STORMWATER MANAGEMENT SUBSEQUENT EVALUATION REPORT

FOR
BRIDGETON LANDFILL
LOCATED AT
13570 SAINT CHARLES ROCK ROAD, BRIDGETON, MISSOURI 63044

Prepared For:

BRIDGETON LANDFILL, LLC

Prepared By:

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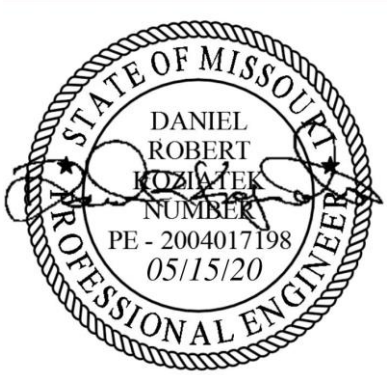
HAZELWOOD, MISSOURI 63042

CEC Project No. 180-128
Task 2009

Date: MAY 2020



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1.0 INTRODUCTION

1.1 INTRODUCTION AND FACILITY DESCRIPTION

The Bridgeton Landfill (Landfill) is a capped former sanitary landfill, located at 13570 Saint Charles Rock Road, Bridgeton, Missouri. The Landfill is within the West Lake Landfill Superfund Site which has been divided into two operable units – West Lake Landfill Operable Unit 1 (OU-1) and West Lake Operable Unit 2 (OU-2). The current Missouri Department of Natural Resources (MDNR) National Pollutant Discharge Elimination System (NPDES) permit (#MO-0112771) covers two applicable portions of OU-2 – the Former Active (Bridgeton) Sanitary Landfill and the Closed Demolition Landfill. This permit authorizes stormwater discharges at six permitted outfalls (#003, 004, 005, 007, 008 and 009). These outfall locations are shown on the enclosed *Figure 1*. Receiving streams to these outfalls are known as Tributary to the Missouri River and Tributary to Old Fee Fee Creek.

As required by the June 2018 Final Consent Judgement, CEC, Inc. performed a stormwater management evaluation in April 2019 of the permitted outfalls. The report provided a summary of the sampling data reviewed in all four quarters of 2017 and the first two quarters of 2018, and provided an evaluation of the site conditions of each outfall and suggestions to implement additional stormwater controls in an effort to obtain compliance with permitted effluent limitations. Since the majority of the permit exceedances occurred at Outfall #007, the April 2019 Stormwater Management Evaluation focused on housekeeping and engineering improvements at that outfall. The Landfill has constructed several improvements to reduce exceedances at Outfall #007, including:

1. Improved housekeeping:

    a. A daily manual trash pickup has been implemented by on-site personnel.
    b. A weekly industrial sized vacuum sweeper is used to clean the 6.6 acre area from the transfer station and along the outbound lane for transfer trucks.
    c. Routine repair and maintenance of the rock check dams are done quarterly. The check dams are constructed with the spillway in the center of the check dam to prevent flows from channeling around the outside edges of the rock and scouring and eroding the earthen hillside. In addition, sediment is cleared from the check dams during routine maintenance intervals. Filter socks are installed to capture sediment and reduce sediment loading into the concrete swales and are replaced as needed.

2. Construction of New Improvements in the Outfall #007 Watershed – see enclosed *Figure 2* for the as-built location of improvements:

    a. Low Water Crossing Pavement – a 0.5-acre area of gravel lot was paved between the main road and the roll-off storage area and the pavement

constructed above new storm culverts to convey runoff under the access road to Outfall #007. These improvements reduced the potential for transmission of dust and total suspended solids (TSS) to the channels and Outfall #007.

b. Roll-off Storage Area – the storage area was stabilized in some areas with gravel in lieu of exposed dirt. Concrete blocks were placed as a diversion berm to contain and channelize site runoff to controlled let-down areas. These changes reduced the total amount of sediment from reaching the concrete swale and Outfall #007 sampling point.
c. North Quarry Access Road – The access road was regraded at a uniform slope with an armored swale to channelize flows to a controlled let-down area. All disturbed areas were stabilized with turf reinforcement mats and vegetated. This work was coordinated with the United States Environmental Protection Agency (USEPA) Region 7 and no excavation or cut was performed.
d. Exit Lane Pavement – Additional pavement was placed along the transfer truck exit lane to raise the elevation of the pavement to provide positive drainage to the adjacent storm swale and inlet. This work was coordinated with the United States Environmental Protection Agency (USEPA) Region 7 and no excavation or cut was performed. This pavement reduced the ponding of stormwater runoff and tracking of debris out of the site.

These improvements have helped reduce the transmission of sediment and trash from the drainage area to Outfall #007. Overall, the above improvements have resulted in decreased concentrations of permitted constituents. However, periodic NPDES exceedances continue to occur at Outfall #007 including biochemical oxygen demand (BOD), chemical oxygen demand (COD), TSS, aluminum and iron. Periodic exceedances have also occurred at Outfalls #003, 004, 005, and 009. As such, and based on provisions in the June 2018 Final Consent Judgment, in May 2020, CEC, Inc. performed a subsequent stormwater management evaluation of the permitted outfalls to further isolate the exceedances and formulate solutions to capture any high concentrations of constituents upstream of the outfalls. A summary of recent sampling results is tabulated below in Section 1.2 with a full summary shown in *Appendix A*. The results of the subsequent evaluation are shown below in Section 2.0.

1.2 STORMWATER SAMPLING RESULTS SUMMARY

Monthly, quarterly and annual stormwater sampling is required to be performed to satisfy the NPDES permit conditions. Stormwater sampling reports provided by the Landfill included quarterly reports in 2018, 2019 and 2020. The data used for this report were subsequent to the data used in the April 2019 stormwater evaluation. Upon review of the new sampling results, no direct correlation between rain events and exceedances was recognized. Precipitation values were tabulated and a summary comparison included in *Appendix A*. A brief summary of exceedances at each outfall is shown in the table below:

Outfall	Description
#003	Generally compliant, but had periodic aluminum benchmark exceedances. One permit exceedance of TSS occurred in 2018Q3.
#004	Permit exceedance of BOD occurred in 2018Q3, permit exceedance of TSS occurred in 2018Q4 and a benchmark exceedance of aluminum occurred in 2019Q2.
#005	Outfall is impounded with sand bags, but a 2020Q1 heavy rain event dislodged the bags and caused permit exceedances of TSS and iron and a benchmark exceedance of aluminum.
#007	Permit exceedances of BOD, COD and TSS occur frequently, while permit exceedances of copper and iron and benchmark exceedances of aluminum occur periodically. Flows from the transfer station are included in this drainage area.
#009	Discharges only occur during heavy rain events. Note that permit and benchmark limits became final in March 2020. A benchmark exceedance of aluminum occurred in 2020Q2.

2.0 OUTFALL EVALUATION AND RECOMMENDATIONS

2.1 STORMWATER OUTFALL #003

This outfall receives discharges from a shallow retention pond on the southwest side of the Landfill. Stormwater runoff inflow to the shallow pond is from an approximate 71.7 acre drainage area comprised of a leachate pretreatment facility, the holding area for a 97,000 gallon permeate tank, the heat removal system, a maintenance building, fuel storage tanks, auxiliary utility flare, the western portion of Bridgeton Landfill and the eastern portion of the Inactive Sanitary Landfill. Outfall #003 also receives flows periodically from the Outfall #005 drainage area through a pumped system. The normal operating procedure at the Landfill is to pump the discharges from Outfall #005 drainage area to a swale that is tributary to Outfall #003. The NPDES stormwater permit is currently under review for renewal and we intend to modify the permit to reflect this pumped procedure. Flow in a 10 year, 24 hour rain event is 7.7 million gallons per day (MGD) and is received by a Tributary to Old Fee Fee Creek.

The stormwater pond is designed to contain and filter stormwater runoff that flushes off the landscape. As such, some routine maintenance is needed including sediment removal in the -upstream lined channels and swales. Sediment was last removed in the upstream channels and swale in 2019Q4. During a stormwater basin inspection performed in 2019Q4, muskrat dens were found constructed within the shallow pond. No burrows were observed in the berms themselves, however we recommend trapping and removing these animals to reduce the risk of burrows in the berms and to reduce sediment and reed accumulation in the outfall pipe associated with muskrat activity.

In addition, we recommend the construction of a semi-circular protection barrier check dam near the outfall pipe – see enclosed *Figure 3*. This barrier is designed to further filter sediment from reaching the outfall and reduce concentrations of constituents. The area behind the barrier adjacent to the outfall pipe should be annually maintained to remove vegetation or debris that may collect. Heavy rip rap revetment should be placed to provide positive drainage away from the outfall and minimize erosion.

2.2 STORMWATER OUTFALL #004

This outfall receives discharges from a sediment pond to the East of the Landfill footprint. Stormwater runoff inflow to this pond drains from the soil borrow area and northeast portion of the Bridgeton Landfill. The Bridgeton Hauling Fleet management parking lot also discharges runoff to this sediment pond comprising a total of 72.5 acres. Flow in a 10 year, 24 hour rain event is 7.8 MGD and is received by a Tributary to Missouri River.

Periodic aluminum and TSS exceedances have occurred at Outfall #004 from 2018-2019. Exceedance spikes in 2018Q3 and Q4 appear related to the work at the earthen borrow area and north quarry cap project when the ground was bare and not lined or vegetated during the ongoing construction process. CEC, Inc. recommends stabilizing work areas when not in operation and during construction efforts to prevent silt loading in the pond. In addition, an annual cleaning of the downstream concrete channels should occur to remove sediment (this cleaning was last performed in 2019Q4).

2.3 STORMWATER OUTFALL #005

This outfall is permitted to receive discharges from the lined ditches located on the southeast corner of the Landfill property. Stormwater runoff inflow to this basin drains from the eastern portion of the Bridgeton Landfill comprising a total of 37.9 acres. Flow in a 10 year, 24 hour rain event is 4.1 MGD and is received by a Tributary to Old Fee Fee Creek.

Sand bags were placed in the two outlet pipes in 2017Q3 to close the outfall. Rain events are managed by a pumping system and divert flow that would typically go to Outfall #005 instead to the Outfall #003 watershed to allow sediment to drop out over a longer residence time. By design, no discharges should occur at Outfall #005. The normal operating procedures are to pump from the lined inner east ditch to a lined swale along the south quarry Landfill cap to drain to the Outfall #003 shallow pond.

However, in 2020Q1 a heavy rain event caused the sand bags to become dislodged and allowed a discharge of stormwater that exceeded permitted limitations/benchmarks of TSS, iron and aluminum. To prevent this from occurring in the future, we recommend to more permanently secure the outfall by installing flanged pipe end sections on the upstream ends of the storm outlet pipes – see enclosed *Figure 4*. The Landfill's MDNR NPDES stormwater permit is also being modified to reflect this procedure.

2.4 STORMWATER OUTFALL #007

This outfall receives discharges from various closed landfills on the property (including West Lake Landfill OU-1, OU-2 Demolition Landfill, OU-2 Inactive Sanitary Landfill, and the Bridgeton Landfill), the asphalt plant and the container storage area west of the office building. The outfall also collects stormwater runoff from the transfer station located onsite. Tributary drainage area is 46.6 acres. Flow in a 10 year, 24 hour rain event is 5.0 MGD and is received by a Tributary to Old Fee Fee Creek.

Though recent improvements as shown on *Figure 2* have helped reduce the transmission of sediment from the drainage area to Outfall #007, the outfall continues to experience recurring NPDES exceedances including BOD, COD, TSS, aluminum and iron. The main remaining contributing factor to the BOD and COD exceedances is the concentrated flows from the transfer station pad. To bring this outfall into compliance, we recommend the following new improvements:

1. Transfer Station Concrete Pad Improvements – we recommend repairing and replacing various damaged concrete slabs throughout the transfer station pad area. These slabs routinely get damaged due to heavy truck traffic and require replacement. The joints in the slabs will be filled with a crack sealant. Improvement of the concrete pad should allow the street sweeper to clean the pad more thoroughly.

2. Transfer Station Concrete Pad Housekeeping – Recently the Landfill has power washed the concrete pad in front of the station to remove sediment and built up debris. This debris is then collected in the nearby sediment trap and removed with a hydro-vacuum truck. This deep cleaning procedure has reduced the concentrations of constituents and provided a compliant stormwater sample in 2Q2020 with the exception of a benchmark exceedance on aluminum. We recommend this deep cleaning procedure continue on a monthly basis – or as needed to ensure the concrete pad is free of debris.

3. Filtration Pilot Test – We recommend a 180 day pilot test be performed to demonstrate efficiencies in further removal of constituents from the transfer station area. Products may be evaluated including passive gravity-flow techniques, patented filtration devices or other proprietary stormwater filtration products. A component of this test will be to increase the sampling frequency of the stormwater effluent to a monthly basis for Outfall #007 quarterly parameters.

4. Asphalt Plant Sediment Removal – Sediment and debris have collected over the years in an area northeast of the asphalt plant against the trash barrier fence. We recommend removing this debris and stabilizing the area with vegetation to reduce the potential for transmission of sediment to the outfall.

2.5 STORMWATER OUTFALL #009

This outfall receives discharges from the northern portion of the Demolition Landfill and the east portion of West Lake Landfill OU-1, Area 2. Total acreage tributary is approximately 10.7 acres. Flow in a 10 year, 24 hour rain event is 0.9 MGD and is received by a Tributary to Old Fee Fee Creek. The drainage area is completely pervious but has areas of non-combustible cover within OU-1, Area 2.

This outfall receives a stormwater discharge only during heavy rain events. Discharges occurred in 2019Q1, 2019Q2, 2020Q1 and 2020Q2. The NPDES effluent limitations became final on March 1, 2020. Until then, the permit limits were interim. During this interim timeframe, there was one interim limit exceedance of TSS in 2019Q2 that appears to be due to runoff from the non-combustible materials within OU-1, Area 2. There were also two interim limit exceedances for aluminum in 2019Q1 and 2020Q1. Since the permit limits became final, there has been one benchmark limit exceedance of aluminum in 2020Q2.

Due to these discharges, some minor sediment and debris has collected in the vicinity of Outfall #009. Since the outfall involves tributary area from OU-1, Area 2, the Landfill is required to coordinate any site disturbances – including the removal of sediment – with the United States Environmental Protection Agency (USEPA). The Landfill is currently coordinating with the USEPA and expects to receive approval to perform this work by the summer of 2020. This approval will allow the Landfill to remove the sediment and debris from the concrete channel and replace the filter socks. Note that sediment and filter socks removed from the concrete channel will be placed into OU-1, Area 2 and will be covered with non-combustible cover.

3.0 CONCLUSION

3.1 CONCLUSION AND SCHEDULE FOR CONSTRUCTION OF IMPROVEMENTS

CEC, Inc. recommends that the improvements proposed in this subsequent stormwater evaluation report be constructed in 2020. An implementation schedule for the construction of proposed BMPs and improvements at each outfall is shown on the enclosed *Figure 5*.

FIGURES

NORTH

LEGEND

SWO #XXX

#9

#7

#8

#4

#3

#5

SUBCATCHMENT #009
AREA = 10.75 AC

SUBCATCHMENT #007
AREA = 34.55 AC

SUBCATCHMENT #008
AREA = 4.17 AC.

SUBCATCHMENT #003
AREA = 76.21 AC.

SUBCATCHMENT #005
AREA = 35.97 AC.

SUBCATCHMENT #004
AREA = 66.15 AC.

PROPERTY BOUNDARY

ST. CHARLES ROCK ROAD

TAUSSIG RD.

CORPORATE EXCHANGE DR.

SCALE IN FEET

0 400 800

*HAND SIGNATURE ON FILE

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BRIDGETON, MO 63044

FACILITY OUTFALL MAP

DRAWN BY:	MAK	CHECKED BY:	DRK	APPROVED BY:	DRK*	FIGURE NO.:	1
DATE:	MARCH 2019	DWG SCALE:	1"= 400'	PROJECT NO:	180-128		

AS-BUILT AREA

BONEYARD IMPROVEMENTS
COMPLETED 10/16/2019

EXIT LANE ADDITIONAL PAVEMENT
COMPLETED 2/3/2020

LOW WATER CROSSING IMPROVEMENTS
COMPLETED 11/15/2019

NORTH QUARRY ACCESS ROAD IMPROVEMENTS
COMPLETED 12/20/2019

EX. END OF PIPE
24" CONC.
FL=458.45

EX. END OF PIPE
24" CONC.
FL=458.42

EX. FLARED END
24" CONC.
FL=459.59

EX. FLARED END
24" CONC.
FL=459.50

EX. END OF PIPE
10" HDPE
FL=480.02

EX. END OF PIPE
10" HDPE
FL=480.20

LEGEND

- EXISTING DRAINAGE DITCH
- EXISTING FENCE LINE
- EXISTING ROADWAY CENTERLINE
- EXISTING CURB
- EXISTING EDGE OF CONCRETE PAVEMENT
- EXISTING ASPHALT PAVEMENT EDGE
- EXISTING UNPAVED ROAD
- EXISTING STRUCTURE
- EXISTING GUIDE RAIL
- EXISTING RETAINING WALL
- EXISTING BLOCK WALL
- EXISTING TANK STRUCTURE
- EXISTING VEGETATION LINE
- EXISTING POST
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE

NORTH

SCALE IN FEET
0 50 100

REFERENCE

1. THE 1' CONTOUR DATA SHOWN HERON IS DERIVED FROM THE FOLLOWING DATA SOURCES:
   A. TOPOGRAPHIC SURVEY CONDUCTED BY:
      FRAZIER LAND SURVEYING
      116 E. PEARCE BLVD., P.O. BOX 65
      WENTZVILLE, MO 63385
      DRAWING NAMES:
      19-5790 bridgeton landfill as built topo 2020.dwg
      19-5790 bridgeton landfill as built topo 2020-repaved area.dwg
      DATE SURVEYED: 01-13-2020 (SEE PLAN FOR BOUNDARY AREA) + ADDITIONAL POINTS 2/6/20
   B. COOPER AERIAL SURVEYING DATED 12-10-2019.
2. THE EXISTING INFRASTRUCTURE SHOWN HEREON IS DERIVED FROM THE FOLLOWING DATA SOURCES:
   A. TOPOGRAPHIC SURVEY CONDUCTED BY:
      FRAZIER LAND SURVEYING. (SEE ABOVE)
   B. 2018 Q4 INFRASTRUCTURE SURVEY BY FEEZOR SURVEYING
   C. RECORD DRAWINGS COMPILED BY CEC.

MISSOURI ONE CALL SYSTEM, INC.
STOP! CALL BEFORE YOU DIG!

CALL BEFORE
YOU DIG!
1-800-DIG-RITE

REVISION RECORD

NO	DATE	DESCRIPTION
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-

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STORMWATER OUTFALL #7
PROPOSED IMPROVEMENTS

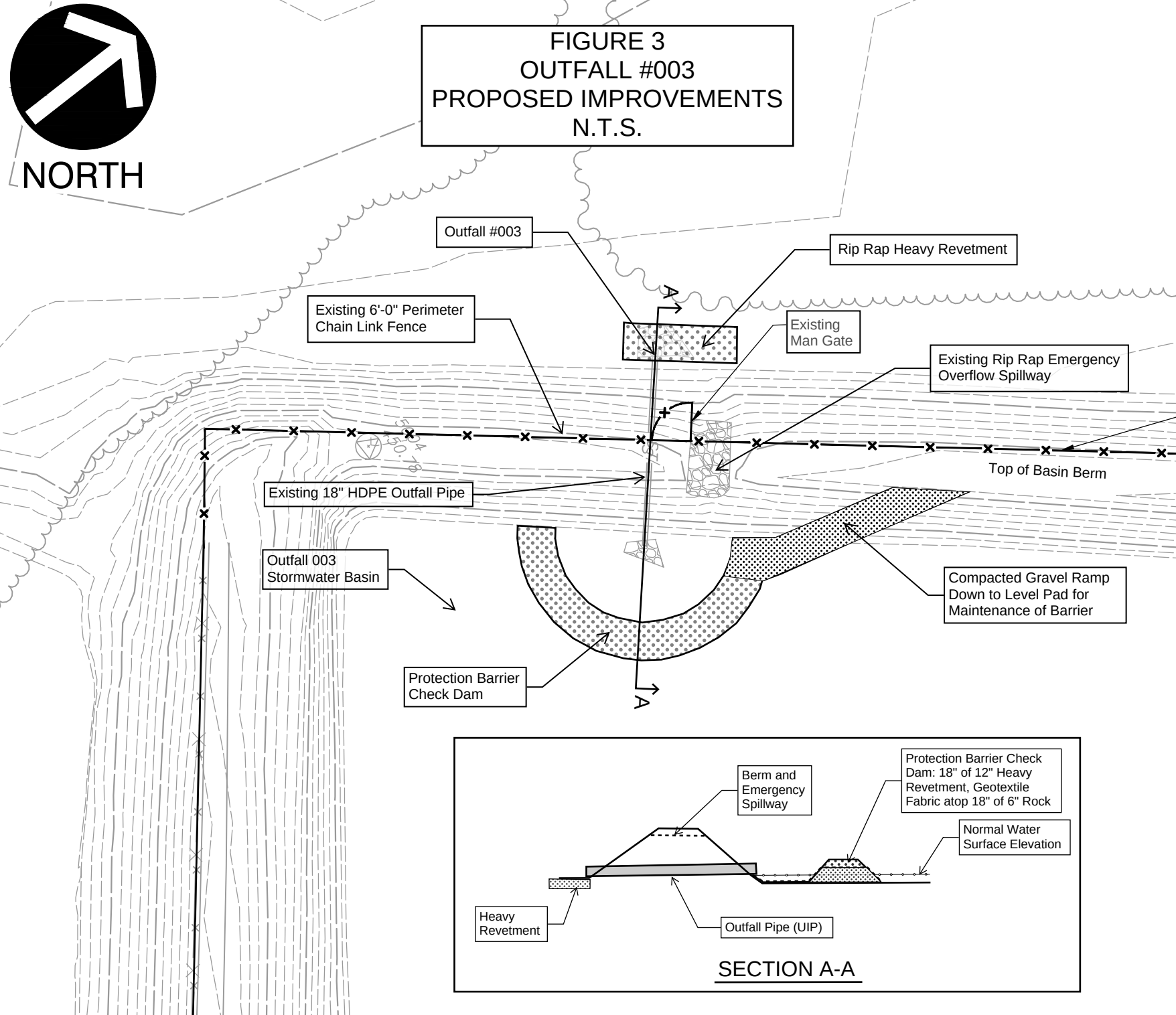
AS-BUILT CONDITIONS

DATE:	FEB 2020
DRAWN BY:	MRV
DWG SCALE:	1"=50'
CHECKED BY:	DRK
PROJECT NO:	180-128
APPROVED BY:	DRK*

STATE OF MISSOURI
DANIEL ROBERT KOLILIS
NUMBER
PE - 2004017198
02/18/20
PROFESSIONAL ENGINEER

DRAWING NO.:
FIGURE 2

FIGURE 3
OUTFALL #003
PROPOSED IMPROVEMENTS
N.T.S.



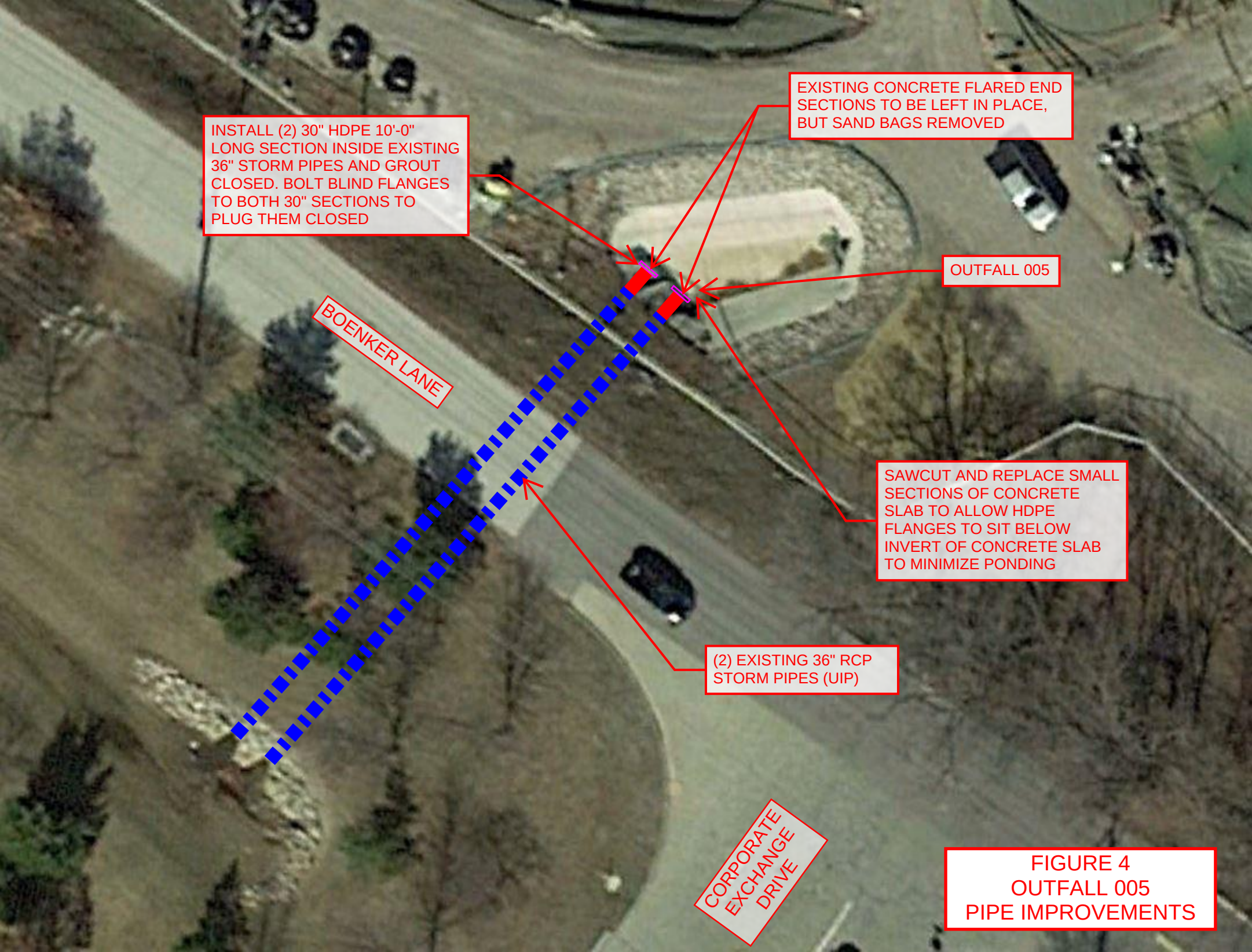
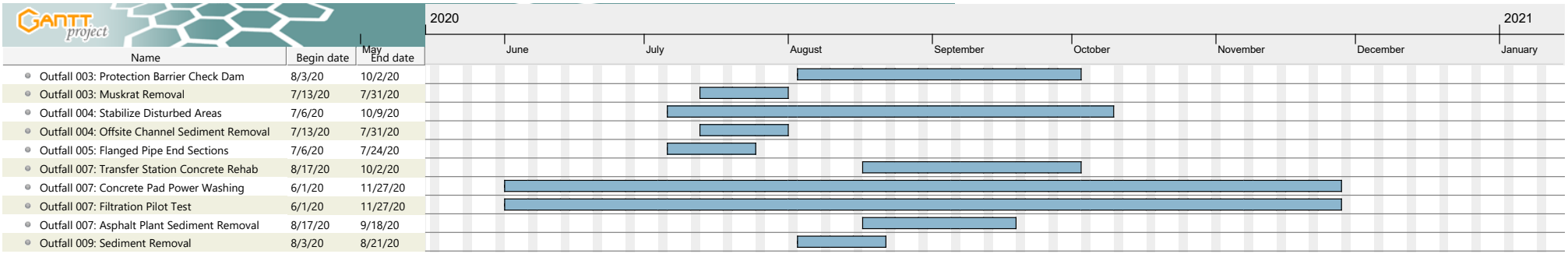


FIGURE 4
OUTFALL 005
PIPE IMPROVEMENTS

Figure 5 - Bridgeton Landfill BMP Implementation Schedule

May 15, 2020

Gantt Chart



Name	Begin date	End date
Outfall 003: Protection Barrier Check Dam	8/3/20	10/2/20
Outfall 003: Muskrat Removal	7/13/20	7/31/20
Outfall 004: Stabilize Disturbed Areas	7/6/20	10/9/20
Outfall 004: Offsite Channel Sediment Removal	7/13/20	7/31/20
Outfall 005: Flanged Pipe End Sections	7/6/20	7/24/20
Outfall 007: Transfer Station Concrete Rehab	8/17/20	10/2/20
Outfall 007: Concrete Pad Power Washing	6/1/20	11/27/20
Outfall 007: Filtration Pilot Test	6/1/20	11/27/20
Outfall 007: Asphalt Plant Sediment Removal	8/17/20	9/18/20
Outfall 009: Sediment Removal	8/3/20	8/21/20

APPENDIX A

SAMPLING RESULTS SUMMARY

APPENDIX A - STORMWATER OUTFALL SAMPLING

OUTFALL RESULTS SUMMARY

	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020
Outfall #003	#003	#003	#003	#003	#003	#003	#003	#003	#003
Outfall #004	#004	#004	#004	#004	#004	#004	#004	#004	#004
Outfall #005								#005	
Outfall #007	#007	#007	#007	#007	#007	#007	#007	#007	#007
Outfall #008									
Outfall #009				#009	#009			#009	#009
	Percipitation (in.)								
	10.42	8.66	9.92	12.08	18.91	14.09	9.25	13.01	6.27

LEGEND

No exceedance
Final limitation exceedance
Benchmark exceedance
Interim Limitation Exceedance
No Discharge
No data provided

Outfall #003 Results											
Effluent Limitations		Units	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
PH	6.5-9.0	S.U.	7.52	7.40	7.30	7.71	6.98	6.98	7.55	8.01	7.66
BOD	45	mg/L	< 5	< 5	< 5	6	< 5	15	< 5	< 5	10
COD	120	mg/L	15	33	26	24	35	47	22	31	60
TSS	80	mg/L	< 6	197	8	4	14	12	29	10	11
Settable Solids	1.5	mL/L	< 0.1	0.6	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	0.1
Oil & Grease	15	mg/L	< 5	< 5	< 6	< 5	< 5	< 5	< 5	< 5	< 5
Chlorides + Sulfates	1000	mg/L	75	27	54	110	55	30	78	103	66
Aluminum, TR	750	µg/L	300	1520	176	294	769	123	769	783	432
Arsenic, TR	33	µg/L	1.1	3.5	1.8	2.5	2.4	3.4	2.4	2	7.5
Copper, TR	22	µg/L	< 5	2.1	< 5	< 5	< 5	< 5	< 5	3.8	< 5
Iron, TR	4000	µg/L	393	2130	294	491	1100	756	1100	847	1030
Percipitation (in)			10.42	8.66	9.92	12.08	18.91	14.09	9.25	13.01	6.27
Flow (MGD)			1.633506	2.378378	0.01152	1.208398	1.015232	1.015232	5.293754	0.164413	0.822067

Outfall #004 Results											
Effluent Limitations		Units	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
PH	6.5-9.0	S.U.	8.90	7.65	8.49	8.40	8.12	8.32	8.46	8.42	8.80
BOD	45	mg/L	< 5	55	5	< 5	< 5	< 5	< 5	< 5	< 5
COD	120	mg/L	< 50	48	14	31	35	< 50	< 50	24	18
TSS	80	mg/L	8	56	96	< 6	9	< 6	5	< 6	9
Settable Solids	1.5	mL/L	< 0.1	0.1	0.1	< 0.1	< 0.1	0.1	0.1	< 0.1	0.1
Oil & Grease	15	mg/L	< 5	< 5	< 6	< 6	< 5	< 5	< 6	< 5	< 5
Chlorides + Sulfates	1000	mg/L	68	21	70	82	92	48	40	58	78
Aluminum, TR	750	µg/L	383	304	315	342	845	80.6	348	165	326
Arsenic, TR	33	µg/L	1.2	2.2	2.5	1.3	1.2	2.7	2.1	1.2	1.3
Copper, TR	22	µg/L	< 5	4.7	1.3	1.5	1.8	< 5	< 5	2.9	1.7
Iron, TR	4000	µg/L	410	505	380	336	844	97.6	391	175	322
Percipitation (in)			10.42	8.66	9.92	12.08	18.91	14.09	9.25	13.01	6.27
Flow (MGD)			0.568759	0.041364	0.38779	0.74111	0.103411	0.012926	0.064632	4.886156	0.0144

Outfall #005 Results											
Effluent Limitations		Units	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
PH	6.5-9.0	S.U.								8.22	
BOD	45	mg/L								< 5	
COD	120	mg/L								76	
TSS	80	mg/L								222	
Settable Solids	1.5	mL/L								0.1	
Oil & Grease	15	mg/L								< 6	
Chlorides + Sulfates	1000	mg/L								12	
Aluminum, TR	750	µg/L								11900	
Arsenic, TR	33	µg/L								8.6	
Copper, TR	22	µg/L								10.8	
Iron, TR	4000	µg/L								15800	
Percipitation (in)			10.42	8.66	9.92	12.08	18.91	14.09	9.25	13.01	6.27
Flow (MGD)			0	0	0	0	0	0	0	0.090484	0

Outfall #007 Results											
Effluent Limitations		Units	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
PH	6.5-9.0	S.U.	7.83	8.45	7.80	7.69	7.89	7.31	7.40	8.04	7.92
BOD	45	mg/L	133	37	111	26	26	137	115	66	42
COD	120	mg/L	59	207	185	90	86	306	203	226	114
TSS	80	mg/L	25	291	244	404	93	80	53	321	36
Settable Solids	1.5	mL/L	< 0.1	0.1	< 0.1	< 0.1	0.1	0.1	0.1	0.2	< 0.1
Oil & Grease	15	mg/L	< 5	< 6	< 6	< 6	< 5	< 6	< 6	< 6	< 6
Chlorides + Sulfates	1000	mg/L	193	143	205	177	312	242	160	349	184
Aluminum, TR	750	µg/L	351	3520	1750	1960	82.8	323	947	7630	1990
Arsenic, TR	33	µg/L	1.9	4.4	4.2	3.0	2.0	6.5	2.9	6.6	2.6
Copper, TR	22	µg/L	5.7	21.6	12.8	13.9	3.9	10.8	18.2	41.9	16.8
Iron, TR	4000	µg/L	411	5260	2050	2460	425	3300	1420	11200	2480
Percipitation (in)			10.42	8.66	9.92	12.08	18.91	14.09	9.25	13.01	6.27
Flow (MGD)			0.096948	0.165457	0.323158	0.126032	0.010341	0.007756	0.072387	0.651487	0.031023

Outfall #008 Results											
Effluent Limitations		Units	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
PH	6.5-9.0	S.U.									
BOD	45	mg/L									
COD	120	mg/L									
TSS	80	mg/L									
Settable Solids	1.5	mL/L									
Oil & Grease	15	mg/L									
Chlorides + Sulfates	1000	mg/L									
Aluminum, TR	750	µg/L									
Arsenic, TR	33	µg/L									
Copper, TR	22	µg/L									
Iron, TR	4000	µg/L									
Percipitation (in)			10.42	8.66	9.92	12.08	18.91	14.09	9.25	13.01	6.27
Flow (MGD)			0	0	0	0	0	0	0	0	0

Outfall #009 Results											
Effluent Limitations		Units	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2
PH	6.5-9.0	S.U.				7.66	7.55			7.38	7.50
BOD	45	mg/L				< 5	< 5			< 5	< 5
COD	120	mg/L				49	43			76	63
TSS	80	mg/L				20	121			10	15
Settable Solids	1.5	mL/L				0.4	< 0.1			0.1	0.1
Oil & Grease	15	mg/L				< 6	< 6			3	< 5
Chlorides + Sulfates	1000	mg/L				16	37			63	11
Aluminum, TR	750	µg/L				1300	630			1300	857
Arsenic, TR	33	µg/L				3.1	1.9			2.0	2.0
Copper, TR	22	µg/L				3.3	6.2			5.0	4.0
Iron, TR	4000	µg/L				1080	557			1370	743
Percipitation (in)			10.42	8.66	9.92	12.08	18.91	14.09	9.25	13.01	6.27
Flow (MGD)			0	0	0	0.00072	0.00072	0	0	0.00144	0.000144