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Mr. Bharat Patel, PE
Environmental Program Manager
Clean Water Program
Pennsylvania Department of Environmental Protection
2 Public Square
Wilkes-Barre, PA 18701-1915

DEPARTMENT OF ENVIRONMENTAL PROTECTION

**RE: 2017 Long Term Control Plan Update
Borough of Freeland Municipal Authority, Luzerne County
NPDES Permit No. PA0024716**

BL No.: 2016-2284-002

Dear Mr. Patel:

Please find enclosed the 2017 Long Term Control Plan Update for the Borough of Freeland Municipal Authority's Combined Sewer Overflow (CSO). If you have any questions or comments related to the update, please contact me at phone 570.821.1999 or email salbert@borton-lawson.com and Mr. David Kavitski, Authority Chairman, phone 570.636.1733 or email rdkeng@ptd.net.

Sincerely,

Borton-Lawson
Samantha Albert, PE
Water/ Wastewater Manager

Bethlehem
Pittsburgh
State College
Wilkes-Barre

Enclosures: 2017 Borough of Freeland Municipal Authority LTCP Update (2 COPIES)
SA

c: Borough of Freeland Municipal Authority w/ Enclosure (2 COPIES)

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LONG TERM CONTROL PLAN UPDATE

THE BOROUGH OF FREELAND MUNICIPAL AUTHORITY

Freeland Borough, Luzerne County, PA

February 2017

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BL PROJECT NO: 2017-3129-001

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A. INTRODUCTION AND BACKGROUND

The Borough of Freeland Municipal Authority (Authority) provides sanitary sewer collection, conveyance, and treatment services for the Borough of Freeland (Borough), and portions of Foster Township and Butler Township, all located within Luzerne County, PA. United States Census data from year 2010, developed by the U.S. Census Bureau, showed a 3% decline in population in the Borough between 2000 (3,643) and 2010 (3,531). Population is not projected to increase within the Borough within the next ten years. A location map and aerial map of the Authority's service area are provided as **Figures 1 & 2** in **Appendix A**.

The Authority-owned sewer system within the Borough includes approximately 11.3 miles of gravity sewers, one (1) sewage pump station, known as the Wyoming Street Pump Station or Foster Township Woodside Pump Station, which handles approximately two-thirds (2/3) of the system wide flows, and a wastewater treatment plant (WWTP) currently permitted at 1.2 million gallons per day (MGD) average daily flow. The pump station is owned by Foster Township (Township) but is operated and maintained by the Authority through an inter-municipal agreement. The wastewater treatment plant discharges to Pond Creek, a dry bed intermittent watercourse tributary of the Lehigh River.

The Authority has one (1) permitted (Combined Sewer Overflow (CSO) structure that is utilized as part of the collection system to help manage wet weather flows. The CSO exclusively services two (2) combined sewer subareas, known as Subareas 3 and 4, located within the Borough. The Borough is comprised of a total of four (4) sanitary sewer subareas, locations shown on **Figure 3** in **Appendix A**). The CSO is permitted through the National Pollution Discharge Elimination System (NPDES) program via NPDES Permit No. PA0024716 issued by the Pennsylvania Department of Environmental Protection (PADEP). The CSO is identified as Outfall 002 in the NPDES Permit. Based on the Borough's population the Authority's CSO is considered a Small System CSO.

The CSO is required to handle wet weather flows resulting from heavier precipitation events and is only to be utilized during a heavy rain event or large snow melt to prevent overflow or flooding at the Wyoming Street Pump Station and/ or hydraulic overloading at the WWTP. Dry weather flows are not by-passed via the CSO at any time. Flows entering the CSO are metered so that diverted flows are adjusted to minimize the by-pass flow volumes and maximize flows to the pump station and WWTP.

The CSO currently discharges to an abandoned strip mine area and is considered to have insignificant environmental impact on adjacent waterways. All CSO bypass events are flow metered and recorded. Results of all CSO flow metering are reported once per month in Discharge Monitoring Reports (DMR's) submitted to PADEP.

The CSO diversion structure was originally installed in 1985 and operated in a completely manual mode. The CSO structure has recently been completely re-constructed (construction completed in 2014) and its operation and control are now fully automated, with new

hydraulically operated floatable and solids screening equipment, permanent flow meters installed both upstream and downstream of the structure, and all instrumentation reporting data to a new Supervisory Control and Data Acquisition (SCADA) system installed at the WWTP.

Because the Authority owns and operates a permitted CSO, they are required to comply with the United States Environmental Protection Agency (EPA) CSO Control Policy issued in 1994, as well as Pennsylvania's CSO Policy. As part of these requirements, the Authority developed a Long Term Control Plan (LTCP) in 2007 to evaluate, select, plan, and communicate both short term and long term operational and capital improvement initiatives working toward improved control and monitoring of CSO discharges. The Authority subsequently published a LTCP Update in 2009 to provide a status report of their progress toward the initiatives and goals identified in the 2007 plan. This document serves as an update to the 2009 report.

B. SEWAGE PLANNING WORK UPDATE

The Borough completed an Official Sewage Facilities Plan Update (Act 537 Plan) that was approved by PADEP in December 2008. In that Plan, the Authority was required, in part, to hydraulically upgrade the WWTP from a permitted flow of 0.75 MGD to 1.2 MGD, add equalization (EQ) tanks for storage of peak wet weather flows, upgrade the CSO structure such that operation of the structure would be fully automated and controlled to minimize by pass events, and repair or replace select sanitary sewer mains, manholes and laterals within the collection system identified as highest priority for need of rehabilitation to reduce extraneous inflow and infiltration (I&I) into the sanitary collection system.

Additionally, the Authority completed a Joint Act 537 Plan Update on behalf of the Borough and Foster Township, approved in December 2013. The Joint Plan was required by PADEP to reconcile inconsistencies with previous planning related to the Township-owned Wyoming Street Pump Station (also known as the Woodside Pump Station), as well as to evaluate the need to replace the ~7,000 linear feet of pump station force main and gravity interceptor to improve pump station capacity. The recommendation from the Joint Plan was to install new larger size, dual force mains for the Wyoming Street Pump Station to improve pumping capacity and station reliability. The implementation of the larger force main increased pump station capacity to approximately 960 gallons per minute (gpm) or 1.38 MGD (max flow 1 pump operating), which is a significant increase from the Authority's old Wyoming Street Pump Station original capacity of approximately 360 gpm (0.58 MGD).

All of the aforementioned capital improvement work was undertaken by the Authority, at a considerable cost of \$13,396,000 dollars. Construction was started in 2010 and all capital improvement work outlined in both 537 Plans was completed in 2014.

There was also sewage planning and subsequent capital improvement work completed by the Township related to constructing a new pump station to replace the old Wyoming Street Pump Station. The new station is referred to as the new Wyoming Street Pump Station or the Foster

Township Woodside Pump Station. The Township constructed the new pump station in 2010 adjacent to the “old Wyoming Street Pump Station” (owned by the Authority & presently only used as a back-up station) with an increased permitted capacity of 1.1 MGD (this capacity was increased to 1.38 MGD in 2014 with the construction of the previously mentioned new larger diameter dual force mains). The old Wyoming Street Pump Station capacity was approximately 360 gallons per minute (gpm) or 0.58 MGD. The primary reason for the construction of the new station was to provide capacity to convey additional flows from the Township’s Sewer Project which constructed public sewers in areas previously on “wild cat” sewers and on-lot systems, as well as convey existing flows from the Borough’s Subarea 3 and Subarea 4. The Township also rehabilitated their entire portion of existing Subarea 5 public sewers to remove extraneous I&I from their collection system. All flows from the Foster Township Sewer Project convey directly to the Wyoming Street Pump Station and do not pass through the Authority’s CSO structure.

C. STATUS OF IMPLEMENTATION OF THE NINE MINIMUM CONTROLS (NMCS)

1. PROPER OPERATION AND MAINTENANCE.

The first minimum control focuses on proper operation and regular maintenance programs for the sewer system and CSO outfall. The Authority has operators and personnel responsible for regular inspection of the sewer system, including the CSO diversion structure. Presently, the Authority employs 1 full-time and 1 part-time licensed wastewater treatment plant operators, as well as 1 full-time wastewater operator and a wastewater supervisor available to complete operation and maintenance activities for the sanitary sewer system.

The CSO structure is inspected after every by-pass event to ensure there are no malfunctions with the CSO gate, screening equipment, or other instrumentation. The structure is also inspected to ensure there is no debris caught up in the structure that would prevent or block flow. The CSO has hydraulic screening equipment which removes floatables and solids ¼-inch and greater in size. The hydro-jet screening equipment is inspected and cleaned as needed after every CSO by-pass event. In addition to screening solids of CSO flows, the Authority is currently utilizing calcium hypochlorite tablets at the CSO to disinfect by-pass flows.

The Authority’s maintenance staff has been provided with the proper training and equipment to inspect and maintain the collection system. In 2012/ 2013 time frame, the authority purchased a sewer camera truck with sewer jet cleaner for the specific purpose of cleaning and inspecting their sewer mains and to support their long-term goal of identifying and eliminating sources of extraneous I&I.

New flowmeters, hard wired for power and connected to the new SCADA system, were installed upstream and downstream of the CSO in 2014. These meters are utilized to measure flows from the combined sewer areas (i.e. Subareas 3 & 4), measure CSO bypass flows, and measure flow conveyed to the Wyoming Street Pump Station. The Authority staff have been

trained on how to properly maintain and clean the new flowmeters (including flumes and area velocity meters), and the meters are calibrated by a service technician once per year.

There is also significant maintenance work conducted on the Wyoming Street Pump Station annually to ensure reliable and maximum pumping operation at all times. The Authority has the wet well pumped of solids as needed, pumps are inspected once per year, repairs made to motors as indicated by pump indicators. In 2013, the Authority spent approximately \$85,000 to install a hydraulic in-line grinder at the pump station to improve performance at the station, decrease pump down-time, eliminate blockages and surcharges on the inlet line, protect pumps from clogging, improve pump reliability and efficiency.

2. MAXIMUM USE OF THE COLLECTION SYSTEM FOR STORAGE.

The second minimum control requires maximization of the storage capacity of the collection system. Authority personnel routinely inspect the collection and conveyance system with their sewer camera truck and visible inspection through manholes. Regular duties include frequent inspections of problem areas to remove flow obstructions. Sewer mains have been televised in order to document any known defects or illegal connections. The collection system is routinely cleaned and flushed via sewer jetting when warranted to remove solids and debris to maintain maximum capacity and performance.

The Authority has embarked on an aggressive program to reduce I&I in the collection system. The Authority smoke tested the Borough sanitary system in 2012. All illegal connections found, such as roof leaders and open clean outs, were provided to the Borough for enforcement action. Numerous manhole repairs have been completed by the Authority since 2009 to eliminate this source of I&I. In 2012, the Authority spent approximately \$1.5 million dollars for replacement and slip lining a total of approximately 5,000 linear feet (LF) of sanitary sewer main, as well as replacement of associated manholes and laterals within the public right of way. In 2016, the Authority spent \$230,000 to replace a portion of the Schwabe Street sanitary main to improve slope, velocity, and eliminate solids settling in this line. All of these improvements have increased available storage in the system by directly targeting elimination of I&I.

Another upgrade completed by the Authority which has had a significant impact on improving collection and conveyance system capacity is the upgrade of the new Wyoming Street Pump Station. In 2010 Foster Township constructed a new pump station which increased capacity from 0.58 MGD to 1.1 MGD permitted, but with actual capacity of 660 gpm or 0.95 MGD. The lower than expected capacity is believed to be from the aged 8-inch cast iron force main having built up tuberculation, effectively reducing the force main diameter. The Authority then spent approximately \$1 million in to replace the pump station's aged 8-inch cast iron force main with new 10-inch PVC dual force mains; this project was completed in 2014. The force main replacement increased the Wyoming Street Pump Station capacity to its present capacity of maximum flow (with 1 pump operating) of 1.38 MGD. This capacity is significant, and in fact, is greater than the permitted average daily flow at the WWTP of 1.2 MGD.

3. REVIEW AND MODIFY PRETREATMENT REQUIREMENTS

The third minimum control concentrates on review and modification of pretreatment requirements to ensure that CSO impacts are minimized.

Currently, the only industrial discharge into the Subarea 3/ 4 combined sewer area is from PGA Recycling. PGA operates on the former Garland Commercial Industry. The facility recycles plastic bottles, primarily used water bottles and some sport drink bottles as well. Their wastewater flows are generated primarily from the washing of plastic bottles. In 2016, the average daily flow from PGA was about 4,300 gallons per day (based on metered water usage), which is a very low percentage of the overall flows to the Subarea 3/ 4 area. The primary constituent in the PGA wastewater discharge are alkaline surfactants, which have posed no issue to the pump station or WWTP. The Authority developed and imposed wastewater pretreatment limits for the PGA facility which were provided to them before they began their operations in 2015. A copy of the **PGA Wastewater Pretreatment Limits** are provided in **Appendix B**.

Citterio USA, a high end cured meat processing facility located in Foster Township, is the largest industrial customer to the Authority. Citterio's flows do not pass through the Borough's Subarea 3 & 4 area or the Authority's CSO, but rather are conveyed directly to the Wyoming Street Pump Station for conveyance to the Authority's WWTP.

The Borough in coordination with the Authority and Foster and Butler Townships adopted an updated Industrial Pretreatment Ordinance in 2013 to strengthen the Borough's Sewer Ordinance and provide more stringent requirements for industrial discharges, including the ability for the Authority to implement enforcement actions for non-compliance with any imposed pretreatment limits. A copy of the **Industrial Pretreatment Ordinance** is provided in **Appendix B**. In 2016, the Authority also adopted a High Strength Waste Surcharge for BOD which applies to all customers, but specifically as incentive to keep BOD waste strengths low for the industrial customers.

4. MAXIMIZATION OF FLOW TO THE POTW FOR TREATMENT.

The fourth minimum control requires treatment plants to maximize flows to their treatment facilities. As described previously, the Wyoming Street Pump Station capacity has effectively been increased from original maximum capacity of 0.58 MGD to 1.38 MGD (with 1 pump operating) from construction of a new pump station with higher capacity pumps and construction of a new larger diameter force main. This is an effective 238% increase in pumping capacity. These capital upgrades, which were final completed in 3rd quarter 2014, have provided a significant improvement in maximizing flows from Subarea 3 & 4 to the WWTP and minimizing CSO bypass flow volumes.

Another significant impact made with respect to maximizing flows to the WWTP, are the infrastructure upgrades completed by the Authority at the WWTP itself and the CSO structure. As part of the WWTP & CSO upgrades project completed in 2014, the Authority installed two (2)

EQ tanks at the WWTP with ~400,000 gallons capacity to store peak wet weather flows; they upgraded the overall hydraulic capacity of the WWTP from 0.75 MGD to 1.2 MGD average daily flow, with the ability to handle peak daily flows in the range of 1.7 -1.8 MGD, and even higher peak hourly flows or higher peak short duration flows. A radio telemetry SCADA system was installed to provide communication and control of the WWTP with the CSO and Wyoming Street Pump Station. The CSO structure was completely re-built with an automated sluice gate to by-pass wet weather peak flows while allowing the Subarea 3 & 4 base flows to always flow to the Wyoming Street Pump Station. The operation of the CSO is presently fully automated to minimize by-pass flows, maximize flows to the Wyoming Street Pump Station and WWTP. The CSO sequence of operation is continuously evaluated by the Authority and modified as needed to improve performance. The cost of this capital improvement work was in the range of \$9 to \$10 million dollars.

5. ELIMINATION OF DRY WEATHER FLOWS.

The fifth minimum control requires the Authority to eliminate dry weather CSO by pass events. Dry weather by pass flows have not occurred within the Authority's system at any time. Routine maintenance of the Wyoming Street Pump Station and the CSO structure ensure the proper operation of these systems, which eliminates the possibility of dry weather overflows.

6. CONTROL OF SOLID AND FLOATABLE MATERIALS IN CSOs.

The sixth minimum control calls for the control of solid and floatable materials in CSOs. As part of the WWTP and CSO upgrades capital upgrades project, a Hydro-Jet Screen was installed in 2013 at the CSO structure to remove floatable materials and solids ¼-inch and larger in size. The screen requires no power for its operation; the equipment utilizes hydraulics for its operation by flushing all screened material to the Wyoming Street Pump Station for conveyance to the WWTP. Technical data on the **Hydro-Jet Screen** is provided in **Appendix C**.

Solids and debris are removed from the combined sewer collection system through the Authority's routine cleaning/ sewer jetting of sewer lines during periods of dry weather. Buildups of solids and floatable materials in the system are not normally a problem because the Borough's topography provides more than adequate velocity in the pipe runs to be self-cleaning.

7. POLLUTION PREVENTION PROGRAMS TO REDUCE CONTAMINANTS IN CSOs.

The seventh minimum control involves pollution prevention. Regular cleaning of the collection system helps prevent release of contaminants into the environment during CSO events. The flows at the CSO are very low in BOD and TSS because the buildup of solids is not a problem in the collection system and the fact that there is only one (1) industrial user on the system located in Subarea 3 & 4 sewers.

8. PUBLIC NOTIFICATION.

The eighth minimum control involves public notification as to the location, occurrence, and possible health and environmental effects of CSOs.

The residents of Freeland Borough and Foster Township are aware of the CSO because of the numerous system-wide sewer improvement projects that have been executed over the last nine (9) years by the Authority that have required approval through the State's sewage planning process. Beginning with the Borough's Act 537 Plan Update approved in 2008, followed by the Joint Borough/ Township 537 Plan Update approved in 2013, and an Act 537 Special Study by the Authority that is currently on-going related, in part, to the Authority's CSO. In addition, there have been associated Water Quality Management permits which require public notification as well, related specifically to the WWTP & CSO upgrades, and Wyoming Street Pump Station force main upgrades.

The Authority is currently coordinating with the Borough to upgrade the Borough's web site to post and notify the public of CSO by-pass event details on the web site. The CSO by pass events are documented and reported in the monthly DMRs submitted to PADEP and are also summarized in the annual Wasteload Management Report (Chapter 94 Report), which the Authority makes available for public review upon submission to PADEP.

The CSO currently discharges to an abandoned strip mine area and is considered to have insignificant environmental impact on adjacent waterways and the public.

9. MONITORING.

The ninth minimum control requires visual inspections and monitoring to characterize the CSO impacts and the efficiency of CSO controls.

In 1992, a flow meter was installed on the effluent pipe of the CSO to record actual by-passed flows. That meter had periodically malfunctioned since 2006, thereby providing incomplete flow records from that time period through 2014 when new permanent flow meter installations were completed.

As part of the WWTP & CSO and collection system upgrades capital improvement project, in 2014 the Authority completed installation of permanent flow meters throughout the collection system in four (4) locations relevant to monitoring the CSO operation, CSO by-pass flows, flows to the Wyoming Street Pump Station, and calculating annual capture rates for compliance with EPA's "Presumption" approach (discussed in more detail in Section H) as follows:

- 1) Subarea 3 flow → area velocity flow meter
- 2) Subarea 4 flow → area velocity flow meter
- 3) Subarea 3 + 4 flow to Wyoming Street Pump Station → Parshall flume with ultrasonic sensor flow meter
- 4) CSO By-pass flow → Palmer Bowlus flume with ultrasonic sensor flow meter

A Parshall flume with ultrasonic sensor flow meter was installed by Foster Township on their sewer line to the Wyoming Street Pump Station. Even though the Township flows do not pass through the Authority's CSO, they impact the capacity of the Wyoming Street Pump Station with their I&I component. Therefore, the Authority has a vested interest in monitoring the Township flows and ensuring those flows have minimal I&I to maximize station capacity for the Borough's combined sewer flow area.

All the flow meters, including the Township's meter, are hard wired for power and transmit data to the Authority's SCADA system via radio telemetry.

The Authority has not collected routine water quality samples from the CSO by-pass flows since the last LTCP update; however, the Authority will begin immediately to collect samples to test for BOD, TSS, pH, and fecal coliform. Previous sampling of the CSO by-pass flows indicated both low BOD and low TSS. With the CSO system in full automated operation, it is more difficult for the operators to plan for sampling events as they may occur during non-working hours for the Authority staff. The Authority has begun using calcium hypochlorite tablets at the CSO to provide disinfection of the by-pass flows.

D. IDENTIFICATION OF SENSITIVE AREAS IMPACTED

The outfall from the CSO is an 18" concrete pipe that is not submerged and is located approximately 150 feet downstream of the CSO structure. The discharged water eventually migrates to an abandoned strip mine area, not a waterway.

The Authority will begin to collect water quality samples of the CSO by-pass flows at regular intervals to document the quality of the discharge. Levels of BOD and TSS from CSO by-pass flows have been historically very low, such that the effluent quality almost met secondary treatment objectives.

From above, the CSO flows are not considered to adversely environmentally impact any sensitive areas or waters of the Commonwealth.

E. PUBLIC PARTICIPATION IN THE CSO PLAN

The initiatives recommended in the 2009 LTCP Update have been reviewed by the appropriate municipal planning agencies and the general public via the sewage planning process.

The Authority is currently working with the Borough to facilitate posting of the 2017 LTCP Update on the Borough's website available to the public. This 2017 LTCP Update will also be reviewed at the Authority's next public meeting and made available for public review at that time.

F. SYSTEM HYDRAULIC CHARACTERIZATION

The wastewater system operators submit monthly CSO reports as part of the WWTP DMRs submitted to PADEP. Metered bypass flows, duration of the overflow, cause of the overflow, and measured precipitation data are included in these reports. The CSO flow records are not complete during periods of time when the old CSO flow meter was installed and was malfunctioning. The old CSO flow meter has been replaced with a new CSO flow meter installed in 2014. **CSO Operational Data**, in **Appendix D**, includes CSO by-pass flow data, daily totalized Subarea 3 & 4 flows, and calculated annual capture rates. The raw flow data is presented graphically, as well as tabulated from time period 2014 through 2016. There is no flow meter data for Subareas 3 & 4 prior to Year 2014 (other than the 6 -week temporary flow metering previously presented as part of the 2009 LTCP Update). The CSO by-pass data from Years 2009 through 2016 are tabulated by year to summarize event information for that year in **Appendix D**. Flow records at the CSO are incomplete during periods of time when the old CSO flow meter was installed, due to malfunctioning and are noted as such in the flow data summaries.

In general, I&I is still a large factor in the collection system following substantial rain and/or snowmelt events and consequently triggers CSO overflow events. The duration of the overflow depends on the intensity and duration of the event. It is difficult to directly relate duration and intensity of rainfall with the quantity of discharge in this system; however, the more data that is collected over time the intention is to evaluate these trends, e.g. how the system responds to various degrees of precipitation and intensity of wet weather events.

G. POST NMC/LTCP IMPLEMENTATION COMPLIANCE MONITORING PLAN

The Authority will implement a post Nine Minimum Control/Long Term Control Plan monitoring program to periodically review the effectiveness of the LTCP.

- Monitor the volume of flow to the Wyoming Street Pump Station on a daily basis. Flows to the Wyoming Street Pump Station are measured via new permanent flow meters installed to measure Subarea 3 & 4 flows as well as a flow meter to measure Foster Township's flows. Data is recorded in the Authority's WWTP SCADA system. The Wyoming Street Pump Station also has an in-line mag meter installed on discharge to measure flow pumped from the station.
- Monitor bypass flows. An American Sigma 980 Permanent Open Channel Flow Meter was installed on the effluent pipe of the CSO to record bypass flows. The meter had experienced frequent problems and provided incomplete annual flow records at the CSO. A new CSO by-pass flow meter was installed in 2014. A Palmer Bowlus flume with ultrasonic sensor.
- Monitor the volume of flow at the WWTP on a daily basis. The Authority currently monitors both influent and effluent flows at the WWTP. New effluent and influent flow meters were installed at the plant and were functional in 2014 tied into the SCADA system. The WWTP

effluent flow is measured utilizing a V-notch weir with an ultrasonic transducer in a distilling tube to eliminate turbulence; this meter is extremely accurate. The Authority also has an insertion-type mag meter installed at the headworks of the WWTP to measure influent flow, as influent flows can be quite different from effluent flows due to the detention time through the tankage in the WWTP.

- Monitor flows within the collection system. Six (6) permanent flowmeters were installed during time period 2012 through 2014 to measure system wide subarea flows as follows:
 - 1) Borough Subarea 3 flow → area velocity flow meter
 - 2) Borough Subarea 4 flow → area velocity flow meter
 - 3) Borough Subarea 3 + 4 flow to Wyoming Street Pump Station → Parshall flume with ultrasonic sensor flow meter
 - 4) Borough CSO By-pass flow → Palmer Bowlus flume with ultrasonic sensor flow meter
 - 5) Borough Subarea 1 & 2 flow → area velocity flow meter
 - 6) Foster Township flow to Wyoming Street PS → Parshall flume with ultrasonic sensor
- Measure the effects of remaining CSO discharges to characterize pollutants to the receiving waters. Water quality samples will be taken at regular intervals to document the quality of the bypassed CSO flows. To being immediately.
- Continue to monitor receiving waters to characterize impacts of remaining CSO discharges. The outfall location is inspected periodically by the Authority to confirm no issues.

H. ALTERNATIVES ANALYSIS

In the 2009 LTCP Update, the Authority summarized their evaluation of alternatives for long-term planning to identify and compare various options for controlling CSO discharges and hydraulic overloading at the WWTP and Wyoming Street Pump Station.

The selected alternative, based on feasibility, cost, operation and maintenance aspects, environmental improvements, and overall benefit to the community was the following:

- Upgrade/ rehabilitate select portions of the collection system to reduce I&I;
- Upgrade the capacity and improve reliability of the Wyoming Street Pump Station station;
- Upgrade the CSO, provide screening, and flow metering, fully automated operation to minimize number of by-pass events and volume of flows, and;
- Upgrade and expansion of the WWTP to a capacity of 1.2 MGD average daily flow, with EQ tanks to store peak wet weather flows;

- Install a SCADA system to monitor, collect and trend data, provide communication between equipment systems, and control operations of the WWTP, Wyoming Street Pump Station, and CSO.

The design, permitting, construction, and start-up associated with the scope of this selected alternative was ultimately implemented and completed in 2014 by the Authority.

The replacement of portions of the collection system focused on the areas that were identified as the biggest sources of I&I. Smoke testing of the Borough was also completed in 2012 to identify illegal connections and defects in the collection system. This information was passed on to the Borough for enforcement action.

The upgraded CSO operates with an automated sluice gate designed to activate (i.e. allow CSO by-pass flows) based on an established peak flow at the WWTP of 1.7 MGD or a high level condition at the Wyoming Street Pump Station. The WWTP, Wyoming Street Pump Station, and CSO all communicate and report data via the new SCADA system. A hydro-jet screen was installed at the CSO to screen floatables and solids generally greater than ¼ inch to improve discharge quality and minimize any solids which may leave the CSO. Calcium hypochlorite tablets are currently utilized by the Authority to disinfect the CSO by-pass flows. Permanent flow meters were installed to monitor CSO performance, determine CSO compliance with the “Presumption” Approach, identify areas of I&I, and quantify I&I.

1. FLOW DATA ANALYSIS W/ SELECTED ALTERNATIVE IMPLEMENTED

The Authority is following the EPA’s “Presumption Approach” by capturing for treatment at the WWTP no less than 85% by volume of the combined sewage collected during precipitation events on a system-wide annual average basis. The flow metering data collected by the Authority to calculate the capture rates for the Subarea 3 & 4 areas for Years 2014, 2015 and 2016 is included in **Appendix D**. These calculations were made possible due to the flow metering data now available since 2014. These calculations are not possible from Year 2009 through 2013 due lack of flow metering data from Subarea 3 & 4; however during that time period the WWTP & CSO upgrades project was underway with design, permitting and construction. A summary of the annual CSO metered flows, total of Subarea 3 & 4 metered flows, and the calculated capture rates are presented in **Table 1**.

TABLE 1
ANNUAL CAPTURE RATES OF SUBAREA 3 & 4 FLOW
“PRESUMPTION” APPROACH

YEAR	SA 3 & SA 4 ANNUAL FLOW ¹ (MGD)	CSO BY PASS ANNUAL FLOW (MGD)	CAPTURE RATE ⁵	ANNUAL PRECIPITATION ⁴
2014 ²	33.1	23.9	27.8%	40.2
2015	35.9	4.4	87.7%	35.9
2016 ³	37.3	3.0	92.0%	43.5

1-Flows on days with measured precipitation. All flow metering data was provided by the Authority from their SCADA system.

2- Flow meter data for the first 22 days in Jan 2014 were not available because the SCADA system was not functional and recording data for the SA-3/4 meters until Jan 23rd; therefore the average daily flow 0.283 MGD (based on the remainder of 2016 yearly data) was utilized for those days.

3- Flow metering data for SA-3/4 meters for the last 4 months in 2016 was not available from the SCADA system due to operational issues with the SCADA reporting features; therefore, an average daily flow 0.225 MGD (based on the previous 8 months of flow data) was utilized for that time period, even on days with precipitation. There were 50 days of precipitation during the last 4 months of the year; the average daily flow in 2016 on days with precipitation was 0.238 MGD; the approach utilized is considered conservative.

4- Precipitation data is measured by the Authority daily at the WWTP.

5- Capture rate = $[1 - (\text{ANNUAL CSO FLOW VOLUME}) / (\text{ANNUAL SA 3 \& 4 FLOW VOLUME ON DAYS WITH PRECIP})] \times 100\%$

The capture rates for 2015 and 2016 were calculated as 87% and 92% respectively, which are above the 85% minimum requirement. The annual capture rate for 2014 was low (~28%), which can be attributed to 2014 as the first year of new full system implementation, working out the operational bugs of the SCADA system in that first year of operation, the Wyoming Street Pump Station force main replacement was not completed until end of July 2014 which ultimately improved conveyance capacity significantly, as well as operators working under a learning curve as to the functionality of a new WWTP biological process that can handle much higher flows than previous system, new equipment, new CSO, and a SCADA system. The improvements in capture rate seen in 2015 and subsequently 2016 can be attributed largely to the increase pumping capacity at the Wyoming Street Pump Station, the continuous evaluation and modification to improve performance of the CSO sequence of operation, and the improved knowledge by the operators of the WWTP operations to accept short duration higher peak flows.

I. IMPLEMENTATION SCHEDULE

The below schedule was proposed in the 2009 LTCP Update for implementation of the selected alternative by the Authority for the proposed capital improvements at the WWTP, CSO, and Collection System to improve control of CSO discharges, overall operation and performance. Updates are provided below for key milestones with completion dates provided.

Apr 1994	National CSO Control Policy Issued
Mar 2001	Documentation of Nine Minimum Controls
Mar 2001	Implementation of Nine Minimum Controls
Sept 2006	Administrative Order to Require LTCP and Documentation of Nine Minimum Controls
Apr 2007	Developed LTCP – <i>completed April 2007</i>

Aug 2007	Submitted Act 537 Plan Update proposing improvements to sewer system and associated CSO
Nov 2008	Submit Revision to Act 537 Plan Update to PADEP
Dec 2008	Approval of Act 537 Plan – <i>completed Dec 2008</i>
Feb 2009	Begin Study/Report for Design of Sewage Facilities
Apr 2009	Apply for NPDES Permit Limits
Aug 2009	Receive Part 1 Discharge Permit(Authority) – <i>completed Oct 2009</i>
Feb 2010	Complete design and apply for Part II (WQM) Permit application
Jun 2010	Obtain PADEP approval of Part II Permit – <i>completed July 2010</i>
Mar 2010	Secure Financing
Jul 2010	Advertise for Bids <i>Collection System project - completed April 2010</i> <i>WWTP & CSO project- completed Aug 2010 & re-bid Oct 2010</i>
Aug 2010	Receive Bids and Finalize Construction Financing <i>Collection System project - completed May 2010</i> <i>WWTP & CSO project- completed Oct 2010</i>
Aug 2010	Award Contract and Begin Construction <i>Collection System project - completed June 2010</i> <i>WWTP & CSO project- completed Jan 2011</i>
Jun 2010	Collection System construction – <i>completed Sept 2011</i>
Aug 2011	Complete WWTP Construction, including CSO facility <i>WWTP & CSO equipment installation substantial completed - May 2013</i> <i>SCADA system installation final completed - Oct 2014</i>
May 2014	Post Monitor Success of Project – <i>Began in 3rd Qrt 2014, on-going</i> Complete Final Contingency Program Tasks (if necessary)

APPENDIX A

Data Sources:
 USGS Topographic Maps
 Quad: Freeland

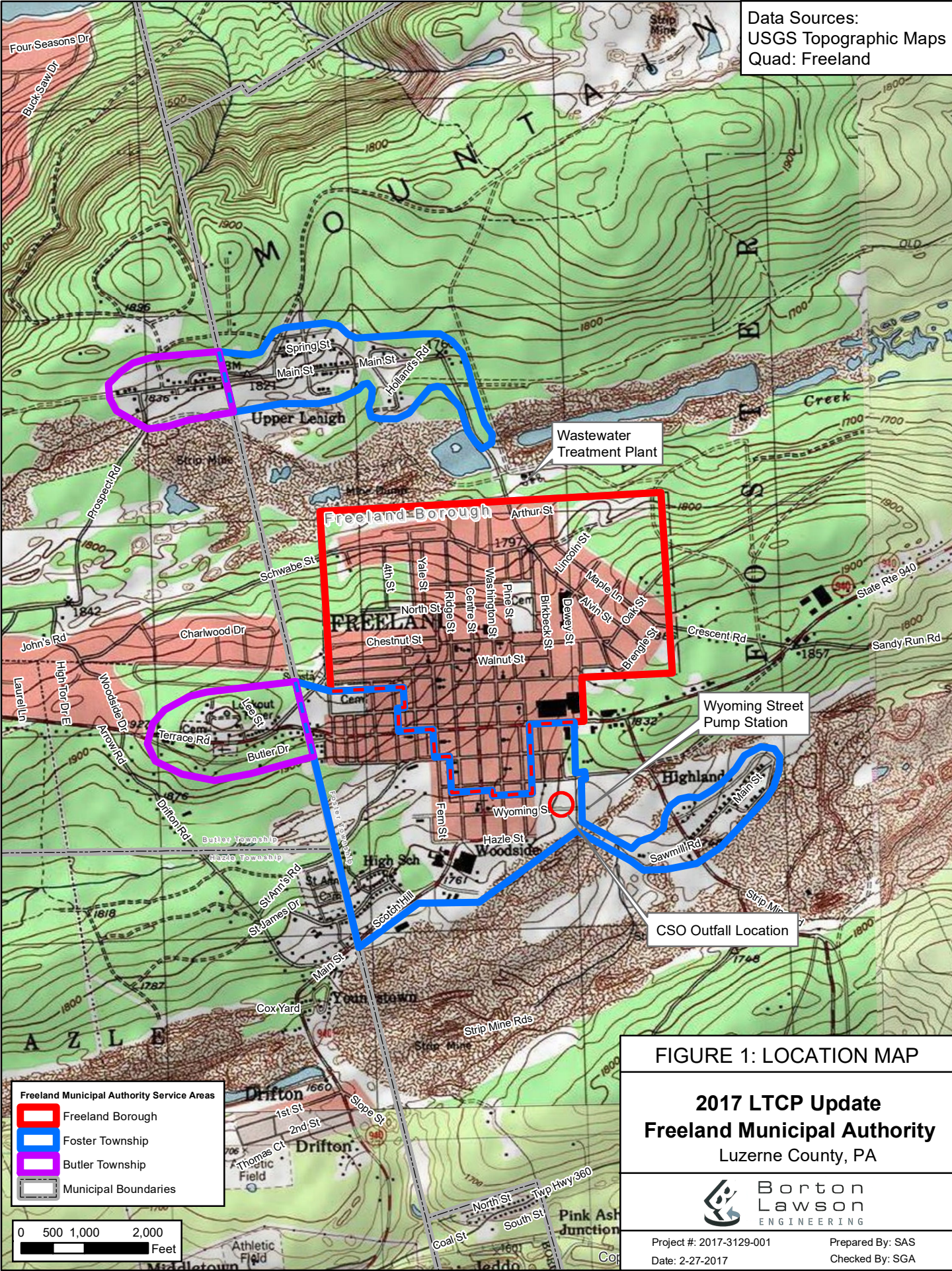


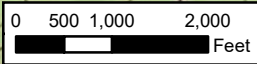
FIGURE 1: LOCATION MAP

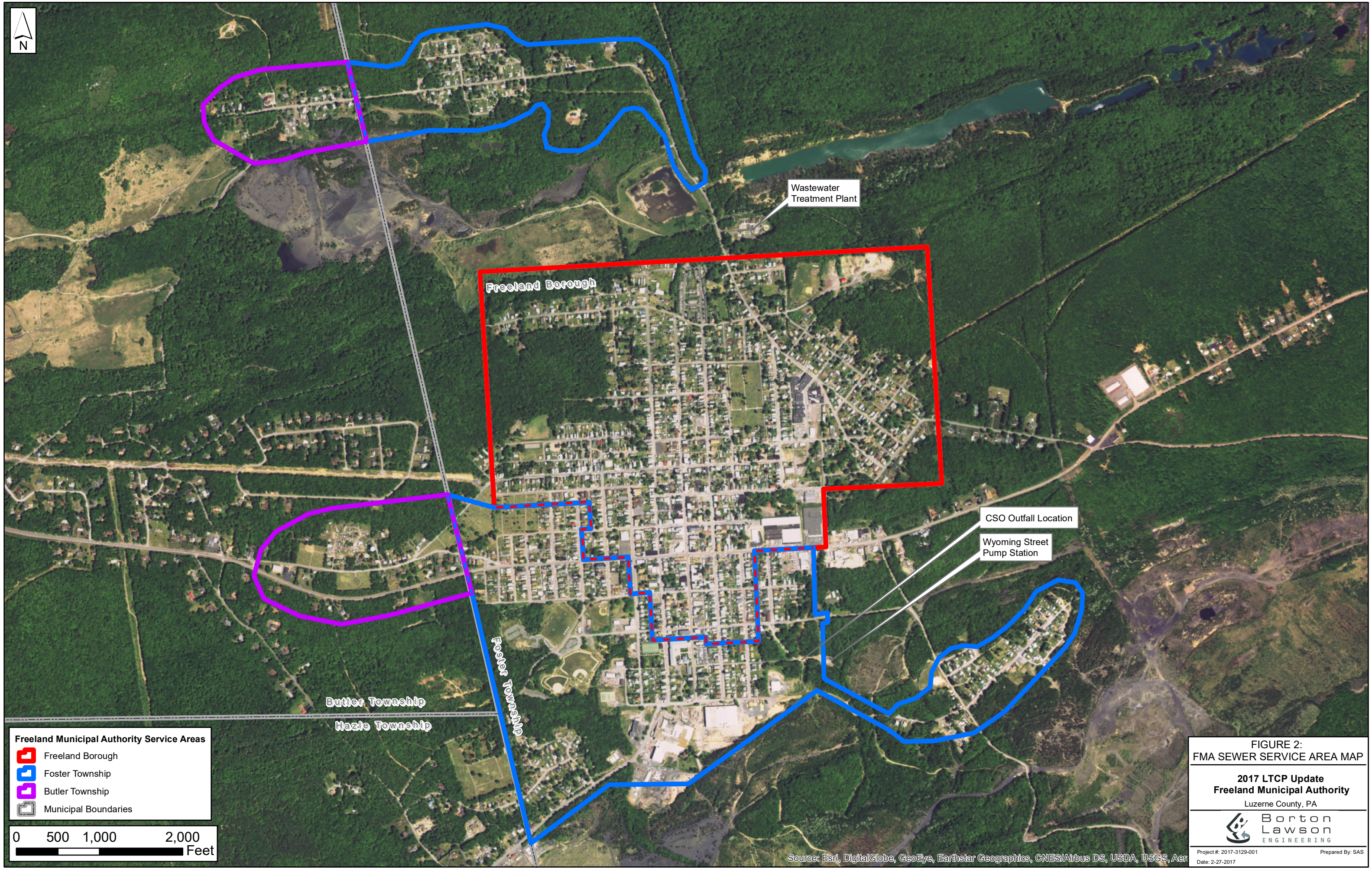
2017 LTCP Update
Freeland Municipal Authority
 Luzerne County, PA



Project #: 2017-3129-001 Prepared By: SAS
 Date: 2-27-2017 Checked By: SGA

- Freeland Municipal Authority Service Areas**
- ▭ Freeland Borough
 - ▭ Foster Township
 - ▭ Butler Township
 - ▭ Municipal Boundaries





Freeland Borough

Wastewater Treatment Plant

CSO Outfall Location





Wyoming Street Pump Station

Butler Township

Hazle Township

Foster Township

Freeland Municipal Authority Service Areas

-  Freeland Borough
-  Foster Township
-  Butler Township
-  Municipal Boundaries

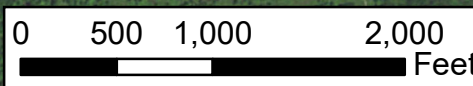



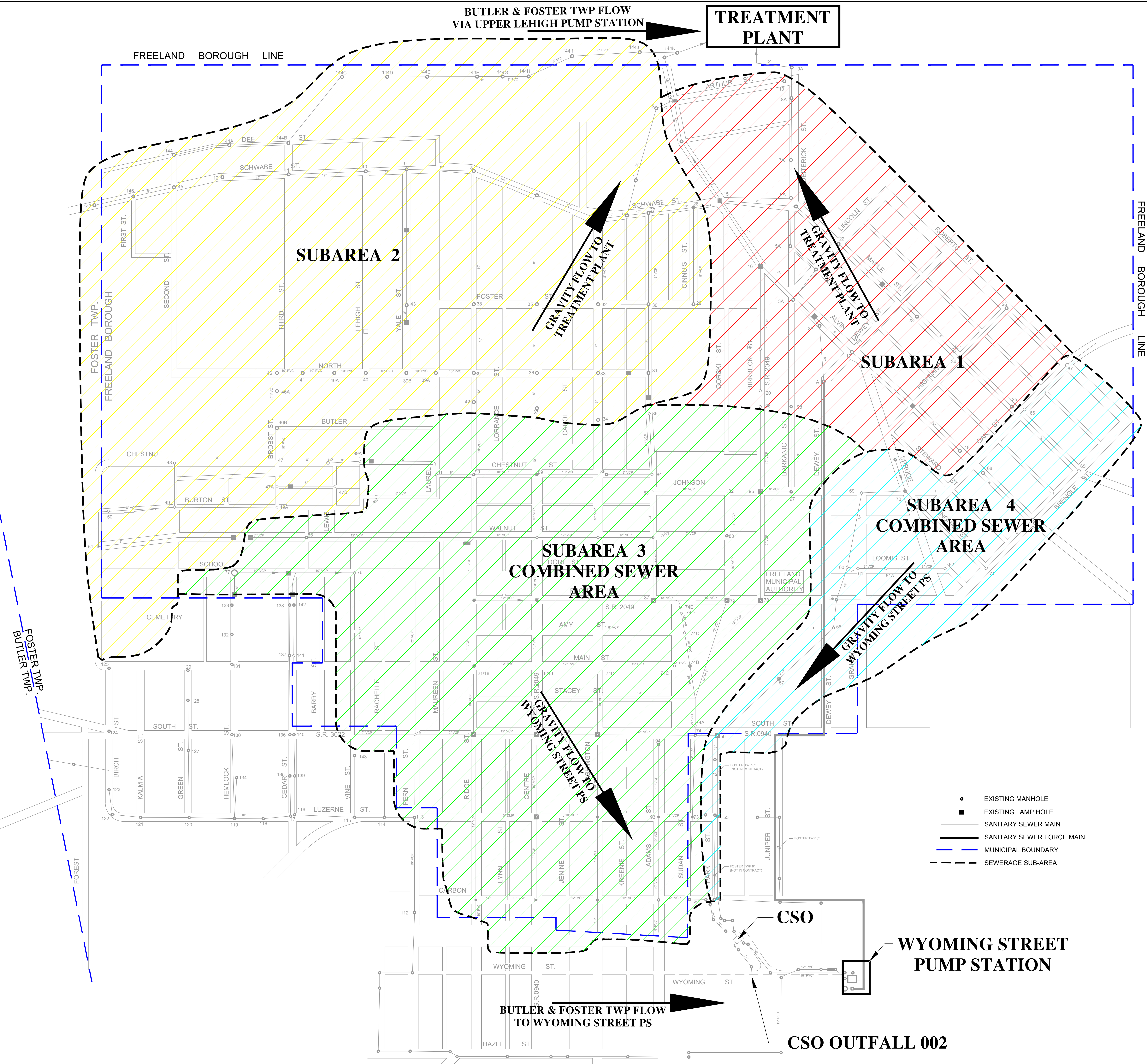
FIGURE 2:
FMA SEWER SERVICE AREA MAP

2017 LTCP Update
Freeland Municipal Authority
Luzerne County, PA



Project #: 2017-3129-001 Prepared By: SAS
Date: 2-27-2017

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, Aer



REVISIONS	REVISIONS	DATE	DATE	SCALE	SCALE	DR. BY	DR. BY	CHK. BY	CHK. BY

APPENDIX B

ATTACHMENT A
PGA Recycling Discharge Requirements
November 2015

PGA Recycling shall not discharge or cause to be discharged into the sewer system any waste streams exceeding the following maximum discharge limits:

PARAMETER ¹	LIMITS OF CONCENTRATION		UNITS	SAMPLING FREQUENCY
	COMPOSITE SAMPLE	GRAB SAMPLE		
BOD ₅ - 1x/ week just composite	250	500	mg/L	1X/ WEEK
COD	500	800	mg/L	1X/ MONTH
Total Suspended Solids (TSS) 1x/week just composite	250	300	mg/L	1X/ WEEK
Ammonia nitrogen	25	50	mg/L	1X/ MONTH
Oil & Grease	30	50	mg/L	1X/ MONTH
Total Phosphorus (TP)	5	5	mg/L	1X/ MONTH
Total Dissolved Solids (TDS)	1,000	1,000	mg/L	1X/ MONTH
Sulfide	*****	200	mg/L	1X/ MONTH
Total Kjeldahl Nitrogen (TKN)	Report	Report	mg/L	1X/ MONTH
Nitrate-Nitrite	Report	Report	mg/L	1X/ MONTH
Chloride	Report	Report	mg/l	1X/ MONTH
Sodium	Report	Report	mg/L	1X/ MONTH
Copper	Report	Report	mg/L	1X/ MONTH
Nickel	Report	Report	mg/L	1X/ MONTH
Zinc	Report	Report	mg/L	1X/ MONTH
Phenols	Report	Report	mg/L	1X/ MONTH
Cyanide	Report	Report	mg/L	1X/ MONTH
Chromium - hexavalent & trivalent	Report	Report	mg/L	1X/ MONTH
Surfactants/ Detergents (as MBAS) ²	Report	Report	mg/L	1X/ MONTH
Spills or Slugs	Prohibited - Report Immediately	Prohibited - Report Immediately	*****	NOT APPLICABLE
Foaming	No visible detection	No visible detection	Qualitative	DAILY INSPECTION

Flow - recorded continuously ³	Report 30 day average	Report Daily Max	MGD	DAILY TOTAL
Temperature	Shall not cause plant wastewater temperature to exceed 104 deg F		Deg F	DAILY
pH	*****	6 to 9	Std. Units	DAILY

- 1 - Discharge parameters and limits may be modified and/or added by the Borough of Freeland Municipal Authority based on process, regulatory, agency or any other requirements, at any time as required.
- 2 - MBAS shall be sampled and reported at this time. A limit may be placed on this parameter in the future if there is an issue with foaming or a process upset related to detergents/cleaning solutions in the wastewater at the plant.
- 3 - Discharge of flows must be equalized over a 24 hour day, 7 days a week.

DEFINITIONS

BOD₅ – five day biochemical oxygen demand.

COD – chemical oxygen demand.

MGD – million gallons per day.

Grab Sample – A sample which is taken from a waste stream without regard to flow in the waste stream and over a time period not to exceed 15 minutes.

Composite Sample – A combination of samples (at least 8 over a 24-hr period) of at least 100 millimeters each obtained at spaced time intervals during the composite period. The composite sample may be flow or time proportioned.

Spills/ Slugs – A spill or slug is considered any discharge at a flow rate or concentration which could cause violation of the prohibited wastes or process upset. Any discharge of a non-routine, episodic nature including but not limited to an accidental spill or a non-customary batch discharge.

BOROUGH OF FREELAND

LUZERNE COUNTY, PENNSYLVANIA

ORDINANCE NUMBER 4-1-1 - of 2013

***ESTABLISHING AN
INDUSTRIAL PRETREATMENT PROGRAM AND
OTHER RULES CONTROLLING DISCHARGES
TO THE SEWER SYSTEM***

Adopted:

Effective: May 13, 2013

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BOROUGH OF FREELAND
Luzerne County, Pennsylvania

Ordinance Number ⁴⁻¹⁻¹ of 2013

AN ORDINANCE OF THE BOROUGH COUNCIL OF THE BOROUGH OF FREELAND, LUZERNE COUNTY, PENNSYLVANIA, ESTABLISHING AN INDUSTRIAL PRETREATMENT PROGRAM AND PROVIDING REGULATIONS LIMITING AND CONTROLLING THE QUALITY OF WASTEWATER DISCHARGED INTO THE PUBLIC SEWAGE SYSTEM, DEFINING CERTAIN WORDS AND PHRASES, PROVIDING PROCEDURES AND SYSTEMS FOR THE ADMINISTRATION OF THE PROGRAM, CREATING ENFORCEMENT PROCEDURES FOR VIOLATION OF THE PROGRAM AND ITS REGULATIONS, ESTABLISHING TECHNICAL REQUIREMENTS AND PROHIBITIONS ON DISCHARGES, PROVIDING FOR THE SETTING OF CERTAIN FEES, PROVIDING FOR THE EFFECTIVENESS OF THIS ORDINANCE, PROVIDING FOR THE SEVERABILITY OF PROVISIONS HEREOF, AND PROVIDING FOR REPEAL OF ALL INCONSISTENT ORDINANCES OR PARTS OF ORDINANCES.

The Borough Council of the Borough of Freeland, Luzerne County, Pennsylvania, enacts and ordains as follows:

ARTICLE I – PURPOSE AND POLICY

Section 1.01 Purpose:

This Ordinance sets forth the following uniform requirements for Users of the Sewer System and enables the Township to regulate the use of the Sewer System and to comply with the requirements of the Clean Water Act and other applicable State and Federal laws and regulations:

- A. Requirements regulating the introduction of Wastewater into the Sewer System by all Users,
- B. Establishing an Industrial Pretreatment Program to monitor and control the Discharge of Industrial Wastes.

Section 1.02 Objectives

The objectives of this Ordinance are:

- A. To prevent the introduction of Pollutants into the Sewer System that will cause Interference, increase the difficulty or costs of operation of the Collection System

or the Sewage Treatment Plant, or reduce the efficiency or effectiveness of the Collection System or Sewage Treatment Plant;

- B. To prevent Pass Through of Pollutants, inadequately treated, to the environment;
- C. To protect workers and the general public from exposure to toxic or other dangerous substances;
- D. To protect the Sewer System from damage;
- E. To improve the opportunity to recycle or reclaim wastewater or sludge;
- F. To provide for the equitable distribution of the cost of the operation, administration and enforcement of the Industrial Pretreatment Program; and
- G. To enable the Township and the Borough of Freeland Municipal Authority to comply with all applicable State and Federal laws rules and regulations, including NPDES permit conditions, sludge use and disposal requirements, air quality standards, and water quality standards.
- H. To comply with the requirements of Agreements and Amendments to Agreements between the Township and the Borough of Freeland Municipal Authority in which the Township covenants to adopt and enforce an ordinance establishing an Industrial Pretreatment Program and designating the Authority as an agent of the Township for the purposes of administering the provisions of the ordinance.

ARTICLE II - DEFINITIONS

Section 2.01 As used in this Ordinance, the following words, terms and phrases will hereinafter have the meanings set forth in this section, unless the context clearly requires a different meaning:

Act or "the Act". The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. 1251, et. seq.

Approval Authority. The Regional Administrator of Region III of the EPA.

Authority. Control Authority.

Authorized Representative of Industrial User. An Authorized Representative of an Industrial User may be: (1) A principal executive officer of at least the level of vice-president, if the Industrial User is a corporation; (2) A general partner or proprietor if the Industrial User is a partnership or proprietorship, respectively; (3) A principal executive officer or director having responsibility for the overall operation of the discharging facility if the Industrial User is a governmental entity, charitable organization or other such unincorporated entity; (4) A duly authorized representative of the individual designated above if such representative is responsible for the overall operation of the facilities from which the Discharge originates.

Best Management Practices (BMPs). Schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in Section 3.02 Prohibited Discharges. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

Biochemical Oxygen Demand (BOD). The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure, five (5) days at 20° centigrade expressed in terms of weight and concentration (milligrams per liter (mg/L)).

Borough. The Borough of Freeland, Luzerne County, Pennsylvania, a municipal corporation existing under the laws of the Commonwealth of Pennsylvania, and the Borough Council thereof, its agents and officials.

Building Sewer. A Sewer conveying Wastewater from the premises of a User to the Sewer System.

Bypass. The intentional diversion of Wastewater from any portion of an Industrial User's Pretreatment facility through which the Wastewater normally passes.

Categorical Industrial User. An Industrial User subject to Categorical Standards.

Categorical Standards. National Categorical Pretreatment Standards.

Certified Professional. A registered professional engineer under the laws of the State.

Chain of Custody. A record of sample collection indicating the place and time of collection and the Person collecting the sample. It shall also include a record of each Person involved in possession of the sample including the laboratory Person who takes final possession of the sample for the purpose of analysis.

Clean Streams Law. The Act of June 22, 1937, P.L. 1937, as amended and re-enacted by the Act of October 10, 1980, P.L. 894, 35 P.S. Sections 691.1 to 691.702.

Color. Color of light transmitted through a waste after removal of all suspended matter, including pseudo-colloidal particles, and measured in platinum-cobalt units.

Combined Waste Formula. A procedure for calculating discharge concentrations of constituents of Industrial Waste, as defined in 40 CFR §403.6(e).

Compliance. Adherence to conditions or requirements of this Ordinance, any written directions issued by the Borough, or any Wastewater Discharge Permit or other permit issued under the provisions of this Ordinance.

Composite Sample. A sample composed of individual subsamples taken at regular intervals over a specified period of time. Subsamples may be proportioned by time interval or size according to flow (Flow-proportioned Composite Sample), or be of equal size and taken at equal time intervals (Equal-time Composite Sample).

Contributing Municipality. Any of the municipalities party to a service agreement with the Authority, including the Borough of Freeland, Foster Township and Butler Township, and such other municipalities incorporated under the laws of the State which may enter into a similar agreement with the Authority.

Control Authority. The Borough of Freeland Municipal Authority, a Pennsylvania municipal authority incorporated, organized and existing under provisions of the Pennsylvania Municipal Authorities Act of 1945, approved May 2, 1945, P.L. 382, as amended and supplemented.

Cooling Water. The water from any use such as air conditioning, cooling or refrigeration, or to which the only pollutant added is heat.

Discharge. The conveyance of any water or Wastewater into the Sewer System.

Domestic Wastes. Normal household wastes from kitchens, water closets, lavatories and laundries, or any waste from a similar source and possessing the same characteristics.

Enforcement Response Plan. A plan and guide developed pursuant to 40 CFR §403.8(f)(5) providing for the enforcement of the Industrial Pretreatment Program.

EPA. The U. S. Environmental Protection Agency, or where appropriate the term may also be used as a designation for the Administrator or other duly authorized official of said agency.

Garbage. Solid or semi-solid wastes resulting from preparation, cooking, and dispensing of food, and from handling storage and sale of produce.

Grab Sample. A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time.

General Permit. A control mechanism issued to more than one Significant Industrial User. Facilities covered under a general permit must have certain similar characteristics as described in Section 5.02(B).

Groundwater. Water which is contained in or passing through the ground.

Holding Tank Waste. Any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump tank trucks.

Industrial Pretreatment Program. The sum of the provisions of this Ordinance, amendments thereto, and any activities authorized by this Ordinance as regards the regulation and control of Industrial Users.

Interference. A Discharge which, alone or in conjunction with Discharges from other sources:

1. Inhibits or disrupts the processes or operations of the Sewage Treatment Plant or the Sewage Collection System, or sludge processes, use or disposal; or
2. Is a cause of a violation of any requirement of the Authority's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Article 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including

Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxics Substances Control Act, and the Marine Protection, Research and Sanctuaries Act; or which results in or increases the severity of a violation of other State or National environmental statutes, rules or regulations.

Industrial User. Any Person who Discharges Industrial Waste into the Sewer System.

Industrial Waste. Any solid, liquid or gaseous substance, or form of energy, which is produced as a result, whether directly or indirectly, of any industrial, manufacturing, trade or business process or activity, or in the course of developing, recovering or processing of natural resources; but not Sanitary Sewage.

Local Limits. Numerical limitations on the concentration, mass or other characteristics of wastes or pollutants discharged, or likely to be discharged, by Industrial Users, and which are developed by the Borough.

Manhole. A structure allowing access from the surface of the ground to a Sewer.

Mg/L. Milligrams per liter; a measure of concentration of water borne substances.

Middle Tier Categorical Industrial User. A Categorical Industrial User that meets the following conditions as determined by the Borough and as listed in Schedule 2 attached hereto and incorporated into this Ordinance and Amendments thereto: 1) Categorical wastewater flow does not exceed a) 0.01% of the design dry weather hydraulic capacity of the POTW, or 5,000 gpd, whichever is smaller, b) 0.01% of the design dry weather organic treatment capacity of the POTW, and c) 0.01% of the maximum allowable headworks loading for any pollutant regulated by the applicable categorical Pretreatment Standard for which approved local limits were developed; 2) has not been in significant noncompliance for any time in the past two years; and 3) does not have daily flow rates, production levels, or pollutant levels that vary so significantly that decreasing the reporting requirement for this Industrial User would result in data that are not representative of conditions occurring during the reporting period.

Monthly Average. The arithmetic mean of all daily determinations of concentration made during a calendar month.

National Categorical Pretreatment Standard. Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. 1317) which applies to a specific category of Industrial Users. National Categorical Pretreatment Standards are enumerated in 40 CFR, Chapter I, Subchapter N, Parts 405 through 471.

NPDES Permit. A permit issued pursuant to Section 402 of the Act (33 U.S.C. 1342).

Net/Gross calculation. A procedure for calculating discharge concentrations of constituents of Industrial Waste, as defined in 40 CFR §403.15.

New Source. Any building, structure, facility, or installation for which there is or may be a Discharge of Pollutants, the construction of which commenced after the publication of proposed Categorical Standards under Section 307 (c) of the Act which will be applicable to such source if

such Categorical Standards are thereafter promulgated in accordance with that Section. Determination of the applicability of New Source standards shall be made as provided in the Act and 40 CFR, §403.3.

Noncompliance. Not in Compliance.

Non-Significant Categorical Industrial User (NSCIU). A Categorical Industrial User that meets the following conditions as determined by the Borough: 1) never discharges more than 100 gallons per day (gpd) of total categorical wastewater (excluding sanitary, non-contact cooling and boiler blowdown wastewater, unless specifically included in the Pretreatment Standard), 2) has consistently complied with all applicable categorical Pretreatment Standards and Requirements, 3) never discharges any untreated concentrated wastewater, and 4) annually submits a certification statement stating that the facility met the definition of an NSCIU together with any additional information necessary to support the certification statement.

Operator. Any Person having charge, care, control or management of a Pretreatment facility for Industrial Wastes or of a truck or trucks used in the removal, transport or disposal of Sewage or Industrial Wastes.

Owner. Any Person vested with ownership, legal or equitable, sole or partial, of an improved property.

Pass Through. Discharge of Pollutants to the Waters of the State either untreated or insufficiently treated, whether alone or in conjunction with a Discharge or Discharges from other sources, so as to cause Pollution or a violation of the Authority's NPDES permit, or causes or contributes to an increase in the magnitude or duration of such Pollution or violation; or concentration of Pollutants in the sludge so that the end use of the sludge results in Pollution, harm to the environment, or a violation of any State or Federal sludge disposal regulation, guideline or standard, or which causes or contributes to an increase in the magnitude or duration of such Pollution, harm or violation.

Person. Any individual, partnership, copartnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine, the singular shall include the plural where indicated by the context.

pH. The logarithm (base 10) of the reciprocal of the concentration of hydrogen ions expressed in moles per liter of solution.

Pollutant. Any substance including but not limited to dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste which, when discharged into water, results in Pollution or increases Pollution.

Pollution. The contamination of any Waters of the State such as will create or is likely to create a nuisance or to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, municipal, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life; or

contamination of the air, soil, or of the environment so as to produce or is likely to produce similar deleterious effects.

POTW. A publicly owned treatment works as defined by Section 212 of the Act (33 U.S.C. 1292). The term includes the Sewage Collection System, and the Sewage Treatment Plant.

Pretreatment. The reduction of the amount of Pollutants, the elimination of Pollutants, or the alteration of the nature of Pollutant properties in Wastewater to a less harmful state prior to or in lieu of Discharging or otherwise introducing such Pollutants into a Sewer System. The reduction or alteration can be obtained by physical, chemical or biological processes, or by mean's of other process changes except as prohibited by 40 CFR §403.6(d).

Pretreatment Coordinator. Agent of the Borough designated to administer the provisions of the Industrial Pretreatment Program.

Pretreatment Requirements. Any substantive or procedural requirement, other than a Categorical Standard, imposed on an Industrial User by Section 303(b) and (c) of the Act, the State or the Industrial Pretreatment Program.

Process Wastewater. Any Wastewater resulting from the direct contact of water with any raw material, intermediate product, finished product, by-product, or waste during any manufacturing process, or water other than Cooling Water which results from a manufacturing process.

Prohibited Discharge. Any Discharge which is prohibited under Section 3.02 of this Ordinance.

Prohibitive Discharge Standard. Any regulation developed under Section 307(b) and (c) of the Act (33 USC 1317) and 40 CFR, §403.5.

Qualified Analyst. Any Person who has demonstrated competency in the analysis of Wastewater by submission of their generally recognized documentation of competency to the Borough.

Refrigeration. Maintenance of temperature for storage, preservation of food, or as a process of manufacturing.

Sanitary Sewage. The normal water-carried Domestic Wastes from any improved property, but excluding: effluent from septic tanks or cesspools; rain, snow or stormwater; groundwater; or other collected water from roofs, drains or basements.

Sanitary Sewer. A Sewer carrying only Sanitary Sewage or Industrial Wastes, and to which storm, surface or ground waters are not intentionally admitted.

Sewage Collection System. All facilities of the Authority or any municipality party to a service agreement with the Authority, as of any particular time, used or usable for collecting, transporting, pumping and disposing of Wastewater, which facilities are connected to and served by the Sewage Treatment Plant. The Sewage Collection System includes, but is not necessarily

limited to those facilities owned or operated by the Borough of Freeland Municipal Authority, Foster Township, and Butler Township, or any other Contributing Municipality.

Sewage Treatment Plant. That portion of the Sewer System owned and operated by the Authority, which is designed to provide treatment of Wastewater and discharge of treated effluent to the environment.

Sewer. A pipe or conduit for conveying Wastewater.

Sewer System. The Sewage Collection System, Sewage Treatment Plant, and any Sewers that convey Wastewater to the Sewage Treatment Plant. For the purposes of this Ordinance, "Sewer System" shall also include any sewers that convey Wastewater to the Sewage Treatment Plant from Persons who are, by contract or agreement with the Authority, Users of the Sewer System.

Shall is mandatory: **May** is permissive.

Significant Industrial User (SIU). An Industrial User who (1) has a discharge flow of 25,000 gallons or more of Process Wastewater per average work day; (2) discharges an organic load, in pounds of BOD per average work day, of 5% or more of the average daily organic loading of the Sewage Treatment Plant; (3) is regulated by Categorical Standards, except in cases where the Borough determines that an Industrial User is a Non-Significant Categorical Industrial User (NSCIU); or (4) is determined by the Borough to have the potential of adversely affecting the operation of the POTW, causing Interference or Pass Through, or of violating any Pretreatment Requirement.

Significant Noncompliance (SNC). A Noncompliance which meets or exceeds standards of Significant Noncompliance determined by the Borough and contained in Section 6.11 of this Ordinance.

Significant Violator. Any Industrial User in Significant Noncompliance.

Slug or Slug Load. Any Prohibited Discharge, or Discharge which could cause problems to the POTW.

Spill. Any non-routine episodic Discharge, including, but not limited to, accidental spills and leaks and non-customary batch Discharges, and including any Discharge resulting from control or cleanup activities associated with such an occurrence.

SPCC Plan. A spill prevention, control and countermeasure plan prepared by an Industrial User to minimize the likelihood and intensity of a Slug Load or Spill and to expedite control and cleanup activities should a Slug Load or Spill occur.

Standard Industrial Classification (SIC). A classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget, 1972.

Standard Methods. The latest edition of "Standard Methods for the Examination of Water and Wastewater," published by the Water Pollution Control Federation, the American Public Health Association and the American Waterworks Association.

State. Commonwealth of Pennsylvania.

Stormwater. Any flow occurring during or following any form of natural precipitation and resulting therefrom.

Suspended Solids. The total suspended matter that floats on the surface of, or is suspended in, water, Wastewater or other liquids, and which is removable by laboratory filtering.

Superintendent. The Person designated by the Authority to supervise the operation of the Sewage Treatment Plant and monitor flows in the Sewage Collection System, including Authority Management, or The Authority's duly authorized representative.

Total Solids. The sum of the dissolved and undissolved solid constituents of water or Wastewater.

Total Toxic Organics. The sum of all quantifiable values of various organic pollutants as determined by the Borough or, for certain Categorical Industrial Users, as defined in the applicable Categorical Standard.

Borough. The Borough of Freeland, Luzerne County, Pennsylvania, a municipal corporation existing under the laws of the Commonwealth of Pennsylvania, and the Borough Council thereof, its agents and officials.

Toxic Organic Management Plan. A plan submitted in lieu of testing for Total Toxic Organics in which an Industrial User specifies methods of control to assure that Total Toxic Organics do not routinely enter the Sewer System.

Toxic Pollutants. Any Pollutant or combination of Pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the provision of Section 307(a) of the Act, or other acts, or is present in sufficient quantity, either singly or in combination with other Wastewater, so as to present risk of causing Interference or Pass Through, causing harm to humans, animals or plants, or creating a hazard to Persons or property, either in the Sewage Collection System, the Sewage Treatment Plant, or the environment into which it is released.

Unauthorized Discharge. Discharge of an Unauthorized Waste, or a Discharge which otherwise is not in compliance with the requirements of the Industrial Pretreatment Program or other Rules or Regulations of the Borough.

Unauthorized Waste. Any substance which is Discharged into the Sewage Collection System which is not in compliance with the provisions of the Industrial Pretreatment Program, or which is Discharged by a Person in violation of any of the provisions of this Ordinance.

User. Any Person who contributes, causes or permits the Discharge of Wastewater into the Sewer System.

Wastewater. Industrial Wastes or Domestic Wastes from dwellings, commercial buildings, industrial facilities, and institutions, together with any groundwater, surface water, and stormwater that may be present, whether treated or untreated, which enters the Sewer System.

Waters of the State. All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the State or any portion thereof.

Wastewater Discharge Permit. As set forth in Article V of this Ordinance.

ARTICLE III - PROHIBITED WASTES AND POLLUTANT LIMITATIONS

Section 3.01 Discharge of Stormwaters

No Person shall Discharge or cause or permit to be Discharged any stormwater, surface water, groundwater, roofwater, subsurface drainage, or building foundation drainage into any Sanitary Sewer.

Section 3.02 Prohibited Discharges

No User shall Discharge or cause to be Discharged, directly or indirectly, any Pollutant or Wastewater which will Interfere with the operation or performance of the Sewer System. These general prohibitions apply to all Users whether or not the Users are subject to Categorical Standards or any other Pretreatment Requirements. A User may not Discharge the following substances to the Sewer System:

A. Any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the Sewer System or to the operation of the Sewer System. At no time, shall two successive readings on an explosion hazard meter, at the point of discharge into the system (or at any point in the system) be more than five percent (5%) nor any single reading over ten percent (10%) of the Lower Explosive Limit (LEL) of the meter. At no time shall the closed cup flashpoint of the Wastewater be less than 140 degrees Fahrenheit. Prohibited materials include, but are not limited to, the following substances in concentrations which cause exceedance of the above standard: gasoline, kerosene, naphtha, benzene, ethers, alcohols, peroxides, chlorates, perchlorates, bromates, and carbides.

B. Solid or viscous substances which may cause obstruction to the flow in a Sewer or other Interference with the operation of the Sewer System, such as, but not limited to: grease, Garbage with particles greater than one-half inch (1/2") in any dimension, animal guts or tissues, paunch manure, bones, hair, hides or fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, gas, tar, asphalt residues, residues from refining, or processing of fuel or lubricating oil, mud, or glass grinding or polishing wastes.

C. Any Wastewater having a pH less than 6.0 or higher than 9.0, or Wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment, and/or personnel of the Sewer System.

- D. Any Wastewater containing Toxic Pollutants in sufficient quantity, either singly or by interaction with other constituents of the Wastewater, to injure or interfere with any Wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the Sewage Treatment Plant, or to exceed the limitation set forth in an applicable Categorical Standard.
- E. Any noxious or malodorous liquids, gases, or solids which either singly or by interaction with other substances normally present in the Sewer System are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the Sewer System for maintenance and repair.
- F. Any substance which results in the formation or release of toxic gasses, vapors or fumes in a quantity that may cause acute worker health and safety problems.
- G. Any petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through, but in no case exceeding 30 mg/L in any composite sample or 50 mg/L in any grab sample.
- H. Fats, oils, greases or waxes of animal or vegetable origin in amounts which cause Interference with the POTW, including but not limited to physical obstruction of Sewers.
- I. Any substance which may cause the Sewage Treatment Plant's effluent or any other product of the Sewage Treatment Plant such as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case, shall a substance discharged to the Sewer System cause the Sewage Treatment Plant to be in noncompliance with sludge use or disposal criteria, guidelines, or regulations affecting sludge use or disposal developed pursuant to the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substances Control Act, or State criteria applicable to the sludge management method being used.
- J. Any substance which will cause the Authority to violate its NPDES and/or State Collection System Permit or applicable receiving water quality standards.
- K. Any Wastewater with objectionable color which will Pass Through the Treatment Plant, such as, but not limited to, dye wastes and vegetable tanning solutions.
- L. Any Wastewater having a temperature which will inhibit biological activity in the Sewage Treatment Plant resulting in Interference, but in no case Wastewater with a temperature at the Discharge into the Sewer System which exceeds 40° C (104° F).
- M. Any Pollutants, including oxygen demanding Pollutants (BOD, etc.) released at a flow rate and/or Pollutant concentration which will cause Interference to the Sewage Treatment Plant or interfere with the operation of the Sewer System. BOD in excess of 250mg/l in a composite sample, and 500 mg/l in any grab sample is prohibited. In no case shall a Slug Load be discharged.
- N. Any Wastewater containing any radioactive wastes or isotopes of such halflife or concentration as may exceed limits established by the Borough or applicable State or Federal regulations.
- O. Any trucked or hauled Wastewater or Pollutants except those discharged at points designated by the Authority.

P. Any Wastewater which is incompatible with treatment processes in use at the Sewage Treatment Plant so as to cause Interference or Pass Through.

Q. Any Wastewater containing any compounds or salts of aldrin, dieldrin, endrin, lindane, methoxychlor, toxaphene, dichlorophenoxyacetic acid, trichlorophenoxypropionic acid, or other persistent herbicides, pesticides or rodenticides.

Section 3.03 Unauthorized Discharges

Discharge of any prohibited substance listed under Section 3.02 shall be considered an Unauthorized Discharge and the Borough may take whatever steps are necessary to halt such a discharge, as set forth in Articles VI and VII of this Ordinance.

Section 3.04 Categorical Standards

A. If the Categorical Standards for a particular Industrial User are more stringent than Local Limits or other requirements imposed under this Ordinance, then the Categorical Standards shall apply. The Borough shall notify all affected Industrial Users of the applicable reporting requirements under 40 CFR, §403.12. The National Categorical Pretreatment Standards are hereby incorporated into the Industrial Pretreatment Program as program requirements for those Industrial Users subject to such Categorical Standards.

B. When the limits in a Categorical Pretreatment Standard are expressed only in terms of pollutant concentrations, the Borough may implement the limits as equivalent mass limits. An Industrial User may request equivalent mass limits from the Borough in writing. Upon receiving such a request the Borough will determine if the Industrial User meets the eligibility criteria for mass limits as listed in Sections 3.04(B)(1)(a) through 3.04(B)(1)(e) below. The Borough may determine that an Industrial User meets the criteria, but choose not to implement the limits as equivalent mass requirements based on other considerations.

1. To be eligible for equivalent mass limits, the Industrial User must:

(a) Employ, or demonstrate that it will employ, water conservation methods and technologies that substantially reduce water use during the term of its control mechanism;

(b) Currently use control and treatment technologies adequate to achieve compliance with the applicable Categorical Pretreatment Standard, and not have used dilution as a substitute for treatment;

(c) Provide sufficient information to establish the facility's actual average daily flow rate for all wastestreams, based on data from a continuous effluent flow monitoring device, as well as the facility's long-term average production rate. Both the actual average daily flow rate and long-term average production rate must be representative of current operating conditions;

(d) Not have daily flow rates, production levels, or pollutant levels that vary so significantly that equivalent mass limits are not appropriate to control the Discharge; and

(e) Have consistently complied with all applicable Categorical Pretreatment Standards during the period prior to the Industrial User's request for equivalent mass limits.

2. An Industrial User subject to equivalent mass limits must:

(a) Maintain and effectively operate control and treatment technologies adequate to achieve compliance with the equivalent mass limits;

(b) Continue to record the facility's flow rates through the use of a continuous effluent flow monitoring device;

(c) Continue to record the facility's production rates and notify the Control Authority whenever production rates are expected to vary by more than 20 percent from its baseline production rates determined in paragraph (1)(c) of this section. Upon notification of a revised production rate, the Control Authority must reassess the equivalent mass limit and revise the limit as necessary to reflect changed conditions at the facility; and

(d) Continue to employ the same or comparable water conservation methods and technologies as those implemented pursuant to paragraph (1)(a) of this section so long as it discharges under an equivalent mass limit.

3. When establishing equivalent mass limits, the Borough:

(a) Will calculate the equivalent mass limit by multiplying the actual average daily flow rate of the regulated process(es) of the Industrial User by the concentration-based daily maximum and monthly average Standard for the applicable Categorical Pretreatment Standard and the appropriate unit conversion factor;

(b) Will, upon notification of a revised production rate, reassess the equivalent mass limit and recalculate the limit as necessary to reflect changed conditions at the facility; and

(c) May retain the same equivalent mass limit in subsequent control mechanism terms if the Industrial User's actual average daily flow rate was reduced solely as a result of the implementation of water conservation methods and technologies, and the actual average daily flow rates used in the original calculation of the equivalent mass limit were not based on the use of dilution as a substitute for treatment pursuant to Section 3.08. The Industrial User must also be in compliance with Section 3.15 (regarding the prohibition of bypass).

Section 3.05 Removal Credits

Where the Sewage Treatment Plant achieves consistent removal of Pollutants limited by Categorical Standards, the Borough may apply to the Approval Authority for modification of specific limits in the Categorical Standards. If the requirements contained in 40 CFR, §403.7, are fulfilled and prior approval from the Approval Authority is obtained, the Borough may then modify Pollutant discharge limits in the Categorical Standards.

Section 3.06 State Requirements

State requirements and limitations on discharges shall apply in any case where they are more stringent than Federal requirements and limitations or those established under this Ordinance.

Section 3.07 Local Limits

The Borough may establish Local Limits regulating the Discharge of specific Pollutants by Industrial Users.

- A. Local Limits may be established for any substance which is Discharged, or is likely to be Discharged, to the Sewer System.
- B. Local Limits may limit concentration, mass, or a combination of the two.
- C. The procedure for the calculation of Local Limits should be as recommended by the Approval Authority. Whenever possible, the calculation of Local Limits shall be technically based, using all available information.
- D. Local Limits shall be calculated to prevent Interference; Pass Through; the discharge of toxic materials in toxic amounts; threats to worker health and safety; and physical, chemical or biological damage to the Sewer System.
- E. Local Limits shall be applied to all Significant Industrial Users and shall be included in all Wastewater Discharge Permits. Local Limits may be applied to other Industrial Users if deemed appropriate by the Borough.
- F. Discharging any pollutant in excess of a Local Limit established for that Pollutant shall constitute an Unauthorized Discharge. Such a Discharge is subject to the actions and penalties set forth herein.

Section 3.08 Prohibition on Dilution

No Industrial User shall, in any way, attempt to dilute a Discharge as a partial or complete substitute for adequate Pretreatment to achieve compliance with the limitations contained in applicable Categorical Standards, or in any other pollutant-specific limitation, including Local Limits, developed by the Borough or State.

Section 3.09 Slug Loads and Spills

Each Industrial User shall provide protection from Spills or accidental Discharges that result in Unauthorized Discharges or Slug Load Discharges. Facilities to prevent Spills and Slug Loads shall be provided and maintained at the Owner or Industrial User's own cost and expense.

A. Notification

- 1. In the case of a Spill or Slug Load or other Unauthorized Discharge, it is the responsibility of the Industrial User to immediately telephone and notify the Superintendent of the incident. The notification shall include location of Discharge, type of waste, concentration and volume, corrective actions being taken or planned, and expected duration.

2. In the event a change is made at a facility that affects the potential for discharge of a Spill or Slug Load, or other Unauthorized Discharge the Industrial User shall immediately notify the Borough of the change.

B. **Notice to Employees** A notice shall be permanently posted on the Industrial User's bulletin board or other prominent place advising employees whom to call in the event of a Spill or other Unauthorized Discharge. Employers shall insure that all employees who may cause or suffer such a Discharge to occur are advised of the emergency notification procedure.

C. **Written Notice** Within five (5) days following a Spill, Slug Load, or other Unauthorized Discharge, the Industrial User shall submit to the Borough a detailed written report describing the cause of the Discharge and the measures to be taken by the Industrial User to prevent similar future occurrences. Such notification shall not relieve the Industrial User of any expense, loss, damage, or other liability which may be incurred as a result of damage to the Sewer System, fish kills, or any other damage to Person or property; nor shall such notification relieve the Industrial User of any fines, civil penalties, or other liability which may be imposed by this Ordinance or applicable law.

D. **SPCC Plans** All existing Significant Industrial Users shall complete and obtain approval of a Spill Prevention Control and Countermeasure (SPCC) Plan, or provide acceptable evidence that such a Plan is not necessary for their facility. No Significant Industrial User who commences Discharge to the Sewer System after the effective date of this Ordinance shall be permitted to introduce Pollutants into the Sewer System until this requirement has been fulfilled. Industrial Users other than Significant Industrial Users may be required to submit a SPCC Plan at the discretion of the Borough. Such Plans shall, at a minimum, contain the elements specified in 40 CFR §403.8(f)(2)(v)(A)-(D). SPCC Plans shall be submitted to the Borough for review, and shall be approved by the Borough before implementation of the Plan or construction of any required facilities. Review and approval of such Plans, facilities and operating procedures by the Borough shall not relieve the Industrial User from the responsibility to modify its facility as necessary to meet the requirements of the Industrial Pretreatment Program.

Section 3.10 Drainage of Water Filtration Systems

Discharge of filter backwash water to the Sewer System shall be regulated as follows:

A. Granular media filter backwash water may be Discharged to the Sewer System, subject to all of the applicable provisions of this Ordinance.

B. Diatomaceous earth filter backwash, if Discharged to the Sewer System, shall be connected to the Sewer System through settling tanks with no less than three (3) months storage capacity of spent diatomaceous earth, which tanks shall be accessible for removing solid waste for disposal.

Section 3.11 Trucked and Hauled Wastes

- A. Discharge of trucked or hauled wastes shall be made at a point designated by the Authority.
- B. Such wastes shall conform to all requirements of the Industrial Pretreatment Program regarding Prohibited Discharges, regulated characteristics, Local Limits, or other requirements as to nature and concentration.
- C. No trucked or hauled wastes shall be Discharged except as specifically approved by the Authority. The Borough and/or Authority may require testing, reporting, or other specific information to be presented by the Operator or Owner prior to Discharge.
- D. In order to implement the provisions of paragraph C of this Section, the Borough and/or Authority may establish a permit system or other means of control, and may set rate, frequency, volume, or other controls on the Discharges from such vehicles.

Section 3.12 Grease and Sand traps

Grease, oil and sand interceptors or traps shall be provided by a User when the Borough determines that such devices are necessary for the proper handling of Wastewaters containing greases, oils or settleable solids. Interceptors and traps shall be installed, operated, maintained and cleaned properly, so that they will consistently remove the grease, oil or settleable solids. Interceptors and traps shall be properly designed to accommodate the maximum flow rate expected to occur, and shall be located as to be readily and easily accessible for cleaning and inspection.

Section 3.13 Garbage Grinders

The use of mechanical Garbage grinders producing a finely divided mass, properly flushed with an ample amount of water, shall be permitted, upon the condition that no such mechanical Garbage grinder used for commercial or business purposes shall be installed until permission for such use has been obtained from the Borough.

Section 3.14 Notification Requirements - Hazardous Wastes and Hazardous Substances

A. All Industrial Users shall notify the Borough, the EPA Regional Waste Management Division Director, and the Pennsylvania Department of Environmental Protection, Bureau of Waste Management, in writing, of any discharge into the POTW of a substance which, if otherwise disposed of, would be a hazardous waste under 40 CFR part 261. Such notification shall include the name of the hazardous waste, as set forth in 40 CFR part 261, the EPA hazardous waste number, and the type of discharge (continuous, batch, or other). If the Industrial User discharges more than 100 kilograms of such waste per calendar month, the notification shall also include the following information, to the extent that it is known and readily available to the Industrial User:

1. An identification of the hazardous constituents contained in the waste;

2. An estimation of the mass and concentration in the Wastewater of all such constituents discharged in the most recent month; and
 3. An estimate of the mass and concentration of such constituents expected to be discharged during the following twelve months.
- B. Industrial Users that commence discharge after the effective date of this Ordinance shall submit the report within 180 days of first discharge of the hazardous waste, except as provided in paragraph D of this Section.
- C. The required report need be submitted only once for each hazardous waste discharged. Industrial Users regulated under Categorical Standards which have already submitted such information in baseline monitoring reports or periodic compliance reports do not have to report this information again.
- D. Industrial Users that Discharge less than fifteen (15) kilograms of hazardous wastes in a calendar month do not have to comply with these reporting requirements. This exemption does not apply to acute hazardous wastes as specified in 40 CFR §261.30(d) and 261.33(e).
- E. An Industrial User shall notify the Borough within 5 days of becoming aware of any Discharges of reportable quantities of listed or unlisted Hazardous Substances, as defined at 40 CFR § 302.4 (CERCLA Hazardous Substances). This notification shall include the time of release; the name of the substance; the identifying CAS number, if known; and the approximate quantity Discharged. If the Discharge constitutes a Spill, change in Wastewater constituents, or Slug Load, other reporting requirements of the Industrial Pretreatment Program may also apply.
- F. Each notification required by this section shall include a statement certifying that the Industrial User has a program in place to reduce the volume and/or toxicity of the Discharged wastes to the extent that it is economically practical. This statement shall be signed by the Authorized Representative of the Industrial User.

Section 3.15 Bypass

- A. Bypass is prohibited, and the Borough may take enforcement action against an Industrial User for a bypass, unless;
1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment

should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

3. The Industrial User submitted notices as required under paragraph (C) of this section.

B. An Industrial User may allow any bypass to occur which does not cause Pretreatment Standards or Requirements to be violated, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (A), (C) and (D) of this section.

C. If an Industrial User knows in advance of the need for a bypass, it shall submit prior notice to the Borough, if possible at least ten days before the date of the bypass. The Borough may approve an anticipated bypass, after considering its adverse effects, if the Borough determines that it will meet the three conditions listed in paragraphs (A)(1) through (A)(3) of this section.

D. An Industrial User shall submit oral notice of an unanticipated bypass that exceeds applicable Pretreatment Standards to the Borough within 24 hours from the time the Industrial User becomes aware of the bypass. A written submission shall also be provided within 5 days of the time the Industrial User becomes aware of the bypass. The written submission shall contain a description of the bypass and its cause; the duration of the bypass, including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass. The Borough may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

ARTICLE IV - FEES

Section 4.01 Purpose

It is the purpose of this section to provide for the recovery of costs from Industrial Users of the Sewer System for the implementation of the Industrial Pretreatment Program established herein. The applicable charges or fees shall be set forth in the Borough's Schedule of Charges and Fees.

Section 4.02 Fees that may be Charged

The Borough may adopt charges and fees which may include:

- A. Fees for reimbursement of costs of setting up and operating the Industrial Pretreatment Program;
- B. Fees for monitoring, inspections and surveillance procedures;
- C. Fees for reviewing accidental discharge procedures and construction;

- D. Fees for Wastewater Discharge Permit applications;
- E. Fees for filing appeals;
- F. Fees for consistent removal (by the Sewage Treatment Plant) of Pollutants otherwise subject to Categorical Standards; and
- G. Other fees as the Borough may deem necessary to carry out the requirements contained herein, including surcharge fees for violation of permit limits.

These fees relate solely to the matters covered by this Ordinance and are separate from all other fees chargeable by the Borough.

ARTICLE V - PERMITS AND REPORTS FOR INDUSTRIAL WASTE DISCHARGED INTO THE SEWER SYSTEM

Section 5.01 Requirement for Wastewater Discharge Permits

Discharge of any Industrial Waste to the Sewer System without a Wastewater Discharge Permit, except as authorized by the Borough in accordance with the provisions of this Ordinance, is an Unauthorized Discharge and subject to the penalties provided herein.

Section 5.02 Significant Industrial Users

A. All Significant Industrial Users, including those meeting the description of a Middle Tier Categorical Industrial User, proposing to connect to or to Discharge to the Sewer System shall obtain a Wastewater Discharge Permit before connecting to or Discharging to the Sewer System.

B. At the discretion of the Borough, General Permits may be available for groups of Significant Industrial Users. Upon review of an application for a new or renewal Wastewater Discharge Permit the Borough may recommend that a Significant Industrial User be covered under a general permit. When applying for a new or renewed discharge permit, an industrial user may also request coverage under a general permit. To be eligible for coverage under a general permit the SIU must meet the following criteria, as determined by the Borough, when compared with other facilities covered under the general permit:

1. Involve the same or substantially similar types of operations;
2. Discharge the same types of wastes;
3. Require the same effluent limitations;
4. Require the same or similar monitoring; and
5. In the opinion of the Borough, are more appropriately controlled under a general control mechanism than under individual control mechanisms.

C. The Borough may not control a Significant Industrial User through a general control mechanism where the facility is subject to production-based Categorical Pretreatment Standards or Categorical Pretreatment Standards expressed as mass of pollutant discharged per day or for Industrial Users whose limits are based on the Combined Wastestream Formula or Net/Gross calculations.

Section 5.03 Other Industrial Users

Industrial Users which are not Significant Industrial Users do not require a Wastewater Discharge Permit, but are required to comply with all other provisions of this Ordinance. If an Industrial User makes changes to processes, flow, Wastewater concentration, Wastewater characteristics, or other changes which result in the Industrial User meeting the definition of Significant Industrial User, the Industrial User shall immediately upon becoming aware that such a change has occurred, or ninety (90) days prior to such a change if it is planned, notify the Borough and apply for a Wastewater Discharge Permit.

Section 5.04 Permit Applications

Industrial Users required to obtain a Wastewater Discharge Permit shall complete and file with the Borough, an application in the form prescribed by the Borough, and accompanied by the fee prescribed in the Borough's schedule of fees, at least 90 days prior to connecting to or Discharging to the Sewer System. In support of the application, the Industrial User shall submit, in units and terms appropriate for evaluation, the following information:

- A. Facility name, address, location, (if different from the address), and the name and phone number of a facility contact.
- B. SIC number or numbers according to the Standard Industrial Classification Manual, Bureau of the Budget, 1972, as amended;
- C. Wastewater constituents and characteristics as required by the Borough, as determined by a Qualified Analyst; sampling and analyses shall be performed in accordance with procedures established by the EPA pursuant to Section 304(g) of the Act and contained in 40 CFR, Part 136, as amended;
- D. Each product by type, amount, process or processes and rate of production;
- E. Type and amount of raw materials processed (average and maximum per day);
- F. Number and type of employees, and hours of operation of plant and proposed or actual hours of operation of pretreatment system;
- G. Time and duration of Wastewater or Industrial Waste contribution;
- H. Average daily and 30 minute peak Wastewater flow rates, including daily, monthly and seasonal variation if any;
- I. Site plans, floor plans, mechanical and plumbing plans and details to show all Building Sewers, Sewer connections, and appurtenances by the size, location and elevation;

- J. Description of activities, facilities and plant processes on the premises including all materials which are or could be Discharged, and a proposed discharge sampling location;
- K. The nature and concentration of any Pollutants in the Discharge which are limited by any Borough, State, or Federal Pretreatment Requirements (including Local Limits), or Categorical Standards, and a statement regarding whether or not the Categorical Standard or Pretreatment Requirements are being met on a consistent basis and, if not, how the Industrial User proposes to meet the Categorical Standards and/or Pretreatment Requirements, including whether additional Operation and Maintenance (O&M) and/or additional Pretreatment is required for the Industrial User to meet the applicable Categorical Standard or Pretreatment Requirement. If the applicant is a Categorical Industrial User, this statement shall be signed by a Certified Professional;
- L. If additional Pretreatment and/or O&M will be required to meet Categorical Standards, Prohibitive Discharge Standards, or other Pretreatment Requirements (including Local Limits), the shortest schedule by which the Industrial User will provide such additional facilities or procedures shall be developed and submitted. The completion date of this schedule shall not be later than the compliance date established for any applicable Categorical Standard.

The following conditions shall apply to this schedule:

(1) The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional Pretreatment required for the Industrial User to meet the applicable Categorical Standards or other Pretreatment Requirements (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.).

(2) No increment referred to in subparagraph (1) shall exceed 9 months.

(3) Not later than 14 days following each date in the schedule and the final date for compliance, the Industrial User shall submit a progress report to the Borough including, as a minimum, whether or not it complied with the increment of progress to be met on such date, and, if not, the date on which it expects to comply with this increment of progress, the reason for delay, and the steps being taken by the Industrial User to return the construction to the schedule established. In no event shall more than 9 months elapse between such progress reports to the Borough.

- M. Compliance information for any applicable best management practices.
- N. Any other information as may be deemed by the Borough to be necessary to evaluate the application.

- O. The application shall be signed and attested to by an Authorized Representative of the Industrial User.

The Borough will evaluate the data furnished by the Industrial User and may require additional information. After evaluation and acceptance of the data furnished, the Borough may issue a Wastewater Discharge Permit subject to terms and conditions provided herein.

Section 5.05 Confidentiality of Applications

- A. All information required by the Borough in the Permit application shall be provided by the Industrial User to the best of its ability.
- B. If information regarding raw materials, processes, production rates or other manufacturing information is regarded as confidential by the Industrial User, such information shall be marked "confidential" on the application form.
- C. Confidentiality shall not apply to information regarding the flow of or the constituents in the Industrial Wastewater Discharge.
- D. Information accepted by the Borough as confidential shall be handled as detailed in Section 5.19 of this Article.

Section 5.06 Wastewater Discharge Permit Conditions

Wastewater Discharge Permits shall be expressly subject to all provisions of this Ordinance and all other applicable regulations, user charges and fees established by the Borough. Permits shall contain the following:

- A. Limits on Wastewater constituents and characteristics, including Local Limits and/or Categorical Standards, as applicable;
- B. List of Prohibited Discharges, as presented in Article III of this Ordinance;
- C. Requirements for submission of technical reports or discharge reports, including the information to be contained and the signatory requirements of these reports;
- D. Specifications for monitoring programs which may include sampling locations, frequency of sampling, number, types and standards for tests and reporting schedule;
- E. Requirements for maintaining and retaining records relating to Industrial Waste, and Wastewater Discharges, wastewater characteristics and Best Management Practices as specified by the Borough, and affording the Borough access thereto;
- F. Requirements for notification to the Borough of any new introduction of Wastewater constituents or any substantial change in the volume or character of the Wastewater constituents being Discharged into the Sewer System;
- G. Requirements for notification of Spills or Slug Loads and any changes affecting the potential for Spills or Slug Loads as per Article III, Section 3.09;
- H. Statement of duration of the Wastewater Discharge Permit;

- I. Notification of the rules regarding transferability, as stated in Section 5.07 of this Article;
- J. Notification of penalties provided for Noncompliance as contained in Article VII of this Ordinance;
- K. Notification of right of appeal.
Permits may also contain other information, including, but not limited to:
- L. Limits on average and maximum rate and time of discharge or requirements for flow regulation and equalization;
- M. Requirements for installation and maintenance of inspection and sampling facilities;
- N. Requirements for installation and maintenance of Pretreatment facilities;
- O. Requirements for developing and implementing special plans or practices such as Toxic Organic Management plans, best management or housekeeping practices, or other such procedures;
- P. Compliance schedules;
- Q. The unit charge or schedule of User charges and fees for the Wastewater to be discharged to the Sewer System;
- R. Applicable slug control requirements.
- S. Other conditions as deemed appropriate by the Borough to ensure compliance with this or any other applicable Ordinance or Ordinance.

Section 5.07 Transferability of Permits

Wastewater Discharge Permits are issued to a specific Industrial User for a specific operation. A Wastewater Discharge Permit shall not be reassigned or transferred or sold to a new Person, new Industrial User, different premises, or a new or changed operation without the approval of the Borough. Any succeeding Industrial User shall also comply with the terms and conditions of the existing Wastewater Discharge Permit. The Borough may, at its discretion, deny the transfer of a Wastewater Discharge Permit and require application for a new Wastewater Discharge Permit under the provisions of this Article.

Section 5.08 Duration of Wastewater Discharge Permits

Wastewater Discharge Permits shall be issued for a specified time period, not to exceed five (5) years. A Wastewater Discharge Permit may be issued for a period of less than five years or may be dated to expire on a specific date. The Industrial User shall apply for reissuance of the Wastewater Discharge Permit a minimum of 180 days prior to the expiration of the Industrial User's existing Wastewater Discharge Permit. The terms and conditions of the Wastewater Discharge Permit may be subject to modification by the Borough during the term of the Wastewater Discharge Permit as limitations or requirements as identified in Article III are modified or other just cause exists. The Industrial User shall be informed of any proposed changes in its Wastewater Discharge Permit at least 30 days prior to the effective date of change.

Any changes or new conditions in the Wastewater Discharge Permit shall include a reasonable time schedule for compliance.

Section 5.09 Delayed Permit Renewal

A. If the Industrial User has complied with the terms of the Wastewater Discharge Permit and this Ordinance, and has applied for renewal as provided for in Section 5.08 of this Article, and the Wastewater Discharge Permit is not renewed on or before the expiration date through no fault of the Industrial User, then the existing Wastewater Discharge Permit shall remain in effect until it is re-issued or rescinded by the Borough.

B. If the Wastewater Discharge Permit is not renewed because of a failure of the Industrial User to apply for renewal in a timely fashion or through an act or omission of the Industrial User, then Discharge of Industrial Waste by the Industrial User without a Wastewater Discharge Permit is an Unauthorized Discharge and is subject to the enforcement provisions of this Ordinance.

Section 5.10 Appeal of Wastewater Discharge Permits

A. Any Industrial User that is issued a Wastewater Discharge Permit may appeal the Permit conditions, in whole or in part. Appeal procedures shall be as set forth in Article VI, Section 6.07 of this Ordinance.

B. During the process of appeal, the Wastewater Discharge Permit shall remain in effect and shall be enforced with the exception of those conditions specified in writing in the appeal. Conditions imposed by Federal or State Regulations (e.g. - Categorical Standards) shall not be waived. Conditions which, in the opinion of the Borough, would constitute a hazard or pose a potential threat of Pollution if waived, shall not be waived during an appeal.

Section 5.11 Baseline Monitoring Reports

A. As soon as possible following the promulgation of a Categorical Standard, the Wastewater Discharge Permit of Industrial Users subject to such standards shall be revised, if necessary, to require compliance with such Categorical Standard within the time frame prescribed by the Categorical Standard.

B. Where an Industrial User, subject to a newly promulgated Categorical Standard, has not previously submitted an application for a Wastewater Discharge Permit as required by Article V, Section 5.04, the Industrial User shall, within 180 days after the promulgation of the applicable Categorical Standard:

(1) Apply for a Wastewater Discharge Permit; and

(2) Provide the baseline monitoring information required by 40 CFR §403.12(b). This information may be incorporated into the application for a Wastewater Discharge Permit.

C. An Industrial User with an existing Wastewater Discharge Permit shall submit to the Borough within 180 days after the promulgation of an applicable Categorical Standard the information required by 40 CFR § 403.12(b).

D. A New Source, or an Industrial User that becomes a Categorical Industrial User through a change in facilities or processes, shall submit a report containing the information required by 40 CFR § 403.12(b) at least 90 days prior to commencement of Discharge from the regulated process or facility.

Section 5.12 Categorical Compliance Report

Within 90 days following the date for final compliance with applicable Categorical Standards or, in the case of a New Source, following commencement of the Discharge of Industrial Waste from processes regulated by Categorical Standards into the Sewer System, any Industrial User subject to Categorical Standards shall submit to the Borough a report indicating the nature and concentration of all Pollutants in the Discharge from the regulated process which are limited by Categorical Standards and the average and maximum daily flow for those process units in the Industrial User's facility which are limited by such Categorical Standards. The report shall certify that the information contained therein concerning Wastewater constituents and flows is representative of discharges during normal workcycles. The report shall state whether the facility is in compliance with applicable best management practices, and if not, include a schedule for implementation of applicable best management practices. The report shall also state whether the applicable Categorical Standards are being met on a consistent basis and, if not, what additional Operation and Management practices and/or Pretreatment is necessary to bring the Industrial User into compliance with the applicable Categorical Standards, and including a schedule for completion of the required actions in the form described in Section 5.04, paragraph L, of this Article. This statement shall be signed by an Authorized Representative of the Industrial User, and certified to by a Certified Professional.

Section 5.13 Periodic Compliance Reports

A. All Significant Industrial Users shall report to the Borough at least twice a year, the date of the report to be as determined by the Borough and contained in the Wastewater Discharge Permit. Reports may be required more frequently, if deemed necessary by the Borough.

B. The Borough may decrease the frequency of periodic compliance reports to no less than once per year for a Significant Industrial User that is designated a Middle Tier Categorical Industrial User (Middle Tier CIU).

C. The reports required under this Section shall contain, at a minimum, the measured concentrations of all Pollutants regulated by the Wastewater Discharge Permit, information necessary to demonstrate compliance with required Best Management Practices, a record of all measured daily flows which exceeded the average daily flow value reported in compliance with Article V, Section 5.04, paragraph H of this Ordinance and the following statement of accuracy and completeness signed and certified by the Authorized Representative of the Significant Industrial User:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. All wastewater discharge data are representative of normal daily facility operations. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for willful or knowing violations."

D. For Significant Industrial Users subject to Categorical Standards, if discharge limits are based on mass units per production unit, then production information regarding the regulated processes during the reporting period shall be included in the report, along with flow and concentration values, so that a determination of Compliance or Noncompliance with Categorical Standards can be made.

E. For Significant Industrial Users subject to Categorical Standards, the certification of Compliance with those Standards, signed by a Certified Professional.

F. Users designated by the Borough as Non-Significant Categorical Industrial Users (NSCIUs) must submit the following certification statement to the Borough once each year along with documentation supporting their classification as a NSCIU:

"Based on my inquiry of the person or persons directly responsible for managing compliance with the categorical Pretreatment Standards under 40 CFR ____, I certify, that to the best of my knowledge and belief that during the period from _____, _____ to _____, _____ [months, days, year]: (a) The facility described as _____ [facility name] met the definition of a non-significant categorical Industrial User as described in §403.3(v)(2); (b) the facility never discharged more than 100 gallons of total categorical wastewater on any given day during this reporting period. This compliance certification is based upon the following information: _____"

Section 5.14 Reporting and Resampling of Discharge Limit Violations

A. If, upon receipt of valid sampling and testing results, a Significant Industrial User becomes aware that a violation of Discharge limits has occurred, the Significant Industrial User shall, within 24 hours of becoming aware of the violation, notify the Borough of this fact. Within 30 days of becoming aware of the violation, the Significant Industrial User shall also sample and analyze its discharge(s) for each parameter found to be in violation and report the results of the re-sampling and analysis to the Borough.

B. Each Significant Industrial User shall have a duty, on receipt of validly obtained sampling and analysis results, of inspecting the results and determining if any Wastewater Discharge Permit condition has been violated. Failure to examine and compare testing

results with Wastewater Discharge Permit conditions shall not be a valid defense for failure to comply with these reporting conditions.

Section 5.15 Sampling and Analysis

A. All sampling and analysis performed in compliance with Wastewater Discharge Permit conditions or to prepare the reports required in Sections 5.11, 5.12, 5.13 and 5.14 of this Article shall be accomplished using techniques specified in 40 CFR Part 136, or alternative procedures approved by the Administrator, or using procedures described in Standard Methods if no EPA-approved procedure exists.

B. Grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide, and volatile organic compounds. For all other pollutants, 24-hour composite samples must be obtained through flow-proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the Borough. Where time-proportional composite sampling or grab sampling is authorized by the Borough, the samples must be representative of the Discharge and the decision to allow the alternative sampling must be documented in the Industrial User file for that facility or facilities.

C. All samples taken for purposes of demonstrating compliance must be based upon data obtained through appropriate sampling and analysis performed during the period covered by the report, which data are representative of normal conditions occurring during the reporting period.

D. If an Industrial User subject to the reporting requirements of this Article monitors any pollutant more frequently than required by the Borough using procedures as specified in Paragraph A., above, the results of this monitoring shall be provided to the Borough with the periodic compliance report required by Section 5.13. If the additional monitoring indicates that a violation of Pretreatment Requirements has occurred, then the provisions of Section 5.14 shall apply. It shall be a violation of the provisions of the Pretreatment Program to obtain several sample analyses for the purpose of selecting and submitting only those analyses that show Compliance with Pretreatment Requirements.

Section 5.16 Monitoring Facilities

A. The Borough may require an Industrial User to provide and operate at the Industrial User's own expense, monitoring facilities to allow inspection, sampling, and flow measurement of the Wastewater or Industrial Waste Discharge. The monitoring facility should normally be situated on the Industrial User's premises, but the Borough may, when such a location would be impractical or cause undue hardship on the Industrial User, allow the facility to be constructed in the public street or sidewalk area and located so that it will not be obstructed by landscaping or parked vehicles.

B. There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the Industrial User.

C. Whether constructed on public or private property, the sampling and monitoring facilities shall be provided in accordance with the Borough's requirements and all applicable local construction standards and specifications. Construction shall be completed within 90 days following written notification by the Borough.

Section 5.17 Inspections

The Borough may inspect the facilities of any User to ascertain whether the purpose of this Ordinance is being met and all requirements are being complied with. Persons or occupants of premises connected to the sewage collection system and/or where Wastewater is created or discharged shall allow the Borough or its representative ready access at all reasonable times to all parts of the premises for the purposes of inspection, sampling, records examination and copying or in the performance of any of their duties. The Borough, its agents (including the Authority), and EPA shall have the right to set up on the User's property such devices as are necessary to conduct sampling, inspection, compliance monitoring and/or metering operations. Where a User has security measures in force which would require proper identification and clearance before entry onto their premises, the User shall make necessary arrangements with its security guards so that upon presentation of suitable identification, personnel from the Borough, the Authority, any state environmental agency, and EPA will be permitted to enter, without delay, for the purpose of performing their specific responsibilities.

Section 5.18 Pretreatment Facilities

Industrial Users shall provide necessary Wastewater Pretreatment as required to comply with this Ordinance and shall achieve Compliance with all applicable Categorical Standards within the time limitations as specified by the applicable Categorical Standards. Any facilities required for Pretreatment shall be provided, operated, and maintained at the Industrial User's expense. Detailed plans showing the Pretreatment facilities and operating procedures shall be submitted to the Borough for review, and shall be acceptable to the Borough before construction of the facility. The review of such plans and operating procedures will in no way relieve the Industrial User from the responsibility of modifying the facility as necessary to produce a Discharge which complies with the provisions of this Ordinance. Any subsequent changes in the Pretreatment facilities or method of operation shall be reported to and be acceptable to the Borough prior to the Industrial User's initiation of the changes. The review and acceptance of plans and procedures by the Borough shall not be considered as an approval regarding their efficacy, safety or reliability; such considerations are solely the responsibility of the Industrial User.

Section 5.19 Confidentiality

A. Information and data on an Industrial User obtained from reports, questionnaires, Wastewater Discharge Permit applications and monitoring programs and from inspections shall be available to the public or any governmental agency without restriction unless the Industrial User specifically requests and is able to demonstrate to the satisfaction of the Borough that the release of such information, processes or methods of production are entitled to protection as trade secrets of the Industrial User.

B. When requested by the Person furnishing a report, and supported by evidence acceptable to the Borough as to need for protection as confidential material, the portion of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public but shall be made available upon written request to governmental agencies for uses related to this Ordinance, the Authority's NPDES Permit, any State permit and/or the Industrial Pretreatment Program; provided, however that such portions of a report shall be available for use by the EPA, the State or any State agency in judicial review or enforcement proceedings involving the Person furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

C. The Borough shall maintain a secure place to store records containing confidential information and shall insure that all records marked as confidential are kept secure from casual or public scrutiny.

D. When information accepted by the Borough as confidential is transmitted to any government agency, a notification to the Industrial User shall be provided listing the confidential information transmitted, and the governmental entity requesting it.

Section 5.20 Change in Operations

A. Any Significant Industrial User contemplating or planning a change in the manufacturing process, raw materials, auxiliary processes, Pretreatment processes or other changes which may result in changes to Wastewater character, composition, volume or rate of flow, shall notify the Borough in writing at least 30 days prior to making such a change, or if the change is unplanned, immediately upon making the change. The report shall include all information necessary to determine the effect on the Wastewater of the change.

B. The Borough may, on receipt of such a report:

1. Continue an existing Wastewater Discharge Permit in effect;
2. Require application for a new Wastewater Discharge Permit;
3. Modify an existing Wastewater Discharge Permit to reflect the changed nature of the waste;
4. Rescind and re-issue an existing Wastewater Discharge Permit in order to make substantial changes in Wastewater Discharge Permit conditions;
5. Revoke an existing Wastewater Discharge Permit or require the Industrial User to cease or prevent the Discharge; or
6. Take such other action as it deems appropriate.

C. Facilities permitted as Middle Tier Categorical Industrial Users (Middle Tier CIUs) must notify the Borough immediately of any changes at its facility causing it to no longer meet Middle Tier eligibility criteria. Upon notification, the Industrial User must immediately begin complying with the minimum reporting as described in Section 5.13(A).

Section 5.21 Records

A. The Borough shall keep and maintain all records relating to the administration and enforcement of the Industrial Pretreatment Program, including but not limited to Wastewater Discharge Permit applications, investigations and calculations, Wastewater Discharge Permits, inspection reports, Industrial User reports, reports of compliance with Best Management Practices, sampling results and enforcement activities, for a minimum of three years. In cases of on-going litigation, records shall be maintained as long as they may be required.

B. The Borough shall keep and maintain documentation to support a determination that a significant industrial user meets the criteria to be permitted under a general permit, a copy of the user's general permit, and a copy of the user's request for coverage under a general permit, for a minimum of three years after expiration of a general permit.

C. The Borough shall keep and maintain documentation to support a determination that a facility qualifies as a Middle Tier CIU, for a minimum of three years after expiration of the permit establishing requirements based on the middle tier determination.

D. All Industrial Users shall keep and maintain records of monitoring activities and results, records of compliance with Best Management Practices, Wastewater Discharge Permits, and reports to the Borough for a minimum of 3 years. In cases of on-going litigation such records shall be maintained as long as they may be required.

ARTICLE VI - ENFORCEMENT

Section 6.01 Right to Refuse

The Borough reserves the right to refuse to accept Wastewater, or combinations of Wastewater, which are Discharged in violation of the terms or conditions of this Ordinance, or the written directions of the Borough issued pursuant to the conditions of this Ordinance. The Borough may take such steps as it deems necessary, as outlined in this Ordinance, to compel discontinuance of use of the Sewer System or Pretreatment of Industrial Wastes in order to comply with the provisions of this Ordinance.

Section 6.02 Suspension of Permit

A. The Borough may suspend the Wastewater Discharge Permit when such suspension is necessary, in the opinion of the Borough, in order to stop an actual or threatened Discharge which presents or may present an imminent or substantial endangerment to the health or welfare of Persons, to the environment, causes Interference or Pass Through, or causes the Authority to violate any condition of its NPDES Permit or any other Federal or State law, rule, regulation or permit condition.

B. Any Industrial User notified of a suspension of its Wastewater Discharge Permit shall immediately stop or eliminate the Discharge. In the event of a failure of the Industrial User to comply voluntarily with the notice of suspension, the Discharge shall be considered an Unauthorized Discharge and the Borough shall take such steps as deemed necessary, including immediate severance or plugging of the connection between the Building Sewer and the Sewage Collection System, to prevent or minimize damage to the Sewer System or endangerment to the environment or any property or Person.

C. The Borough may reinstate the Wastewater Discharge Permit upon submission of proof by the Industrial User of the elimination of the Unauthorized Discharge. A detailed written statement submitted by the Industrial User describing the causes of the Unauthorized Discharge and the measures taken to prevent any future occurrence shall be submitted to the Borough within 15 days of the date of occurrence.

Section 6.03 Revocation of Permit

A. Any Industrial User who violates the following conditions of this Ordinance, or applicable State and Federal regulations, is subject to having its Wastewater Discharge Permit revoked.

1. Failure of an Industrial User to factually report the Wastewater constituents and characteristics of its discharge in any application for a Wastewater Discharge Permit, or in any reports required by Article V, Sections 5.11, 5.12, 5.13, or 5.14 of this Ordinance;

2. Failure of the Industrial User to report significant changes in operations, or Wastewater constituents and characteristics as required in Article V, Section 5.20 of this Ordinance;

3. Refusal of reasonable access to the Industrial User's premises for the purpose of inspection or monitoring; or

4. Significant Noncompliance with conditions of the Wastewater Discharge Permit.

B. Discharge of any Industrial Waste to the Sewer System by a Significant Industrial User without a Wastewater Discharge Permit is an Unauthorized Discharge, as provided in Article V, Section 5.01, and is subject to the penalties provided herein.

Section 6.04 Notice of Violation

Whenever the Borough finds that any Industrial User has violated or is violating the provisions of the Industrial Pretreatment Program, its Wastewater Discharge Permit, or any prohibition, limitation or requirements contained herein, the Borough may serve upon such Industrial User a written notice stating the nature of the violation, and requiring a response

within a specified time. Responses required of Industrial Users may include, but are not restricted to, actions, plans, compliance schedules, or written explanations.

Section 6.05 Show Cause Hearing

A. The Borough may require any Industrial User who causes or allows an Unauthorized Discharge to enter the Sewer System, or who violates any condition or requirement of the Industrial Pretreatment Program or its Wastewater Discharge Permit, to show cause before the Borough why the proposed enforcement action should not be taken. A notice shall be served on the Industrial User specifying the time and place of a hearing to be held by the Borough regarding the violation, the reasons why the action is to be taken, the proposed enforcement action, and directing the Industrial User to show cause before the Borough why the proposed enforcement action should not be taken. The notice of the hearing shall be served personally or by registered or certified mail (return receipt requested) at least ten days before the hearing. Service may be made on any agent or officer of a corporation if the Industrial User is a corporation.

B. The Borough may itself conduct the hearing and take the evidence, or may designate any of its members or any representative of the Borough to:

1. Issue in the name of the Borough notices of hearings requesting the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in such hearings;
2. Take the evidence;
3. Transmit a report of the evidence and hearing, including transcripts and other evidence, together with recommendations to the Borough for action thereon.

C. At any hearing held pursuant to this Section, testimony taken must be under oath and recorded stenographically. The transcript, so recorded, will be made available to any member of the public or any party to the hearing upon payment of the usual charges thereof.

D. After the Borough has reviewed the evidence, it may, in writing, direct the Industrial User to take certain actions to correct the Unauthorized Discharge or to achieve Compliance. The actions which may be directed include, but are not limited to:

1. Installation of Pretreatment facilities or equipment;
2. Modification or additions to existing Pretreatment facilities or equipment;
3. Initiation of management practices which are required to alter the nature of the Industrial Waste being Discharged;
4. Development or implementation of SPCC plans or other measures;

5. Other measures found to be necessary to correct the Unauthorized Discharge or other Non Compliance.
 6. The direction may be in the form of a schedule for compliance, setting dates by which certain actions shall be taken.
- E. Failure of an Industrial User to comply with directions issued pursuant to a hearing constitutes a violation of this Ordinance and may be subject to additional actions or penalties as outlined in this Article.

Section 6.06 Administrative Orders

The Borough may issue written directions as described in Section 6.05, paragraph D, of this Article without a Show Cause Hearing if the Borough determines that such directions are necessary to correct conditions or remedy continuing violations of this Ordinance or any Wastewater Discharge Permit or other requirements of the Industrial Pretreatment Program, the Borough or Federal or State regulations.

Section 6.07 Right of Appeal

- A. An Industrial User may appeal the enforcement actions enumerated above in Sections 6.02, 6.03, 6.05 and 6.06 of this Article, or Wastewater Discharge Permit conditions, in whole or in part. An appeal is subject to the following requirements.
1. The appeal must be made in writing to the Borough.
 2. The appeal must be made within thirty (30) calendar days from the date of receipt of the Wastewater Discharge Permit, written directions, or notice of suspension or revocation of a Wastewater Discharge Permit being appealed by the Industrial User.
 3. The appeal must state the specific provision(s) of a Wastewater Discharge Permit or the specific directions of the Borough which are being contested.
 4. The appeal must state the reasons for the appeal of each provision.
 5. The appeal may suggest alternate or revised provisions to replace those appealed.
- B. Provisions mandated by Federal or State regulations (e.g., compliance with Categorical Standards) shall not be appealed.
- C. An appeal shall be made to the Borough, and shall be reviewed by any designated representative(s) of the Borough, provided:
1. The representative shall not be the Pretreatment Coordinator; and
 2. The representative is not the Superintendent.
- D. Within 60 days of receipt, the representative(s) reviewing the appeal shall report in writing to the Borough the results of the review. The report shall contain, at a minimum:

1. A summary of each item appealed, the appellant's reasons for appeal, and the appellant's proposed remedies, if any.
2. The finding of merit for each point, and the reason(s) for finding.
3. For each point found to be with merit, a proposed remedy, and a finding that the remedy is allowable under the provisions of the Industrial Pretreatment Program, and all applicable Federal, State and local rules, regulations and laws.

E. The Borough shall review the report and, at one or more regular or special public meetings, take any additional testimony offered by the appellant, reviewer, Pretreatment Program Coordinator, or other interested party. The Borough shall, within 45 days of the conclusion of testimony, decide to:

1. Grant the appeal or portions of the appeal, applying such remedies as it deems proper; or
2. Deny the appeal.

This decision constitutes final administrative action.

Section 6.08 Civil Actions

If any Person violates the provisions of the Industrial Pretreatment Program, including local Federal or State Pretreatment Requirements, Categorical Standards, or any Wastewater Discharge Permit or written directions issued by the Borough, the Borough may commence an action for appropriate legal and/or equitable relief in the Court of Common Pleas of Luzerne County.

Section 6.09 Injunctive Relief

If any Person causes or permits an Unauthorized Discharge to occur, or otherwise violates the conditions imposed by the Industrial Pretreatment Program or any Wastewater Discharge Permit or written directions issued by the Borough, or any Federal or State Pretreatment Requirement or Categorical Standard, the Borough may commence an action in the Court of Common Pleas of Luzerne County for injunctive relief to stop the Unauthorized Discharge, or to require Compliance with the applicable condition.

Section 6.10 Enforcement Response Plan

The Borough may develop an Enforcement Response Plan to guide the Pretreatment Coordinator in the administration of the Industrial Pretreatment Program. The Enforcement Response Plan shall meet the requirements of 40 CFR § 403.8(f)(5) regarding the contents of Enforcement Response Plans. The Pretreatment Coordinator shall be guided by the Enforcement Response Plan when reviewing Industrial User reports, inspection results and other compliance information, and when recommending to the Borough enforcement action in response to Noncompliance.

Section 6.11 Significant Violators

The Borough shall publish annually, a list of Industrial Users that were found to be in Significant Noncompliance during the previous calendar year. The list shall be published in a newspaper of general circulation within the municipalities served by the Sewage Collection System. Significant Noncompliance shall be determined using measures of rate, magnitude, and type of Noncompliance, as delineated below:

A. Chronic violations of Local Limits, Prohibitive Discharge Standards, Categorical Standards, or other numerical limitations on Discharges of Industrial Waste. A Chronic violation occurs if sixty-six percent (66%) or more of all the measurements taken for the same pollutant parameter during a six (6) month period exceed (by any magnitude) a numeric Pretreatment Standard or requirement, including instantaneous limits.

B. Technical Review Criteria (TRC) violations of Local Limits, Prohibitive Discharge Standards, Categorical Standards, or other numerical limitations on Discharges of Industrial Waste. A TRC violation occurs if thirty-three percent (33%) or more of all of the measurements taken for the same pollutant parameter during a six (6) month period equal or exceed (by any magnitude) a numeric Pretreatment Standard or requirement, including instantaneous limits, multiplied by the applicable TRC. For conventional Pollutants (BOD, Total Suspended Solids and fats, oil and grease), the TRC equals one and four-tenths (1.4); for all other Pollutants except pH, the TRC equals one and two-tenths (1.2).

C. Any violation of Local Limits, Prohibitive Discharge Standards, Categorical Standards, or other Standard or Requirement for Discharges of Industrial Waste which the Borough determines has caused, alone or in combination with other discharges, Pass Through or Interference, or has endangered the health or safety of Sewer System maintenance or operating personnel or the public.

D. Any Discharge that has caused imminent endangerment to human health, welfare or the environment, or has caused the Borough to exercise its emergency authority under Section 6.02 of this Ordinance.

E. Failure to meet, within ninety (90) days after the schedule date, a compliance schedule milestone contained in a Wastewater Discharge Permit or submitted in response to written directions of the Borough, for starting construction, completing construction, or attaining final compliance.

F. Failure to provide, within forty-five (45) days after the due date, any required reports, including but not limited to baseline monitoring reports, periodic compliance reports, reports on compliance with compliance schedules, or reports on a change in operations.

G. Failure to accurately report any Noncompliance.

H. Any other violation, or group of violations, Noncompliance or Noncompliances, which may include a violation of Best Management Practices, which the Borough determines will adversely affect the operation or implementation of the Industrial Pretreatment Program.

Section 6.12 Records

The Borough shall maintain records of all enforcement actions taken, the reasons for those actions, and the results of those actions. These records shall be made available to the Approval Authority and the public during normal Borough business hours.

ARTICLE VII - PENALTIES

Any person who violates any provisions of this Ordinance, or the rules, regulations and permits issued hereunder, shall pay a civil penalty of not less than One Hundred Dollars nor more than Twenty-five Thousand Dollars for each offense. In addition to the penalties provided herein, the Borough may recover reasonable attorney's fees, court costs, court reporters' fees and other expenses of litigation by appropriate suite at law against the Person found to have violated this Ordinance or the rules, regulations, and permits issued hereunder.

ARTICLE VIII – REMEDIES NOT EXCLUSIVE

The enumeration of remedies in Articles VI and VII of this Ordinance does not restrict their application. Although the Enforcement Response Plan shall serve as a guide in applying remedies and penalties, the Borough reserves the right to take any action or combination of actions allowed by this Ordinance or other applicable law, including concurrent actions, if it determines that those actions are necessary for the proper and prudent administration or enforcement of the Industrial Pretreatment Program.

**ARTICLE IX – ADMINISTRATION OF THE INDUSTRIAL
PRETREATMENT PROGRAM**

Section 9.01 Appointment of Authority as Agent

The Borough appoints the Borough of Freeland Municipal Authority as its agent for the purposes of administering the Industrial Pretreatment Program. All reports and applications required by this ordinance to be submitted to the Borough shall be submitted to the Authority. The Authority is hereby authorized to develop all procedures for inspecting Users, reporting, issuing Wastewater Discharge Permits, reviewing Pretreatment facility plans, and otherwise administering all of the provisions of this Ordinance and the Industrial Pretreatment Program. Local Limits developed by the Authority shall be applied as Local Limits authorized by this Ordinance and applied to such Industrial Users as authorized by this Ordinance. All administrative enforcement actions, as set forth in Articles VI and VII of this Ordinance, may be taken by the Authority acting as an agent for the Borough; this includes, but is not limited to, issuance of written directions and notices of violation, the scheduling and hearing of Show Cause Hearings, and the suspension or revocation of Wastewater Discharge Permits. On the appeal of an action by the Authority by an Industrial User, the Borough may assign the hearing of the appeal and the right to make final decisions to the Authority. This appointment may be revoked only upon the amendment of this Ordinance by majority vote of the Borough Council of the Borough of Freeland, at a duly scheduled and publicly advertised regular or special public meeting.

Section 9.02 Authorization of Authority To Act In The Name Of The Borough

All enforcement procedures authorized by Articles VI and VII of this Ordinance may be undertaken, without prior consultation with the Borough, by the Authority and the Authority shall in such instances be authorized to act for and in the name of the Borough. It is the intent of the Borough Council of the Borough of Freeland that the Industrial Pretreatment Program be administered and enforced by the Authority and that all action taken by the Authority in administering and enforcing this ordinance are actions on behalf of the Borough and may be taken in the name of the Borough. This authorization may be revoked only upon the amendment of this ordinance by a majority vote of the Borough Council of the Borough of Freeland at a duly scheduled and publicly advertised regular or special public meeting.

Section 9.03 Information To Be Shared With Authority

Information acquired by the Borough which pertains to the provisions of the Industrial Pretreatment Program shall be provided to the Authority in a timely manner. Such information shall include but not limited to:

- A. Information regarding new Industrial Users or changes in use of existing Users.
- B. Information pertaining to the quality, quantity, or rate of flow Discharges.
- C. Information regarding violations of this ordinance or any of its provisions or of the Industrial Pretreatment Program.

Section 9.04 Actions To Be Taken In Support of Authority in Administration and Enforcement

The Borough may provide such services as may be required or requested in aid of the administration or enforcement of the provisions of the Industrial Pretreatment Program. Such aid and assistance may include, but not limited to, assistance in obtaining information, recordkeeping, sampling, inspections or enforcement.

Section 9.05 Authorization of Authority Not Exclusive

Notwithstanding the above, the Borough retains the right to administer and enforce the Industrial Pretreatment Program in keeping with the provisions of this Ordinance. When so notified by the Borough, Users shall provide such information as is required by this Ordinance or its provisions to the Borough. The Borough may take such administrative or enforcement actions as it deems necessary to comply with the provisions of this Ordinance.

ARTICLE X – ADOPTION OF ADDITIONAL RULES AND REGULATIONS

The Borough Council of the Borough of Freeland reserve the right to adopt, from time to time, such additional rules and regulations as it shall deem necessary and proper in conjunction with use and operation of the Sewer System, which rules and regulations shall be, shall become and shall be construed as part of this Ordinance.

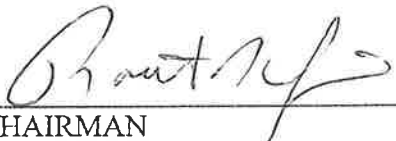
ARTICLE XI – CONSTRUCTION AND SEVERABILITY

In the event any provision, section, sentence, clause or part of this Ordinance shall be held to be invalid, such validity shall not affect or impair any remaining provision, section, sentence, clause or part of this Ordinance, it being the intent of the Authority that such remainder shall be and shall remain in force and effect. Provisions of headings in this Ordinance are solely for convenience and shall have no effect on the legal or technical interpretation of any provision or requirement.

ARTICLE XII – REPEALER

All other ordinances or parts of ordinances inconsistent herewith expressly are repealed

PASSED FINALLY, by Borough Council of the Borough of Freeland, Luzerne County, Pennsylvania, in lawful session duly assembled, this **Thirteenth** day of May, 2013.

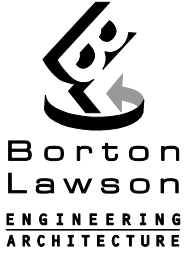

CHAIRMAN

ATTEST:


SECRETARY

(SEAL)

APPENDIX C



SHOP DRAWINGS
CONTRACT 1 - GENERAL
LETTER OF TRANSMITTAL

Date: April 21, 2014

To: **Michael F. Ronca & Sons, Inc.**
179 Mikron Drive
Bethlehem, PA 18020

Attn: Scott Wachinski

RE: **Contract 1: General Construction**
Freeland Wastewater Plant Upgrade

From: David Wieller, P.E.
Office: Bethlehem Office

Proj. No 2009-2467-00

We Are Sending You Attached Under separate cover via _____ the following items:

- Shop Drawings Prints Plans Samples Specifications
 RFI Response Change Order Other: _____

Copies:	Date:	No.:	Description:
1	4/21/14	276	CSO Hydro Jet Screen O&M Manual

Remarks:

Northeast Pennsylvania
613 Baltimore Drive
Suite 300
Wilkes-Barre, PA
18702-7903
Voice: 570.821.1999
Fax: 570.821.1990

Copy To: FMA (w/ enclosure) Signed David Wieller

- Original Correspondence Reading _____ _____

Bethlehem
3893 Adler Place
Suite 100
Bethlehem, PA 18017
Voice: 484.821.0470
Fax: 484.821.0474

If enclosures are not as noted, kindly notify us at once.

Shop Drawing

Borough of Freeland MA WWTP Upgrade

Contractor Michael F. Ronca & Sons, Inc.
Submittal No: SD 276
Title: CSO Hydro Jet Screen O&M Manual
Date Rec'd: April 9, 2014
Date Ret'd: April 21, 2014
Specification No: 11050-006

Comments:

1. Provide the information required for Section 2.2 (see attached).

- Approved
 Furnish as Corrected
 Revise and Resubmit
 Rejected

By: David Wieller

Date: 4/21/2014

Engineer's review and approval of this submittal are expressly limited as provided in the Contract Documents and are only to determine compliance with information given in Contract Documents and conformance with the design concept of completed project as a functioning whole.

CONTRACTOR is, and ENGINEER is NOT responsible for all matters relating to fabrication, shipping, handling, storage, assembly, installation and construction, and for all safety aspects of performing and coordinating the Work.

Borton-Lawson Engineering Inc.

Borton-Lawson, 613 Baltimore Drive, Wilkes-Barre, PA 18702-7903



Section 2

Performance & Design

2.1 Performance Objectives

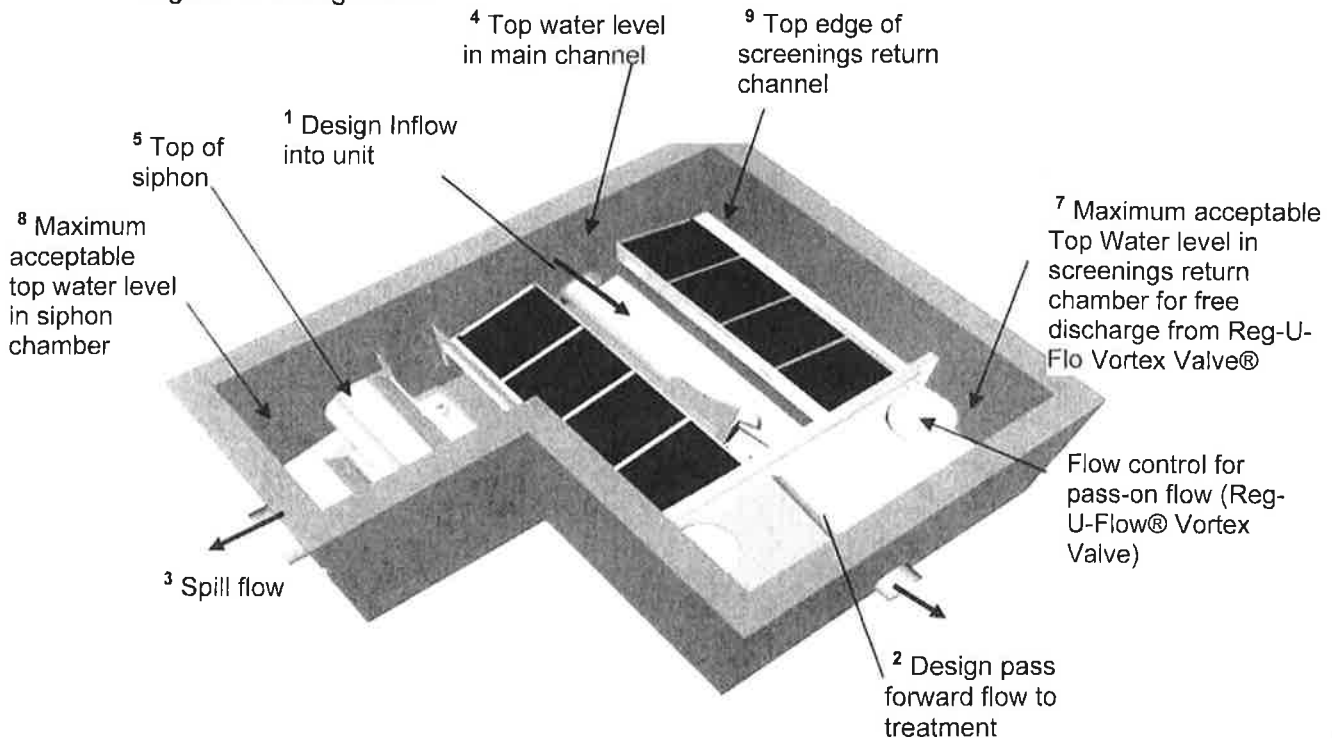
Provides screening better than 1/4" in two directions, to intercept and retain aesthetically offensive material and gross solids at all states of flow up to the peak storm flow with the material being returned to the foul sewer after the storm event. The screen is to require no external power, have no moving parts.

2.2 Design Criteria

Refer to Figure 1. Design Data

Site Name	
Hydro International Reference	
Design Inflow Rate ¹ mgd	
Design Pass forward flow to treatment mgd	
Design Spill flow ³ mgd	
Screen bypass flow to WWTP pump station mgd	
Design Maximum Top Water Level in main channel ⁴	
Screen Invert Level	
Maximum Acceptable Top Water Level in screenings return chamber ⁷	
Maximum Acceptable Top Water Level in siphon discharge chamber ⁸	

Figure 1. Design Data



Michael F. Ronca & Sons, Inc.

179 Mikron Road

Bethlehem, PA 18020

Phone: 610-759-5100

Fax: 610-746-0974

TRANSMITTAL

No. 00644

PROJECT: Borough of Freeland M.A. WWTP Upgrad

DATE: 4/4/2014

TO: Borton Lawson
613 Baltimore Drive
Suite 300
Wilkes-Barre, PA 18702-7903

REF: Submittals

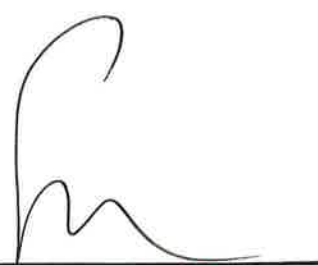
ATTN: Samantha Albert, PE

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
<input checked="" type="checkbox"/> Shop Drawings	<input checked="" type="checkbox"/> Approval	<input type="checkbox"/> Approved as Submitted
<input type="checkbox"/> Letter	<input type="checkbox"/> Your Use	<input type="checkbox"/> Approved as Noted
<input type="checkbox"/> Prints	<input checked="" type="checkbox"/> As Requested	<input type="checkbox"/> Returned After Loan
<input type="checkbox"/> Change Order	<input type="checkbox"/> Review and Comment	<input type="checkbox"/> Resubmit
<input type="checkbox"/> Plans		<input type="checkbox"/> Submit
<input type="checkbox"/> Samples	SENT VIA:	<input type="checkbox"/> Returned
<input type="checkbox"/> Specifications	<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> Returned for Corrections
<input checked="" type="checkbox"/> Other: Made from Submittal	<input type="checkbox"/> Separate Cover Via: Mail	<input type="checkbox"/> Due Date:

ITEM	PACKAGE	SUBMITTAL	DRAWING	REV.	ITEM NO.	COPIES	DATE	DESCRIPTION	STATUS
SUT	11050	11050-006		001		4	4/4/2014	Aerated Grit O&M	NEW

BORTON-LAWSON	
CEO _____	TOK _____
PRES _____	
CFO _____	APR - 9 2014
HR _____	
MKTG _____	
ACCT _____	<i>[Signature]</i> PROJECT NO. _____

CC: HO, field
MC - 001

Signed: 
Scott Wachinski

Michael F. Ronca & Sons, Inc.

179 Mikron Road

Bethlehem, PA 18020

Phone: 610-759-5100

Fax: 610-746-0974

SUBMITTAL**NO. 11050-006****PACKAGE NO: 11050**

TITLE: Aerated Grit O&M
PROJECT: Borough of Freeland M.A. WWTP Upgrad
DRAWING:
STATUS: NEW
BIC: BORTONLA

REQUIRED START:
REQUIRED FINISH:
DAYS HELD: 0
DAYS ELAPSED: 0
DAYS OVERDUE: 0

RECEIVED FROM	SENT TO	RETURNED BY	FORWARDED TO
SHERWOOD EZ	BORTONLA BB	BORTONLA BB	SHERWOOD EZ

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status	Drawing		Held	Elapsed
							Sepias	Prints		
001		4/4/2014	4/4/2014			NEW	0	0	0	0
Contractor indicates that he has checked this Submittal with the contract drawings, specifications, and site conditions and found it to meet all requirements of same including dimensions, and that the Contractor's guarantee fully applies to the specified material or equipment										

Operations & Maintenance Manual

Hydro-Jet® Screen



Freeland, PA Screening Facility

Hydro
International 

Manufacturer:

Hydro International Wastewater
2925 NW Aloclek Drive, Suite 140
Hillsboro, OR 97124
(503) 615-8130 Phone
www.eutek.com

Operations and Maintenance Manual

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Section 1

Introduction

The Hydro-Jet® Screen is a self-cleansing, self-activating, non-powered screening system for the removal of material >1/4" in two directions from storm overflows.

Physical characteristics of the device include:

- An influent chamber
- An overflow weir
- A series of inclined perforated mesh screens
- A screenings collection channel
- A Reg-U-Flo® vortex valve to limit the screenings return to the WWTP.
- A siphon to control the screened discharge to the watercourse and provide the water backwash to the screenings panels

Two variations of the Hydro-Jet® Screen exist:

1. The original Hydro-Jet® Screen which incorporates flat screenings panels
2. The new High-Capacity Hydro-Jet® Screen that incorporates corrugated screening panels. This variation is to be installed at the Freeland CSO Facility.

As the Hydro-jet® Screen is hydraulically operated, the water levels within the system are critical to successful performance.

Pass-on Flow Collection Chamber

Both the bypass flow control and screenings return flow controls discharge into this chamber. The flow to treatment is therefore the accumulation of the two. The Freeland CSO unit will have a screenings return flow only.

Siphon Chamber

Water that passes through the screens is initially prevented from discharging to the watercourse by the discharge siphon. This causes the water level below the screens to rise and in so doing provides the backwash mechanism that prevents the screens from blinding. Once the siphon crest is reached (at a water level slightly above the top of the screening panels) the siphon primes.

Section 2

Performance & Design

2.1 Performance Objectives

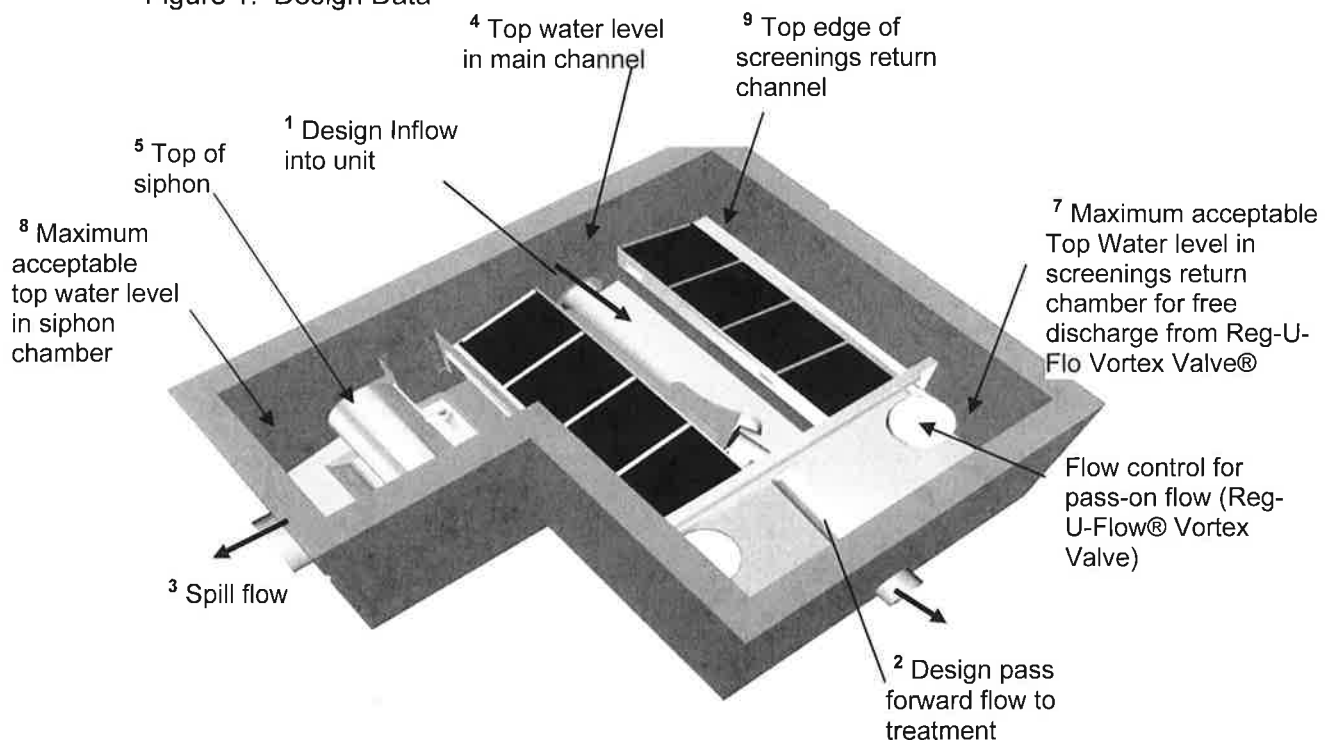
Provides screening better than ¼" in two directions, to intercept and retain aesthetically offensive material and gross solids at all states of flow up to the peak storm flow with the material being returned to the foul sewer after the storm event. The screen is to require no external power, have no moving parts.

2.2 Design Criteria

Refer to Figure 1. Design Data

Site Name	
Hydro International Reference	
Design Inflow Rate ¹ mgd	
Design Pass forward flow to treatment mgd	
Design Spill flow ³ mgd	
Screen bypass flow to WWTP pump station mgd	
Design Maximum Top Water Level in main channel ⁴	
Screen Invert Level	
Maximum Acceptable Top Water Level in screenings return chamber ⁷	
Maximum Acceptable Top Water Level in siphon discharge chamber ⁸	

Figure 1. Design Data



2.3 Control Philosophy

The screen requires no external power source, having no moving parts. It requires minimal maintenance and has a low head requirement. A patented air break siphon is used to generate a rising and falling water level through the screen to free the screenings, which are directed to the treatment works.

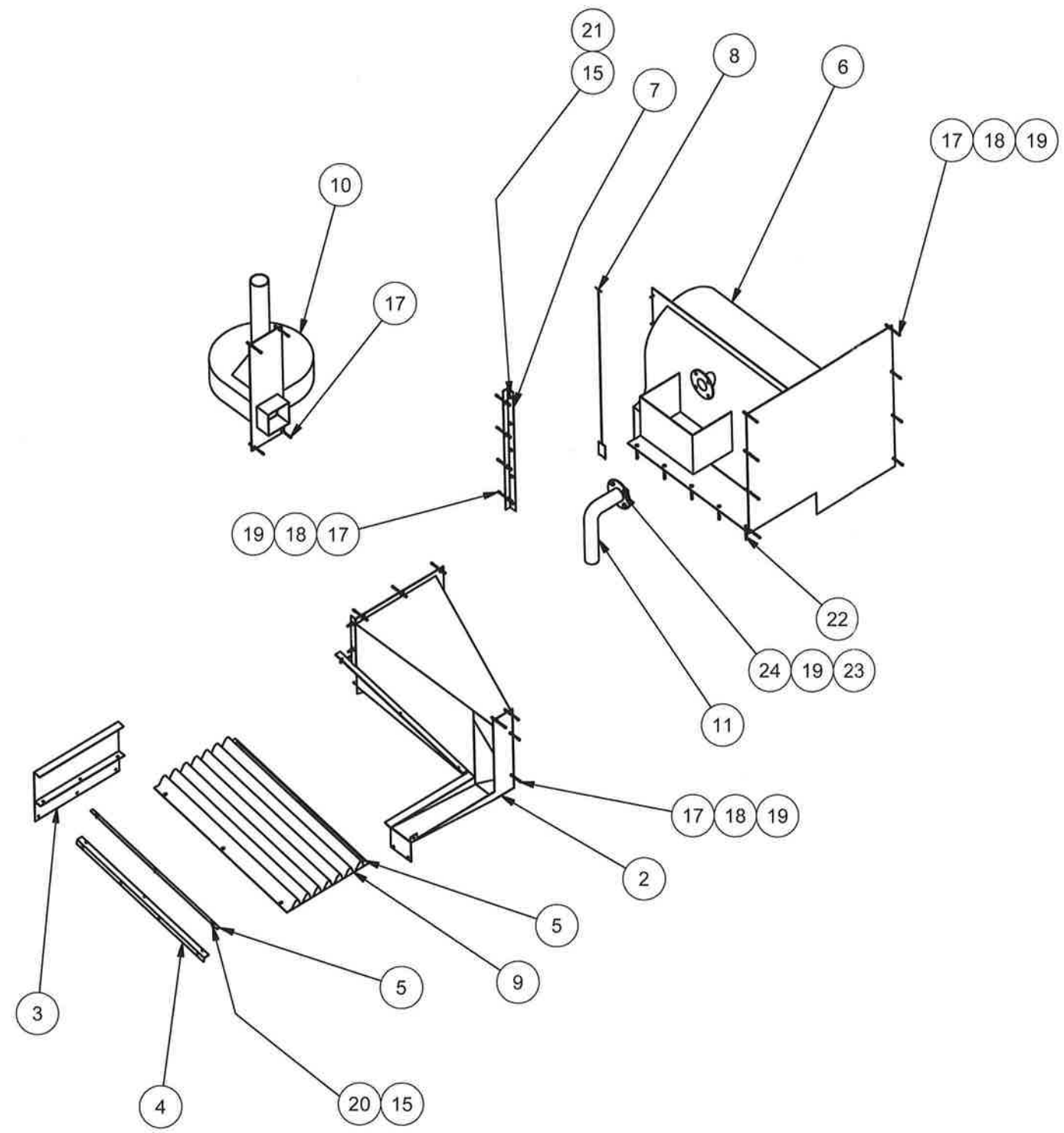
During wet weather, two screw centrifugal pumps located in the adjacent wet well will pump to the Freeland Hydro-Jet® Screen causing water levels will rise within the chamber and spill over the screens.

Section 3

Drawings

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT GENERAL ARRANGEMENT & DETAIL DRAWINGS.

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	Screen Chamber	Not Shown, Supplied by Others
2	1	Screenings Return Channel	
3	1	Screen Mount	
4	1	Small Wall Mount	
5	2	Screen Clamp	
6	1	Siphon	
7	1	Siphon Mount	
8	1	Drain Down Spade	
9	1	Screen Material	
10	1	Screenings Return Valve	
11	1	Air Switch Pipe	
12	1	Gate Valve	
13	1	Cover	Not Shown, Supplied by Others
14	2	Hatch	Not Shown, Supplied by Others
15	11	ANSI B18.22.1 - 1/4 - Regular - Type B	Plain Washer (Inch)Type A and B
17	43	3-8 x 5 inch Anchor Bolt	
18	43	ANSI B18.22.1 - 3/8 - Regular - Type B	Plain Washer (Inch)Type A and B
19	47	ANSI B18.2.2 - 3/8 - 16	Hex Nuts (Inch Series) Hex Nut
20	6	ANSI/ASME B18.2.1 - 1/4-20 UNC - 1	Hex Bolt - UNC (Regular Thread - Inch)
21	5	ANSI B18.2.2 - 1/4 - 20	Hex Nuts (Inch Series) Hex Nut
22	5	3-8 x 4 inch Recessed Sleeve Bolt Anchor	
23	8	ANSI B18.22.1 - 3/8 - wide - Type B	Plain Washer (Inch)Type A and B
24	4	ANSI/ASME B18.2.1 - 3/8-16 UNC - 1.25	Hex Bolt - UNC (Regular Thread - Inch)



A	MB	04/11/11	ALTERNATE OPTION
-	MB	01/28/11	FIRST RELEASE
REV	BY	DATE	DESCRIPTION

REVISION HISTORY

Date	Scale	
4/11/2011	NTS	
Drawn By	Checked By	Approved By
MB	-	NDR

Title
HJS 150 HYDRO-JET SCREEN SYSTEM

FREELAND CSO
 FREELAND, PA

PARTS LIST

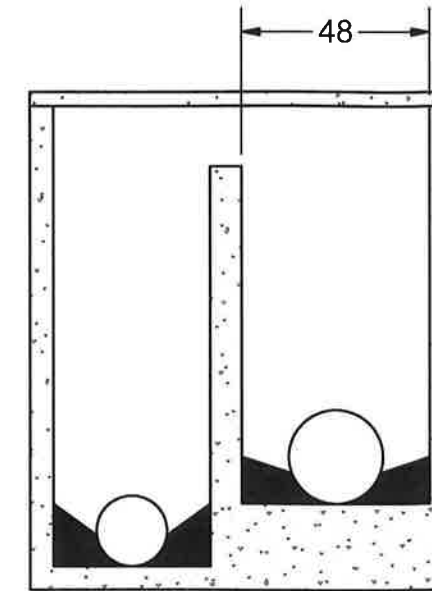
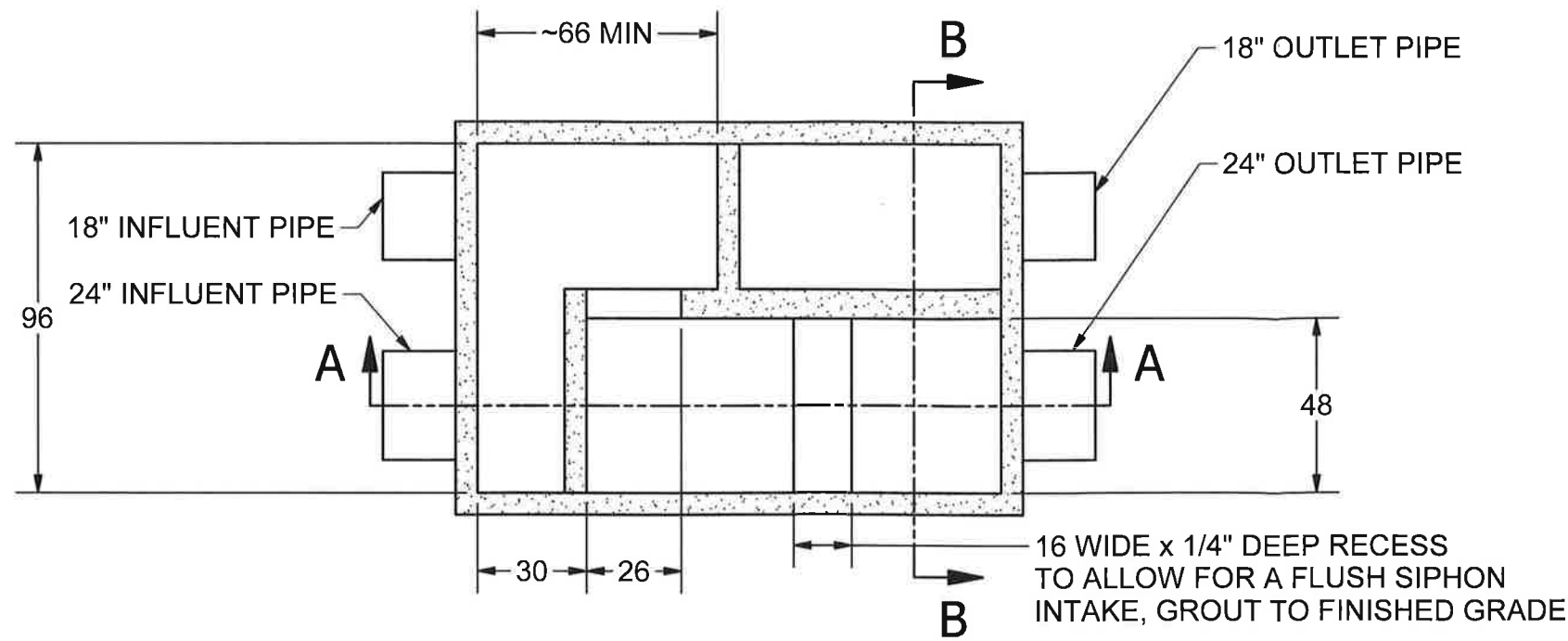


94 Hutchins Drive
 Portland, ME 04102
 Tel: (207) 756-6200
 Fax: (207) 756-6212
 email: hiltech@hil-tech.com

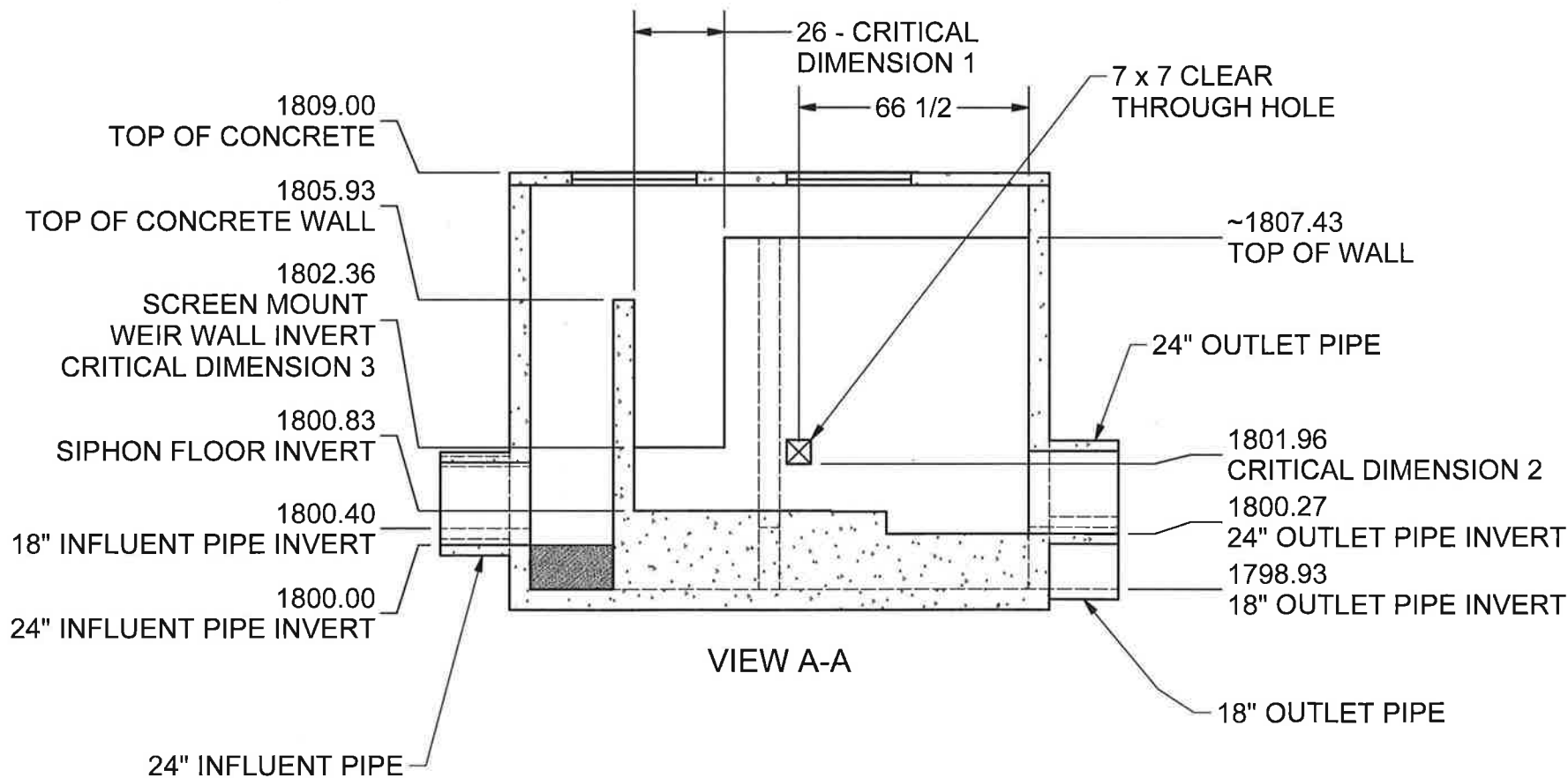
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 FRACTIONS ± 1/16
 DECIMALS ± .06
 ANGLES ± 1'

Approximate Weight:	N/A
Finish:	
Treatment:	
Sheet Size:	B
Sheet:	1 OF 1
Next Assembly:	-
Ref. No.:	09-3515
Drawing No.:	PL5A
Rev	A



VIEW B-B



VIEW A-A

CRITICAL DIMENSIONS DETAILS:

CRITICAL DIMENSION 1 - THE SCREEN MOUNT WIDTH WILL BE DICTATED BY THE SITE MEASUREMENT OF THIS DIMENSION, PLEASE NOTIFY HYDRO OF THE FINAL DIMENSION PRIOR TO FABRICATION.

CRITICAL DIMENSION 2 - FOR THE VALVE AND SCREEN EQUIPMENT TO ALIGN THIS INVERT MUST BE MAINTAINED.

CRITICAL DIMENSION 3 - THE OVERALL HYDRAULIC GRADELINE WILL BE DETERMINED BY THIS ELEVATION. IF IT VARIES THE ASSOCIATED EQUIPMENT ELEVATIONS DOWNSTREAM MUST BE MODIFIED TO SUIT.

PROJECTION

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT GENERAL ARRANGEMENT & DETAIL DRAWINGS.

REV	BY	DATE	DESCRIPTION
A	MB	04/11/11	ALTERNATE OPTION
-	MB	01/28/11	FIRST RELEASE

REVISION HISTORY

Date	4/11/2011	Scale	1/4"=1'
Drawn By	MB	Checked By	NDR
Approved By			

Title
HJS 150 HYDRO-JET SCREEN SYSTEM

FREELAND CSO
FREELAND, PA

CONCRETE DESIGN



94 Hutchins Drive
Portland, ME 04102
Tel: (207) 756-6200
Fax: (207) 756-6212
email: hiltech@hil-tech.com

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DECIMALS ± .06
ANGLES ± 1'

Approximate Weight:

N/A

Finish:

Treatment:

Sheet Size:

B

Sheet

1 OF 1

Next Assembly:

Ref. No.

09-3515

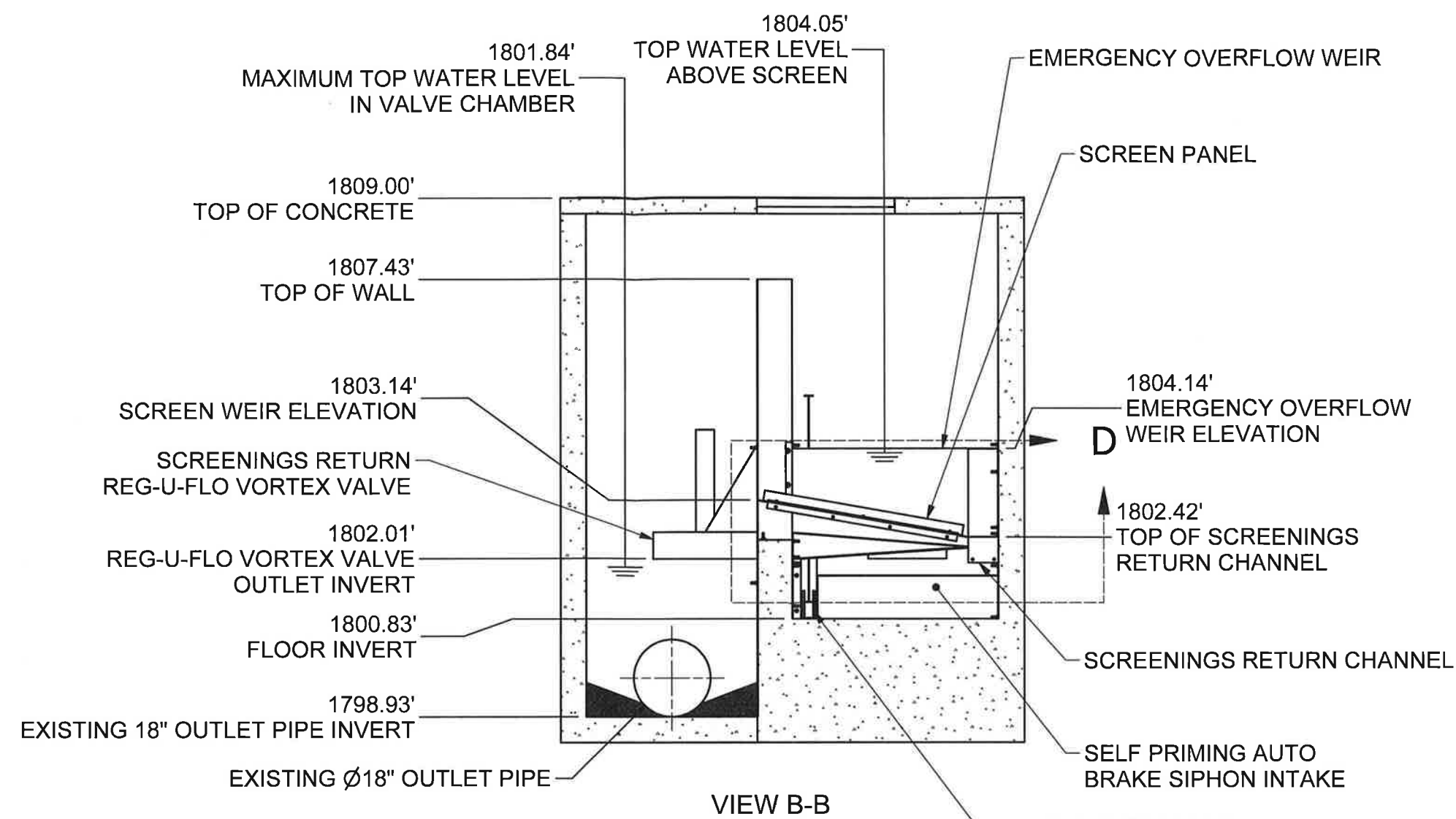
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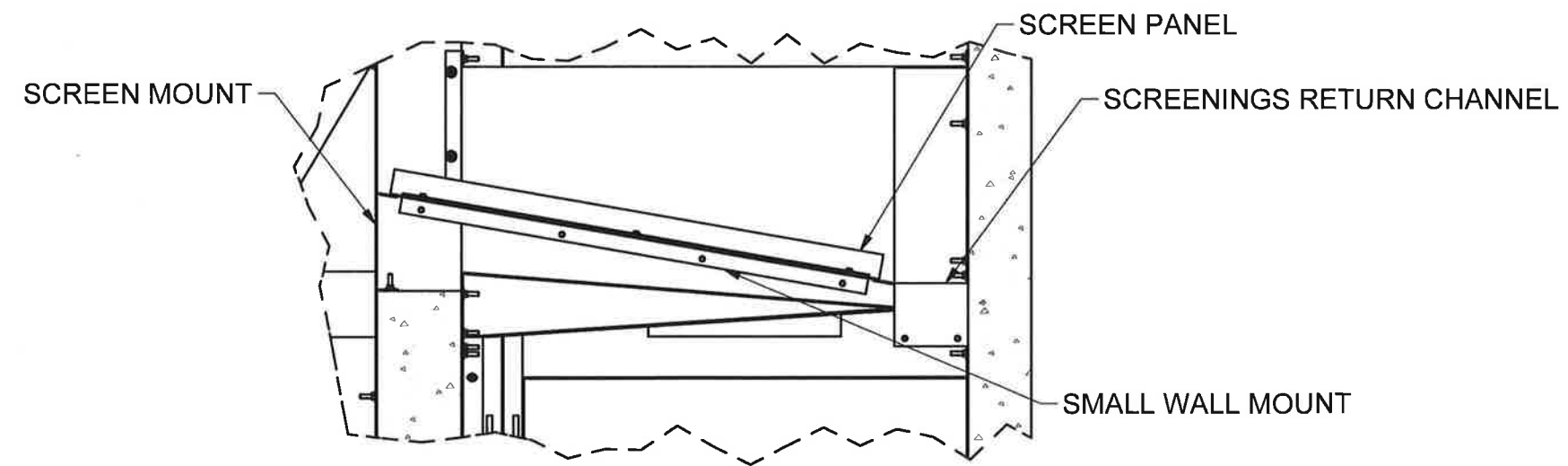
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VIEW B-B



DETAIL D
NOT TO SCALE

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-	MB	01/28/11	FIRST RELEASE

REVISION HISTORY

Date	4/11/2011	Scale	3/8"=1'
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Drawn By	MB	Checked By	-	Approved By	NDR
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Title
HJS 150 HYDRO-JET
SCREEN SYSTEM

FREELAND CSO
FREELAND, PA

ELEVATION B-B



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Tel: (207) 756-6200
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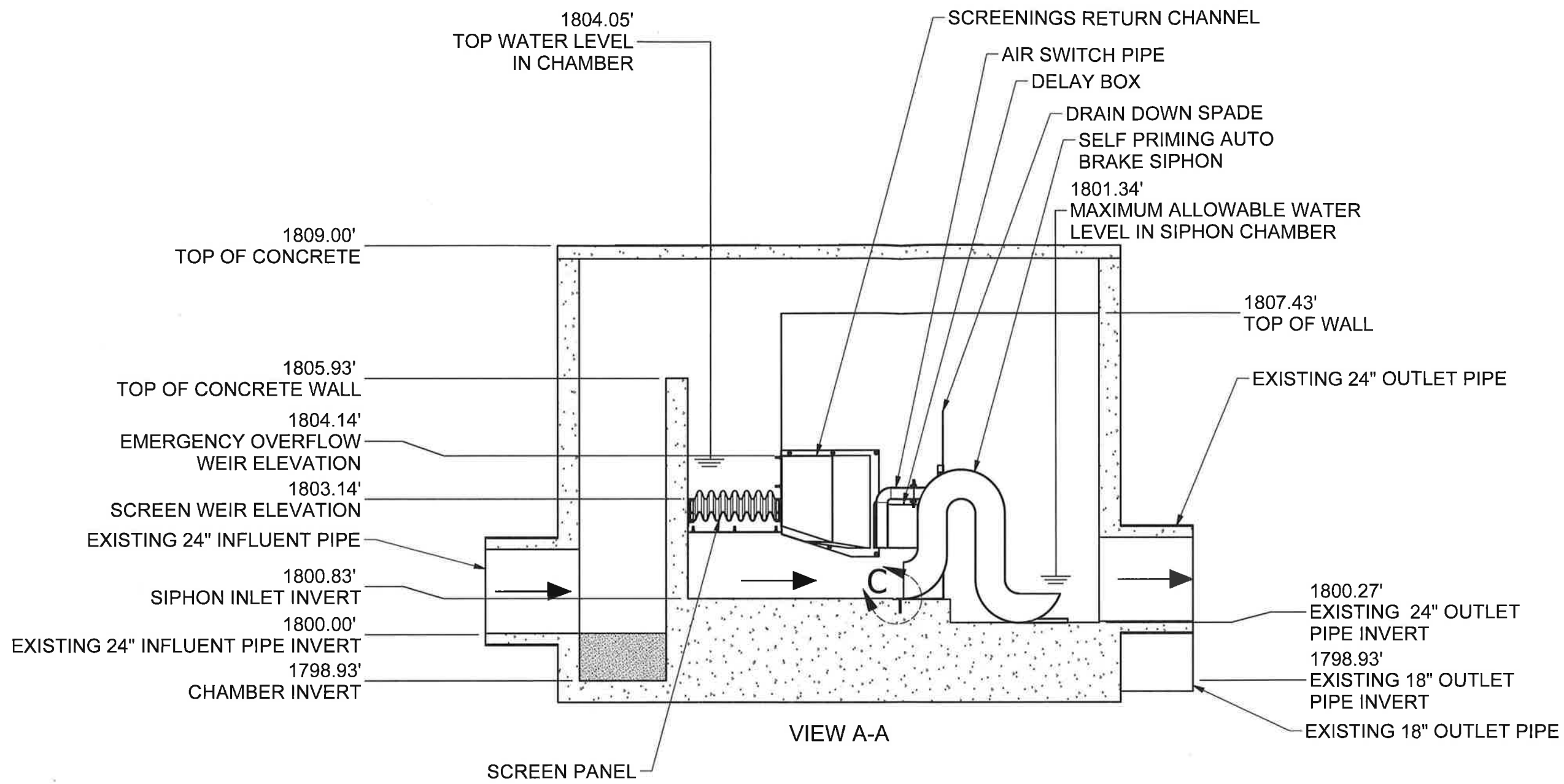
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Drawing No.	PL3A
Rev	A



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-	MB	01/28/11	FIRST RELEASE

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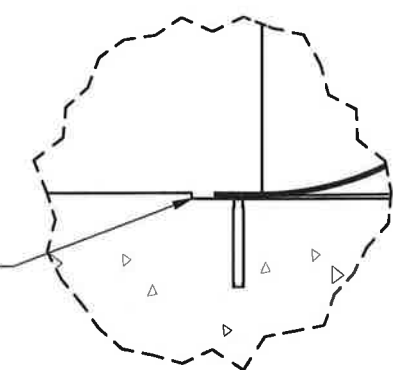
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Drawn By	MB	Checked By	-
Approved By	NDR		

Title
HJS 150 HYDRO-JET SCREEN SYSTEM
 FREELAND CSO
 FREELAND, PA
 ELEVATION A-A



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 Tel: (207) 756-6200
 Fax: (207) 756-6212
 email: hiltech@hil-tech.com

RECESS TO ALLOW FOR A FLUSH SIPHON INTAKE GROUT TO FINISHED GRADE



DETAIL C
 NOT TO SCALE

ANY WARRANTY GIVEN BY HYDRO INTERNATIONAL WILL APPLY ONLY TO THOSE ITEMS SUPPLIED BY IT. ACCORDINGLY HYDRO INTERNATIONAL CANNOT ACCEPT ANY RESPONSIBILITY FOR ANY STRUCTURE, PLANT, OR EQUIPMENT, (OR THE PERFORMANCE THERE OF) DESIGNED, BUILT, MANUFACTURED, OR SUPPLIED BY ANY THIRD PARTY. HYDRO INTERNATIONAL HAVE A POLICY OF CONTINUOUS DEVELOPMENT AND RESERVE THE RIGHT TO AMEND THE SPECIFICATION. HYDRO INTERNATIONAL CANNOT ACCEPT LIABILITY FOR PERFORMANCE OF ITS EQUIPMENT, (OR ANY PART THEREOF), IF THE EQUIPMENT IS SUBJECT TO CONDITIONS OUTSIDE ANY DESIGN SPECIFICATION. HYDRO INTERNATIONAL OWNS THE COPYRIGHT OF THIS DRAWING, WHICH IS SUPPLIED IN CONFIDENCE. IT MUST NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUPPLIED AND MUST NOT BE REPRODUCED, IN WHOLE OR IN PART, WITHOUT PRIOR PERMISSION IN WRITING FROM HYDRO INTERNATIONAL.
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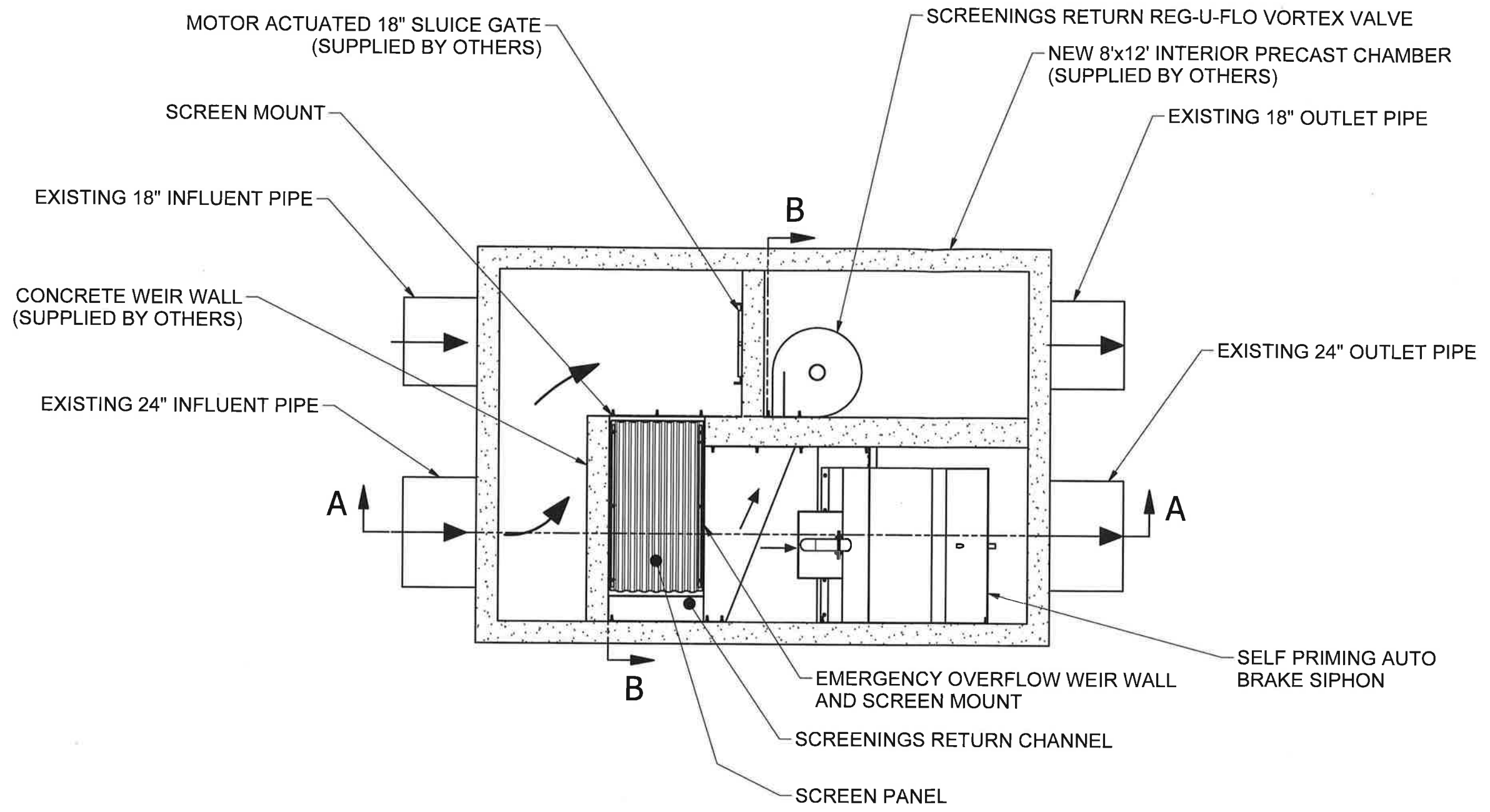
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 ANGLES ± 1'

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Ref. No.	09-3515
Drawing No.	PL2A
Rev	A



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-	MB	01/29/11	FIRST RELEASE

REVISION HISTORY

Date: 4/11/2011 Scale: 3/8"=1'

Drawn By: MB Checked By: - Approved By: NDR

Title
**HJS 150 HYDRO-JET
 SCREEN SYSTEM**

FREELAND CSO
 FREELAND, PA

GENERAL
 ARRANGEMENT



94 Hutchins Drive
 Portland, ME 04102
 Tel: (207) 756-6200
 Fax: (207) 756-6212
 email: hiltech@hil-tech.com

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DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

FRACTIONS ± 1/16
 DECIMALS ± .06
 ANGLES ± 1'

Approximate Weight:	N/A
Finish:	-
Treatment:	-
Sheet Size:	B
Sheet:	1 OF 1

Next Assembly:	-
Ref. No.	09-3515
Drawing No.	PL1A
Rev	A

Section 4

Health and Safety

For your own personal safety read and take note of the following:

1. The advice given in this manual is based on the use of common sense during the undertaking of any repair or maintenance operation.
2. The work area should be adequately fenced / guarded to prevent any unauthorized persons gaining access to, or interfering with the site.
3. All work should be carried out by fully trained / qualified operators, tradesman and / or engineers.
4. When effecting maintenance, or operating in hazardous areas i.e. Chambers, Channels, refer to current safety regulations.
5. Particular care and precautions should be undertaken when working within confined spaces. All personnel should have all relevant certification required to carry out operations in these areas and should comply with all current legislation with regard to entering a confined space.
6. Beware of local biohazards and take necessary precautions.
7. Use current manual handling regulations when required to carry out any manual handling of equipment.

Section 5

Installation Instructions

5.1 Sequence of installation of components

The most effective sequence for the installation of components is:

1. Install weir support plate.
2. If the crane is not likely to be available at a later stage, lift the siphon into position.
3. Install channel support weir
4. Position the screenings return channel(s) and attach loosely.
5. Bolt the screenings support arms into position, linking the channel support weir screen weir support concrete wall.
6. Check that the screen weir support wall and support arms are at 90 degrees to each other by fitting a 'blank' screen panel in a various positions.
7. Once the support arms are in position relative to the weir support wall, bolt the weir support legs down.
8. Insert the remainder of the fixings for the screenings return channel (s) and steel end wall (if supplied).
9. Tighten the bolts on the screen panel support arms.
10. Seal between the screenings channel and concrete wall and the main flow channel and end wall with polyurethane mastic as appropriate.
11. Clear out the chamber of any debris.
12. Fit screens and clamping strips.
13. Fit screening return Hydro-Brake(s)[®] and bracket(s) if supplied. This can be carried out at any stage after the fitting of the screenings return channel.
14. Fit siphon, side-pieces and drain-down facility. This can be carried out at any stage, as the siphon is independent of the other components.

Screenings return channel (One channel supplied for the Freeland unit)

The unit may be supplied with either one or two screenings channels depending on whether it is configured as a single or double-sided overflow. It is important that the difference between the two channels is recognised. One of the screening channels may have a large backplate attached which acts as an overflow facility for the siphon. This screening channel will be installed on the siphon side of the chamber and the standard screening channel will be installed on the other side of the chamber.

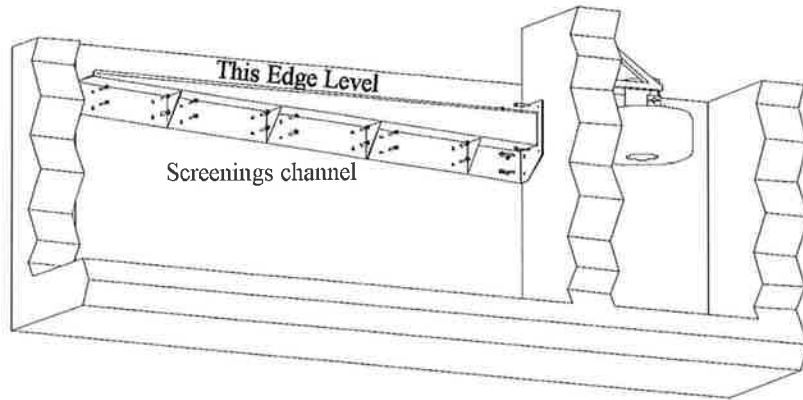


Figure 2. Screenings return channel mounted in position.

Note! In some circumstances, the overflow weir for the siphon will be constructed in concrete, and therefore it will be important to identify the screening channels as left hand and right hand prior to fitting. The screening channels have the correct 'fall' built in, therefore it is only necessary to ensure that the spigot end of the channel fits into the outlet hole, and, using a spirit level, check that the channel is horizontal on the top face. At this stage, drill and fix alternate stud anchor bolts to hold the channel in place.

Screen support arms

The screen support arms should be bolted between the screenings return channel and the studs welded onto the top of the weir. They are slotted to allow for variation in the overall internal width of the chamber along its length.

It is important that all of the screen support arms are in position before any of the support arm fixing bolts is tightened.

Siphon

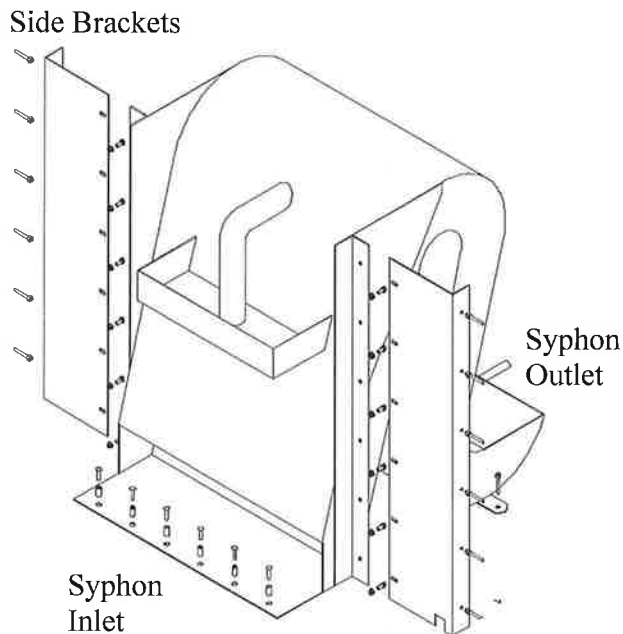


Figure 3. Siphon

The siphon is an important and integral part of the installation. The level that the siphon is set at with respect to the rest of the installation is of critical importance for the correct operation of the unit. Any variation from the approved GA drawings should be indicated to Hydro International as soon as possible, in order that any necessary adjustments to other components can be calculated.

Place the siphon into its chamber and position it according to drawing. Assemble the side fixing plates to each side of the siphon, using the supplied hex sets, and gently 'nip' the hex sets to allow some lateral movement. Note: the side fixing plates have holes and slots; the slots are for adjustment between the siphon and the side plate, and the holes are for fixing the side plate to the concrete wall using the supplied stud anchors. When satisfied that the siphon is in the correct position, drill and fix the lugs at the bottom of the siphon and then drill and fix the side plates to the siphon. Drill and fix the wedge anchors through the countersunk holes at the entry to the siphon. To ensure a watertight seal mastic should be used around the side plates etc. Ensure that the removable drain down Reg-U-Flo® vortex valve or manually operated sluice gate can be lifted from its retaining brackets and replaced easily.

If a manually operated sluice gate is provided for drain-down this will intentionally be supplied with a loose fit to allow leakage and an automatic slow drain-down.

Once the siphon is installed, then benching can commence. Make sure that the drainpipe from the siphon and the drain down Reg-U-Flo® vortex valve are not obstructed and that no 'dead' areas are apparent in the benching. Benching should fall from the outlet of the siphon towards the discharge pipeline. Prior to benching, if required, a PVC or similar pipe should be fitted over the drainpipe and laid into the outlet pipe.

Screenings return Hydro-Brake® Flow Controls

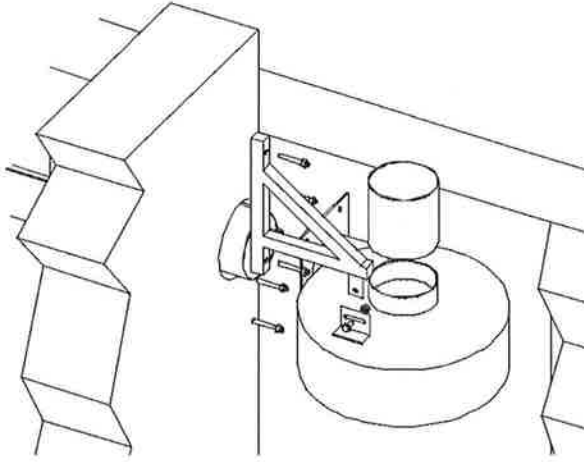


Figure 4. Screenings return Hydro-Brake® Flow Control and mounting bracket.

The screenings return Hydro-Brakes® are supplied with a mounting bracket and removal spigot pipe to allow for easy maintenance. The unit(s) should be mounted in a horizontal orientation with the discharge pointing vertically downwards and the removable spigot pipe on the top as shown above.

Figure 5. Hydro-Jet® Screen, Equipment Supplied

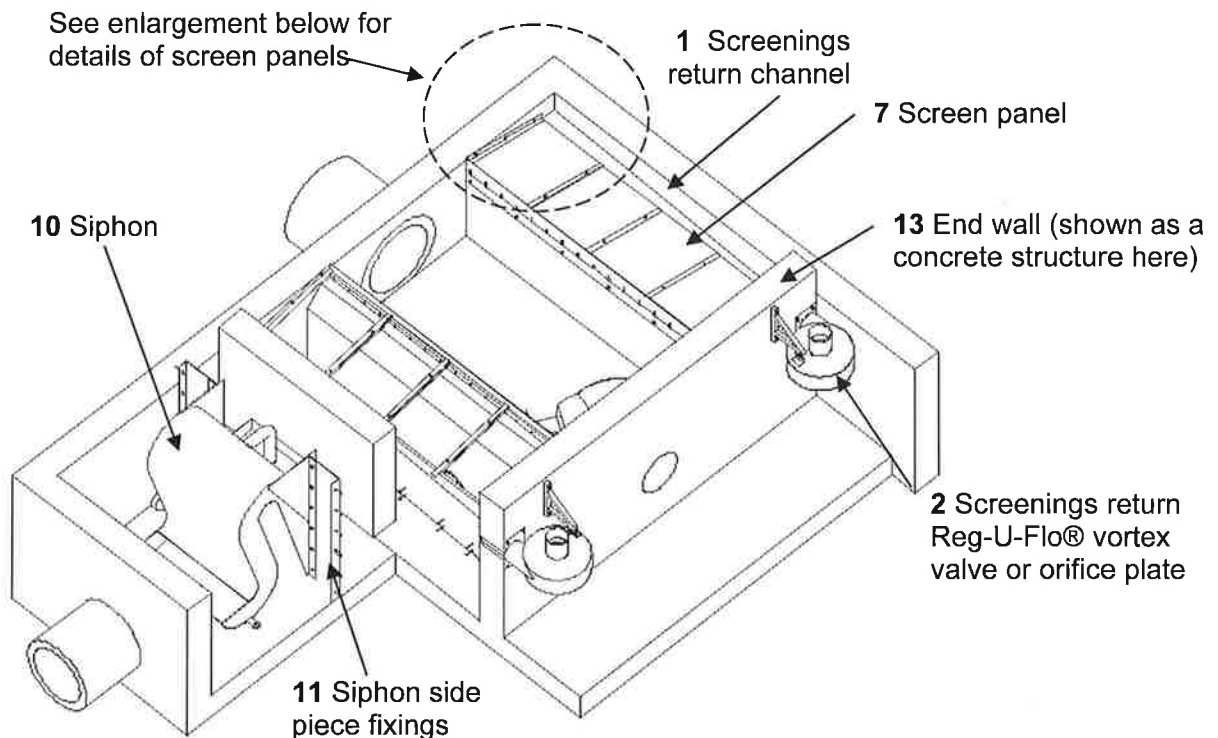
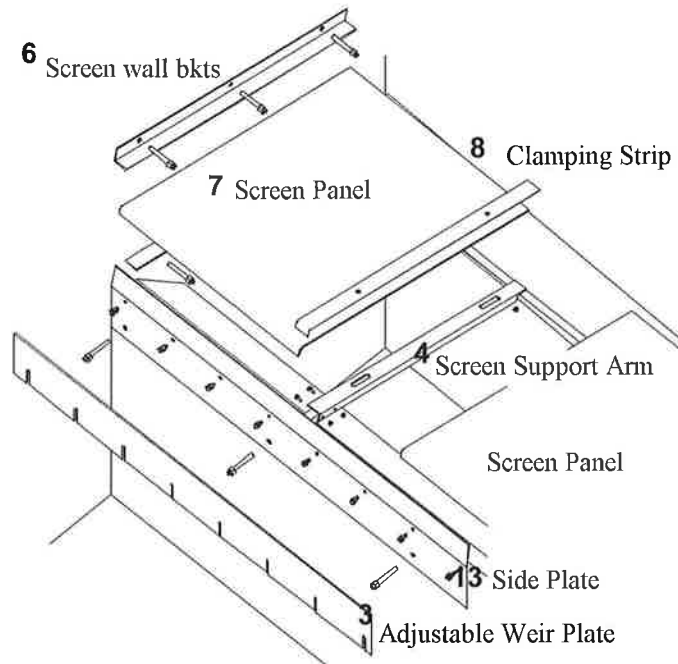


Figure 6. Screen Assembly



Screen and fixing strips

It is important that the coating on the screen panels is not damaged therefore it is recommended that the fitting of the plastic coated screens should be the final operation of installation. All grouting and concreting in the chamber should have been completed and where the chamber has a concrete slab, it is advisable that the screens are fitted **AFTER** the slab has been placed. This avoids the risk of damage from concrete etc falling on the screens. Any remaining temporary supports within the chamber should be removed. Starting from one end of the chamber, place a screen panel over the weir wall support and slide it between the two screen support brackets. Correct positioning is when the plastic screen just clears the holes in the support arm (clearance is typically 5-10mm), and the screen overhangs the screening channel. Place the next screen in position with the same 5 – 10 mm clearance and fit the screen clamping strip using the supplied dome headed screws. Continue this procedure to the end of the chamber where the other screen support brackets enable the last screen to be slid into position. When all the screens have been fitted, check that all the dome headed screws are tightened down.

Benching

Screenings Return Channel

Benching is required in the screenings return channel to direct the dry weather flow straight through the flow control to the continuation sewer and to direct the flow from the screenings return Hydro-Brake(s).

Siphon Chamber

Benching is required from the siphon discharge level to slope down to the invert of the discharge pipeline in order to prevent standing water being left in the chamber at the end of a storm event.

Below Screen

Benching is required below the screen area itself to reduce the volume in this area. The General Arrangement drawings show the concrete level used to fill this space. The effect of this benching is to reduce the time for the first backwash to occur at the start of a storm and thus minimize the risk of the screen blinding before a backwash is occurring at a regular interval.

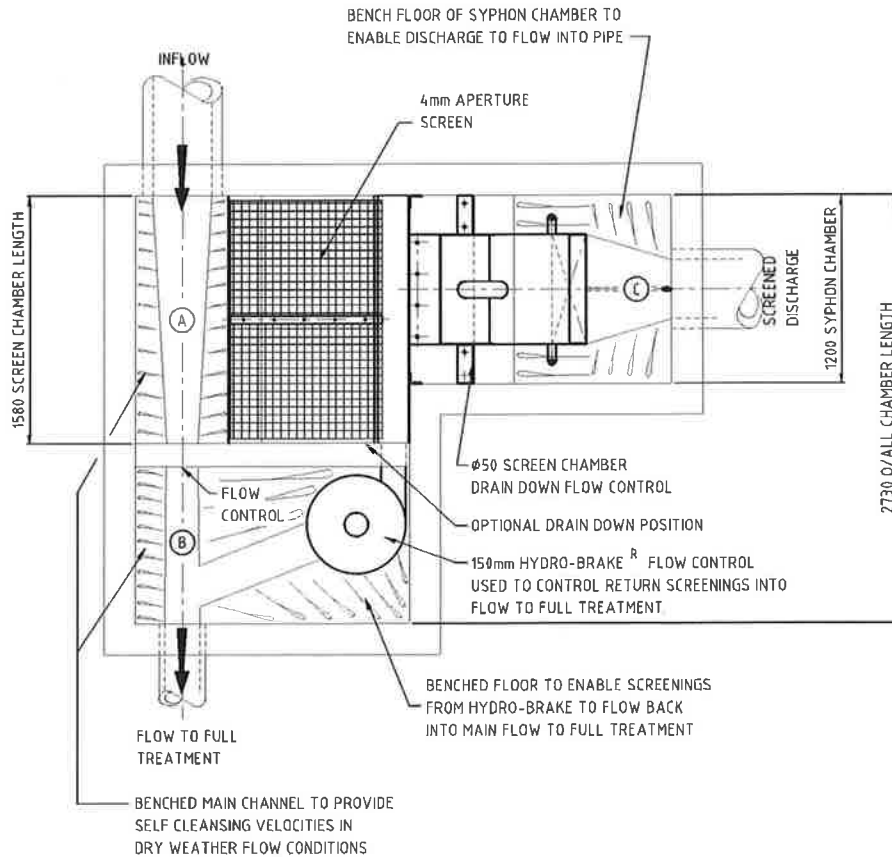


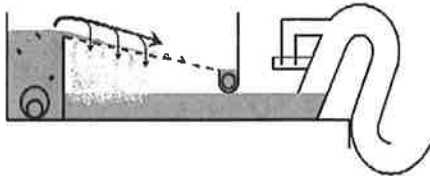
Figure 7. Plan view of a standard Hydro-Jet® Screen showing benching in main flow channel, siphon chamber and screenings return chamber.

Section 6

Operating Philosophy

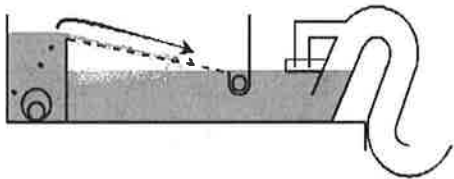
Hydro-Jet® Screen Sequence of Operation

1.



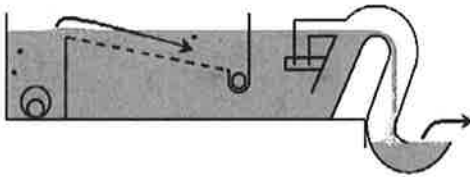
When the inflow exceeds the required flow to treatment, the level in the main channel rises and flow spills through the screen. The water level beneath the screen starts to rise.

2.



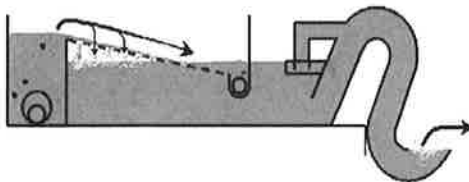
The rising water level beneath the screen pushes the trapped air up and out through the screen holes as 'jets' of air, helping to dislodge material trapped on the screen. The air cushion causes the flow to run over the surface carrying screenings to the channel at the bottom of the screen.

3.



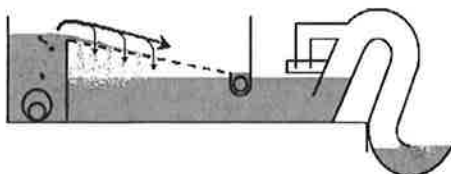
A combination of air jets, scouring flow over the screen surface and turbulence is used to keep the screen clear. Screenings are deposited in a downstream chamber where the water level is lower. Once the water has risen to the level in the main channel the siphon starts to fire.

4.



The siphon is designed to discharge more than the peak spill flow over the screens so the water level below the screens drops as the screened water is discharged via the siphon into the receiving watercourse.

5.



Once the water level has fallen below the bottom of the screen, the air break pipe on the siphon introduces air into the siphon causing it to stop discharging. The cycle would now repeat. During a storm event a complete cycle would typically take about 60 seconds.

The pass-on flow control may be either a Reg-U-Flo® vortex valve or an orifice plate however the benefits of the Reg-U-Flo® vortex valve are that it will be larger than an orifice plate designed to pass the same flow and therefore less likely to block. It should also be able to pass more flow at low heads and thus a greater volume is passed on to treatment before a spill occurs. This effect may significantly reduce the impact of the first foul flush on the receiving watercourse.

The siphon is designed to be fully automatic. It contains the patented air-breaking system that is used to vary the water level in order to generate the backwash through the screen.

Section 7

Hydro-Jet® Screen General Maintenance Statement

(See summary for maintenance schedule)

The Hydro-Jet® Screen has been designed to operate as a fully automatic, self-cleansing high performance screening system. It has a number of features that significantly reduce the maintenance commitment and whole life running costs when compared with other available screening systems.

- The Hydro-Jet® Screen has no moving or mechanical parts and requires no external power supply. The screen is kept clean by a dynamic backwashing system produced by the hydraulic head present within the system driving an automatic siphon. As every sewerage system has different characteristics it is recommended that the unit be visited after the first two operational storm events to ensure that the hydraulic conditions anticipated during the design of the system have occurred. The installation should require visiting no more than twice a year. There is no requirement for lubricants or any consumable spares.
- All metal components including the screen panels are fabricated from grade 304 stainless steel (or higher if requested) that has an estimated lifespan in excess of 30 years. In addition the screen panels are dipped in a non-stick plastic coating. It is anticipated that the coating will have a life of 15+ years when not exposed to direct sunlight. Screen panels can be replaced by removing the retaining strips that clamp them in place by undoing the dome headed fixing bolts with a 6mm hexagon wrench key. Each panel will take between 5 and 10 minutes to remove and replace depending on access into and out of the chamber.
- The Hydro-Jet® Screen is designed to be self-cleansing. If the screens are found to be blinded this will probably be due either to downstream surcharge of the sewer system preventing the return the screenings washed off the screen back into the continuation flow or a blockage of the Reg-U-Flo® vortex valve (s) or orifice plate. The outlet of the Reg-U-Flo® vortex valve is sized to minimize the risk of blockage. However when placed in a large sewer it is possible for debris of a substantial size to be washed down and cause a blockage, hence the need for routine inspections.

Screen

The screen panels have been designed to minimise the risk of blocking by utilising a 3mm thick screen complete with a non-stick plastic coating. The screen panels themselves have an 'excess' hydraulic capacity of about 50% more than the peak design flow thus if the screens are 50% blinded they will still allow the peak design flow to pass through them. The system is also designed to recover from 60% partially blinded.

After normal operation the screen is expected to be at least 60% free from debris. If the screen is more than 60% covered at a routine inspection and there is no blockage in the Hydro-Brake® Flow Controls it is likely to be due to a downstream surcharge condition. The screen should be hosed down and steps taken to reduce the top water level in the downstream sewer network.

The screen is coated with a non-stick polymer to reduce pinning during operation. This also has the effect of making cleaning much easier than a standard stainless steel screen. Cleaning can be carried out either with a stiff brush or a high-pressure hose.

In the event that the screen blinds the system is designed to 'fail safe' and discharge unscreened sewage directly to the receiving watercourse rather than cause a backing up of the water level within the sewer potentially leading to flooding upstream.

Reg-U-Flo® Vortex Valve or orifice plate

Most Hydro-Jet® Screens are supplied with one or more screenings return Reg-U-Flo® vortex valve ® or orifice plates. These are essential to restrict the amount of flow that is returned to the WWTP.

The screenings return flow control(s) are provided as an integral part of the 'Jet Screen system. On the routine biannual inspections, flow controls should be checked for any obstructing debris.

Summary

7.1 Periodic Maintenance

Once the system is brought on-line, visually inspect the Hydro-Jet™ Screen after the first two spill events. After this initial inspection visual inspection of all the equipment should be carried out every six months.

7.2 Servicing Procedures

Screen Cleaning

If on visual inspection the screen is seen to be over 50% blinded it should be cleaned with a stiff brush and/or high pressure hose.

Screen Removal

Time required	Weight	Tools
5-10 mins. Per screen	15Kg approx	6mm hexagon wrench key

Reg-U-Flo® vortex valve or orifice plates

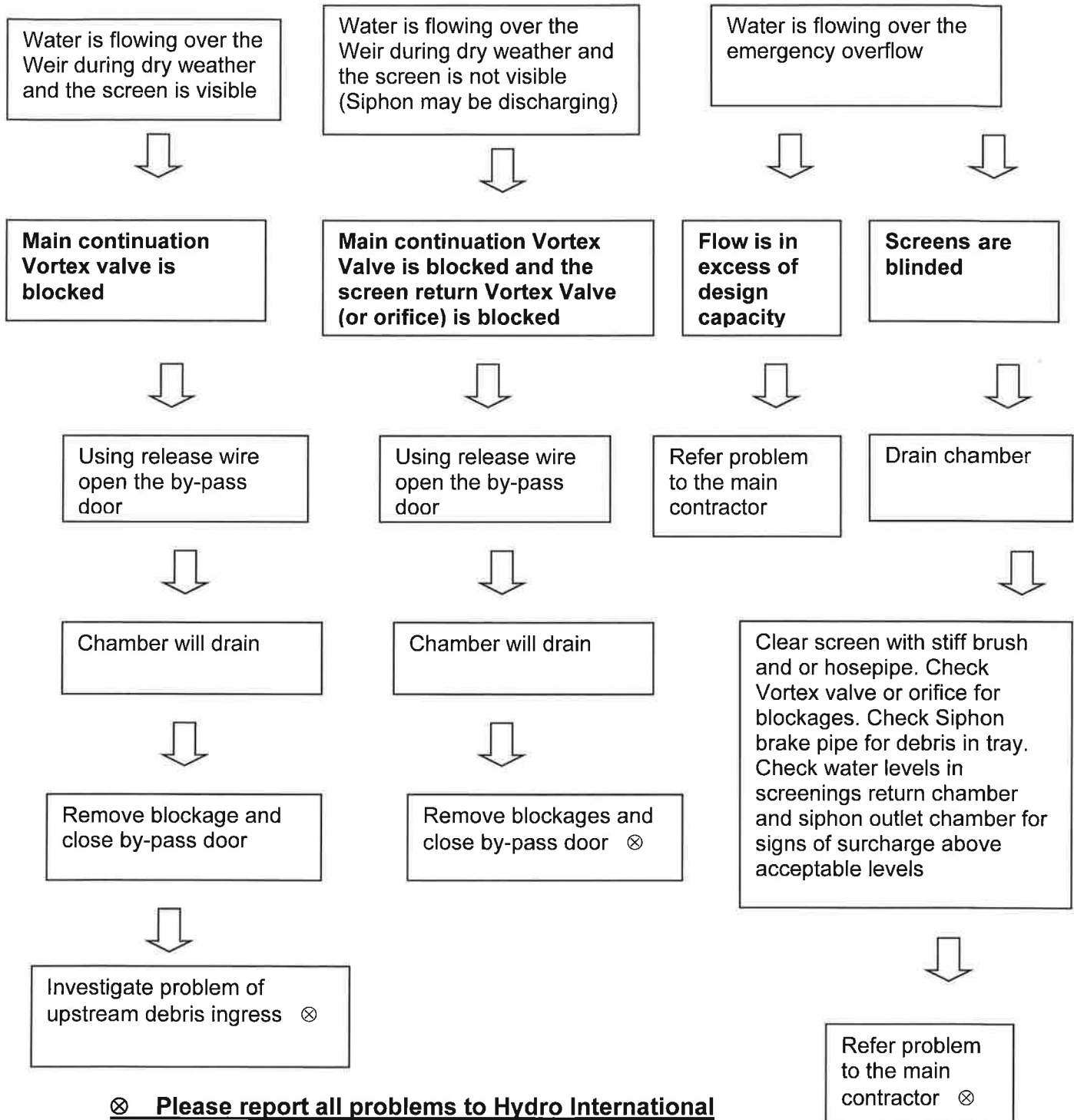
If on visual inspection the Hydro Brake is seen to be blocked, the obstructing debris should be removed.

7.3 Lubrication Schedule

Non Required

Section 8 Emergency Procedures – Fault finding

(Please note that the Freeland CSO Facility is equipped w/ an influent chamber rather than a main continuation flow channel. Disregard procedures that are not applicable to the Freeland CSO configuration)



⊗ Please report all problems to Hydro International

Section 9

Equipment Schedule

One (1) No. JS750 Hydro-Jet® Screen conforming to the specifications.

The Hydro-Jet® Screen shall consist of a cast in place concrete rectangular chamber (By General Contractor). Ensure concrete surfaces are satisfactory to meet equipment tolerance and clearances. The major internal components shall comprise of:

- 1 No. Hydro-Jet™ Screen (comprising of 5 No. corrugated mesh screen panels)
- 1 No. Self-activated air brake backwash siphon
- 1 No. Reg-U-Flo® vortex valve to control screenings return flow

All internal components shall be manufactured from Type 304 stainless steel. All welding shall conform to the most recent standards of the American Welding Society (AWS) and American Society of Mechanical Engineers (ASME).

The Hydro-Jet® Screen; mesh panels are to be manufactured from Type 304 stainless steel, in addition, dipped in a non-stick plastic coating.

All internal components shall be designed to withstand all normal loadings associated with shipping, installation, and normal operation of the equipment. All fasteners shall be 304 stainless steel, which shall be provided by Hydro International.

The Hydro-Jet® Screen has no moving parts hence there are no consumable or running spares. If however there is a need to replace any item due to damage, all are available through Hydro International.

Section 10

Quality Assurance

HYDRO-JET® SCREEN COMMISSIONING STATEMENT

10.1 Commissioning

Manufacturer's Services

A factory trained representative for the equipment specified herein shall be present at the job site and/or classroom designated by the Owner for a maximum of one (1) 8-hour man-day for installation inspection and operating instructions; travel time excluded. A minimum of 30 days notice is required to schedule manufacturer's services. Any services with less than 30 days notice shall be billed for service time and actual travel costs.

Functional Checking

1. Prior to startup, all equipment shall be inspected for proper location, alignment, fitment, and connection. The Hydro-Jet™ Screen has no moving parts and no requirement for external power. Because of this, there is no need to carryout any mechanical testing prior to in service operation.

Manufacturer's Certificate

Provide manufacturer's certificate of installation and commissioning following functional testing and startup.

It is recommended that the unit be inspected after the first storm event to check for acceptable hydraulic operation. An acceptable condition is defined as being up to 40% of the screen covered with debris and no evidence of new material in the siphon chamber or the watercourse. These criteria are applicable only when flows are within design parameters.

TO CARRY OUT WET IN SERVICE COMMISSIONING IN THE ABSENCE OF FLOWS LARGE ENOUGH TO CAUSE THE HYDRO-JET™ SCREEN TO OPERATE.

The Hydro-Jet™ Screen is designed to work over a range of flows up to its intended maximum design parameters. If commissioning is required during a period of dry weather it is possible to initiate a spill by following the procedure below.

1. The flow control at the end of the screenings chamber will need to be plugged to allow the dry weather flow channel to fill.
2. Extra flow should be introduced into the dry weather flow channel. This extra flow may be obtained from a nearby river with the aid of a pump, or from tankers

containing final effluent or similar. Enough volume of effluent needs to be introduced to fill the chamber approximately twice as this will enable the backwash cycle to operate more than once. The rate at which the chamber is filled should be at least 25% of the maximum design spill-flow to ensure that a backwash cycle occurs within a reasonable time period. (Note: Consent to spill to the receiving watercourse may be required.)

3. After normal operation the screen is expected to be at least 60% free from debris. If the screen is more than 50% covered at a routine inspection then it should be brushed or hosed down. Water (e.g. from a jetting unit) is NOT essential, however it allows the screen to be cleaned without entry into the chamber. If water is not available the screen can be brushed clean provided that at least 60% of the screen holes are open and clear of debris. If the screen regularly blinds and there is no blockage in the Hydro-Brake® Flow Controls it is likely to be due to a downstream surcharge condition or overloading of the system. Longer-term remedial action should look at reducing the top water level in the downstream sewer network.

10.3 Warranties

Warranty

Hydro International shall guarantee the equipment to be free from defects in materials and workmanship for a period of 12 months following acceptance. Any defects found within the warranty period shall be repaired at no expense to the Owner.

In normal conditions all the equipment other than the screen coating is estimated to last at least 30 years. The screen, having a plastic coating, is vulnerable to unknown elements within the sewer system, which may sustain damage to it. Although this will not be detrimental to its screening ability it could cause ragging and should be changed. Hydro International cannot accept any liability for this claim.

It is estimated that the plastic coating on the screen will have a design life of between 10 and 15 years. When the plastic begins to wear out the screening panels can be removed and replaced. Replacement screening panels are available through Hydro International.

Patent Indemnity

Hydro International hereby warrants that the products sold do not infringe upon or violate any patent, copyright, trade secret or any other proprietary right of any third party. In the event of a claim by any third party against the Owners, the Owner shall promptly notify Hydro International, and Hydro International shall defend such claim, in the Owner's name, but at Hydro International's expense, and shall indemnify the Owner against any loss, cost, expense or liability arising out of such claim whether or not such claim is successful.

Hydro International will consider liability for defects or faults in their equipment, other than that caused by accident, acts of vandalism or unauthorized repair / rectification, for a period of one year after installation.

In normal conditions all the equipment other than the screen coating is estimated to last at least 30 years. The screen, having a plastic coating, is vulnerable to unknown elements within the sewer system, which may sustain damage to it. Although this will not be detrimental to its screening ability it could cause ragging and should be changed. Hydro International cannot accept any liability for this claim.

It is estimated that the plastic coating on the screen will have a design life of between 10 and 15 years. When the plastic begins to wear out the screening panels can be removed and replaced. Replacement screening panels are available through Hydro International.



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HX is Hydro Experience, the essence of Hydro. It's interwoven into every strand of Hydro's story, from our products to our people, our engineering pedigree to our approach to business and problem-solving.

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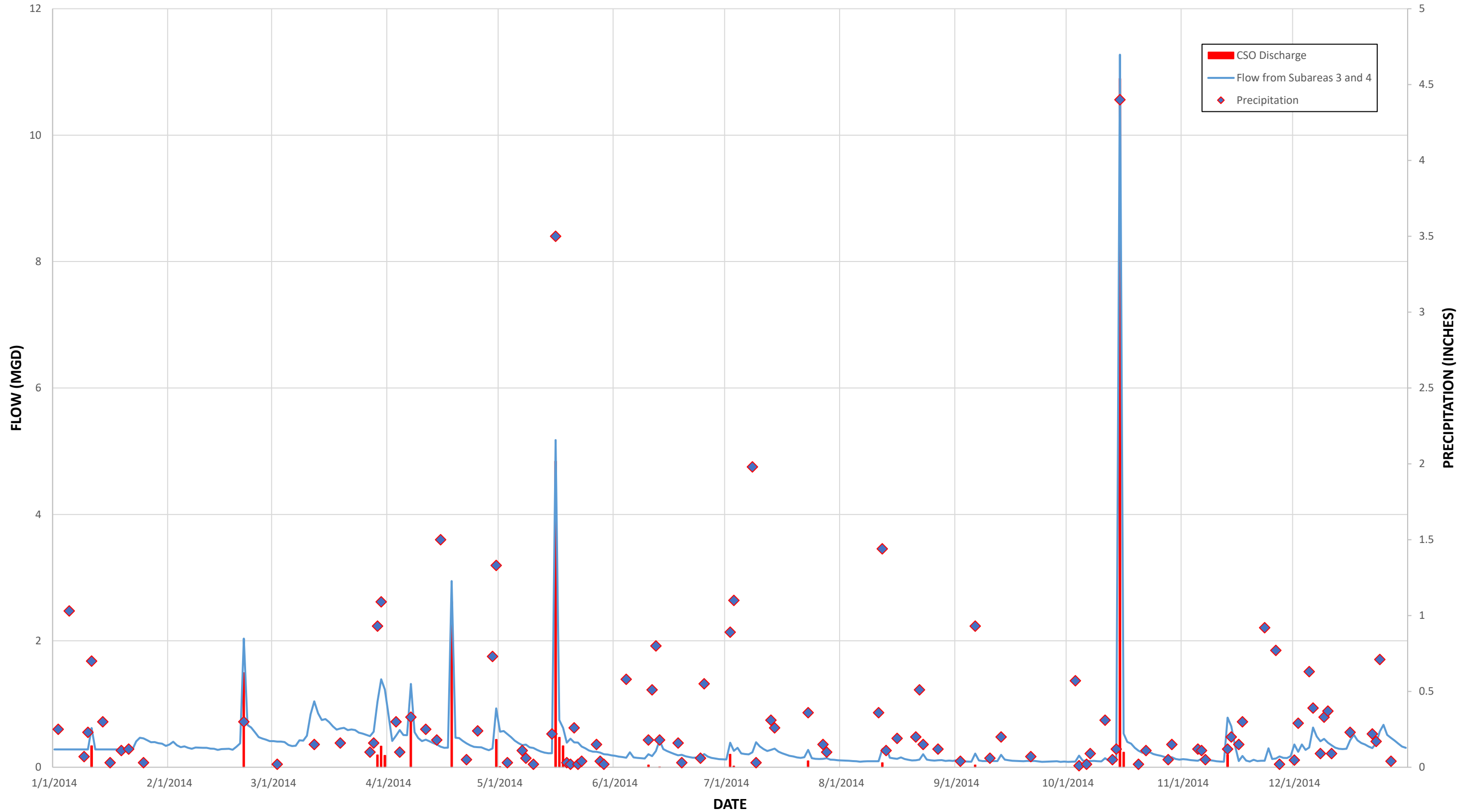
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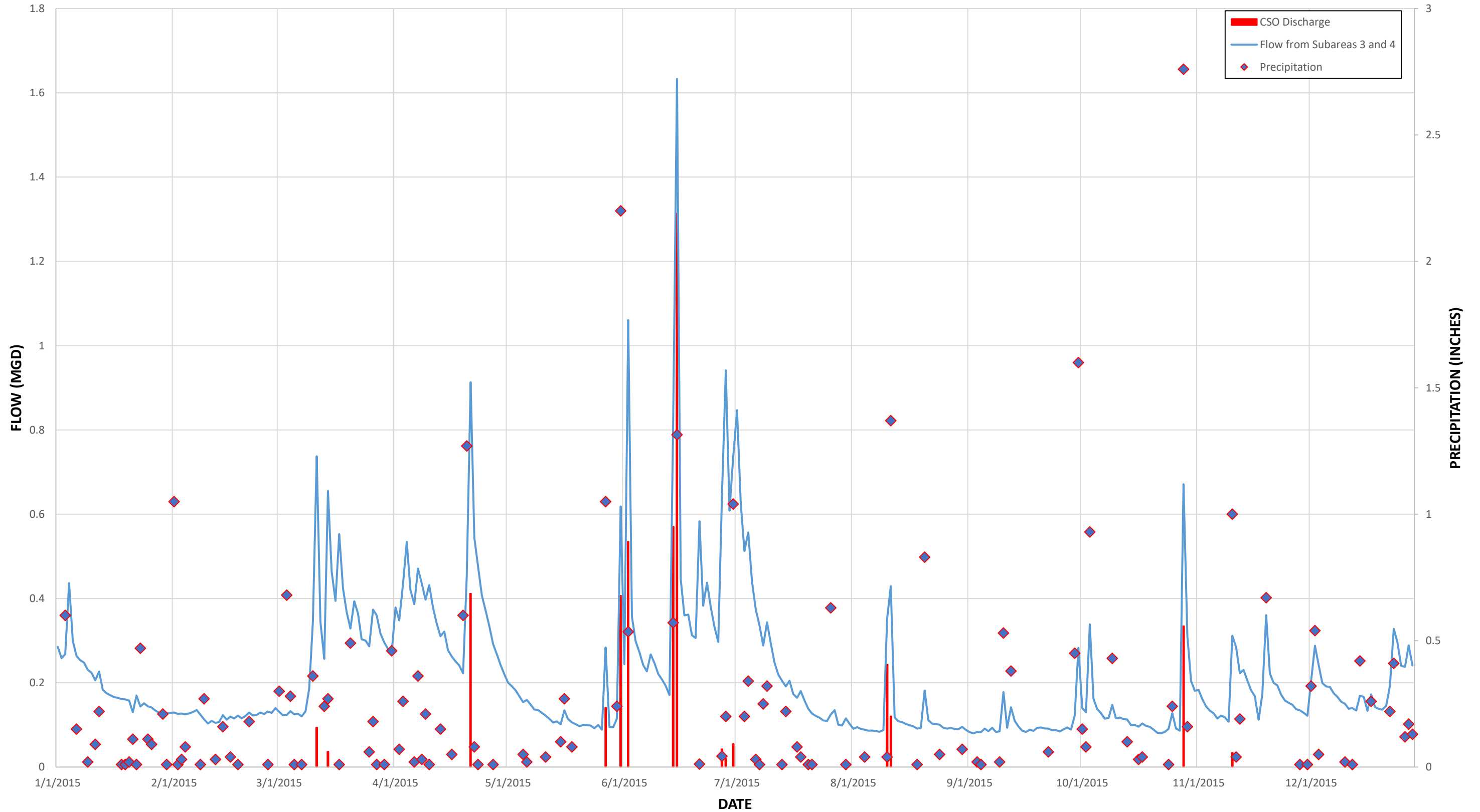
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APPENDIX D

THE BOROUGH OF FREELAND MUNICIPAL AUTHORITY YEAR 2014 FLOW DATA

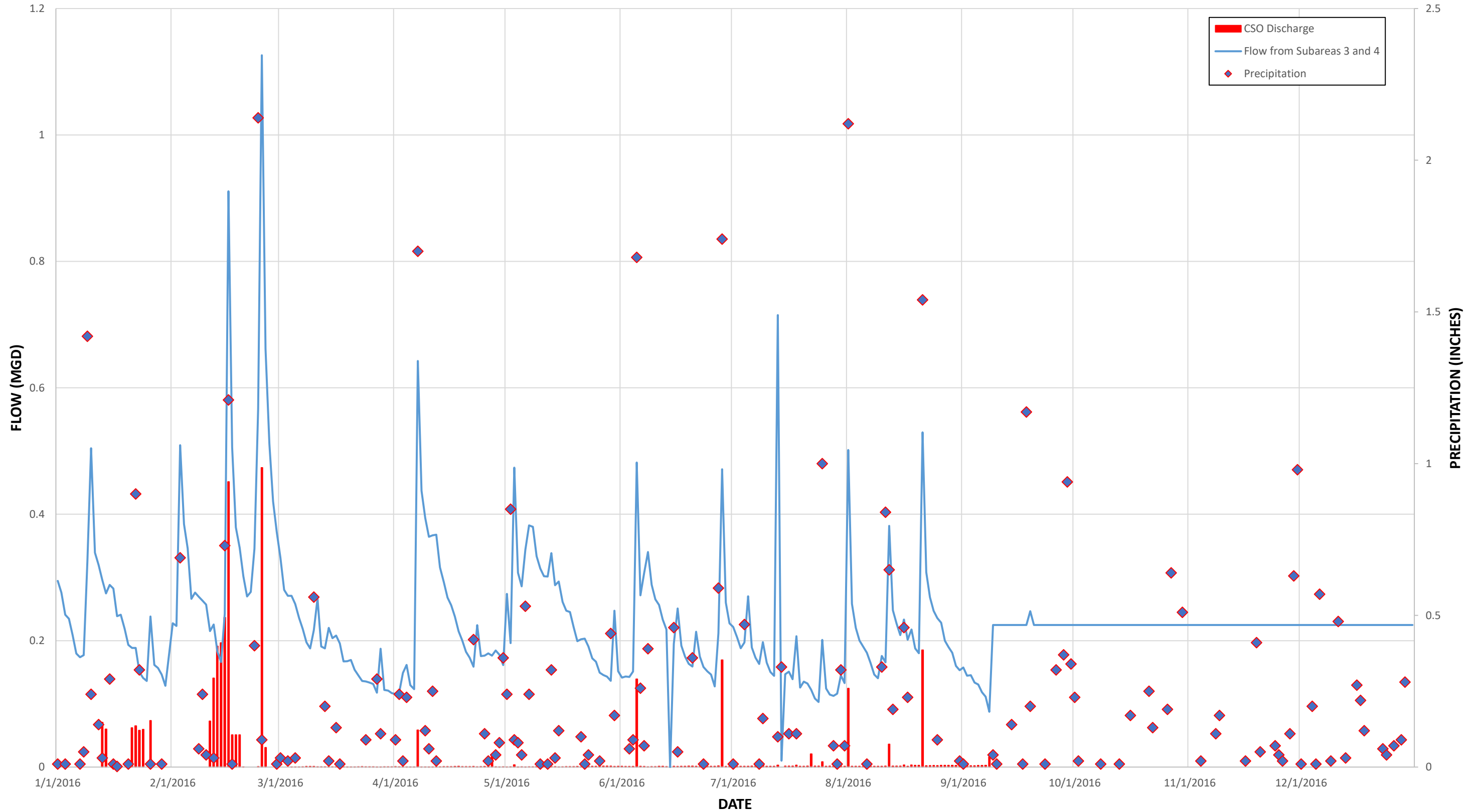


THE BOROUGH OF FREELAND MUNICIPAL AUTHORITY YEAR 2015 FLOW DATA



THE BOROUGH OF FREELAND MUNICIPAL AUTHORITY

YEAR 2016 FLOW DATA



**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)
1/1/2014	0.283		
1/2/2014	0.283		0.25
1/3/2014	0.283		
1/4/2014	0.283		
1/5/2014	0.283		1.03
1/6/2014	0.283		
1/7/2014	0.283		
1/8/2014	0.283		
1/9/2014	0.283		0.07
1/10/2014	0.283		0.23
1/11/2014	0.620	0.337	0.7
1/12/2014	0.283		
1/13/2014	0.283		
1/14/2014	0.283		0.3
1/15/2014	0.283		
1/16/2014	0.283		0.03
1/17/2014	0.283		
1/18/2014	0.283		
1/19/2014	0.283		0.11
1/20/2014	0.283		
1/21/2014	0.283		0.12
1/22/2014	0.283		
1/23/2014	0.409		
1/24/2014	0.467		
1/25/2014	0.456		0.03
1/26/2014	0.427		
1/27/2014	0.395		
1/28/2014	0.399		
1/29/2014	0.380		
1/30/2014	0.372		
1/31/2014	0.339		
2/1/2014	0.362		
2/2/2014	0.403		
2/3/2014	0.348		
2/4/2014	0.319		
2/5/2014	0.329		
2/6/2014	0.309		
2/7/2014	0.294		
2/8/2014	0.313		
2/9/2014	0.311		
2/10/2014	0.309		
2/11/2014	0.306		
2/12/2014	0.294		
2/13/2014	0.293		
2/14/2014	0.274		
2/15/2014	0.288		
2/16/2014	0.291		
2/17/2014	0.293		
2/18/2014	0.278		
2/19/2014	0.323		
2/20/2014	0.379		
2/21/2014	2.037	1.495	0.3
2/22/2014	0.668		
2/23/2014	0.627		
2/24/2014	0.552		
2/25/2014	0.478		
2/26/2014	0.454		
2/27/2014	0.437		
2/28/2014	0.415		
3/1/2014	0.414		
3/2/2014	0.407		0.02
3/3/2014	0.406		
3/4/2014	0.399		
3/5/2014	0.354		
3/6/2014	0.335		
3/7/2014	0.342		
3/8/2014	0.425		
3/9/2014	0.420		
3/10/2014	0.499		
3/11/2014	0.839		
3/12/2014	1.043		0.15
3/13/2014	0.854		
3/14/2014	0.748		
3/15/2014	0.762		
3/16/2014	0.714		

Notes
SA 3 + SA 4 Flow data for 1/1/14 thru 1/22/14 is based on average daily flow for remainder of 2014 (1/23/14 thru 12/31/14)

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
3/17/2014	0.646			
3/18/2014	0.595			
3/19/2014	0.614		0.16	
3/20/2014	0.625			
3/21/2014	0.587			
3/22/2014	0.599			
3/23/2014	0.588			
3/24/2014	0.547			
3/25/2014	0.533			
3/26/2014	0.513			
3/27/2014	0.493		0.1	
3/28/2014	0.563		0.16	
3/29/2014	1.040	0.194	0.93	
3/30/2014	1.392	0.333	1.09	
3/31/2014	1.230	0.187		
4/1/2014	0.825			
4/2/2014	0.416			
4/3/2014	0.499		0.3	
4/4/2014	0.589		0.1	
4/5/2014	0.510			
4/6/2014	0.508			
4/7/2014	1.318	0.799	0.33	
4/8/2014	0.555			
4/9/2014	0.463			
4/10/2014	0.414			
4/11/2014	0.436		0.25	
4/12/2014	0.410			
4/13/2014	0.383			
4/14/2014	0.362		0.18	
4/15/2014	0.325		1.5	
4/16/2014	0.308			
4/17/2014	0.309			
4/18/2014	2.944	2.619		
4/19/2014	0.467			
4/20/2014	0.463			
4/21/2014	0.417			
4/22/2014	0.378		0.05	
4/23/2014	0.346			
4/24/2014	0.322			
4/25/2014	0.319		0.24	
4/26/2014	0.316			
4/27/2014	0.289			
4/28/2014	0.269			
4/29/2014	0.298		0.73	
4/30/2014	0.931	0.438	1.33	
5/1/2014	0.563	0.01		
5/2/2014	0.572			
5/3/2014	0.526		0.03	
5/4/2014	0.476			
5/5/2014	0.421			
5/6/2014	0.380			
5/7/2014	0.350		0.11	
5/8/2014	0.357		0.06	
5/9/2014	0.315			
5/10/2014	0.304		0.02	
5/11/2014	0.276			
5/12/2014	0.251			
5/13/2014	0.231			
5/14/2014	0.222			
5/15/2014	0.222		0.22	
5/16/2014	5.177	4.84	3.5	
5/17/2014	0.747	0.472		
5/18/2014	0.620	0.339		
5/19/2014	0.389		0.03	
5/20/2014	0.452		0.02	
5/21/2014	0.395		0.26	
5/22/2014	0.390		0.02	
5/23/2014	0.329		0.04	
5/24/2014	0.300			
5/25/2014	0.265			
5/26/2014	0.248			
5/27/2014	0.245		0.15	
5/28/2014	0.232		0.04	
5/29/2014	0.206		0.02	
5/30/2014	0.200			

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
5/31/2014	0.190			
6/1/2014	0.181			
6/2/2014	0.169			
6/3/2014	0.160			
6/4/2014	0.151		0.58	
6/5/2014	0.237			
6/6/2014	0.157			
6/7/2014	0.149			
6/8/2014	0.144			
6/9/2014	0.138			
6/10/2014	0.206	0.036	0.18	
6/11/2014	0.177		0.51	
6/12/2014	0.258		0.8	
6/13/2014	0.427	0.004	0.18	
6/14/2014	0.288			
6/15/2014	0.256			
6/16/2014	0.233			
6/17/2014	0.208			
6/18/2014	0.189		0.16	
6/19/2014	0.196		0.03	
6/20/2014	0.174			
6/21/2014	0.161			
6/22/2014	0.151			
6/23/2014	0.154			
6/24/2014	0.157		0.06	
6/25/2014	0.209		0.55	
6/26/2014	0.169			
6/27/2014	0.149			
6/28/2014	0.139			
6/29/2014	0.130			
6/30/2014	0.126			
7/1/2014	0.124			
7/2/2014	0.390	0.203	0.89	
7/3/2014	0.259	0.017	1.1	
7/4/2014	0.307			
7/5/2014	0.220			
7/6/2014	0.209			
7/7/2014	0.203			
7/8/2014	0.236		1.98	
7/9/2014	0.396		0.03	
7/10/2014	0.330			
7/11/2014	0.288			
7/12/2014	0.258			
7/13/2014	0.274		0.31	
7/14/2014	0.296		0.26	
7/15/2014	0.246			
7/16/2014	0.221			
7/17/2014	0.201			
7/18/2014	0.181			
7/19/2014	0.170			
7/20/2014	0.156			
7/21/2014	0.150			
7/22/2014	0.159			
7/23/2014	0.275	0.1	0.36	
7/24/2014	0.144			
7/25/2014	0.132			
7/26/2014	0.130			
7/27/2014	0.132		0.15	
7/28/2014	0.143		0.1	
7/29/2014	0.121			
7/30/2014	0.119			
7/31/2014	0.110			
8/1/2014	0.108			
8/2/2014	0.105			
8/3/2014	0.103			
8/4/2014	0.099			
8/5/2014	0.094			
8/6/2014	0.089			
8/7/2014	0.092			
8/8/2014	0.095			
8/9/2014	0.096			
8/10/2014	0.095			
8/11/2014	0.096		0.36	
8/12/2014	0.286	0.07	1.44	
8/13/2014	0.326		0.11	

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
8/14/2014	0.152			
8/15/2014	0.141			
8/16/2014	0.135		0.19	
8/17/2014	0.157			
8/18/2014	0.130			
8/19/2014	0.118			
8/20/2014	0.107			
8/21/2014	0.111		0.2	
8/22/2014	0.121		0.51	
8/23/2014	0.208		0.15	
8/24/2014	0.120			
8/25/2014	0.111			
8/26/2014	0.106			
8/27/2014	0.110		0.12	
8/28/2014	0.112			
8/29/2014	0.100			
8/30/2014	0.106			
8/31/2014	0.101			
9/1/2014	0.110			
9/2/2014	0.100		0.04	
9/3/2014	0.092			
9/4/2014	0.090			
9/5/2014	0.088			
9/6/2014	0.217	0.036	0.93	
9/7/2014	0.108			
9/8/2014	0.097			
9/9/2014	0.098			
9/10/2014	0.095		0.06	
9/11/2014	0.098			
9/12/2014	0.098			
9/13/2014	0.197		0.2	
9/14/2014	0.121			
9/15/2014	0.111			
9/16/2014	0.104			
9/17/2014	0.100			
9/18/2014	0.098			
9/19/2014	0.096			
9/20/2014	0.100			
9/21/2014	0.098		0.07	
9/22/2014	0.100			
9/23/2014	0.093			
9/24/2014	0.086			
9/25/2014	0.089			
9/26/2014	0.089			
9/27/2014	0.092			
9/28/2014	0.096			
9/29/2014	0.086			
9/30/2014	0.090			
10/1/2014	0.086			
10/2/2014	0.088			
10/3/2014	0.091		0.57	
10/4/2014	0.183		0.01	
10/5/2014	0.103			
10/6/2014	0.104		0.02	
10/7/2014	0.099		0.09	
10/8/2014	0.101			
10/9/2014	0.096			
10/10/2014	0.093			
10/11/2014	0.143		0.31	
10/12/2014	0.104			
10/13/2014	0.104		0.05	
10/14/2014	0.098		0.12	
10/15/2014	11.273	10.893	4.4	
10/16/2014	0.533	0.238		
10/17/2014	0.402			
10/18/2014	0.374			
10/19/2014	0.307			
10/20/2014	0.262		0.02	
10/21/2014	0.233			
10/22/2014	0.222		0.11	
10/23/2014	0.240			
10/24/2014	0.210			
10/25/2014	0.194			
10/26/2014	0.181			
10/27/2014	0.163			

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
10/28/2014	0.150		0.05	
10/29/2014	0.159		0.15	
10/30/2014	0.130			
10/31/2014	0.120			
11/1/2014	0.129			
11/2/2014	0.124			
11/3/2014	0.113			
11/4/2014	0.107			
11/5/2014	0.104		0.12	
11/6/2014	0.132		0.11	
11/7/2014	0.107		0.05	
11/8/2014	0.114			
11/9/2014	0.105			
11/10/2014	0.096			
11/11/2014	0.091			
11/12/2014	0.087			
11/13/2014	0.785	0.2	0.12	
11/14/2014	0.649		0.2	
11/15/2014	0.349			
11/16/2014	0.098		0.15	
11/17/2014	0.179		0.3	
11/18/2014	0.106			
11/19/2014	0.090			
11/20/2014	0.118			
11/21/2014	0.097			
11/22/2014	0.102			
11/23/2014	0.102		0.92	
11/24/2014	0.299			
11/25/2014	0.130			
11/26/2014	0.138		0.77	
11/27/2014	0.172		0.02	
11/28/2014	0.149			
11/29/2014	0.145			
11/30/2014	0.175			
12/1/2014	0.360		0.047	
12/2/2014	0.244		0.29	
12/3/2014	0.360			
12/4/2014	0.274			
12/5/2014	0.313		0.63	
12/6/2014	0.628		0.39	
12/7/2014	0.487			
12/8/2014	0.410		0.09	
12/9/2014	0.449		0.33	
12/10/2014	0.388		0.37	
12/11/2014	0.348		0.09	
12/12/2014	0.310			
12/13/2014	0.293			
12/14/2014	0.287			
12/15/2014	0.293			
12/16/2014	0.427		0.23	
12/17/2014	0.515			
12/18/2014	0.428			
12/19/2014	0.383			
12/20/2014	0.360			
12/21/2014	0.328			
12/22/2014	0.303		0.22	
12/23/2014	0.381		0.17	
12/24/2014	0.568		0.71	
12/25/2014	0.671			
12/26/2014	0.512			
12/27/2014	0.465		0.04	
12/28/2014	0.422			
12/29/2014	0.373			
12/30/2014	0.327			
12/31/2014	0.307			
1/1/2015	0.285			
1/2/2015	0.258			
1/3/2015	0.268		0.6	
1/4/2015	0.436			
1/5/2015	0.300			
1/6/2015	0.264		0.15	
1/7/2015	0.253			
1/8/2015	0.248			
1/9/2015	0.231		0.02	

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
1/10/2015	0.224			
1/11/2015	0.206		0.09	
1/12/2015	0.227		0.22	
1/13/2015	0.183			
1/14/2015	0.175			
1/15/2015	0.170			
1/16/2015	0.166			
1/17/2015	0.165			
1/18/2015	0.161		0.01	
1/19/2015	0.161		0.01	
1/20/2015	0.158		0.02	
1/21/2015	0.130		0.11	
1/22/2015	0.170		0.01	
1/23/2015	0.144		0.47	
1/24/2015	0.152			
1/25/2015	0.144		0.11	
1/26/2015	0.142		0.09	
1/27/2015	0.134			
1/28/2015	0.129			
1/29/2015	0.129		0.21	
1/30/2015	0.128		0.01	
1/31/2015	0.129			
2/1/2015	0.129		1.05	
2/2/2015	0.126		0.01	
2/3/2015	0.127		0.03	
2/4/2015	0.125		0.08	
2/5/2015	0.128			
2/6/2015	0.130			
2/7/2015	0.135			
2/8/2015	0.125		0.01	
2/9/2015	0.113		0.27	
2/10/2015	0.104			
2/11/2015	0.110			
2/12/2015	0.105		0.03	
2/13/2015	0.107			
2/14/2015	0.123		0.16	
2/15/2015	0.113			
2/16/2015	0.120		0.04	
2/17/2015	0.115			
2/18/2015	0.122		0.01	
2/19/2015	0.116			
2/20/2015	0.121			
2/21/2015	0.129		0.18	
2/22/2015	0.122			
2/23/2015	0.124			
2/24/2015	0.129			
2/25/2015	0.126			
2/26/2015	0.132		0.01	
2/27/2015	0.129			
2/28/2015	0.140			
3/1/2015	0.131		0.3	
3/2/2015	0.123			
3/3/2015	0.124		0.68	
3/4/2015	0.133		0.28	
3/5/2015	0.125		0.01	
3/6/2015	0.127			
3/7/2015	0.120		0.01	
3/8/2015	0.132			
3/9/2015	0.186			
3/10/2015	0.344		0.36	
3/11/2015	0.738	0.094		
3/12/2015	0.345			
3/13/2015	0.257		0.24	
3/14/2015	0.655	0.037	0.27	
3/15/2015	0.464			
3/16/2015	0.394			
3/17/2015	0.553		0.01	
3/18/2015	0.423			
3/19/2015	0.367			

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
3/20/2015	0.329		0.49	
3/21/2015	0.394			
3/22/2015	0.364			
3/23/2015	0.303			
3/24/2015	0.300			
3/25/2015	0.287		0.06	
3/26/2015	0.374		0.18	
3/27/2015	0.359		0.01	
3/28/2015	0.317			
3/29/2015	0.296		0.01	
3/30/2015	0.280			
3/31/2015	0.272		0.46	
4/1/2015	0.379			
4/2/2015	0.348		0.07	
4/3/2015	0.435		0.26	
4/4/2015	0.534			
4/5/2015	0.420			
4/6/2015	0.386		0.02	
4/7/2015	0.471		0.36	
4/8/2015	0.435		0.03	
4/9/2015	0.397		0.21	
4/10/2015	0.432		0.01	
4/11/2015	0.378			
4/12/2015	0.340			
4/13/2015	0.311		0.15	
4/14/2015	0.321			
4/15/2015	0.277			
4/16/2015	0.262		0.05	
4/17/2015	0.251			
4/18/2015	0.241			
4/19/2015	0.222		0.6	
4/20/2015	0.455		1.27	
4/21/2015	0.913	0.412		
4/22/2015	0.544		0.08	
4/23/2015	0.477		0.01	
4/24/2015	0.407			
4/25/2015	0.372			
4/26/2015	0.335			
4/27/2015	0.292		0.01	
4/28/2015	0.268			
4/29/2015	0.242			
4/30/2015	0.220			
5/1/2015	0.201			
5/2/2015	0.192			
5/3/2015	0.182			
5/4/2015	0.169			
5/5/2015	0.154		0.05	
5/6/2015	0.159		0.02	
5/7/2015	0.148			
5/8/2015	0.137			
5/9/2015	0.135			
5/10/2015	0.129			
5/11/2015	0.122		0.04	
5/12/2015	0.115			
5/13/2015	0.106			
5/14/2015	0.109			
5/15/2015	0.101		0.1	
5/16/2015	0.135		0.27	
5/17/2015	0.114			
5/18/2015	0.106		0.08	
5/19/2015	0.102			
5/20/2015	0.097			
5/21/2015	0.100			
5/22/2015	0.099			
5/23/2015	0.099			
5/24/2015	0.092			
5/25/2015	0.100			
5/26/2015	0.089			
5/27/2015	0.284	0.141	1.05	

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
5/28/2015	0.095			
5/29/2015	0.094			
5/30/2015	0.115		0.24	
5/31/2015	0.618	0.407	2.2	
6/1/2015	0.244			
6/2/2015	1.061	0.535	0.535	
6/3/2015	0.357			
6/4/2015	0.299			
6/5/2015	0.272			
6/6/2015	0.242			
6/7/2015	0.227			
6/8/2015	0.268			
6/9/2015	0.247			
6/10/2015	0.221			
6/11/2015	0.208			
6/12/2015	0.193			
6/13/2015	0.171			
6/14/2015	0.819	0.571	0.571	
6/15/2015	1.633	1.314	1.314	
6/16/2015	0.446			
6/17/2015	0.360			
6/18/2015	0.362			
6/19/2015	0.313			
6/20/2015	0.306			
6/21/2015	0.583	0.012	0.012	
6/22/2015	0.383			
6/23/2015	0.438			
6/24/2015	0.380			
6/25/2015	0.333			
6/26/2015	0.297			
6/27/2015	0.644	0.043	0.043	
6/28/2015	0.942	0.02	0.2	
6/29/2015	0.609			
6/30/2015	0.735	0.055	1.04	
7/1/2015	0.847			
7/2/2015	0.626			
7/3/2015	0.513		0.2	
7/4/2015	0.557		0.34	
7/5/2015	0.441			
7/6/2015	0.373		0.03	
7/7/2015	0.336		0.01	
7/8/2015	0.288		0.25	
7/9/2015	0.344		0.32	
7/10/2015	0.294			
7/11/2015	0.247			
7/12/2015	0.220			
7/13/2015	0.205		0.01	
7/14/2015	0.191		0.22	
7/15/2015	0.205			
7/16/2015	0.174			
7/17/2015	0.164		0.08	
7/18/2015	0.180		0.04	
7/19/2015	0.158			
7/20/2015	0.138		0.01	
7/21/2015	0.127		0.01	
7/22/2015	0.121			
7/23/2015	0.117			
7/24/2015	0.111			
7/25/2015	0.110			
7/26/2015	0.125		0.63	
7/27/2015	0.135			
7/28/2015	0.100			
7/29/2015	0.098			
7/30/2015	0.116		0.01	
7/31/2015	0.103			
8/1/2015	0.091			
8/2/2015	0.095			
8/3/2015	0.091			
8/4/2015	0.089		0.04	

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
8/5/2015	0.086			
8/6/2015	0.087			
8/7/2015	0.086			
8/8/2015	0.084			
8/9/2015	0.088			
8/10/2015	0.351	0.243	0.04	
8/11/2015	0.429	0.121	1.37	
8/12/2015	0.118			
8/13/2015	0.109			
8/14/2015	0.107			
8/15/2015	0.102			
8/16/2015	0.099			
8/17/2015	0.097			
8/18/2015	0.091		0.01	
8/19/2015	0.093			
8/20/2015	0.182		0.83	
8/21/2015	0.111			
8/22/2015	0.103			
8/23/2015	0.102			
8/24/2015	0.101		0.05	
8/25/2015	0.093			
8/26/2015	0.091			
8/27/2015	0.093			
8/28/2015	0.091			
8/29/2015	0.090			
8/30/2015	0.095		0.07	
8/31/2015	0.088			
9/1/2015	0.083			
9/2/2015	0.080			
9/3/2015	0.083		0.02	
9/4/2015	0.083		0.01	
9/5/2015	0.091			
9/6/2015	0.085			
9/7/2015	0.093			
9/8/2015	0.083			
9/9/2015	0.085		0.02	
9/10/2015	0.178		0.53	
9/11/2015	0.093			
9/12/2015	0.142		0.38	
9/13/2015	0.110			
9/14/2015	0.096			
9/15/2015	0.086			
9/16/2015	0.083			
9/17/2015	0.089			
9/18/2015	0.086			
9/19/2015	0.093			
9/20/2015	0.094			
9/21/2015	0.091			
9/22/2015	0.091		0.06	
9/23/2015	0.087			
9/24/2015	0.088			
9/25/2015	0.084			
9/26/2015	0.089			
9/27/2015	0.094			
9/28/2015	0.089			
9/29/2015	0.122		0.45	
9/30/2015	0.283		1.6	
10/1/2015	0.140		0.15	
10/2/2015	0.130		0.08	
10/3/2015	0.339		0.93	
10/4/2015	0.162			
10/5/2015	0.138			
10/6/2015	0.128			
10/7/2015	0.115			
10/8/2015	0.116			
10/9/2015	0.148		0.43	
10/10/2015	0.116			
10/11/2015	0.117			
10/12/2015	0.114			

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
10/13/2015	0.113		0.1	
10/14/2015	0.099			
10/15/2015	0.100			
10/16/2015	0.096		0.03	
10/17/2015	0.103		0.04	
10/18/2015	0.098			
10/19/2015	0.096			
10/20/2015	0.089			
10/21/2015	0.081			
10/22/2015	0.080			
10/23/2015	0.083			
10/24/2015	0.091		0.01	
10/25/2015	0.128		0.24	
10/26/2015	0.092			
10/27/2015	0.086			
10/28/2015	0.671	0.335	2.76	
10/29/2015	0.311		0.16	
10/30/2015	0.205			
10/31/2015	0.181			
11/1/2015	0.183			
11/2/2015	0.161			
11/3/2015	0.144			
11/4/2015	0.134			
11/5/2015	0.128			
11/6/2015	0.115			
11/7/2015	0.122			
11/8/2015	0.118			
11/9/2015	0.108			
11/10/2015	0.312	0.034	1	
11/11/2015	0.284		0.04	
11/12/2015	0.223		0.19	
11/13/2015	0.231			
11/14/2015	0.205			
11/15/2015	0.182			
11/16/2015	0.169			
11/17/2015	0.112			
11/18/2015	0.173			
11/19/2015	0.360		0.67	
11/20/2015	0.223			
11/21/2015	0.200			
11/22/2015	0.194			
11/23/2015	0.172			
11/24/2015	0.158			
11/25/2015	0.153			
11/26/2015	0.148			
11/27/2015	0.137			
11/28/2015	0.135		0.01	
11/29/2015	0.129			
11/30/2015	0.122		0.01	
12/1/2015	0.205		0.32	
12/2/2015	0.288		0.54	
12/3/2015	0.243		0.05	
12/4/2015	0.199			
12/5/2015	0.191			
12/6/2015	0.190			
12/7/2015	0.175			
12/8/2015	0.167			
12/9/2015	0.155			
12/10/2015	0.150		0.02	
12/11/2015	0.139			
12/12/2015	0.140		0.01	
12/13/2015	0.134			
12/14/2015	0.169		0.42	
12/15/2015	0.167			
12/16/2015	0.134			
12/17/2015	0.173		0.26	
12/18/2015	0.143			
12/19/2015	0.138			
12/20/2015	0.136			
12/21/2015	0.146			
12/22/2015	0.193		0.22	
12/23/2015	0.328		0.41	
12/24/2015	0.296			
12/25/2015	0.240			

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
12/26/2015	0.238		0.12	
12/27/2015	0.289		0.17	
12/28/2015	0.241		0.13	
12/29/2015	0.000		0.45	
12/30/2015	0.000		0.06	
12/31/2015	0.000			
1/1/2016	0.295		0.01	
1/2/2016	0.276			
1/3/2016	0.241		0.01	
1/4/2016	0.235			
1/5/2016	0.209			
1/6/2016	0.180			
1/7/2016	0.174		0.01	
1/8/2016	0.177		0.05	
1/9/2016	0.325	0.129	1.42	
1/10/2016	0.504		0.24	
1/11/2016	0.339			
1/12/2016	0.320		0.14	
1/13/2016	0.296		0.03	
1/14/2016	0.275			
1/15/2016	0.288		0.29	
1/16/2016	0.282		0.01	
1/17/2016	0.239		0.002	
1/18/2016	0.241			
1/19/2016	0.219			
1/20/2016	0.193		0.01	
1/21/2016	0.188			
1/22/2016	0.188		0.9	
1/23/2016	0.151		0.32	
1/24/2016	0.141			
1/25/2016	0.136			
1/26/2016	0.238		0.01	
1/27/2016	0.162			
1/28/2016	0.157			
1/29/2016	0.146		0.01	
1/30/2016	0.128			
1/31/2016	0.178			
2/1/2016	0.228			
2/2/2016	0.223			
2/3/2016	0.509	0.058	0.69	
2/4/2016	0.384			
2/5/2016	0.346			
2/6/2016	0.266			
2/7/2016	0.276			
2/8/2016	0.270		0.06	
2/9/2016	0.263		0.24	
2/10/2016	0.257		0.04	
2/11/2016	0.215			
2/12/2016	0.225		0.03	
2/13/2016	0.183			
2/14/2016	0.166			
2/15/2016	0.243		0.73	
2/16/2016	0.911	0.641	1.21	
2/17/2016	0.506	0.041	0.01	
2/18/2016	0.379			
2/19/2016	0.347			
2/20/2016	0.302			
2/21/2016	0.270			
2/22/2016	0.277			
2/23/2016	0.345		0.4	
2/24/2016	0.567	0.289	2.14	
2/25/2016	1.126	0.617	0.09	
2/26/2016	0.662	0.002		
2/27/2016	0.511			
2/28/2016	0.420			
2/29/2016	0.372		0.01	
3/1/2016	0.331		0.03	
3/2/2016	0.280			
3/3/2016	0.271		0.02	
3/4/2016	0.271			
3/5/2016	0.258		0.03	
3/6/2016	0.236			
3/7/2016	0.219			
3/8/2016	0.197			
3/9/2016	0.188			

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
3/10/2016	0.217		0.56	
3/11/2016	0.267			
3/12/2016	0.191			
3/13/2016	0.188		0.2	
3/14/2016	0.220		0.02	
3/15/2016	0.204			
3/16/2016	0.208		0.13	
3/17/2016	0.196		0.01	
3/18/2016	0.167			
3/19/2016	0.168			
3/20/2016	0.169			
3/21/2016	0.154			
3/22/2016	0.145			
3/23/2016	0.136			
3/24/2016	0.135		0.09	
3/25/2016	0.134			
3/26/2016	0.131			
3/27/2016	0.118		0.29	
3/28/2016	0.187		0.11	
3/29/2016	0.122			
3/30/2016	0.121			
3/31/2016	0.117			
4/1/2016	0.116		0.09	
4/2/2016	0.118		0.24	
4/3/2016	0.149		0.02	
4/4/2016	0.162		0.23	
4/5/2016	0.130			
4/6/2016	0.123			
4/7/2016	0.642	0.257	1.7	
4/8/2016	0.437			
4/9/2016	0.394		0.12	
4/10/2016	0.364		0.06	
4/11/2016	0.367		0.25	
4/12/2016	0.368		0.02	
4/13/2016	0.316			
4/14/2016	0.292			
4/15/2016	0.268			
4/16/2016	0.256			
4/17/2016	0.238			
4/18/2016	0.215			
4/19/2016	0.200			
4/20/2016	0.182			
4/21/2016	0.173			
4/22/2016	0.159		0.42	
4/23/2016	0.224			
4/24/2016	0.175			
4/25/2016	0.176		0.11	
4/26/2016	0.180		0.02	
4/27/2016	0.176			
4/28/2016	0.184		0.04	
4/29/2016	0.178		0.08	
4/30/2016	0.161		0.36	
5/1/2016	0.274		0.24	
5/2/2016	0.196		0.85	
5/3/2016	0.474	0.003	0.09	
5/4/2016	0.307		0.08	
5/5/2016	0.286		0.04	
5/6/2016	0.344		0.53	
5/7/2016	0.382		0.24	
5/8/2016	0.380			
5/9/2016	0.334			
5/10/2016	0.314		0.01	
5/11/2016	0.302			
5/12/2016	0.301		0.01	
5/13/2016	0.338		0.32	
5/14/2016	0.288		0.03	
5/15/2016	0.293		0.12	
5/16/2016	0.261			
5/17/2016	0.247			
5/18/2016	0.245			
5/19/2016	0.221			
5/20/2016	0.199			
5/21/2016	0.202		0.1	
5/22/2016	0.203		0.01	
5/23/2016	0.191		0.04	

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
5/24/2016	0.172			
5/25/2016	0.167			
5/26/2016	0.149		0.02	
5/27/2016	0.146			
5/28/2016	0.143			
5/29/2016	0.136		0.44	
5/30/2016	0.247		0.17	
5/31/2016	0.152			
6/1/2016	0.142			
6/2/2016	0.143			
6/3/2016	0.143		0.06	
6/4/2016	0.151		0.09	
6/5/2016	0.482	0.142	1.68	
6/6/2016	0.272		0.26	
6/7/2016	0.307		0.07	
6/8/2016	0.340		0.39	
6/9/2016	0.288			
6/10/2016	0.265			
6/11/2016	0.257			
6/12/2016	0.233			
6/13/2016	0.218			
6/14/2016	0.000			
6/15/2016	0.195		0.46	
6/16/2016	0.251		0.05	
6/17/2016	0.192			
6/18/2016	0.175			
6/19/2016	0.163			
6/20/2016	0.159		0.36	
6/21/2016	0.214			
6/22/2016	0.175			
6/23/2016	0.158		0.01	
6/24/2016	0.152			
6/25/2016	0.146			
6/26/2016	0.128			
6/27/2016	0.212	0.001	0.59	
6/28/2016	0.471	0.237	1.74	
6/29/2016	0.260			
6/30/2016	0.227			
7/1/2016	0.222		0.01	
7/2/2016	0.205			
7/3/2016	0.188			
7/4/2016	0.197		0.47	
7/5/2016	0.270			
7/6/2016	0.189			
7/7/2016	0.173			
7/8/2016	0.163		0.01	
7/9/2016	0.198	0.004	0.16	
7/10/2016	0.165			
7/11/2016	0.150			
7/12/2016	0.144			
7/13/2016	0.715		0.1	
7/14/2016	0.010	0.01	0.33	
7/15/2016	0.147			
7/16/2016	0.151		0.11	
7/17/2016	0.139			
7/18/2016	0.207		0.11	
7/19/2016	0.126			
7/20/2016	0.135			
7/21/2016	0.132			
7/22/2016	0.122			
7/23/2016	0.108			
7/24/2016	0.103			
7/25/2016	0.201	0.014	1	
7/26/2016	0.124			
7/27/2016	0.115			
7/28/2016	0.113		0.07	
7/29/2016	0.116		0.01	
7/30/2016	0.145		0.32	
7/31/2016	0.133		0.07	
8/1/2016	0.502	0.249	2.12	
8/2/2016	0.258			
8/3/2016	0.220			
8/4/2016	0.200			
8/5/2016	0.191			
8/6/2016	0.181		0.01	

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
8/7/2016	0.165			
8/8/2016	0.146			
8/9/2016	0.141			
8/10/2016	0.176		0.33	
8/11/2016	0.166		0.84	
8/12/2016	0.382	0.07	0.65	
8/13/2016	0.248		0.19	
8/14/2016	0.227			
8/15/2016	0.209			
8/16/2016	0.233	0.004	0.46	
8/17/2016	0.201		0.23	
8/18/2016	0.218			
8/19/2016	0.188			
8/20/2016	0.180			
8/21/2016	0.530	0.181	1.54	
8/22/2016	0.308			
8/23/2016	0.269			
8/24/2016	0.247			
8/25/2016	0.236		0.09	
8/26/2016	0.228			
8/27/2016	0.200			
8/28/2016	0.190			
8/29/2016	0.181			
8/30/2016	0.160			
8/31/2016	0.153		0.02	
9/1/2016	0.157		0.01	
9/2/2016	0.145			
9/3/2016	0.145			
9/4/2016	0.134			
9/5/2016	0.131			
9/6/2016	0.119			
9/7/2016	0.111			
9/8/2016	0.088			
9/9/2016	0.225		0.04	
9/10/2016	0.225		0.01	
9/11/2016	0.225			
9/12/2016	0.225			
9/13/2016	0.225			
9/14/2016	0.225		0.14	
9/15/2016	0.225			
9/16/2016	0.225			
9/17/2016	0.225		0.01	
9/18/2016	0.225		1.17	
9/19/2016	0.247	0.022	0.2	
9/20/2016	0.225			SA 3 + SA 4 Flow data for 9/20/16 thru 12/31/16 is based on average daily flow for remainder of 2016 (1/1/16 thru 9/19/16)
9/21/2016	0.225			
9/22/2016	0.225			
9/23/2016	0.225		0.01	
9/24/2016	0.225			
9/25/2016	0.225			
9/26/2016	0.225		0.32	
9/27/2016	0.225			
9/28/2016	0.225		0.37	
9/29/2016	0.225		0.94	
9/30/2016	0.225		0.34	
10/1/2016	0.225		0.23	
10/2/2016	0.225		0.02	
10/3/2016	0.225			
10/4/2016	0.225			
10/5/2016	0.225			
10/6/2016	0.225			
10/7/2016	0.225			
10/8/2016	0.225		0.01	
10/9/2016	0.225			
10/10/2016	0.225			
10/11/2016	0.225			
10/12/2016	0.225			
10/13/2016	0.225		0.01	
10/14/2016	0.225			
10/15/2016	0.225			
10/16/2016	0.225		0.17	
10/17/2016	0.225			
10/18/2016	0.225			
10/19/2016	0.225			
10/20/2016	0.225			

**The Borough of Freeland Municipal Authority
2014-2016 Daily Flow and Precipitation Data**

Date	SA 3 + SA 4 Flow (MGD)	CSO Bypass (MGD)	Prep (in)	Notes
10/21/2016	0.225		0.25	
10/22/2016	0.225		0.13	
10/23/2016	0.225			
10/24/2016	0.225			
10/25/2016	0.225			
10/26/2016	0.225		0.19	
10/27/2016	0.225		0.64	
10/28/2016	0.225			
10/29/2016	0.225			
10/30/2016	0.225		0.51	
10/31/2016	0.225			
11/1/2016	0.225			
11/2/2016	0.225			
11/3/2016	0.225			
11/4/2016	0.225		0.02	
11/5/2016	0.225			
11/6/2016	0.225			
11/7/2016	0.225			
11/8/2016	0.225		0.11	
11/9/2016	0.225		0.17	
11/10/2016	0.225			
11/11/2016	0.225			
11/12/2016	0.225			
11/13/2016	0.225			
11/14/2016	0.225			
11/15/2016	0.225			
11/16/2016	0.225		0.02	
11/17/2016	0.225			
11/18/2016	0.225			
11/19/2016	0.225		0.41	
11/20/2016	0.225		0.05	
11/21/2016	0.225			
11/22/2016	0.225			
11/23/2016	0.225			
11/24/2016	0.225		0.07	
11/25/2016	0.225		0.04	
11/26/2016	0.225		0.02	
11/27/2016	0.225			
11/28/2016	0.225		0.11	
11/29/2016	0.225		0.63	
11/30/2016	0.225		0.98	
12/1/2016	0.225		0.01	
12/2/2016	0.225			
12/3/2016	0.225			
12/4/2016	0.225		0.2	
12/5/2016	0.225		0.01	
12/6/2016	0.225		0.57	
12/7/2016	0.225			
12/8/2016	0.225			
12/9/2016	0.225		0.02	
12/10/2016	0.225			
12/11/2016	0.225		0.48	
12/12/2016	0.225			
12/13/2016	0.225		0.03	
12/14/2016	0.225			
12/15/2016	0.225			
12/16/2016	0.225		0.27	
12/17/2016	0.225		0.22	
12/18/2016	0.225		0.12	
12/19/2016	0.225			
12/20/2016	0.225			
12/21/2016	0.225			
12/22/2016	0.225			
12/23/2016	0.225		0.06	
12/24/2016	0.225		0.04	
12/25/2016	0.225			
12/26/2016	0.225		0.07	
12/27/2016	0.225			
12/28/2016	0.225		0.09	
12/29/2016	0.225		0.28	
12/30/2016	0.225			
12/31/2016	0.225			

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2009 CSO Events

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
2/8/2009	0.044	0.5	Snow Melt		
2/11/2009	0.264	24	Infiltration		
2/12/2009	0.308	24	Infiltration		
2/13/2009	0.228	24	Infiltration		
2/14/2009	0.06	13.5	Infiltration		
2/27/2009	0.006	24	Infiltration		
3/8/2009	0.006	3	Rain		
3/29/2009	0.018	1	Rain		
4/3/2009	0.389	24	Rain		
4/4/2009	0.369	24	Rain		
4/5/2009	0.048	24	Rain		
4/6/2009	0.195	24	Infiltration		
4/7/2009	0.004	24	Infiltration		Plant flooding
4/8/2009	0.069	24	Infiltration		
4/9/2009	0.028	24	Infiltration		
4/15/2009	0.051	24	Rain		
4/20/2009	0.013	24	Rain		After Working hours, no samples
4/21/2009	0.002	24	Rain		After Working hours, no samples
5/1/2009	0.001	N/A	Rain	0.68	After Working hours, no samples
5/14/2009	0.289	10	Rain	0.56	After Working hours, no samples
5/16/2009	0.028	2	Rain	1.08	After Working hours, no samples
5/29/2009	0.011	2	Rain	0.95	After Working hours, no samples
6/3/2009	0.172	7.5	Rain	0.9	After Hours
6/9/2009	0.022		Rain	0.84	After Hours
6/11/2009	0.049	6		0.86	After Hours
6/12/2009	0.028	10		0.6	After Hours
6/13/2009	0.124				After Hours
6/14/2009	0.182				After Hours
6/15/2009	0.142				After Hours
6/17/2009	0.121	10		0.68	After Hours
6/19/2009	0.162	24			After Hours
6/20/2009	0.421	24			After Hours

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2009 CSO Events (continued)

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
6/21/2009	0.353	24			After Hours
6/22/2009	0.37	24			After Hours
6/23/2009	0.29	24			After Hours
6/24/2009	0.231	24			After Hours
6/25/2009	0.225	14			After Hours
6/29/2009	0.007			0.03	After Hours
7/1/2009	0.006	1	Rain	0.64	After Hours
7/12/2009	0.02	1.5	Rain	0.79	After Hours
7/27/2009	0.008	2	Rain	0.35	After Hours
7/29/2009	0.04	2.5	Rain	1.39	After Hours
8/2/2009	0.051	8	Rain	0.56	After Hours
8/9/2009	0.042	11	Rain	0.9	After Hours
8/10/2009	0.019	11	Rain	0.45	After Hours
8/11/2009	0.002	10	Rain	0.41	After Hours
8/13/2009	0.048	24	Rain	1.35	After Hours
8/14/2009	0.118	11	Rain		
8/18/2009	0.102	2	Rain	1.5	After Hours
8/19/2009	0.004	1	Rain	0.13	After Hours
8/22/2009	0.453	11	Rain	0.71	After Hours
8/23/2009	0.473	24	Rain		
8/24/2009	0.466	10	Rain		
8/29/2009	0.004	3	Rain	0.61	After Hours
8/30/2009	0.019	1	Rain	0.41	After Hours
9/13/2009	0.502	12		1.32	After Hours
9/27/2009	0.006	23.5		0.98	After Hours
10/6/2009	0.006	0.5	Rain	0.25	
10/8/2009	0.005		Rain	0.25	
10/9/2009	0.015	0.5	Rain	0.65	
10/17/2009		12	Rain	0.15	
10/18/2009	0.01	9	Rain	0.33	
10/24/2009	0.01	14	Rain	1	
10/25/2009	0.035	24			

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2009 CSO Events (continued)

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
10/26/2009	0.003	13.75			
10/27/2009	0.003	10.25	Rain	1.8	
10/28/2009	0.225	24	Rain	1.75	
10/29/2009	0.367	24	Rain	0.05	
10/30/2009	0.526	24	Rain	0.05	
10/31/2009	0.334	24	Rain	0.26	
11/1/2009	0.243	12		0.2	
11/2/2009	0.189	24	I&I		
11/3/2009	0.153	13.5	I&I		
11/19/2009	0.026	7	Rain	1.33	
11/30/2009	0.002	10	Rain	0.37	
12/2/2009	0.043		Rain	0.95	
12/3/2009	Unknown	12			
12/4/2009	Unknown	22			
12/9/2009	Unknown	Unknown	Rain	2	
12/10/2009	0.312	Unknown	I&I		
12/11/2009	0.091	Unknown	I&I		
12/12/2009	0.196	Unknown	I&I		
12/13/2009	0.311	Unknown	Rain	0.78	
12/14/2009	0.046	Unknown	I&I		
12/15/2009	0.294	11.75	I&I		
12/16/2009	0.306	24	I&I		
12/17/2009	0.302	24	I&I		
12/18/2009		11			
12/26/2009	0.531	16	Rain	0.43	
12/27/2009	0.518	24	Rain	0.37	
12/28/2009	0.34	24	I&I		
12/29/2009		14			
12/31/2009	0.003	7	Rain	0.3	
2009 Total CSO Discharge	13.158	Million Gallons	(Note: not all CSO discharge was measured)		

**The Borough of Freeland Municipal Authority
2009-2016 CSO Performance Data**

Year 2010 CSO Events

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
1/1/2010	0.003				
1/2/2010	0.003	6	Snow Melt		Numerous small short overflows over the next 3 day period.
1/3/2010	0.003	5	High Flows		
1/17/2010	0.005	4	High Flows		
1/24/2010	0.059	7	Rain	0.82	Plant flows were down to mid 0.500's, 0.966 this day with rain event.
1/25/2010	0.021	2	High Flows		Plant flow 1.143 MGD
1/26/2010	0.018	24	High Flows	2.61	Plant flow 1.558 MGD, Pump Station was OFF
1/27/2010	0.057	24	Snow melt		Plant flow 1.133 MGD, 1-25 at 08:30
1/28/2010	0.077	24	High Flows		Plant flow 1.202 MGD, 1-27 at 11:00
1/29/2010	0.025	24			
1/30/2010	0.047	24			Called DEP on 1-25 to report PS shutdown, plant overflowing. Did not receive return phone call.
1/31/2010	0.083	24			
2/1/2010		11			
3/10/2010	0.077	6			Note for March: Bypass totals are incorrect due to meter not working correctly at all times. Especially the high totals. Authority is in the process of soliciting bids for a new type of meter and pipe work in the area of the CSO. Plant flow readings are correct.
3/11/2010	0.307	24	Snow Melt, I&I		Plant Flow 0.910 MGD
3/12/2010	0.236	24	Snow Melt, I&I		Plant Flow 1.412 MGD
3/13/2010	0.231	24	Snow Melt, Rain, I&I		Plant Flow 1.570 MGD
3/14/2010	0.261	24	Snow Melt, Rain, I&I	0.46	Plant Flow 1.493 MGD, 0.92 Rain Starts
3/15/2010	0.38	24	Snow Melt, Rain, I&I	0.46	Plant Flow 1.633 MGD, 0.92 Rain Ends
3/16/2010	0.445	24	Snow Melt, I&I		Plant Flow 1.316 MGD
3/17/2010	0.674	24	Snow Melt, I&I		Plant Flow 1.007 MGD
3/18/2010	0.543	24	Snow Melt, I&I		Plant Flow 1.306 MGD
3/19/2010	0.663	24	I&I		Plant Flow 1.22 MGD

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2010 CSO Events (continued)

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
3/20/2010	0.769	24	I&I		Plant Flow 0.975 MGD
3/21/2010	0.697	24	I&I		Plant Flow 0.863 MGD Added water from CSO
3/22/2010	1.912	24	I&I		Plant Flow 0.973 MGD
3/23/2010	0.642	24	Rain, I&I	1.2	Plant Flow 1.213 MGD closed CSO
3/24/2010	1.027	24	I&I		Plant Flow 1.23 MGD
3/25/2010	1.036	24	I&I		Plant Flow 0.988 MGD
3/26/2010	0.336	24	I&I		Plant Flow 1.026 MGD
3/27/2010	0.777	24	Rain, I&I	0.35	Plant Flow 0.826 MGD
3/28/2010	2.058	24	Rain, I&I	0.31	Plant Flow 0.750 MGD
3/29/2010	2.115	24	Rain, I&I	0.94	Plant Flow 1.074 MGD
3/30/2010	1.305	24	Rain, I&I		Plant Flow 1.267 MGD
3/31/2010	0.793	24	Rain, I&I	0.72	Plant Flow 1.280 MGD
4/1/2010	0.901	24	I&I		Plant Flow 1.338 MGD
4/2/2010	1.25	24	I&I		Flows from 4-1 to 4-1 are too high and inaccurate.
4/3/2010	1.7	24	I&I		Ajusted and Cleaned sensor
4/4/2010	2.266	24	I&I		
4/5/2010		14	I&I		
4/16/2010		3			Stopped CSO bypass
4/17/2010	0.046	7	Rain T- Storms	0.88	
4/26/2010		12	Rain		
4/27/2010	0.087	6	Rain	1.73	
5/3/2010	0.003	0.5	T-Storm	0.5	Plant flow 0.859 MGD
5/13/2017	0.011	2	Rain	0.95	Plant flow 0.800 MGD
6/9/2010	0.006	2.5	Rain	0.97	Plant flow 0.831 MGD
8/15/2010	0.01	3.5	Rain	0.96	No Plant flow recorded
8/22/2010	0.04	12	Heavy Rain	2.4	
8/23/2010		8			
9/28/2010	0.009	14	Rain	0.75	Bypass meter not recording accurate flows. Authority has a new meter ordered. Meter should be delivered in November.
9/30/2010	0.017	16	Heavy Rain	5.71	

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2010 CSO Events (continued)

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
10/1/2010	0.007	24	I&I		Inf from previous 5.71" rain on 9-30
10/2/2010	0.002	24	I&I		
10/3/2010	0.002	24	I&I		
10/4/2010	0	8.3	Rain	1.12	
10/5/2010	0.011	10.5	Rain, I&I	0.9	
10/6/2010	0.005	24	Rain, I&I	0.2	
10/7/2010	0.014	24	I&I		
10/8/2010	0.024	24	I&I		
10/9/2010		10.5	I&I		
10/14/2010		6	Rain		Bypass meter flows are not accurate due to malfunctioning meter. Authority has new meter ordered. Meter is expected to be delivered in Nov.
10/15/2010	0.015	13	Rain	0.69	
11/4/2010	0.004	24	Rain	1	Plant flow 1.090 MGD
11/17/2010	0.008	16	Rain	1.53	Plant flow 1.175 MGD
11/18/2010	0.038	16	I&I		
11/30/2010	0.045	9	Rain	2.3	Plant flow 1.116 MGD , Bypass meter flows are not accurate due to malfunctioning meter. Authority has new meter ordered. Meter is expected to be delivered in Nov.
2010 Total CSO Discharge	24.206	Million Gallons			

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2011 CSO Events

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
2/17/2011	0.970	10.5	Snowmelt, I&I		Plant flow 0.934 MGD
2/18/2011	0.666	24	Snowmelt, I&I		Plant flow 1.146 MGD
2/19/2011		10.45	Snowmelt, I&I		Event ends, plant flow 0.905 MGD
2/25/2011	0.105	3	Rain, Snowmelt, I&I	0.65	Plant flow 1.181 MGD
2/26/2011	0.828	11.25	Rain, Snowmelt, I&I	0.65	Plant flow 0.916 MGD
2/27/2011	0.394	10	Rain, Snowmelt, I&I	0.3	Plant flow 0.837 MGD
2/28/2011	0.671	14	Rain, Snowmelt, I&I	0.3	Plant flow 1.402 MGD
3/1/2011	0.818	10	Snowmelt, I&I		Plant flow 1.213 MGD
3/2/2011	0.535	24	Snowmelt, I&I		Plant flow 1.039 MGD
3/3/2011	0.442	24	Snowmelt, I&I		Plant flow 1.184 MGD
3/5/2011		12.5	Rain overnight		Plant flow 1.113 MGD
3/6/2011	0.551	24	Rain /Snow	2.6	Plant flow 1.616 MGD
3/7/2011	2.147	24	Snowmelt, I&I		Plant flow 1.420 MGD
3/8/2011	0.953	24	Snowmelt, I&I		Plant flow 1.341 MGD
3/9/2011	0.713	24	Snowmelt, I&I		Plant flow 1.132 MGD
3/10/2011	0.774	24	Rain	4.2	Plant flow 1.607 MGD
3/11/2011	2.201	24	Snowmelt, I&I		Plant flow 1.645 MGD
3/12/2011	Unknown	24	Snowmelt, I&I		Plant flow 1.336 MGD - Flow meter for CSO is not recording since the heavy rain event on 3/10/2011 (4.2") We are waiting for contractor who installed meter and meter manufacturer to correct the problem.
3/13/2011	Unknown	24	I&I		Plant flow 1.064 MGD
3/14/2011	Unknown	24	I&I		Plant flow 1.117 MGD
3/15/2011	Unknown	24	I&I		Plant flow 1.005 MGD
3/16/2011	Unknown	24			Plant flow 1.212 MGD
3/21/2011	Unknown	8	Rain/ Snowmelt	1.14	Plant flow 1.154 MGD
3/22/2011	Unknown	15.75	I&I		Plant flow 1.123 MGD
3/23/2011	Unknown	10	Snow/Rain	1.32	Plant flow 1.153 MGD
3/24/2011	Unknown	24	Snowmelt, I&I		Plant flow 0.990 MGD
3/25/2011	Unknown	11	Snowmelt, I&I		Plant flow 1.099 MGD
4/5/2011	Unknown	14.5	Rain	0.77	Plant flow 1.436 MGD

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2011 CSO Events (continued)

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
4/6/2011	Unknown	24	Rain/Snow	0.6	Plant flow 1.342 MGD
4/7/2011	Unknown	24	Rain		Plant flow 1.315 MGD
4/8/2011	Unknown	24	Rain		Plant flow 1.318 MGD
4/9/2011	Unknown	24	I&I	0.15	Plant flow 1.180 MGD
4/10/2011	Unknown	24	I&I		Plant flow 1.083 MGD
4/11/2011	Unknown	24	I&I		Plant flow 0.965 MGD
4/12/2011	Unknown	24	Rain	1.1	Plant flow 1.169 MGD
4/13/2011	Unknown	24	Rain, I&I	0.31	Plant flow 1.357 MGD
4/14/2011	Unknown	24	I&I		Plant flow 1.187 MGD
4/15/2011	Unknown	24	I&I		Plant flow 1.046 MGD
4/16/2011	Unknown	24	Rain, I&I	2.63	Plant flow 1.537 MGD
4/17/2011	Unknown	24	I&I		Plant flow 1.580 MGD
4/18/2011	Unknown	24	I&I		Plant flow 1.499 MGD
4/19/2011	Unknown	24	Rain, I&I	0.23	Plant flow 1.282 MGD
4/20/2011	Unknown	24	I&I		Plant flow 1.144 MGD
4/21/2011	Unknown	15	I&I		
4/23/2011	Unknown	14.75	Rain, I&I	0.43	Plant flow 1.138 MGD
4/24/2011	Unknown	24			Plant flow 1.025 MGD
4/28/2011	Unknown	15.75	Rain	2.55	Plant flow 1.584 MGD
4/29/2011	Unknown	24	I&I		Plant flow 1.500 MGD
4/30/2011	Unknown	24	I&I		Plant flow 1.343 MGD
5/1/2011	Unknown	24	I&I		Plant flow 1.125 MGD
5/2/2011	Unknown	24	I&I		Plant flow 1.015 MGD
5/3/2011	Unknown	24	I&I, Raim		Plant flow 1.068 MGD
5/4/2011	Unknown	24	I&I, Rain	1.4	Plant flow 1.254 MGD
5/5/2011	Unknown	24	I&I		Plant flow 1.070 MGD
5/6/2011	Unknown	24	I&I		Plant flow 0.987 MGD
5/7/2011	Unknown	10.25			
7/25/2011	Unknown	5.5	T-storms	2.15	Plant flow 0.924 MGD
8/19/2011	Unknown	8.5	T-storms	1.00	Plant flow 1.0370.924 MGD
8/20/2011	Unknown	11			Plant flow 0.869 MGD
8/25/2011	Unknown	2	Rain	0.81	Plant flow 0.964 MGD

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2011 CSO Events (continued)

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
8/27/2011	Unknown	1	Rain	2.1	Plant flow 1.155 MGD
8/28/2011	Unknown	24	Rain	1.2	Plant flow 1.572 MGD
8/29/2011	Unknown	24	I&I		Plant flow 1.216 MGD
8/30/2011	Unknown	24	I&I		Plant flow 1.186 MGD
8/31/2011	Unknown	24	I&I		Plant flow 0.990 MGD
9/1/2011	Unknown	11	I&I		Plant flow 1.106 MGD
9/5/2011	Unknown	16	Rain	1.56	Plant flow 1.428 MGD
9/6/2011	Unknown	24	Rain	4.09	Plant flow 1.595 MGD
9/7/2011	Unknown	24	Rain	1.45	Plant flow 1.640 MGD
9/8/2011	Unknown	24	Rain + i&I	0.58	Plant flow 1.590 MGD
9/9/2011	Unknown	24	I&I		Plant flow 1.454 MGD
9/10/2011	Unknown	24	I&I		Plant flow 1.143 MGD
9/11/2011	Unknown	24	I&I, Rain	0.13	Plant flow 1.202 MGD
9/12/2011	Unknown	24	I&I		Plant flow 1.021 MGD
9/13/2011	Unknown	24	I&I		Plant flow 0.822 MGD
9/14/2011	Unknown	10.5			Plant flow 0.987 MGD
9/23/2011	Unknown	13	Heavy Rain	3.45	Plant flow 1.500 MGD
9/24/2011	Unknown	24	I&I		Plant flow 1.330 MGD
9/25/2011	Unknown	24	I&I		Plant flow 1.081 MGD
9/26/2011	Unknown	24	I&I		Plant flow 1.292 MGD
9/27/2011	Unknown	24	Rain	5.03	Plant flow 1.487 MGD
9/28/2011	Unknown	24	I&I, Rain	1.33	Plant flow 1.638 MGD
9/29/2011	Unknown	24	I&I, Rain	0.33	Plant flow 1.661 MGD
9/30/2011	Unknown	24	I&I		Plant flow 1.333 MGD
10/1/2011	Unknown	24	Rain, I&I	0.78	Plant flow 1.539 MGD
10/2/2011	Unknown	24	Rain, I&I	0.33	Plant flow 1.363 MGD
10/3/2011	Unknown	24	I&I		Plant flow 1.382 MGD
10/4/2011	Unknown	24	I&I		Plant flow 1.345 MGD
10/5/2011	Unknown	24	I&I		Plant flow 1.151 MGD
10/6/2011	Unknown	24	I&I		Plant flow 1.008 MGD
10/7/2011	Unknown	14	I&I		Plant flow 0.935 MGD
10/14/2011	Unknown	9	Rain, I&I	0.7	Plant flow 1.117 MGD

The Borough of Freeland Municipal Authority

2009-2016 CSO Performance Data

Year 2011 CSO Events (continued)

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
10/15/2011	Unknown	24	Rain, I&I	0.66	Plant flow 0.915 MGD
10/16/2011	Unknown	24	Rain, I&I	0.18	Plant flow 0.881 MGD
10/17/2011	Unknown	11.5			Plant flow 0.912 MGD
11/22/2011	Unknown	19.5	Rain	1.82	Plant flow 1.138 MGD
11/23/2011	Unknown	24	Rain, I&I	0.17	Plant flow 1.432 MGD
11/24/2011	Unknown	24	I&I		Plant flow 1.230 MGD
11/25/2011	Unknown	24	I&I		Plant flow 1.089 MGD
11/26/2011	Unknown	24	I&I		Plant flow 0.932 MGD
11/27/2011	Unknown	10	I&I		Plant flow 0.988 MGD
11/29/2011	Unknown	20	Rain	1.5	Plant flow 1.505 MGD
11/30/2011	Unknown	24	I&I		Plant flow 1.429 MGD
12/1/2011	Unknown	24	I&I		Plant flow 1.234 MGD
12/2/2011	Unknown	24	I&I		Plant flow 1.101 MGD
12/3/2011	Unknown	24	I&I		Plant flow 0.996 MGD
12/4/2011	Unknown	10	I&I		Plant flow 1.071 MGD
12/7/2011	Unknown	12	Rain	2.08	Plant flow 1.590 MGD
12/8/2011	Unknown	24	I&I		Plant flow 1.526 MGD
12/9/2011	Unknown	24	I&I		Plant flow 1.383 MGD
12/10/2011	Unknown	24	I&I		Plant flow 1.230 MGD
12/11/2011	Unknown	24	I&I		Plant flow 1.093 MGD
12/12/2011	Unknown	24	I&I		Plant flow 0.966 MGD
12/13/2011	Unknown	13.5	I&I		Plant flow 0.994 MGD
2011 Total CSO Discharge	12.768	Million Gallons	(Note: not all CSO discharge was measured)		

The Borough of Freeland Municipal Authority
2009-2016 CSO Performance Data

Year 2012 CSO Events

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
1/27/2012	Unknown	15.25	Rain, Snowmelt	1.01	Plant flow 1.157 MGD
1/28/2012	Unknown	10.75	I&I		Plant flow 1.056 MGD
5/15/2012	0.335	24	Rain	1.16	No plant flow recorded
5/16/2012	0.060	24	Rain	0.9	No plant flow recorded
5/17/2012	0.003	24	Rain	0	No plant flow recorded
2012 Total CSO Discharge	0.398	Million Gallons	(Note: not all CSO discharge was measured)		

Year 2013 CSO Events

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
1/31/2013	0.002	24	Rain		Excessive flow from rain
3/13/2013	0.411	24	Rain/ I&I		Heavy rain/ snowmelt
7/2/2013	0.528	17	Rain/ I&I	1.06	Heavy Rain
7/3/2013		15			
8/9/2013		16			
8/10/2013	0.315	11.25	Rain, I&I	2.65	
9/10/2013	0.021	12	Contractor hit pipe		
10/7/2013	0.363	7	Heavy Rain	1.5	
11/26/2013	0.246	23.5	Heavy Rain		
12/28/2013	0.636	18	Rain, Snowmelt		
2013 Total CSO Discharge	2.522	Million Gallons	(Note: not all CSO discharge was measured)		

**The Borough of Freeland Municipal Authority
2009-2016 CSO Performance Data**

Year 2014 CSO Events

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
1/11/2014	0.1685	13	Heavy Rain	0.7	
1/12/2014	0.1685	13	Heavy Rain		
2/11/2014	1.495	19.75	Heavy Rain	0.3	
3/29/2014	0.194	0.5	Heavy Rain	0.93	
3/30/2014	0.333	24	Heavy Rain	1.09	
3/31/2014	0.187	24	Heavy Rain		
4/3/2014	0.691	thru below		0.3	
4/7/2014	0.108	80		0.33	
4/15/2014	1.891	thru below	Heavy Rain	1.5	
4/16/2014	0.299		Heavy Rain		
4/17/2014	0.247		Heavy Rain		
4/18/2014	0.182	96	Heavy Rain		
4/30/2014	0.438	18.5	Heavy Rain	1.33	
5/1/2014	0.01	7			
5/16/2014	4.84	15.5	Heavy Rain	3.5	
5/17/2014	0.472	24			
5/18/2014	0.339	14.5			
6/10/2014	0.036	0.75	Heavy Rain	0.18	
6/13/2014	0.004	0.5	Heavy Rain	0.18	
7/2/2014	0.203	0.5	Heavy Rain	0.89	
7/3/2014	0.017	0.5	Heavy Rain	1.1	
7/23/2014	0.1	0.25	Heavy Rain	0.36	
8/12/2014	0.07	1.75	Heavy Rain	1.44	
9/6/2014	0.036	0.25	Heavy Rain	0.93	
10/15/2014	10.893	11.5	Heavy Rain	4.4	
10/16/2014	0.283	8.75	Heavy Rain		
11/13/2014	0.2	2.5		0.12	
2014 Total CSO Discharge	23.905	Million Gallons			

The Borough of Freeland Municipal Authority
 2009-2016 CSO Performance Data

Year 2015 CSO Events

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
3/11/2015	0.094	7.75	Rain/Snow Melt		
3/14/2015	0.037	3.5	Rain/Snow Melt	0.27	
4/21/2015	0.412	14	Heavy Rain		
5/27/2015	0.141	0.5	Heavy Rain	1.05	
5/31/2015	0.407	2	Heavy Rain	2.2	
6/2/2015	0.535	8	Heavy Rain	0.535	
6/14/2015	0.571	1.25	Heavy Rain	0.571	
6/15/2015	1.314	3	Heavy Rain	1.314	
6/21/2015	0.012	1.25	Heavy Rain	0.012	
6/27/2015	0.043	4.5	Heavy Rain	0.043	
6/28/2015	0.02	1.25	Heavy Rain	0.2	
6/30/2015	0.055	1.5	Heavy Rain	1.04	
8/10/2015	0.243	1	Heavy Rain	0.04	
8/11/2015	0.121	0.5	Heavy Rain	1.37	
10/28/2015	0.335	4.5	Heavy Rain		
11/10/2015	0.034	2	Heavy Rain	1	
12/2/2015	0.003	0.25	Heavy Rain		
12/29/2015	0.001	6	Heavy Rain	2.76	
2015 Total CSO Discharge	4.378	Million Gallons			

The Borough of Freeland Municipal Authority
 2009-2016 CSO Performance Data

Year 2016 CSO Events

Bypass Date	Bypass Flow (MGD)	Duration (Hrs)	Cause	Precip (in)	Comments
1/19/2016	0.129	8.75	Heavy Rain		
2/3/2016	0.058	3	Heavy Rain	0.69	
2/16/2016	0.641	16.5	Heavy Rain	1.21	
2/17/2016	0.041	22.5	Heavy Rain	0.01	
2/24/2016	0.289	8.5	Heavy Rain	2.14	
2/25/2016	0.617	24	Heavy Rain	0.09	
2/26/2016	0.002	14.25	Heavy Rain		
4/7/2016	0.257	9	Heavy Rain	1.7	
5/3/2016	0.003	0.25	Heavy Rain	0.09	
6/5/2016	0.142	2.75	Heavy Rain	1.68	
6/27/2016	0.001	0.083	Heavy Rain	0.59	
6/28/2016	0.237	2.25	Heavy Rain	1.74	
7/9/2016	0.004	0.25	Heavy Rain	0.16	
7/14/2016	0.01	0.45	Heavy Rain	0.33	
7/25/2016	0.014	0.5	Heavy Rain	1	
8/1/2016	0.249	2.5	Heavy Rain	2.12	
8/12/2016	0.07	1	Heavy Rain	0.65	
8/18/2016	0.004	0.12	Heavy Rain		
8/23/2016	0.181	1.75	Heavy Rain		
9/19/2016	0.022	0.5	Heavy Rain	0.2	
2016 Total CSO Discharge	2.971	Million Gallons			