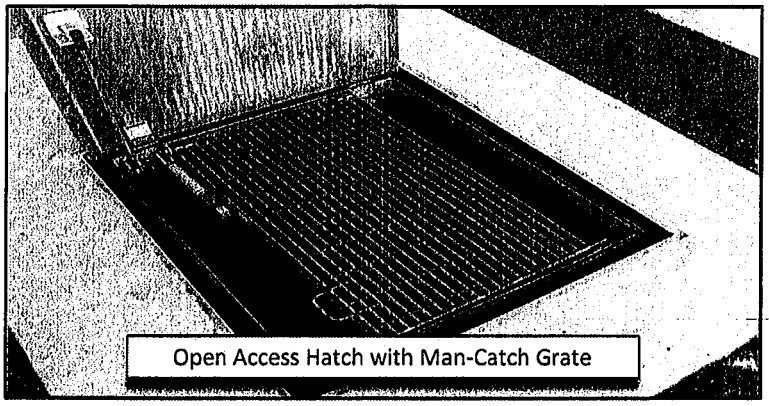


3/18/2016

FC # 821 - Outfall @ Hatch

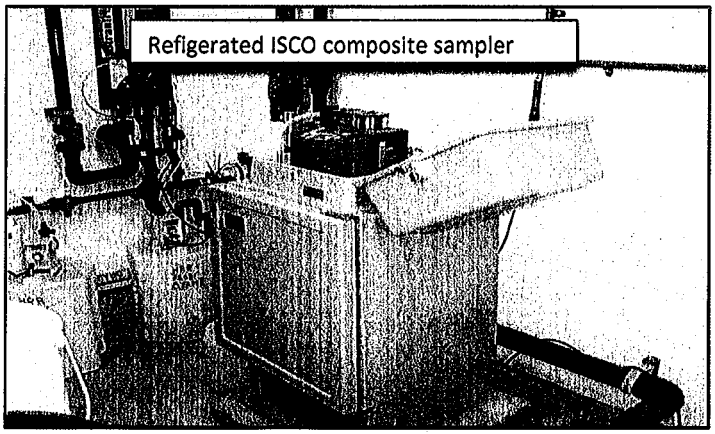


Closed Access Hatch



Open Access Hatch with Man-Catch Grate

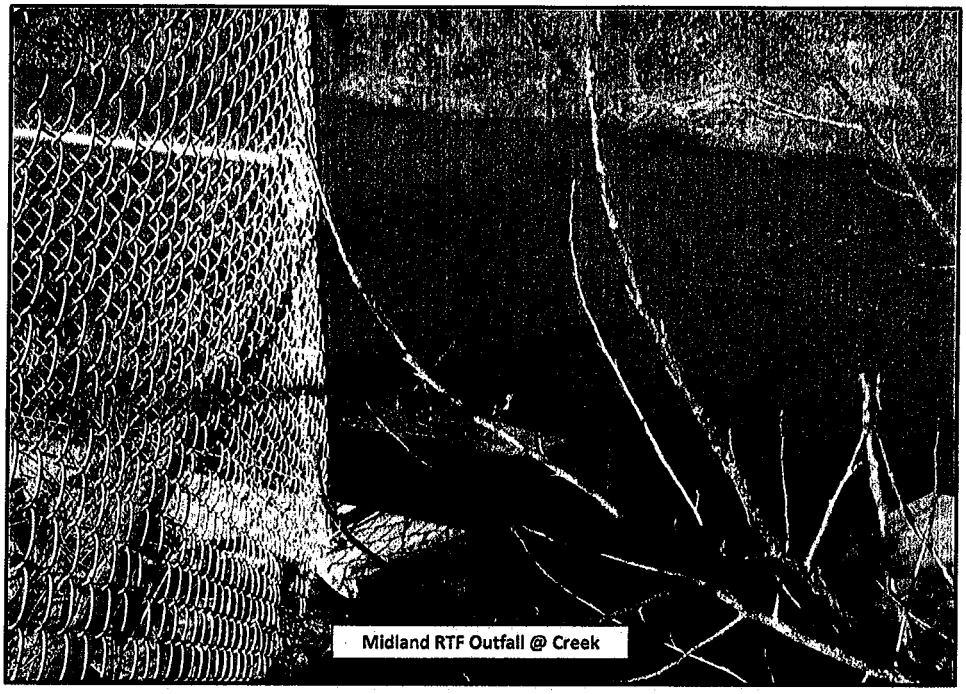
FC # 810 Outfall @ Sampler



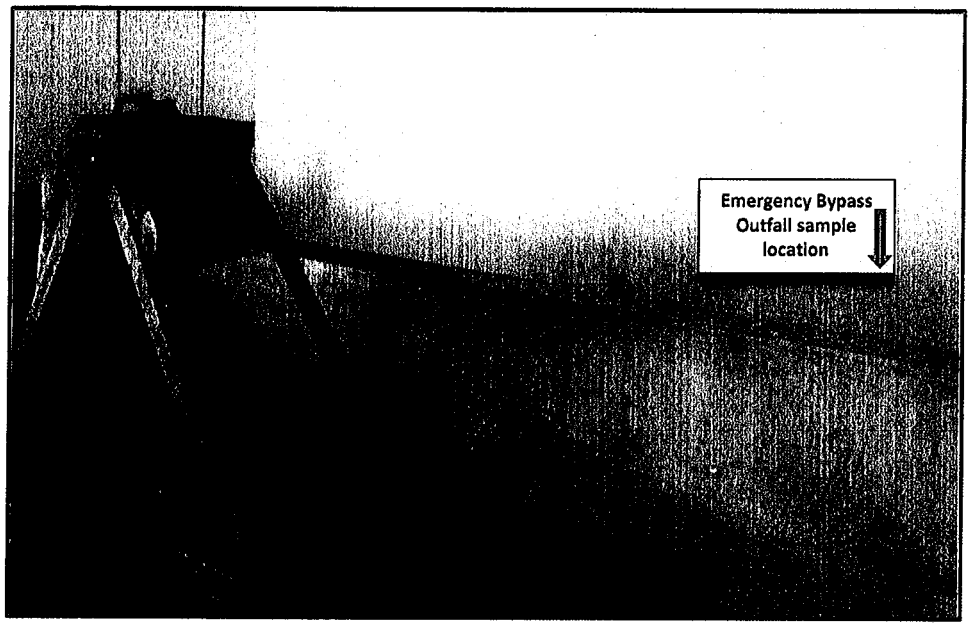
Refigerated ISCO composite sampler

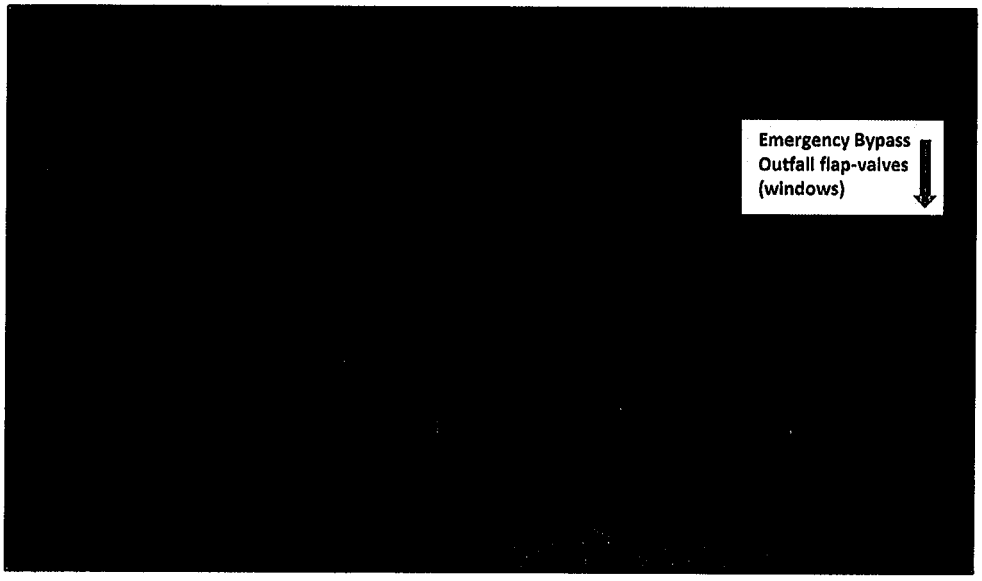
3/18/2016

FC # 815 - Outfall @ Creek



FC # 820 - Emergency Bypass Outfall





Standard Operating Procedure (SOP):

LOWER HARBOR BROOK (LHB) CSO STORAGE FACILITY OVERFLOW SAMPLING FC# 2124 (Outfall No: 04A)

1. APPROVED:

Author (Janaki Suryadevara, SE II) Janaki Suryadevara Signature 6/13/19 Date

2. APPROVED:

Supervisor (Jeanne C. Powers, SE III) Jeanne C Powers Signature 6/13/19 Date

3. APPROVED:

QC Manager (Jennifer May) Signature 6/18/19 Date

4. APPROVED:

Laboratory Director (Joe Denkenberger, PhD) Joseph E Denkenberger Signature 6/17/19 Date

Change Record

Revision No.	Date	Responsible person	Description of change
1	2/22/2018	Janaki Suryadevara, SEII	First Issue
2	6/13/2019	Janaki Suryadevara, SEII	Section 3 (Responsibilities): Updated personnel; added second facility alarm.

Distribution List (via meeting or circulation to individuals)

1) Engineering and Technical Services (ETS) SOP Reference Book.

1. SCOPE

To establish standard operating procedure for collecting samples of wastewater that discharges excess flows associated with the design storm from the Lower Harbor Brook CSO Storage Facility into receiving waters (Harbor Brook) in accordance with current SPDES Permit # NY0027081.

2. PURPOSE

Under extreme weather conditions, it is possible that too much flow in a short period of time could result in a storage facility overflow event. The County is required to monitor Combined Sewer Overflows (CSOs) and WWTP system by-pass/discharge events as part of SPDES Permit requirements to determine the impact of such discharges on receiving waters.

3. RESPONSIBILITIES

Name	Title	Cell Phone	Project Involvement
Janaki Suryadevara	Sanitary Engineer II	(315) 420-7259	ETS Engineer Contact *
Chris Gandino	Sanitary Engineer II	(315) 383-5364	ETS Engineer Contact *
Tim O'Dell	Sanitary Engineer II	(315) 391-4115	ETS Engineer Contact *
Dan Walpole	Wastewater Technician II	(315) 263-5237	ETS WWT II Primary Contact*
Mark Halbritter	Wastewater Technician II	(315) 399-3807	ETS WWT II Primary Contact*
Jason Shaw	Wastewater Technician II	(315) 575-4860	ETS WWT II Primary Contact*
Technicians Group	Wastewater Technician I	NA	Collect samples.
Daniel Jean	Operations Superintendent	(315) 263-7467	Supervisor - Cty Operations x 309
Dean Ellsworth	Metro Head Operator	(315) 435-3142	Metro Operations Supervisor x 208
Flow Control on-call Personnel	On-call Personnel	(315) 435-3142	Contact Metro Board regarding any facility issues.
Metro Board	Metro Operators	(315) 435-3142	Make alarm notifications.

** Monthly Rotation – refer to the current version of the ETS Engineer/Wastewater Technician II Monthly Rotational Call-In List (Metro On Call Weekly Rotation Google Sheet).*

4. SAMPLING PLAN

4.1 Safety:

Required Personal Protective Equipment include: Safety Glasses, Steel Toe Boots, Gloves and Flashlight.

NOTE: As the facility overflow sampling location is located outside the storage facility, there is no need for the ETS WW Technician staff to enter the facility for sample collection.

4.2 Monitoring Location(s):

Permit Outfall 04A (FC# 2124)

This is the primary sampling location where facility overflows and discharges to the receiving waters, i.e., Harbor Brook. Grab samples are collected at the Sampling Grate from this waste stream (refer to Attachment 1 – Site Layout Plan).

4.3 Overflow Event:

- An overflow event starts once overflow out of the CSO Storage Facility begins discharging to the receiving waters and ends once the overflow stops.
- As per the requirements of the Metro SPDES Permit, sampling during each discharge and/or bypass event shall occur within the first 60 minutes of the bypass.
- **If the bypass does not occur for more than 30 minutes (start/end), it is not necessary to collect a sample.**
- If the initial discharge stops and another storm occurs before stored facility water is completely pumped back to Metro, sampling shall resume within 30 minutes of commencing bypass.
- Any discharge event **will be confirmed visually by responding ETS personnel** at the time of arrival.

4.4 Response:

4.4.1 The first facility alarm is "**LHB CSO Storage Tank T-201 Level. Level Alarm High – Notify ETS Engineer Contact**." This is the trigger to initiate a sampling response at the Lower Harbor Brook SF and is based on when the Storage Tank level in SCADA is 32.2 feet. This early notification alarm allows more time to mobilize wastewater technicians before the storage facility starts to overflow. An ultrasonic level detector alarm will alert Metro Board personnel as to when this level is reached. Metro Board will notify the designated on-call ETS Engineer Contact (based on the "Metro On Call Weekly Rotation" – Google Sheet). For after-hour notifications, the ETS Engineer Contact will look at the weather forecast prior to notifying the eligible ETS WW Tech II (refer to the current version of the ETS WW Tech II Monthly Rotational Call-in List) to arrange sample collection. An alarm at a level of 21 feet would allow some lead time as the tank fills, but rain intensity will determine how quickly the tank fills.

4.4.2 The second facility alarm is "**LHB CSO Storage Tank T-201 Level. Level Alarm Hi Hi – Notify ETS Engineer Contact**" and is triggered when the Storage Tank level is ~42 feet and the facility is just below the level of the overflow channel. An increase in the level of Harbor Brook during a rain event could hold the facility flap gate closed, delaying a discharge until the water stored in the tank overcomes

Harbor Brook's pressure to open the flap. SCADA indicates if the flap gate is open, but not to what extent.

4.4.3 A separate distinct alarm "**LHB CSO – Storage Tank Overflow Flap Open Alarm – Notify ETS Engineer Contact**," indicates that the flap valve in the Overflow Channel is open and the facility is discharging to Harbor Brook.
Note: There are no pumps for this facility to discharge to Harbor Brook (discharge is by gravity only). Metro Board will call the ETS on-call Engineer Primary Contact (refer to Metro Call-in Weekly Rotation – Google Sheets).

4.4.4 During an alarm event, **Metro Board personnel** will notify the designated on-call ETS Engineer Primary Contact first; if unavailable, the Board shall contact the ETS Engineer Back-up Contact; **do not just leave a message, actual voice communication with this individual must be made (refer to Section 3 herein for phone numbers).** The ETS Engineer contacted will then assume responsibility for arranging sample collection. All samples will be collected by ETS Wastewater Technician staff. Once the initial alarm has been received, the responsible party (**ETS Engineer Contact**) shall notify the eligible WTS Wastewater Tech II to arrange sample collection by calling in a 2-person sample crew; (**Note: for safety reasons, the crew must be 2-person**).

4.4.5 Once a set of grab samples has been collected by said crew, the ETS Wastewater Technician responders shall notify the ETS WWT II Supervisor or ETS Engineer Contact to confirm, if possible, that the duration of the overflow was greater than 30 minutes per SPDES.
NOTE: It is important to verify the overflow, and collect sample(s) before calling in Lab personnel after hours; visually check the Sampling Grate and the outfall channel at creek side. Once the sampling event has ended but before leaving the facility, ETS Wastewater Technicians who responded to said event will call the ETS WWT II regarding the status of the event, i.e., whether samples were collected; if the duration of overflow meets SPDES criteria; and to receive further instructions as necessary.

4.4.6 If it is deemed a viable sample, i.e., over 30 minutes overflow duration, ETS WW Technician responders shall notify **Metro Board personnel between 1530 hours through 0300 hrs.** and request that they notify the Lab Supervisor on-call (refer to the Lab Call in Procedures Memo) to arrange for a Lab Technician to come in to the OCDWEP Environmental Lab located at the Henry Clay Boulevard facility and analyze the collected sample(s) based on holding times for F. coli samples. Note: If the duration of the overflow is not determined following sample collection, the ETS WW Technicians will proceed to transporting the sample back to the Lab for analysis. The ETS WW Techs will then follow-up on any instructions. If samples are collected, the ETS WW Technicians will transport the samples to the Lab and store them in the Sample Sign-In room refrigerator. Leave appropriate C-of-C paperwork on counter for lab notification.

4.4.7 **Lower Harbor Brook SF Site Access:** To enter through the access gate, a pass card must be used (Ley Creek Scan Card). Once through the main gate, take a right turn and go to side parking lot where the Sampling Grate cover is located (FC# 2124 - refer to Attachment 2).

4.4.8 **Required Sampling:** When arriving on site, ETS WW Techs need to confirm that an overflow is occurring. To do this, open the sampling grate and check the overflow channel near the stream bed and confirm that flow is discharging.

1. Event Visual Observations (Overflow verification, sample grab times, location, and sample descriptions) - taken at the time of sample collection; record on any Chain of Custody that accompanies a sample. Note: Typically the ETS WW Technicians will not be able to determine the actual run time, unless they arrive at site prior to the start of the overflow, they should be able to determine if the discharge duration is greater than thirty minutes. All samples collected will be delivered to the Lab for analysis.
2. ETS Wastewater Technicians are to collect the following grab samples from the primary sampling location at grate during all SF overflow events:
   (1) 125ml Plastic (F. Coli) - Grab Sample. Note: needs Cl_2 Res - use Hach Colorimeter II at time of grabs; record on the Chain of Custody. **Collect during all overflow events every four hours per requirements (Note: Monitoring of F. Coli is only required from April 1 through October 15).**
   (2) Visual observation of Floatables at the primary sampling location and the outfall to the receiving water **MUST** be observed and noted on the C-of-C form.

4.4.9 **Sampling Parameters:**

LOWER HARBOR BROOK CSO STORAGE FACILITY SAMPLING ANALYTES
(For OCDWEP Environmental Laboratory use only)

ANALYTES	SAMPLE TYPE [2]	FREQUENCY
Fecal Coliform [1]	Grab	Each Event (1 every 4 hrs)
Floatable Material (Visual observations)	Visual	Each Event (1 every 4 hrs)

[1] Refer to OCDWEP Environmental Laboratory-Field Preservation Guide.
[2] Samples to be collected at the sampling grate of the Lower Harbor Brook SF. Collect F. coli grabs every 4 hours during each overflow event.

5. GENERAL REQUIREMENTS (ETS Personnel and Metro Board)

Overflow Event Tracking Log/Chain of Custody Form/Sample Preservation

5.1 C-of-C Forms must be completed for each sample set collected; include visual observations of sample and note if there are any floatables as well. C-of-C Forms must accompany all samples to the OCDWEP Environmental Lab. Completed data sheets recording observations/grab samples must also be delivered to the OCDWEP Environmental Lab.

5.2 Preserve samples according to procedures listed in the OCDWEP Environmental Lab - Field Preservation Guide. All samples must be delivered on ice to the OCDWEP Environmental Lab or store at ≤6°C without freezing.

NOTE: If samples are delivered to the Lab outside of normal working hours, then store samples in the under-counter refrigerator located in the Lab sample Sign-in room. Leave appropriate C-of-C paperwork on the counter for lab notification.

5.3 The Fecal coli containers are pre-preserved; do not rinse or overfill containers. Collect sample in one clean F. coli bottle and then pour into a second clean F. coli bottle. Deliver samples on ice to the OCDWEP Environmental Lab or store at ≤6°C without freezing.

6. LAB NOTIFICATION

6.1 Wastewater Technician responders will notify Metro Board and have them call the designated Lab call-in contact person between 1530 - 0300 hours, if **F. coliform** analysis is required, so that arrangements can be made to begin the analytical procedures for the samples. **Refer to Call-in schedule for OCDWEP Environmental Laboratory**. If the designated call-in person is unavailable, the Board will contact the Senior Chemist as per memo. If samples are delivered to the Lab outside of normal working hours, then store samples in the under-counter refrigerator located in the sample Sign-In room. Leave appropriate C-of-C paperwork on counter for lab notification. Deliver samples on ice or store at ≤6°C without freezing.

6.2 During scheduled work hours, the Lab will be notified by the ETS WW Tech II and/or the ETS Engineer Contact on call.
The event period will be determined by the ETS Engineer Contact based on data received from SCADA monitor and/or Flow Control Engineer(s).

7. REFERENCE

7.1 Call-in Procedures for OCDWEP Environmental Lab.

7.2 OCDWEP Environmental Laboratory - Field Preservation Guide.

7.3 Metropolitan-Syracuse WWTP SPDES Permit#: NY0027081, dated May 13, 2017.

8. ATTACHMENTS

8.1 Attachment 1 - Lower Harbor Brook CSO Storage Facility Site Layout Plan

8.2 Attachment 2 - Sampling Site Photos

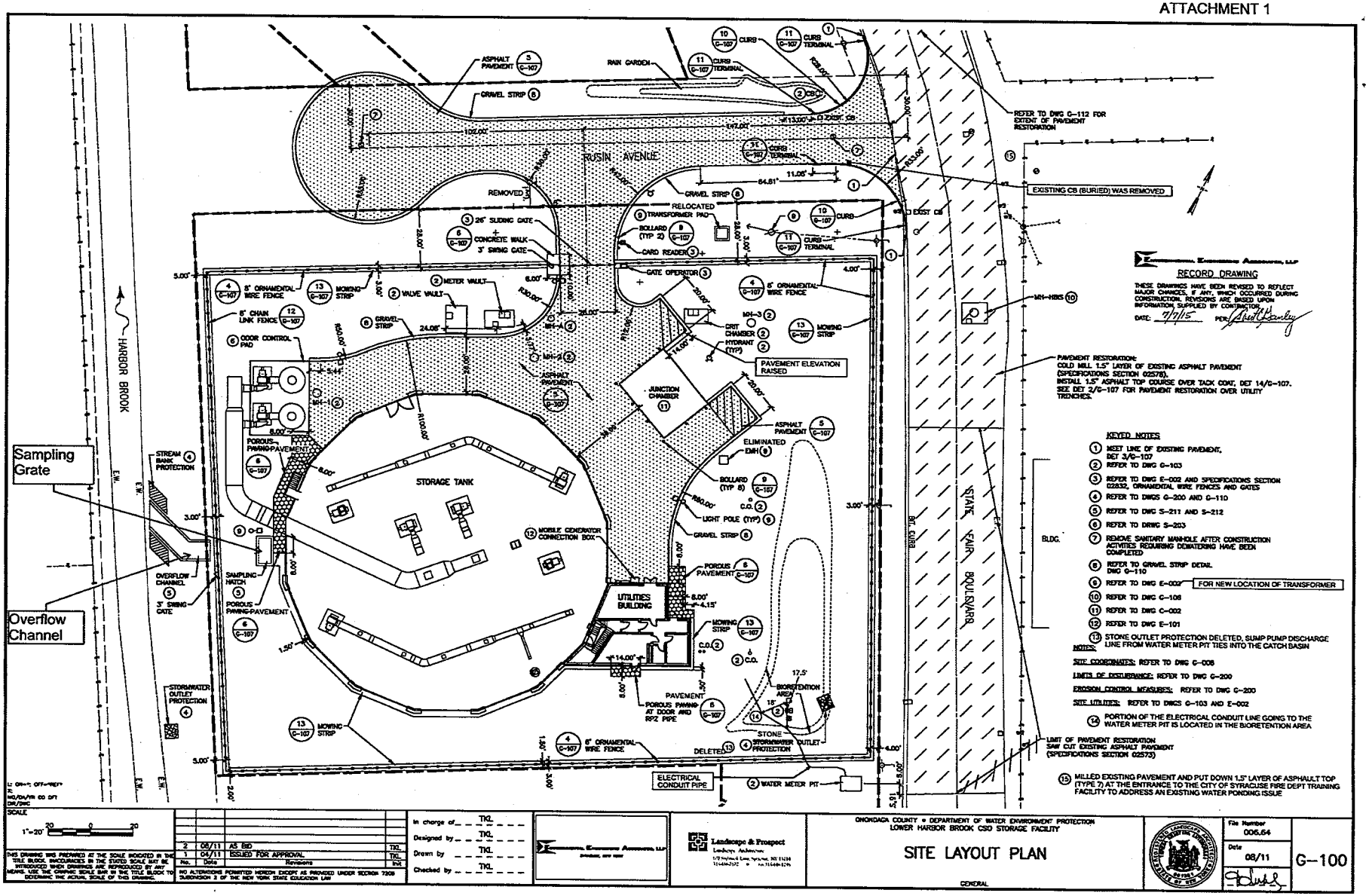
9. TRAINING CERTIFICATION RECORD

I certify that the requirements of this SOP have been communicated to me and that I am trained in its use.

Employee Name (print)	Signature	Job Title	Date
Tim O'Dell	T ODell	SETT	6/14/19

CHRIS Gandino		SE II	6-14-19
Jason Shaw		WWT II	6/18/19
Mark Halb-H		WWT II	6/18/19
K O'Brien		WWT I	6/18/19
Nathan Talucci		WWT-I	06/18/19
Dan Walpole		WWT II	6/18/19
Jeremy Lopez		WWT I	6/18/19
Travis Henn		WWTI	6/19/19
Robert D-Argenio		WWT-I	6-19-19
Melanie Hicks		WWT I	6/19/19
Don Aumell		WWT I	6/19/19
Barb Yeager		WWTI	6/19/19
Dean Ellsworth		Head Operator	6/20/19

ATTACHMENT 1



SCALE 1"=20'

No.	Date	Revisions	Init.
2	08/11	AS BID	TKL
1	04/11	ISSUED FOR APPROVAL	TKL

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

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In charge of TKL
Designed by TKL
Drawn by TKL
Checked by TKL

Landscape & Prospect Landscape Architecture

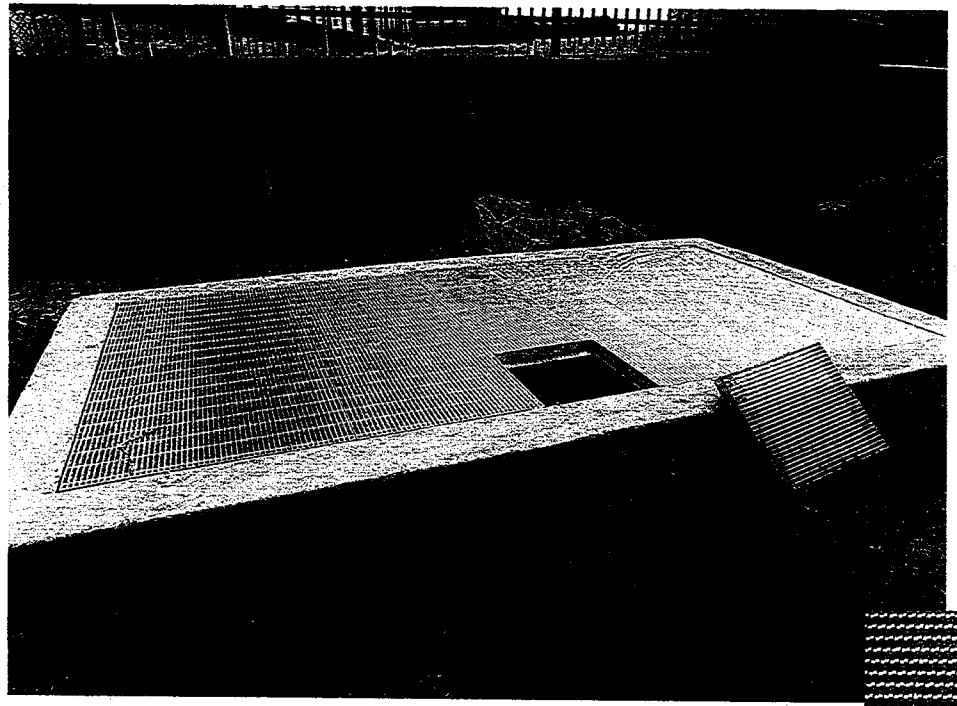
ONONDAGA COUNTY • DEPARTMENT OF WATER ENVIRONMENT PROTECTION
LOWER HARBOR BROOK CSO STORAGE FACILITY

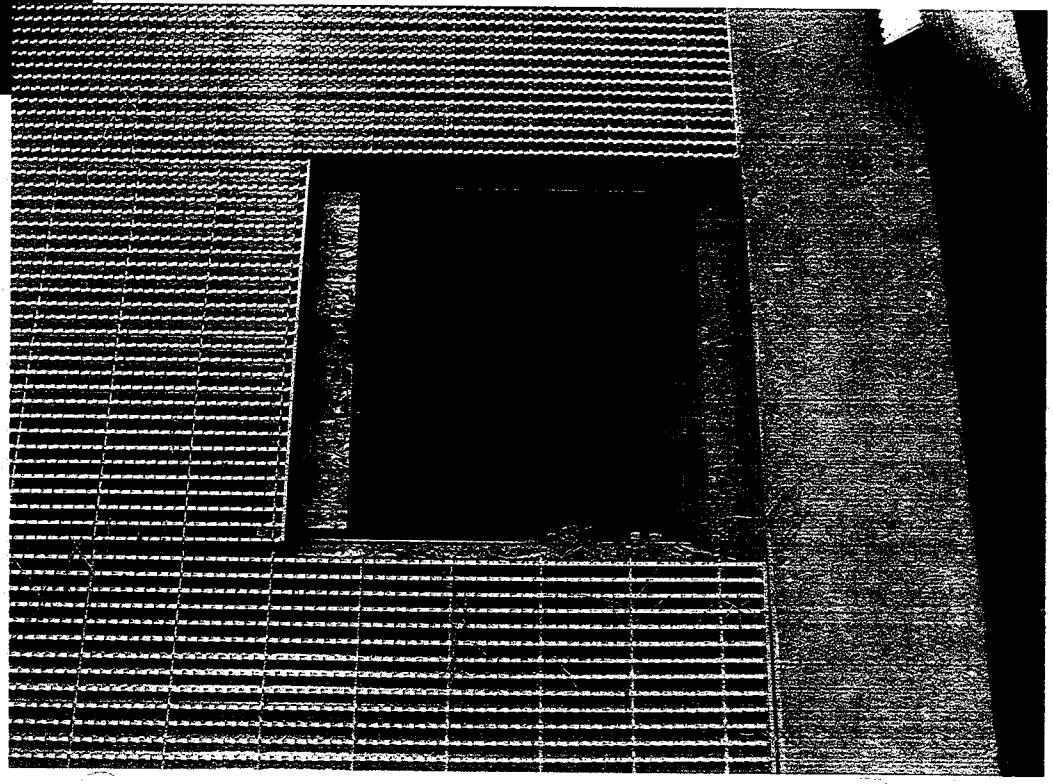
SITE LAYOUT PLAN

GENERAL

File Number 006.64
Date 08/11
G-100

ATTACHMENT 2
Sampling Grate





Standard Operating Procedure:

CLINTON CSO STORAGE FACILITY OVERFLOW SAMPLING (Outfall No: 33A) FC# 2125

1. APPROVED:

Author	Janaki Suryadevara (Janaki Suryadevara, SE II)	Signature	6/13/19 Date

2. APPROVED:

Supervisor	Jeanne C. Powers (Jeanne C. Powers, SE III)	Signature	6/13/19 Date

3. APPROVED:

QC Manager	(Jennifer May)	Signature	6/18/19 Date

4. APPROVED:

Laboratory Director	Joseph S. Denkenberger (Joseph S. Denkenberger, PhD)	Signature	6/17/19 Date

Change Record

Revision No.	Date	Responsible person	Description of change
1	2/22/2018	Janaki Suryadevara, SEII	First Issue
2	06/13/2019	Janaki Suryadevara, SEII	Section 3 (Responsibilities: Added Shaw, replaced Metro Head Operator); added second facility alarm.

Distribution List (via meeting or circulation to individuals)

1) Engineering and Technical Services (ETS) SOP Reference Book.

1. SCOPE

To establish standard operating procedure for collecting samples of wastewater that discharges excess flows associated with the design storm from the Clinton CSO Storage Facility into receiving waters (Onondaga Creek) in accordance with current SPDES Permit # NY0027081.

2. PURPOSE

Under extreme weather conditions, it is possible that too much flow in a short period of time could result in a storage facility overflow event. The County is required to monitor Combined Sewer Overflows (CSOs) and WWTP system by-pass/discharge events as part of SPDES Permit requirements to determine the impact of such discharges on receiving waters.

3. RESPONSIBILITIES

Name	Title	Cell Phone	Project Involvement
Janaki Suryadevara	Sanitary Engineer II	(315) 420-7259	ETS Engineer Contact *
Chris Gandino	Sanitary Engineer II	(315) 383-5364	ETS Engineer Contact *
Tim O'Dell	Sanitary Engineer II	(315) 391-4115	ETS Engineer Contact *
Dan Walpole	Wastewater Technician II	(315) 263-5237	ETS WWT II Primary Contact*
Mark Halbritter	Wastewater Technician II	(315) 399-3807	ETS WWT II Primary Contact*
Jason Shaw	Wastewater Technician II	(315) 575-4860	ETS WWT II Primary Contact*
Technicians Group	Wastewater Technician I	NA	Collect samples.
Daniel Jean	Operations Superintendent	(315) 263-7467	Supervisor - Cty Operations x 309
Dean Ellsworth	Metro Head Operator	(315) 435-3142	Metro Operations Supervisor x 208
Flow Control on-call Personnel	On-call Personnel	(315) 435-3142	Contact Metro Board regarding any facility issues.
Metro Board	Metro Operators	(315) 435-3142	Make alarm notifications.

** Monthly Rotation – refer to the current version of the ETS Engineer/Wastewater Technician II Monthly Rotational List Contact (Metro On Call Weekly Rotation Google Sheet).*

4. SAMPLING PLAN

4.1. SAFETY:

Required Personal Protective Equipment include: Safety Glasses, Steel Toe Boots, Gloves and Flashlight.

NOTE: As the facility overflow sampling location at outfall is located outside the storage facility, there is no need for the ETS WW Technician staff to enter the facility for sample collection.

4.2. MONITORING LOCATION(S):

Permit Outfall 33A (FC# 2125) Primary sampling location where facility effluent wastewater overflows and discharges to the receiving waters, i.e., Onondaga Creek. Grab samples are collected at the Sampling Hatch from this waste stream (refer to Attachment 1 – Site Layout Plan).

4.3. DISCHARGE DESCRIPTION:

An overflow event starts once overflow out of the CSO Storage Facility actually begins discharging to the receiving waters and ends once the overflow stops. As per the requirements of the Metro SPDES Permit, sampling during each discharge and/or bypass event shall occur within the first 60 minutes of the bypass. ***If the bypass does not occur for more than 30 minutes (start/end), it is not necessary to collect a sample.*** However, if the initial discharge stops and another storm occurs before stored Clinton Storage Facility water is completely pumped back to Metro WWTP, sampling shall resume within 30 minutes of commencing bypass. Any discharge event **will be confirmed visually by responding ETS personnel** at the time of arrival. For Lab notification, refer to Section 6.0 of this document.

4.4. RESPONSE:

4.4.1. The first facility alarm **"Clinton CSO Effluent Chamber Level at 6.xx Ft.---Notify ETS Primary Contact"**, is based on when the Effluent Chamber Level indicator in SCADA is at or greater than 6 feet and should initiate a sampling response at the Clinton SF. This ultrasonic level detector initial alarm will alert Metro Board personnel to notify the designated on-call ETS Engineer Contact (based on the "Metro On Call Weekly Rotation" – Google Sheet). This early notification alarm allows more time to mobilize wastewater technicians before the storage facility starts to overflow. For after-hour notifications, the ETS Engineer Contact will look at the weather forecast prior to notifying the eligible ETS WW Tech II (refer to the current version of the ETS WW Tech II Monthly Rotational Contact List) to arrange sample collection.

4.4.2. The second facility alarm **"Clinton CSO Effluent Chamber Level at 24.xx Ft.---Notify ETS Primary Contact"**, is based on when the Effluent Chamber Level indicator in SCADA is at or greater than 24 feet. This ultrasonic level detector alarm will alert Metro Board personnel to notify the designated on-call ETS Engineer Contact to inform them that the storage facility is close to overflowing. The following alarm(s) indicates that the effluent pump is running: "**Clinton CSO – Effluent Pump 1, 2 or 3 Running --- Notify ETS Primary Contact**."
Note: If the Overflow Channel level in the storage facility is at 32 feet, all effluent pumps shut off. However, the facility may still discharge through the Emergency Overflow Windows (flaps). The ETS WW Technician sampling crew can visually check the hatch to see if the facility is discharging.

4.4.3. **Response Times: Day - Evening (24 Hours) and Holidays:** During an alarm event, **Metro Board personnel** will notify the designated on-call ETS Engineer Contact first; if unavailable, the Board shall contact the ETS Back-up Contact; **do not just leave a message, actual voice communication with this individual must be made (refer to Section 3 herein for phone numbers).** The ETS Engineer contacted will then assume responsibility for arranging sample collection. All samples will be collected by ETS Wastewater Technician staff. Once the initial alarm has been received, the responsible party (**ETS Engineer Contact**) shall notify the eligible WTS Wastewater Tech II (***refer to the ETS WW Tech II Monthly Rotational Contact List***) to arrange sample collection by calling in a 2-person sample crew; (**Note: for safety reasons, the crew must be 2-person**). Once a set of grab samples has been collected by said crew, the ETS Wastewater Technician responders shall notify the ETS WWT II Supervisor or ETS Engineer Contact to confirm, if possible, that the duration of the overflow was greater than 30 minutes per SPDES.
NOTE: It is important to verify the overflow, and collect sample(s) before calling in Lab personnel after hours; visually check the Sampling Hatch and the outfall channel at creek side. Once the sampling event has ended but before leaving the facility, ETS Wastewater Technicians who responded to said event will call the ETS WWT II regarding the status of the event, i.e., whether samples were collected; if the duration of overflow meets SPDES criteria; and to receive further instructions as necessary.

If it is deemed a viable sample, i.e., over 30 minutes overflow duration, ETS WW Technician responders shall notify **Metro Board personnel between 1530 hours through 0300 hrs.** and request that they notify the Lab Supervisor on-call *(refer to the current version of the Lab Call in Procedures Memo)* to arrange for a Lab Technician to come in to the OCDWEP Environmental Lab located at the Henry Clay Boulevard facility and analyze the collected sample(s) based on holding times for F. coli samples.
Note: If the duration of the overflow is not determined following sample collection, the ETS WW Technicians will proceed to transporting the sample back to the Lab for analysis. The ETS WW Techs will then follow-up on any instructions. If samples are collected, the ETS WW Technicians will transport the samples to the Lab and store them in the Sample Sign-In room refrigerator. Leave appropriate C-of-C paperwork on counter for lab notification.

4.4.4. **Clinton SF Site Access:** To enter through the access gate, a pass card must be used (Ley Creek Scan Card). Once through the main gate, take a right turn and go to side parking lot where the Sampling Hatch cover is located (FC# 2125 – refer to Attachment 2). Once the technician reaches the Clinton Storage Facility Sampling Hatch, a tool is needed to open the hatch (this is stored at the Metro Waste Hauler Office).

4.4.5. **Required Sampling:** When arriving on site, ETS WW Techs need to confirm that an overflow is occurring. To do this, open the sampling hatch and check the overflow channel near the stream bed and confirm that flow is discharging.

1. Event Visual Observations (Overflow verification, sample grab times, location, and sample descriptions) - taken at the time of sample collection; record on any Chain of Custody that accompanies a sample. Note: Typically the ETS WW Technicians will not be able to determine the

actual run time, unless they arrive at site prior to the start of the overflow, they should be able to determine if the discharge duration is greater than thirty minutes. All samples collected will be delivered to the Lab for analysis.

2. ETS Wastewater Technicians are to collect the following grab samples from the primary sampling location at hatch during all SF overflow events:
   (1) 125ml Plastic (F. Coli) - Grab Sample. Note: needs Cl_2 Res - use Hach Colorimeter II at time of grabs; record on the Chain of Custody. **Collect during all overflow events every four hours per requirements (Note: Monitoring of F. Coli is only required from April 1 through October 15).**
   (2) Visual observation of Floatables at the primary sampling location and the outfall to the receiving water **MUST** be observed and noted on the C-of-C form.

4.4.6. **Sampling Parameters:**

CLINTON CSO STORAGE FACILITY SAMPLING ANALYTES *(For OCDWEP Environmental Laboratory use only)*		
ANALYTES	**SAMPLE TYPE [2]**	**FREQUENCY**
Fecal Coliform [1]	Grab	Each Event (1 every 4 hrs)
Floatable Material (Visual observations)	Visual	Each Event (1 every 4 hrs)
[1] Refer to current OCDWEP Environmental Laboratory-Field Preservation Guide. **[2] Samples to be collected at the sampling hatch of the Clinton SF. Collect F. coli grabs every 4 hours during each overflow event.**		

5. GENERAL REQUIREMENTS (ETS Personnel and Metro Board)

Overflow Event Tracking Log/Chain of Custody Form/Sample Preservation

5.1. C-of-C Forms must be completed for each sample set collected; include visual observations of sample and note if there are any floatables as well. C-of-C Forms must accompany all samples to the OCDWEP Environmental Lab. Completed data sheets recording observations/grab samples must also be delivered to the OCDWEP Environmental Lab.

5.2. Preserve samples according to procedures listed on the most current OCDWEP Environmental Lab - Field Preservation Guide. All samples must be delivered on ice to the OCDWEP Environmental Lab or store at ≤6°C without freezing.
NOTE: If samples are collected and delivered to the Lab outside of normal working hours, then store samples in the under-counter refrigerator located in the Lab sample Sign-in room. Leave appropriate C-of-C paperwork on counter for lab notification.

5.3. The Fecal coli containers are pre-preserved; do not rinse or overfill containers. Collect sample in one clean F. coli bottle and then pour into a second clean F. coli bottle. Deliver samples on ice to the OCDWEP Environmental Lab or store at ≤6°C without freezing.

6. LAB NOTIFICATION

6.1. Wastewater Technician responders will notify Metro Board and have them call the designated Lab call-in contact person between 1530 - 0300 hours, if **F. coliform** analysis is required, so that arrangements can be made to begin the analytical procedures for the samples. **Refer to current version of Call-in schedule for OCDWEP Environmental Laboratory**. If the designated call-in person is unavailable, the Board will contact the Senior Chemist as per memo. If samples are delivered to the Lab outside of normal working hours, then store samples in the under-counter refrigerator located in the sample Sign-In room. Leave appropriate C-of-C paperwork on counter for lab notification. Deliver samples on ice or store at ≤6°C without freezing.

6.2. During scheduled work hours, the Lab will be notified by the ETS WW Tech II and/or the ETS Engineer Contact on call.
The event period will be determined by the ETS Engineer Contact based on data received from SCADA monitor and/or Flow Control Engineer(s).

7. REFERENCE

7.1. Call-in Procedures for OCDWEP Environmental Lab.

7.2. OCDWEP Environmental Laboratory - Field Preservation Guide.

7.3. Metropolitan-Syracuse WWTP SPDES Permit#: NY0027081, dated May 13, 2017.

8. ATTACHMENTS

8.1. Attachment 1 - Clinton CSO Storage Facility Site Layout Plan

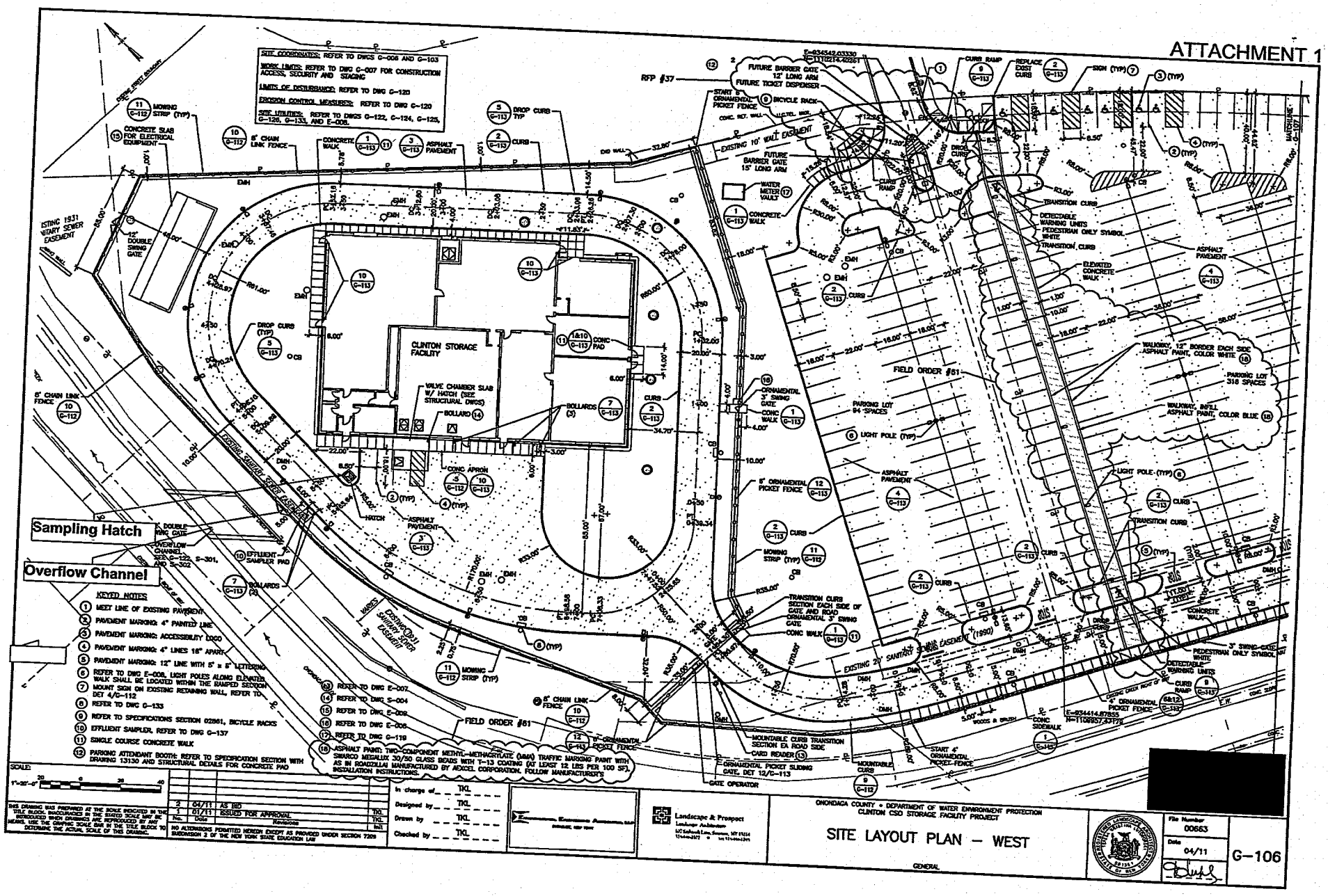
8.2. Attachment 2 - Sampling Site Photos

9. TRAINING CERTIFICATION RECORD

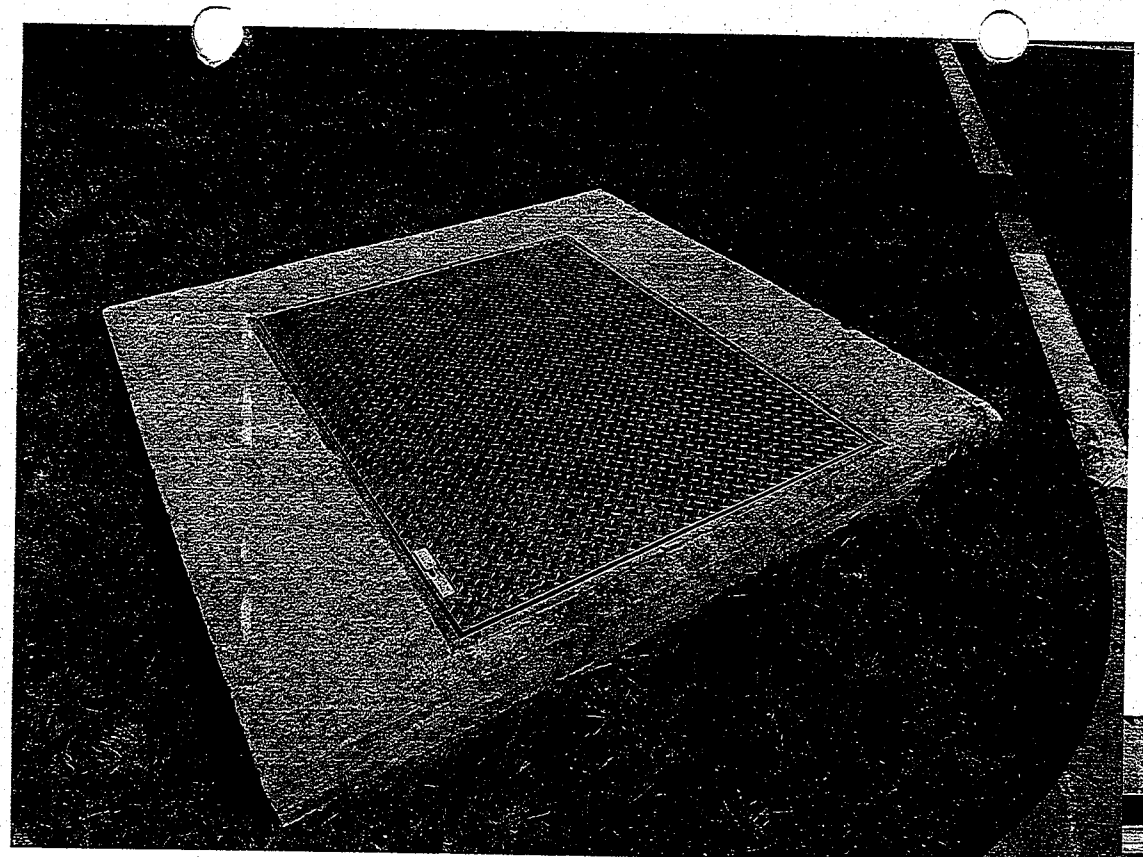
I certify that the requirements of this SOP have been communicated to me and that I am trained in its use.

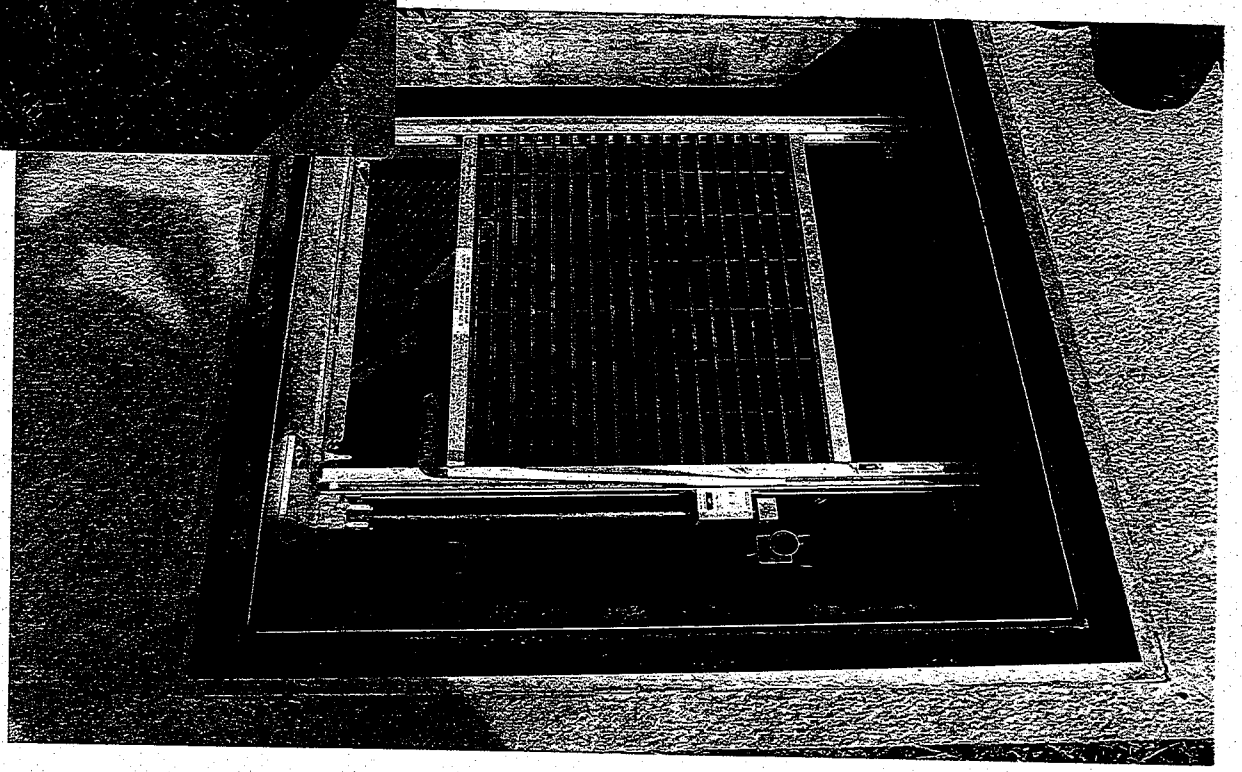
Employee Name (print)	Signature	Job Title	Date
Tim O'Dell		SE II	6/14/19
Chris Gandino		SE II	6/9/19
Jason Shaw		WWT II	6/18/19
Mark Halbritter		WWT II	6/18/19
Kimberly O'Brien		WWT I	6/18/19
Nathan Talvie		WWT-I	06/18/19
Dean Walpole		WWT-II	6/18/19
Jeremy Lopez		WWT-I	6/18/19
Travis Henn		WWT-I	6/19/19
Robert D'Argenio		WWT-I	6-19-19
Melanie Kukla		WWT I	6/19/19
Dan Aumell		WWT I	6/19/19
Barb Yeager	Barb Yeager	WWT I	6/19/19
Dean Ellsworth		Head Operator	6/20/19

ATTACHMENT 1



ATTACHMENT 2
Sampling Hatch





Standard Operating Procedure:

Wet Weather Point Source Discharge Procedures

1. APPROVED:

Author	Printed Name	Signature	Date
	Tim O'Dell	Tim O'Dell	10/25/17

2. APPROVED:

Supervisor	Printed Name	Signature	Date
	Jeanne Powers	Jeanne C Powers	10/25/17

Change Record

Revision	Date	Responsible person	Description of change
1	10/10/17	Tim O'Dell	SOP Separation from SOP 00010 Metro WWTP Bypass Monitoring and Point Source Discharge Procedure.

1. SCOPE

To establish standard operating procedures to eliminate pre-established, controllable Point Source Discharges during high flow conditions to maximize treatment capacity at the POTW.

2. PURPOSE

In accordance with SPDES Permit requirements (SPDES Permit # NY 002 7081 EDP 7/1/2017), all pre-established wet weather related point source discharges are to be curtailed during a Metro bypass period to maximize treatment capacity during high flow events.

3. RESPONSIBILITIES

Name	Title	Home Phone	Cell Phone	Project Involvement
Chris Gandino	Sanitary Engineer II	NA	315-383-5364	ETS Engineer Contact*
Tim O'Dell	Sanitary Engineer II	NA	315-391-4115	ETS Engineer Contact*
Janaki Suryadevara	Sanitary Engineer II	315-699-0467	315-420-7259	ETS Engineer Contact*
Daniel Jean	Operations Superintendent	315-436-3509	315-263-7467	Operations Superintendent
Metro Board	Metro Operators	315-435-3142		Make alarm notifications.

*Monthly Rotation – refer to current Monthly Rotational List schedule attached.

4. POINT SOURCE DISCHARGE NOTIFICATION PROCEDURES

4.1 Wet Weather Point Source Discharges - Metro Board shall notify the Operations Superintendent and the ETS Engineer Contact when a Secondary Bypass Event is imminent or has started at Metro WWTP. The ETS Engineer Contact will initiate cancellation of any/all identified conditional Point Source Discharges. Once the bypass condition has passed and the Metro Board approves, the ETS Engineer contact will call each industry and give them permission to resume discharge to the sanitary sewer.

The following sites are currently identified as permitted conditional point source discharges that are routinely accepted at Metro (there may be other sites not included herein- refer to Section 6 below,).

5.0 Wet Weather Point Source Discharges

5.1 Honeywell Discharges

5.1.1 Honeywell SCA Treatment Plant: The ETS Engineer Contact will notify Tom Boea (315-532-5608) to cease discharge until further notice.

5.1.2 Honeywell Willis-Semet Groundwater Treatment Plant, Honeywell Wastebed Overflow and Honeywell LCP: The ETS Engineer Contact will notify the following contacts in this order: John Formozza (315-532-5608) or Mike Stout (315-558-4018) to cease discharges until further notice.

5.2 SU Chilled Water Plant: The ETS Engineer Contact will notify the Chilled Water Plant Operator (24 Hr. Phone – 315-443-3714) or the S.U. Assistant Manager, Steve Richards (315-952-9502) to cease discharge until further notice.

5.3 Hancock Airport: The ETS Engineer Contact will notify Hancock Airport personnel in this order; Airport Operations (315-455-3666 or 315-374-4403), Antimo Pascarella (315-956-1595) or John Carni (315-374-4629) to cease all lagoon discharges until further notice. Note: The Hancock Airport generally only discharges during the cold-weather months of November through April but sometimes has lagoon discharges into May and June depending on weather conditions of the previous season.

5.4 The Town of Salina Landfill: The ETS Engineer Contact will notify Tom Bullard from the Camden Group (315-591-4180) or The Town of Salina Highway Department (315-455-5525) to cease discharge until further notice.

5.5 Other Point Source Discharges (Interim; short term). These may include, but are not limited to, short-term permitted discharges such as groundwater, masonry restoration and swimming pools. Permits shall contain requirements for WWOP contingencies.

6. UPDATING LIST OF INTERIM POINT SOURCE DISCHARGES

ETS Engineering Staff will maintain a known list of interim point source that are permitted to discharge into the collection system. Please include the following information:

1. The Project Name/address of the discharge location.
2. The date the discharge will begin as well as the expected duration of the discharge.
3. The gallons/ minute of the discharge.
4. The designated site contact(s) along with their phone numbers (All hours).
5. The date the discharge will be terminated.

It is the responsibility of the ETS Engineer Contact to actively maintain a list tracking all current short-term permitted discharges to the Metro WWTP along with contact information to allow the shutdown of said flows during a Wet Weather By-pass Event.

7. HEADWORKS BYPASS/EMERGENCY PROCEDURES

7.1 Waste Hauler Control Facility (WHCF): Metro Board shall notify the ETS Engineer Contact or Waste Hauler Control Facility personnel that the plant is approaching a bypass condition at the Headworks. The Waste Hauler Control Facility will be closed before the bypass starts. Preparation for closure involves posting a sign at the Metro Waste Hauler Control Facility that the WHCF is closed or that closing is imminent. If permitted by the Metro Board, Haulers that are already at the plant or arrive shortly thereafter may be allowed to discharge as long as a Headworks bypass is not occurring. Waste Hauler Control Facility personnel shall immediately begin notifying all the permitted Waste Haulers by phone of the situation and discourage bringing any loads to Metro until further notice. Once the event has ended, Waste Hauler Control Facility staff will again notify each hauler that the WHCF has re-opened and normal operations have resumed.

7.2 Industry Shutdowns: During a catastrophic weather event and/or Metro WWTP unanticipated unit process shutdown(s), there is the possibility that industrial discharges will need to be curtailed or flow limited due to the lack of treatment capacity at the Metro POTW. In such a rare case, the Operations Superintendent or designee will notify the Commissioner of said conditions and wait for approval to proceed as directed.

8. TRAINING CERTIFICATION RECORD

I certify that the requirements of this SOP have been communicated to me and that I am trained in its use.

Employee Name (print)	Signature	Job Title	Date
JANAKI SURYADEVARA	Janaki Suryadevara	SE II	10/25/17
Daniel Dean		Op Superintendent	10/25/17
CHRIS GAUCH		SE II	10/26/17
JAMES JONES		HEAVY OPERATOR	10/27/17