



June 5, 2020

To: Benjamin McPherson (NYSDEC)

From: Todd Waldrop (Inventum)

CC: Jon Williams (Riverview); John Yensan (OSC); Craig Slater (CS Law); John Black, P.E. and James Edwards (Inventum)

RE: Surface Water System Maintenance Work Plan  
Riverview Innovation & Technology Campus, Inc.  
Brownfield Cleanup Program Site No. C915353  
Town of Tonawanda, New York

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Inventum Engineering, P.C. (Engineering), on behalf of Riverview Innovation & Technology Campus, Inc. (Riverview), is submitting this Surface Water Sewer System Work Plan (work plan) to the New York State Department of Environmental Conservation (NYSDEC) for the Riverview Brownfield Cleanup Program (BCP) Site (#C915353) located at 3875 River Road, Tonawanda, New York.

## Background and Purpose

Prior to their October 2018 bankruptcy, Tonawanda Coke Corporation (TCC) operated under Stormwater discharge permit NY0002399, which designated four outfalls for discharge of water:

- Outfall #001 – Non-contact cooling water, boiler blowdown and stormwater runoff from operational areas;
- Outfall #002 – Stormwater runoff from coal pile storage area and coal storage/handling;
- Outfall #003 – Not currently active. Operation of the cogeneration plant that was the sole source of effluent to Outfall #003 ceased in November 2009; and
- Outfall #004 – Combined flow from Outfalls 001, 002 and 003.

Beginning in October 2018, the United States Environmental Protection Agency (USEPA) managed the water discharges at the Former TCC properties through their authority as the On-scene Coordinator. Inventum has reviewed the data collected by the USEPA (Table 1) and compared the results to the former TCC Permit limits and monitoring only standards. The former TCC SPDES permit was not in force during this period and no data is available to Inventum from the period prior to the USEPA assumption of control of the site. The discharge from Outfall #001 is located on the property and does not directly discharge off the property. This flow migrates on the property where it is combined with flow from other non-owned industrial properties before flowing from the property and ultimately the combined discharges flow to the Niagara River.

The USEPA maintained control and management of surface water through February 2020. Since being accepted into the BCP on February 14, 2020, Riverview has been continuing the management of surface water discharges under the draft Storm Water Pollution Plan (SWPPP) of March 12, 2020 which incorporates the general requirements of the former TCC permit. There are no longer any non-contact cooling water or boiler blowdown discharges at the property.

The data collected at the three Outfalls is presented in Table 1. The three outfalls include Outfall #001 which is the discharge from the concrete lined settling ponds, Outfall #002 that consists of the weir discharge from the coal and coke yards and State Superfund Operable Unit - Site 110, and Outfall #004 which is combined from #001 and #002 that discharges from the BCP Site and two State Superfund Site Operable Units (Sites 109 and 110). In accordance with the former permit, each outfall had specific sampling requirements and these requirements have been incorporated into the draft SWPPP. The discharges were sampled on a monthly, quarterly, and semi-annual basis by the USEPA and will continue to be sampled by Riverview in accordance with the former TCC Permit and subsequently the final SWPPP that was approved by the NYSDEC on June 1, 2020.

The sample results for Outfalls #002 and #004 have been consistently lower than the former permit guidance over the USEPA period of management. The semi-annual list of parameters was analyzed on samples collected from Outfall #001 for October 2018, December 2018, July 2019, October 2019, and December 2019. As shown on Table 1, the analyses in October and December 2018 utilized protocols that did not allow quantification down to the permit limit concentration for benzene, naphthalene, or toluene. The same protocol was used for the July 2019 samples, but naphthalene was detected at 0.005 milligrams per liter (mg/L) in the sample and at 0.00529 mg/L in the duplicate sample compared to the former permit limit 0.003 mg/L. The results for the December 2019 sample analyses indicated that ammonia, cyanide, benzene, naphthalene, and iron were detected. In the January 2020 sample, the USEPA detected benzene, toluene, and naphthalene, cyanide and iron above the former permit guidance. In the February 2020 sample, the USEPA detected iron above the former permit guidance.

### Surface Water Collection System

The flow that discharges from Outfall #001 originates from the former process area, is conveyed through a series of storm sewers, and ultimately to a series of two concrete lined settling ponds (Figure 1 and Figure 1a) on Site 109. The enclosed Figure 1 is the October 2016 O'Brien & Gere Engineers, Inc., Figure 1 titled Storm and Wastewater Conveyance and Discharge Limits and Figure 1a, and Figure 2 are excerpt from this Figure.

The concrete pad to the right in Figure 1a (East) is a ramp to allow access for cleaning. The chase and flume are within the narrow channel along the south wall of structure in Figure 1a.

The flow currently enters the north chamber and flows over a weir into the south chamber before flowing over a second weir into the chase and flume that directs flow to the Outfall. The flow into the north chamber comes from a storm sewer that directs surface water flow from a collection sump behind the "Mansion" (former office building in the northwest corner of the BCP Site). The collection sump is often referred to as the "Mansion Sump". . Underground, east of the ponds is an influent manifold. No as-built drawing of the manifold has been found, but the design drawing and the valves that are visible suggest a 3-leg manifold into the settling ponds leading to the north pond, south pond, and directly to



the chase. During the IRM, efforts will be attempted to confirm the flow configuration of the manifold. Each valve will be opened and tested during completion of the Scope of Work.

The flow into the collection sump (referred to as the “Mansion Sump”) comes from two surface water collection systems (Figure 2); the north storm sewer system (green) and the box culvert (black- blue dashed line). The north sewer collects surface water from the area of the property starting at an inlet near the fire water standpipe to the east wall of the Mansion Sump. The box culvert collects surface water along “Broadway” (the road between the battery and the by-products and boiler house areas) starting at an inlet southeast of the boiler house. The box culvert directs flow to the west where it discharges to another box culvert that conveys flow north along the former parking lot to the south side of the Mansion Sump.

### Stormwater Improvement Activities

Although the USEPA had the authority for stormwater management through February 2020, Riverview was actively improving conditions upgradient of the Outfalls. Riverview conducted a stormwater inspection soon after the purchase was approved. After the sale was completed, Riverview initiated activities to improve the management of stormwater on the property:

- The Mansion Sump was nearly full of sediment. The sediment was removed from the sump to improve retention and limit the potential for sediment transport to the Concrete-lined Settling Ponds;
- A boom was installed across the discharge from the Mansion Sump to limit the movement of lighter than water biological growth;
- Stone check dams were constructed across several low areas along the South Ditch to redirect flow to the stormwater collection system;
- The eastern end of the South Ditch was dredged to remove coal fines;
- Drums and containers were moved away from stormwater inlets;
- Booms were placed around catch basins and inlets and the stormwater inlet at the warehouse was cleared; and
- A visual inspection of the drainage system in the process area was completed in February 2020 and the result of that inspection is the development of this Work Plan.

### February 2020 Inspection

On February 5, 2020 Inventum conducted an inspection of the surface water management systems in the former process area at the property in an effort to document the conditions at the time of transition to Riverview. The concrete-lined settling ponds, collection sump, stormwater inlets, and three locations along the box culvert were observed. The key observations can be summarized as follows:

- Outfall #001 appeared to be covered with biological growth;
- There was an accumulation of sediment at the point the flow enters the north pond of the concrete lined settling ponds. No equipment was available to assess the entire basin;
- There were no access points to inspect the storm sewer between the collection sump and the concrete lined settling ponds;
- There was flow into the collection sump from the box culvert. No significant flow was coming from the north storm sewer system;



- Oil absorbent booms were in place to prevent any floating liquids from discharging from the collection sump. No oil or an oil sheen was observed;
- The water in the collection sump had an orange appearance (similar to the biological growth at the Outfall #001);
- There was no flow into any of the inlets along the north storm sewer system. One inlet, near the warehouse was buried, and was cleared by OSC. The inlet near the Oil House was plugged and for the interim the inlet remains plugged;
- The covers over the box culvert were removed at three locations along the box culvert (designated BC001, BC002, and BC003);
- The flow in the box culvert was estimated between not discernable to 10-gallons to 15-gallons per minute (GPM);
- The box culvert contained between 6-inches and 18-inches of sediment/sludge at the three locations inspected; and
- There were numerous sections of the covers over the box culvert that were potentially unstable.

The inspection was limited by the accumulated sediment in the box culvert and several inlets along the North Storm Sewer. The available drawings for the storm sewer systems are limited. The drawings that are available are not consistent with each other and do not match the observations in the field. Without the ability to define the storm sewer system it is not possible to determine the sources of the constituents detected in the flow at Outfall #001.

## Scope of Work

A phased approach is proposed to define the stormwater collection network in the former process area. Without an understanding of the sources of flow, it is not possible to address the concentrations in the Outfall #001 discharge. Prior to the mapping Riverview will request modification of the Town Sewer permit limit (Industrial Sewer Connection Permit No. 331) to allow discharge of water rerouted during the inspection and cleaning activities.

### Phase 1 – System Mapping and Hydraulics

The potential sources of the flow and concentrations of constituents in the Outfall #001 discharge must be quantified. The exact routes of the sewers leading to the concrete-lined settling ponds is unknown. The available drawings are not complete or consistent with field observations. During this Phase the following activities will be conducted:

Sewer Alignment – The alignments of the sewers in the process area are fairly well defined, with a few exceptions:

1. Box culvert – It is not clear that flow is continuous from the east to the west. Several sections of the box culvert will be opened to determine if there are laterals conducting flow to or away from the culvert. It is likely that the majority of the box culvert will be exposed, and the sediment removed;
2. Compressor Building Drainage (building number 66, Figure 4) – It is unknown how the area near the former compressor building drains. The heavy vegetation will be cut to allow an inspection of the area to determine if there are any inlets south of the building;



3. Efforts will be attempted to confirm the flow configuration and operation of all manifolds where present which potentially includes the multiple pipes entering and leaving the Mansion sump and the concrete-lined settling ponds manifold. Each valve at the concrete lined settling ponds will be opened and the flow monitored during this phase of work once identified.
4. Northern Storm Sewer – The alignment from the Oil House (building number 6, Figure 3) to the Mansion (building number 1, Figure 3) sump is unknown. The drop inlets that can be accessed will be opened and the pipes in the inlets will be mapped and it will be attempted to confirm the flow configuration of the manifold at the Mansion sump (structure number 2, Figure 3). If required, a vacuum truck will be used to clean the inlet structures; and
5. North-South Storm Sewer - The location and number of manholes along the north south storm sewer between the Mansion Sump and the concrete lined settling ponds is unknown. The vegetation along this alignment will be cut, the manholes identified and opened to map piping into and from the manholes. If required, a vacuum truck will be used to clean the inlet structures.

As sections of the box culvert are cleared, any laterals identified shall be marked with survey stakes and recorded on the site key plan. To the extent possible the following will be recorded:

1. Flow direction (into or from the lateral);
2. Estimated flow rate;
3. Visual and olfactory observations (liquid and solids);
4. Condition of lateral (free flowing, partially blocked, plugged);
5. pH, temperature and settleable solids in liquid if there is flow from the laterals;
6. Nearby sources of flow to the laterals; and
7. Changes in flow with time.

The recovered sediment will be staged on and covered with polyethylene sheeting on the pad for the former bag house (east of the battery) or in lined roll off boxes. If the sediment is stored on poly sheeting the edges of the sheeting will be diked to prevent any liquid in the sediment from migrating out of the staged stockpile. The recovered sediment will be sampled for the following parameters to properly characterize the recovered sediment for off-site disposal.

- SVOCs using EPA Method 8270D
- VOCs using EPA Method 8260C
- Metals using EPA Method 6010C
- Mercury using EPA Method 7470A

## Phase 2 - Sampling

Samples will be collected along the box culvert system to identify any individual significant flows (greater than 3 gallons per minute [GPM]) into the system and of the composite quality entering the Mansion Sump. These samples will be collected after the mapping activities are completed.

The exact sampling program cannot be defined in advance of the Phase 1 inspection, but bottles will be available for the following:

Collection of liquid and sediment samples from five locations in the system. The glassware and sample equipment will include aliquots for the following laboratory analyses of water:



- Priority Pollutant (PP) SVOCs using EPA Method 625.1
- PP VOCs using EPA Method 624.1
- PP Metals using EPA Method 200.8
- Mercury using EPA Method 1631E<sup>1\*</sup>

The glassware and sample equipment will include aliquots for the following laboratory analyses of solids:

- SVOCs using EPA Method 8270D
- VOCs using EPA Method 8260C
- Metals using EPA Method 6010C
- Mercury using EPA Method 7470A

No sooner than 48-hours after the mapping and cleaning activities are completed, a 24-hour composite sample will be collected at Outfall #001. The sample will include the analysis for the quarterly and semi-annual parameters in the approved SWPPP.

### Phase 3 – Analysis

Following plotting of the pipes and laterals along the three storm sewer systems; box culvert, north storm sewer and north south storm sewer; the sources and discharges of each system will be carefully defined on the grid base map. After receipt of the laboratory analyses, the data will be reviewed, the results presented on the mapping compiled on the grid maps, and an analysis of any required follow up actions will be developed.

### Schedule

Surface Water System Maintenance Work Plan will be completed in phases as defined above. The following schedule will be followed (all times are keyed from approval):

- Phase 1 – System Mapping and Hydraulics
  - Box Culvert Mapping – 2 weeks
  - Compressor Building Area Drainage – 2 weeks
  - Northern Storm Sewer – 2 weeks
  - North-south Storm Sewer – 3 weeks
- Phase 2 – Sampling
  - Box Culvert – 5 weeks (including Laboratory)
  - Outfall #001 – 5 weeks (including Laboratory)
- Phase 3 – Analysis
  - Draft Report – 4 weeks after data is received from laboratory.

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<sup>1</sup> Inventum specified EPA Method 1631E as with method will allow reporting to 50 ng/L and will be beneficial information to us as we implement the SWPPP.



## Tables

Outfall 001			QUANTITY OR CONCENTRATION (USEPA SITE MANAGEMENT PERIOD)																													
PARAMETER	FORMER TCC PERMIT REQUIREMENT																															
	MINIMUM	MAXIMUM	UNITS	23-Oct-18		Dec. 12 and 13, 2018		Feb. 5 and 6, 2019		Feb. 26 and 27, 2019		Mar. 19 and 20, 2019		Apr. 16 and 17, 2019		May 20 - 22, 2019		Jun. 18 - 20, 2019		Jul. 29 and 30, 2019		Aug. 28 and 29, 2019		Sept. 23 and 25, 2019		29-Oct-19		26-Nov-19		17-Dec-19		28-Jan-20
SAMPLE DATE >				Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	
Flow		Monitor Only	GPM	NS	1,410		309		107		105		157		72		81		NM		NM		NM		NM		NM		NM		NM	
Flow		Monitor Only	GPD		2,030,000		445,000		154,000	0	151,000	0	226,000	0	103,000		117,000															
pH	6.0	9.0	S.U.	8.35	7.82		8.3		6.3		7.1		7.3		7.2		7.4		7.6		7.0		6.3									
Total Suspended Solids (Net)		50	mg/l	NS	0		33		35		24		25		10 U		10 U		10 U	10 U	10 U	10 U	10U									
Oil & Grease (Net)		15	mg/l	<5.8U	<5.7U		5.4 U		6.0 U		5.5 U		5.9 U		5.6 U		5.8 U		5.9 U	5.9 U	5.4 U	5.7 U	5.9 U	5.8 U	5.6UJ	5.6UJ	5.4U		5.7U	5.4U		
Temperature		102	°F	56.6	39.7		50.2		35.6		48.5		47.1		70.7		72.0		73		67.3		73.4									
Ammonia (as N)		1.5	mg/l	<0.1U	<0.10U														0.86	0.88										3.6		
Ammonia (as N)		Monitor Only	Lb./Day	N.D.	N.D.		0	0	0	0	0	0	0	0	0	0	0	0	NM	NM	0	0	0	0	0	0	0	0	0	0	0	
Total Cyanide		0.03	mg/l	<0.001U	<0.01U														0.01 U	0.01 U									0.05	0.056	0.052	
Total Cyanide		Monitor Only	Lb./Day	N.D.	0	N.D.	0	0	0	0	0	0	0	0	0	0	0	0	N.D.	N.D.	0	0	0	0	0	0	0	0	0	0	0	
Phenol (Net)		0.03	mg/l	NS	0														0.01 U, L										.011L			
Phenol (Net)		Monitor Only	Lb./Day	NS	0	N.D.	0	0	0	0	0	0	0	0	0	0	0	0	N.D.	NM	0	0	0	0	0	0	0	0	0	0	0	
Benzene		0.0015	mg/l	<0.005U	<0.005U														5.00 U	5.00 U									0.009	0.011		
Benzene		Monitor Only	Lb./Day	N.D.	0	N.D.	0	0	0	0	0	0	0	0	0	0	0	0	N.D.	N.D.	0	0	0	0	0	0	0	0	0	0	0	
Benzo(a)pyrene		0.002	mg/l	NS	NS																								U			
Benzo(a)pyrene		Monitor Only	Lb./Day	NS	0	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Naphthalene		0.003	mg/l	<0.00515	<0.0054U														0.005	0.00529									0.012	0.018		
Naphthalene		Monitor Only	Lb./Day	N.D.	0	N.D.	0	0	0	0	0	0	0	0	0	0	0	0	NM	NM	0	0	0	0	0	0	0	0	0	0	0	
Toluene		0.003	mg/l	<0.005U	<0.005U														0.005 U	0.005 U									U	0.037(J)		
Toluene		Monitor Only	Lb./Day	N.D.	0	N.D.	0	0	0	0	0	0	0	0	0	0	0	0	NM	NM	0	0	0	0	0	0	0	0	0	0	0	
Fluorene		1.5	mg/l	NS	0.13														0.68	0.67									0.63			
Surfactant		0.5	mg/l	NS	<0.1U														0.1 U	0.1 U									U			
Iron		4	mg/l																										7.63	13.6	18.0	18.0



Outfall 002																																		
PARAMETER	FORMER TCC PERMIT REQUIREMENT			QUANTITY OR CONCENTRATION (USEPA SITE MANAGEMENT PERIOD)																														
	SAMPLE DATE >	MINIMUM	MAXIMUM	UNITS	23-Oct-18	23-Oct-18	Dec. 12 and 13, 2018	Feb. 5 and 6, 2019	Feb. 26 and 27, 2019	Mar. 19 and 20, 2019	Apr. 16 and 17, 2019	May 20 - 22, 2019	Jun. 18 - 20, 2019	Jul. 29 and 30, 2019	Aug. 28 and 29, 2019	Sept. 23 and 25, 2019		26-Nov-19	17-Dec-19	17-Dec-19	Summary													
				Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Maximum	Minimum	Average					
Flow		Monitor Only	GPM	NS		1 inch		1 inch		1 inch		1 inch		1 inch		1 inch		NM										0	0	0				
Flow		Monitor Only	GPD	NS																							0	0	0					
pH	6.0	9.0	S.U.	7.99		6.92		8.2		7.1		7.2		6.7		7.4		7.8		7.3							8.2	6.7	7.4					
Temperature		Not on TCC	°F	50.9				48.7		NM		50.9		47.1		64.2		70.9									70.9	47.1	55.5					
Total Suspended Solids		50	mg/l	NS		<10U		50		11		11		10 U		10 U		10 U									50.0	11	24.0					
Iron		4	mg/l	0.1		0.74		3.44		1.35		0.79		0.759	0.702	0.469	0.860	0.187	0.0595								1.02	0.196	0.459	0.498	0.41	3.4	0.0595	0.8
Cyanide		0.1	mg/l	<0.01U		0.021L																					0.042	.010U	0.022	0.022	0.021	0.0	0.021	0.0
Copper		0.2	mg/l	<0.01U		NS																					0.010U	.020U						
Nickel		0.5	mg/l	<0.02U		0.042																					0.020U	.020U				0.0	0.042	0.0
Zinc		0.5	mg/l	<0.02U		0.142																					0.406	0.0207	0.035	0.0349		0.4	0.0207	0.1
Surfactant		0.5	mg/l			<0.10U																							U					
Aluminum		1	mg/l	0.25		0.147																					0.247	.100U	0.16	0.164		0.3	0.147	0.2
Manganese		1	mg/l	0.047		0.818																					0.289	0.126	0.252	0.253		0.8	0.047	0.3

Outfall 004																																			
PARAMETER	FORMER TCC PERMIT REQUIREMENT			QUANTITY OR CONCENTRATION (USEPA SITE MANAGEMENT PERIOD)																															
	SAMPLE DATE >	MINIMUM	MAXIMUM	UNITS	23-Oct-18	23-Oct-18	Dec. 12 and 13, 2018	Feb. 5 and 6, 2019	Feb. 26 and 27, 2019	Mar. 19 and 20, 2019	Apr. 16 and 17, 2019	May 20 - 22, 2019	Jun. 18 - 20, 2019	Jul. 29 and 30, 2019	Aug. 28 and 29, 2019	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate	Result/Duplicate						
Flow (May 1 to Oct. 31)		Monitor Only	GPM	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
Flow (May 1 to Oct. 31)		Monitor Only	GPD																																
Temperature (First Bi-monthly) (May 1 to Oct. 31)		Monitor Only	°F	57		41		43.2		39.9		49.1		50.9		66.5		72.5		70.9		71.3		73.9											
Temperature (Second Bi-monthly) (May 1 to Oct. 31)		Monitor Only	°F																																
Mercury		50	ng/l			<50U				50U																									
pH		Monitor Only	S.U.	8.44				6.7		7.2		7.5		7.1		7.6		7.7		7.3		7.1		7.4											

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

- Notes:
- 1 mg/l - 8.345 x 10<sup>-6</sup> pounds per gallon
  - Detection Limit greater than former discharge standard.
  - Calculated Value
- J - The reported value is an estimate

Table 1  
Water Quality at Former  
Outfall #001

Table 2  
Upgradient Water Quality

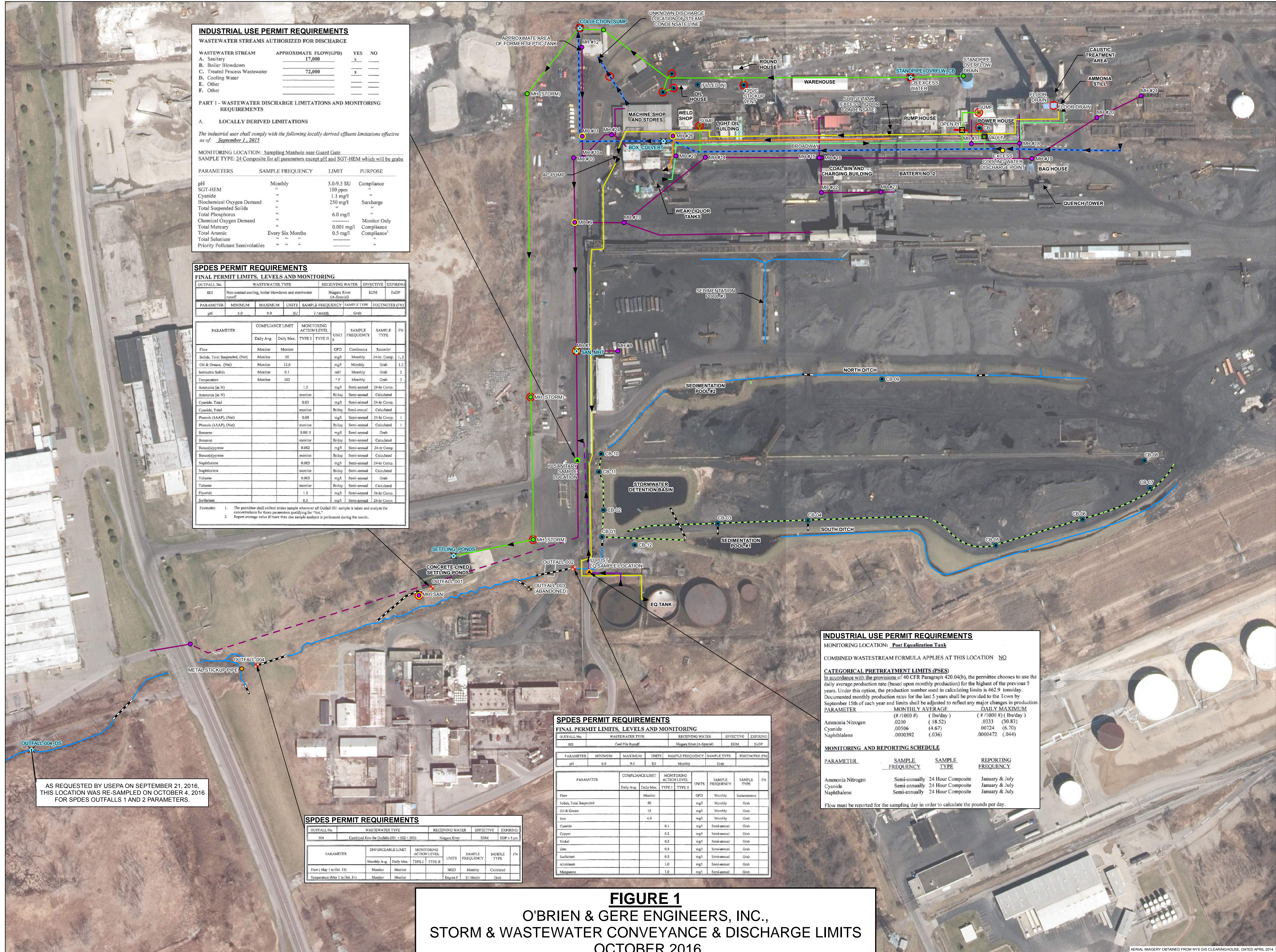
				OutFall #001	Mansion Sump	Box Culvert West of Process Area, Near Former Light Oil Building	Box Culvert Adjacent to Battery	Box Culvert East of Battery				
				Discharge Point from Concrete Lined Settling Basins	Internal Discharge At Influent from Box Culvert	Internal Flow, not a Discharge Point	Internal Flow, not a Discharge Point	Internal Flow, not a Discharge Point				
				Former Permitted Outfall to Stream on Site 109	Not a Regulated Discharge Location	Not a Regulated Discharge Location	Not a Regulated Discharge Location	Not a Regulated Discharge Location				
				OTF001 -02052020	MS001-02052020	BC001-02052020	BC002-02052020	BC003-02052020				
Former Permit Limit				Result	Interpreted Qualifiers	Interpreted Qualifiers	Interpreted Qualifiers	Interpreted Qualifiers				
<b>FIELD PARAMETERS</b>												
	Flow (Estimated)	Monitor	GPD	72000	Estimate	43200	Estimate	Not Discernable	14400	Estimate	14400	Estimate
	pH	6.0 to 9.0	S.U.	7.35		6.46		3.81	3.75		4.24	
	Temperature	No Limit	°F									
<b>METALS</b>												
743C20:C429-97-6	Mercury	0.00005	mg/L									
7429-90-5	Aluminum	1	mg/L	0.426		4.85			11.9		13.9	
7440-36-0	Antimony	No Limit	mg/L									
7440-39-3	Barium	No Limit	mg/L	0.0291	J	0.03	J		< 0.0500		< 0.0500	
7440-41-7	Beryllium	No Limit	mg/L	< 0.00250		< 0.00250			< 0.00250		< 0.00250	
7440-43-9	Cadmium	No Limit	mg/L									
7440-70-2	Calcium	No Limit	mg/L									
7440-47-3	Chromium	No Limit	mg/L	0.00303	J	0.0441			0.0717		0.082	
7440-48-4	Cobalt	0.2	mg/L									
7440-50-8	Copper	No Limit	mg/L									
7439-89-6	Iron	4	mg/L	21.7		50			73		54.7	
7439-92-1	Lead	No Limit	mg/L									
7439-95-4	Magnesium	No Limit	mg/L									
7439-96-5	Manganese	1	mg/L	0.996		1.39			2.09		1.82	
7440-02-0	Nickel	0.5	mg/L									
7440-09-7	Potassium	No Limit	mg/L									
7782-49-2	Selenium	No Limit	mg/L									
7440-23-5	Sodium	No Limit	mg/L									
7440-28-0	Thallium	No Limit	mg/L									
7440-66-6	Zinc	0.5	mg/L	0.34		0.718			2.15		2.45	
<b>SEMI-VOLITILE ORGANIC COMPOUNDS</b>												
206-44-0	Fluoranthene	No Limit	ug/L									
<b>VOLITILE ORGANIC COMPOUNDS</b>												
67-64-1	Acetone	No Limit	ug/L	< 10.0		< 10.0		5.96	J	6.33	J	< 10.0
71-43-2	Benzene	No Limit	ug/L	18.1		87.7		4.19		0.655	J	< 1.00
<b>OTHER INORGANIC COMPOUNDS</b>												
57-12-5	Cyanide, Total	0.1	mg/L									
7723-14-0	Phosphorus, Total	No Limit	mg/L									
<b>TOTAL SUSPENDED SOLIDS</b>												
TSS	Solids, Suspended	50	mg/L									
<b>SURFACTANTS</b>												
	Surfactants	0.5	mg/L									

Notes:

1. Detections and estimated values only. All others were ND - Not Detected.
2. Samples and field data collected February 5, 2020.
3. Samples were collected for design purposes only, compliance samples are collected by the USEPA.

## Figures

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**INDUSTRIAL USE PERMIT REQUIREMENTS**  
WASTEWATER STREAMS AUTHORIZED FOR DISCHARGE

WASTEWATER STREAM	APPROXIMATE FLOW (GPD)	YES	NO
A. Sanitary	17,000	X	
B. Boiler Blowdown			X
C. Treated Process Wastewater	72,000		X
D. Cooling Water			
E. Other			
F. Other			

**PART 1 - WASTEWATER DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS**

A. **LOCALLY DERIVED LIMITATIONS**

The industrial user shall comply with the following locally derived effluent limitations effective as of: September 1, 2015

MONITORING LOCATION: Sampling Manhole near Guard Gate  
SAMPLE TYPE: 24 Composite for all parameters except pH and SGT-HEM which will be grabs

PARAMETERS	SAMPLE FREQUENCY	LIMIT	PURPOSE
pH	Monthly	5.0-9.5 SU	Compliance
SGT-HEM	"	100 ppm	"
Cyanide	"	1.1 mg/l	"
Fluoride	"	250 mg/l	Surcharge
Total Suspended Solids	"	6.0 mg/l	"
Total Phosphorus	"	"	"
Chemical Oxygen Demand	"	"	Monitor Only
Total Mercury	Every Six Months	0.001 mg/l	Compliance
Total Arsenic	"	0.5 mg/l	"
Total Selenium	"	"	"
Priority Pollutant Semivolatiles	"	"	"

**SPDES PERMIT REQUIREMENTS**  
FINAL PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
001	Non-contact cooling, boiler blowdown and stormwater	Niagara River (A-Special)	EDM	EDDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	5.0	9.0	SU	2 / month	Grab	

PARAMETER	COMPLIANCE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Daily Avg	Daily Max	TYPE I	TYPE II				
Flow	Monitor	Monitor			GPD	Continuous	Recorder	
Solids, Total Suspended, (Net)	Monitor	30			mg/l	Monthly	Grab	1,2
Oil & Grease, (Net)	Monitor	15.0			mg/l	Monthly	Grab	1,3
Temperature	Monitor	0.1			°F	Monthly	Grab	2
Ammonia (as N)	Monitor	102			mg/l	Monthly	Grab	2
Ammonia (as N)	Monitor		1.5		mg/l	Semi-annual	24-Hr Comp.	
Cyanide, Total	Monitor		0.03		mg/l	Semi-annual	24-Hr Comp.	
Cyanide, Total	Monitor				mg/l	Semi-annual	Calculated	
Phenols (AAP, Net)	Monitor		0.08		mg/l	Semi-annual	24-Hr Comp.	1
Phenols (AAP, Net)	Monitor				mg/l	Semi-annual	Calculated	1
Benzene	Monitor	0.0015			mg/l	Semi-annual	Grab	
Benzene	Monitor				mg/l	Semi-annual	Calculated	
Benzonaphthylene	Monitor	0.002			mg/l	Semi-annual	24-Hr Comp.	
Benzonaphthylene	Monitor				mg/l	Semi-annual	Calculated	
Naphthalene	Monitor	0.003			mg/l	Semi-annual	24-Hr Comp.	
Naphthalene	Monitor				mg/l	Semi-annual	Calculated	
Toluene	Monitor	0.003			mg/l	Semi-annual	Grab	
Toluene	Monitor				mg/l	Semi-annual	Calculated	
Fluoride	Monitor	1.5			mg/l	Semi-annual	24-Hr Comp.	
Surfactant	Monitor	0.3			mg/l	Semi-annual	24-Hr Comp.	

Footnotes:  
1. The permittee shall collect and analyze sample whenever all Outfall 001 sample is taken and analyze the concentrations for those parameters qualifying for "Net."  
2. Report average value if more than one sample analysis is performed during the month.

**INDUSTRIAL USE PERMIT REQUIREMENTS**  
MONITORING LOCATION: Post Equalization Tank

COMBINED WASTEWATER FORMULA APPLIES AT THIS LOCATION **NO**

**CATEGORICAL PRETREATMENT LIMITS (PSEL)**  
In accordance with the provisions of 40 CFR Paragraph 420.04(b), the permittee chooses to use the daily average production rate (based upon monthly production) for the highest of the previous 5 years. Under this option, the production number used in calculating limits is 462.9 tons/day. Documented monthly production rates for the last 5 years shall be provided to the Town by September 15th of each year and limits shall be adjusted to reflect any major changes in production.

PARAMETER	MONTHLY AVERAGE	DAILY MAXIMUM
	(# /1000 #) ( lbs/day )	( # /1000 #) ( lbs/day )
Ammonia Nitrogen	.0200 ( 18.52 )	.0233 ( 20.83 )
Cyanide	.00506 ( 4.67 )	.00724 ( 6.70 )
Naphthalene	.0000392 ( 0.36 )	.0000472 ( 0.44 )

**MONITORING AND REPORTING SCHEDULE**

PARAMETER	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
Ammonia Nitrogen	Semi-annually	24 Hour Composite	January & July
Cyanide	Semi-annually	24 Hour Composite	January & July
Naphthalene	Semi-annually	24 Hour Composite	January & July

Flow must be reported for the sampling day in order to calculate the pounds per day.

**SPDES PERMIT REQUIREMENTS**  
FINAL PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
002	Coal Pile Runoff	Niagara River (A-Special)	EDM	EDDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	COMPLIANCE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Daily Avg	Daily Max	TYPE I	TYPE II				
Flow	Monitor	Monitor			GPD	Monthly	Instantaneous	
TSS, Total Suspended	Monitor	30			mg/l	Monthly	Grab	
Oil & Grease	Monitor	15			mg/l	Monthly	Grab	
Cyanide	Monitor	4.0	0.1		mg/l	Semi-annual	Grab	
Copper	Monitor	0.3	0.3		mg/l	Semi-annual	Grab	
Nickel	Monitor	0.3	0.3		mg/l	Semi-annual	Grab	
Zinc	Monitor	0.3	0.3		mg/l	Semi-annual	Grab	
Surfactant	Monitor	0.5	0.5		mg/l	Semi-annual	Grab	
Aluminum	Monitor	1.0	1.0		mg/l	Semi-annual	Grab	
Manganese	Monitor	1.0	1.0		mg/l	Semi-annual	Grab	

**SPDES PERMIT REQUIREMENTS**

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
004	Combined flow for Outfalls 001 + 002 + 003	Niagara River	EDM	EDDP + 5 yrs

PARAMETER	ENFORCEABLE LIMIT		MONITORING ACTION LEVEL		UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg	Daily Max	TYPE I	TYPE II				
Flow (May 1 to Oct 31)	Monitor	Monitor			MGD	Monthly	Calculated	
Temperature (May 1 to Oct 31)	Monitor	Monitor			Degrees F	2 / Month	Grab	

AS REQUESTED BY USEPA ON SEPTEMBER 21, 2016, THIS LOCATION WAS RE-SAMPLED ON OCTOBER 4, 2016 FOR SPDES OUTFALLS 1 AND 2 PARAMETERS.

**LEGEND**

- Water Sample Location (July 2016)
- Dye Test Location
- Sanitary Manhole (Accessible)
- Sanitary Manhole (Inaccessible or Not Found)
- IU Sanitary Sample Location
- Ammonia Still Floor Drain - Pumped to Still
- IU Post EQ Sample Location (to Sanitary Sewer)
- Open Pit (to Storm Sewer)
- Boiler House Outside Vault (to Storm Sewer)
- SPDES Outfall
- Outfall-003 (Abandoned)
- Storm Water Manhole
- Catch Basin/Drain (to Storm Sewer)
- Excess Cooling Water Discharge (to Storm Sewer)
- Sump (to Storm Sewer)
- Metal Stick-Up Pipe (Unknown Source)
- Approximate Sanitary Sewer (Based on CRA Report, 2010)
- Approximate Sanitary Sewer (Based on Historic Facility Drawings)
- Storm Sewer Structure

**STORM DRAINAGE/SEWER**

- Concrete Box Culvert
- Storm Culvert
- Breeze Field Storm Pipe
- Storm Pipe
- Storm Pipe (Inferred)
- Surface Drainage
- Unidentified Pipe (to Storm)

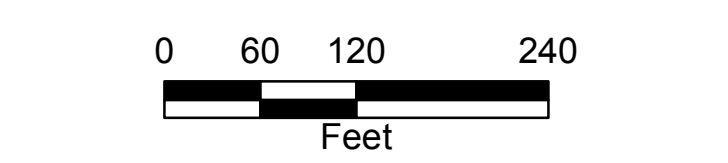
**PROCESS WASTEWATER LINES<sup>1</sup>**

- Excess Liquor from Surge Tank to Storage Tanks
- Flow from Storage Tank to Ammonia Still for Treatment
- Flow from Ammonia Still to AC Pump then to EQ Tank
- Discharge from EQ Tank to Sanitary Sewer (Line Dashed - Approximated Underground Location)

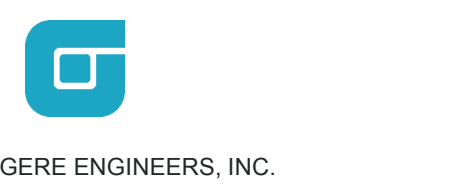
**NOTES:**  
1. PROCESS WASTEWATER LINES ARE GENERALIZED FOR THE PURPOSE OF DISPLAYING CONVEYANCE ACROSS THE SITE.

TONAWANDA COKE CORP.  
CLEAN WATER ACT  
COMPLIANCE AUDIT  
TONAWANDA, NEW YORK

**STORM & WASTEWATER CONVEYANCE & DISCHARGE LIMITS**



FILE NO. 25489.62791  
DATE: OCTOBER 2016



**FIGURE 1**  
O'BRIEN & GERE ENGINEERS, INC.,  
STORM & WASTEWATER CONVEYANCE & DISCHARGE LIMITS  
OCTOBER 2016  
FOR REFERENCE ONLY

I:\Tonawanda-Coke-2548962791-1\Ww-Compliance-Storm-Water-Conveyance-Rev-10-2016.mxd

AERIAL IMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE, DATED APRIL 2014.



Figure 1a  
Concrete Lined Settling Ponds  
Source: O'Brien & Gere (2016)



**Figure 2**

Stormwater System – Process Areas

Note: The black-blue dashed line is the Box Culvert, the green line to the north and west are underground storm sewers, the yellow and purple lines are process utilities, not storm sewer lines.

Source: O'Brien & Gere (2016)

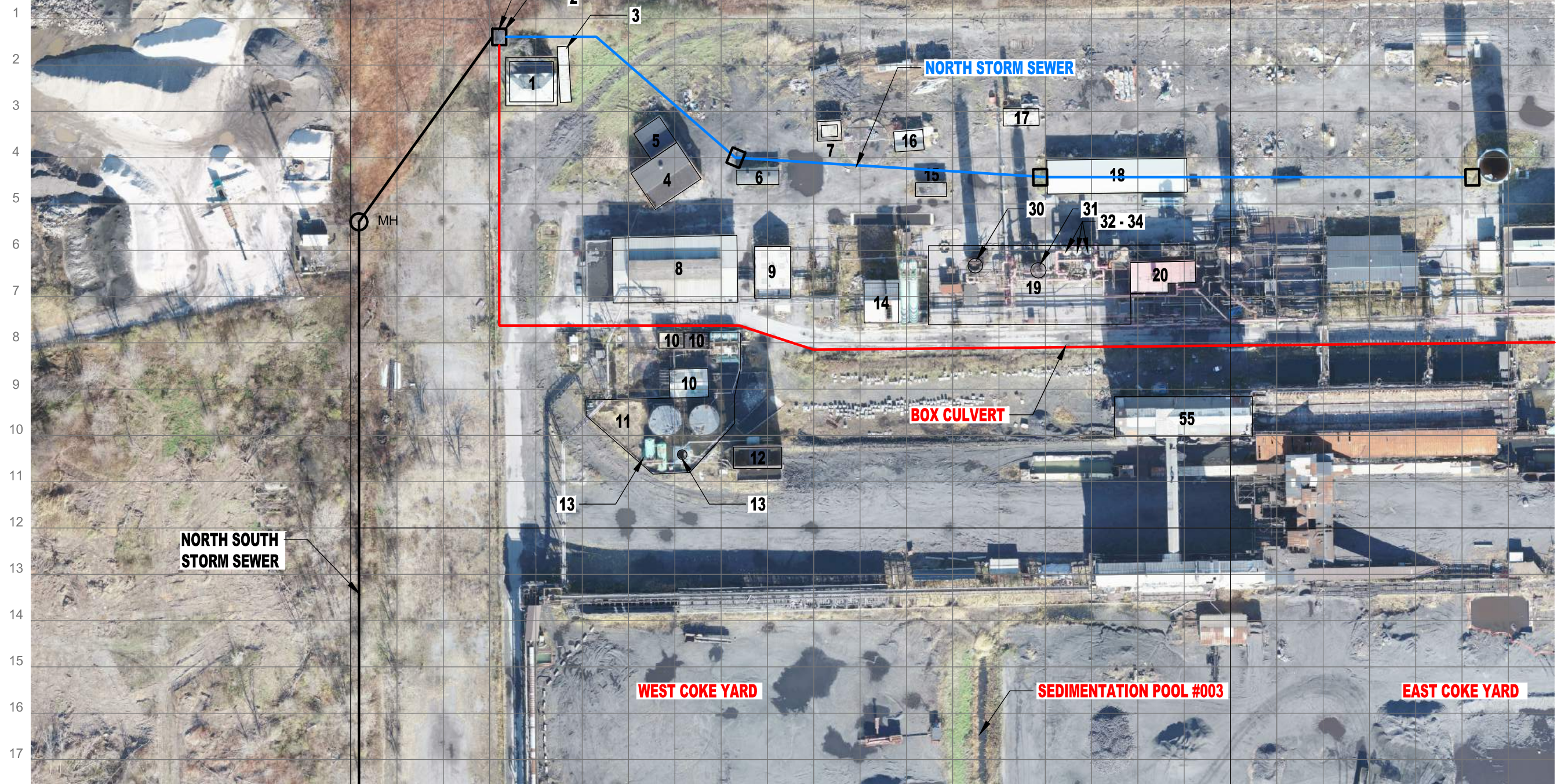
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NW-1

COLLECTION "MANSION" SUMP

**LEGEND:**

- MANHOLE
- CATCH BASIN
- BOX CULVERT
- NORTH SOUTH STORM SEWER
- NORTH STORM SEWER



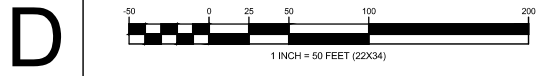
NORTH SOUTH STORM SEWER

WEST COKE YARD

SEDIMENTATION POOL #003

EAST COKE YARD

NOTE: SEWER LOCATIONS ARE APPROXIMATE.



D

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**FIGURE 3**  
 DRAWING NUMBER  
**WCW SET**

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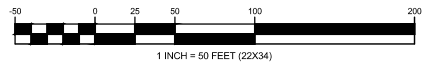
NC-2

**LEGEND:**

- MANHOLE
- CATCH BASIN
- BOX CULVERT
- NORTH SOUTH STORM SEWER
- NORTH STORM SEWER



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NOTE: SEWER LOCATIONS ARE APPROXIMATE.

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**FIGURE 4**  
 DRAWING NUMBER  
**107A**





**LEGEND:**

- MANHOLE
- CATCH BASIN
- BOX CULVERT
- NORTH SOUTH STORM SEWER
- NORTH STORM SEWER

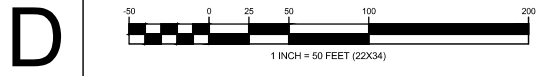


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**FIGURE 5**  
DRAWING NUMBER  
**107A**



NOTE: SEWER LOCATIONS ARE APPROXIMATE.

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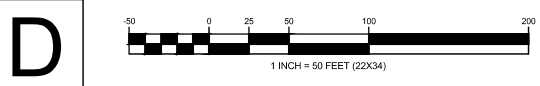
**LEGEND:**

- MANHOLE
- CATCH BASIN
- BOX CULVERT
- NORTH SOUTH STORM SEWER
- NORTH STORM SEWER

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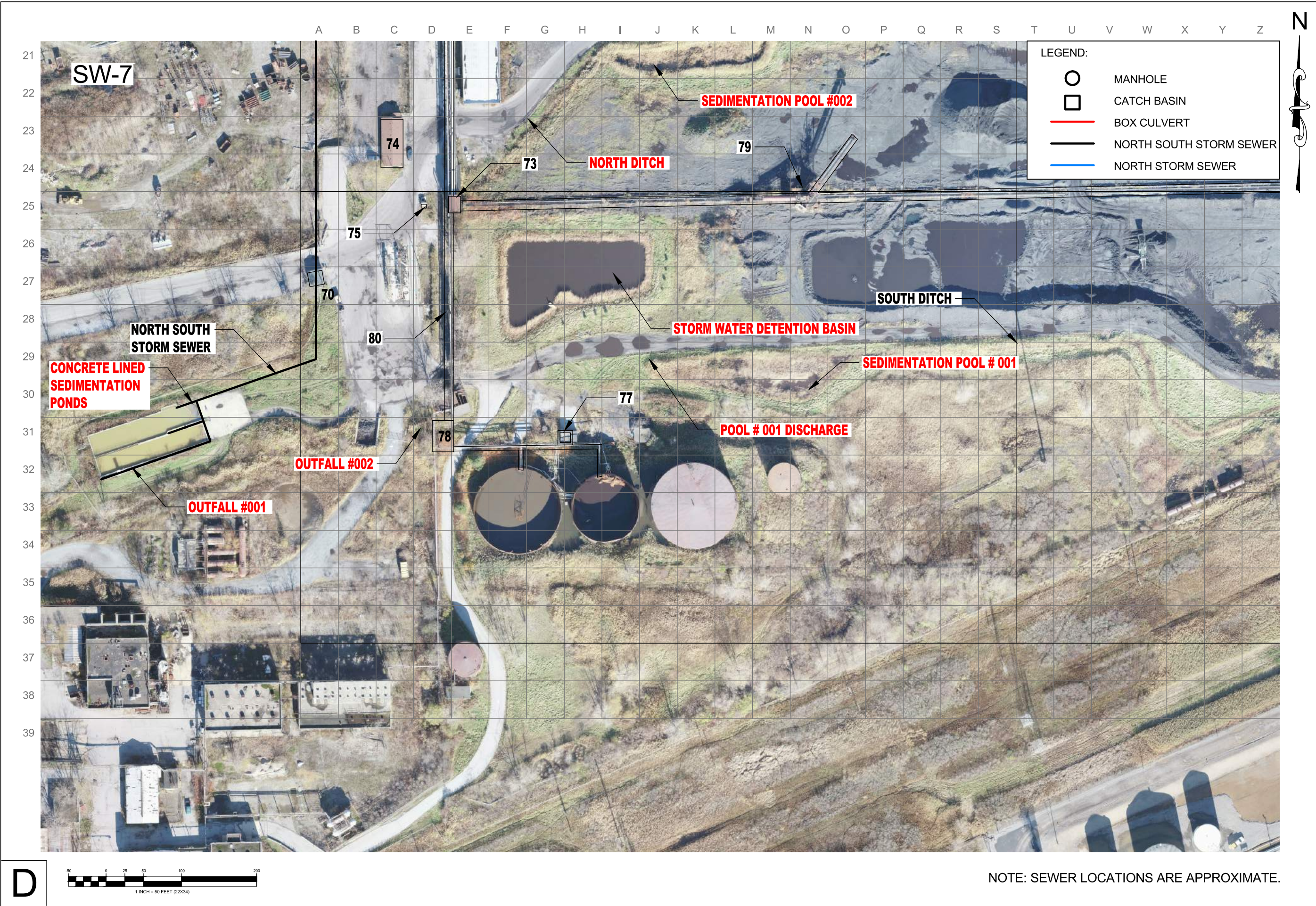
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NOTE: SEWER LOCATIONS ARE APPROXIMATE.

**FIGURE 6**  
 DRAWING NUMBER  
**107A**



**LEGEND:**

- MANHOLE
- CATCH BASIN
- BOX CULVERT
- NORTH SOUTH STORM SEWER
- NORTH STORM SEWER



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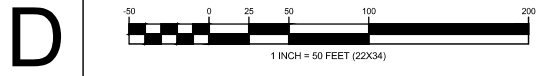
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**FIGURE 7**  
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**107A**



NOTE: SEWER LOCATIONS ARE APPROXIMATE.

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