ILLICIT DISCHARGE AND BMP – MS4 PERMIT INSPECTION SUMMARY

Inspection Summary Report

February 2020

PREPARED FOR:
Village of Brown Deer
4800 West Green Brook Drive
Brown Deer, WI 53223

PREPARED BY:
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INTRODUCTION

The Wisconsin Department of Natural Resources (WDNR) has issued the Village of Brown Deer a Wisconsin Pollutant Discharge Elimination System permit (WPDES Permit No. WI-S061565-03) to regulate storm water discharge throughout the Village. Certain requirements must be met by the WPDES permit to remain in compliance.

One requirement of the permit is that the Village of Brown Deer must implement an Illicit Discharge Detection and Elimination (IDDE) Program designed to identify and eliminate illicit connections to the Village's municipal storm sewer system. A second requirement is that the Village must perform inspections on all water quality devices (publicly and privately owned) within their permitted area for which they wish to take pollutant reduction credit.

Ruekert & Mielke, Inc. (R/M) was asked to perform illicit discharge field screenings on all the priority outfalls currently identified and shown on a map prepared by R/M (IDDE Map, Attached), as well as the evaluation methods and results are described below.

FIELD INSPECTION METHODOLOGY – ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) INSPECTIONS

To qualify as a "dry weather" inspection, WDNR suggests waiting for a period of at least 48 hours without a measurable rainfall prior to the inspection. The Village of Brown Deer inspections were completed on November 19, November 20, December 5, 2019. Inspections were performed on days in which there was no measurable rainfall for a minimum of 48 hours leading up to the inspections. Each outfall that was inspected was physically examined and evaluated using an illicit discharge field screening form as a guide for detecting and documenting illicit and non-illicit discharges. The same form was also used to document outfall characteristics such as material, shape, and dimensions. When discharge was identified within an inspected outfall, a 250-milliliter grab sample was taken and evaluated for pH (digital pH meter), temperature (digital thermometer), ammonia (salicylate method), detergent (methylene blue method), phenol (4-aminoantipyrine method), soluble copper (bathocuproine method) and free/total chlorine (DPD method), as well as any other characteristics identified by sight and smell. The sample results were compared to WDNR March 2012 Program Guidance 3800-2012-01 regarding Indicator Parameters Action Levels for illicit discharge sampling. Photographs of all outfalls were taken, labeled with an individual outfall identifier number, and attached to the corresponding illicit discharge field screening sheet. All completed field screening sheets and corresponding photographs are included with this summary report.

IDDE EVALUATION RESULTS

There are 16 priority outfalls identified on the 2019 Brown Deer IDDE Map, all of which were evaluated under this effort.

The result of these evaluations identified 11 outfalls that were flowing, which prompted samples to be taken. One outfall was not flowing, but a sample was taken from the pool. The remaining 4 outfalls were identified as being dry with no sampling necessary.

Five of the 12 sampled outfalls tested positive for detergents, although, only 3 of those 5 were within the WDNR action limits. One of the 12 sampled outfalls had a total chlorine level of 0.10 mg/L as well as an ammonia level of .75 mg/L. Both test results are within the WDNR action limit for total chlorine and ammonia. Three of the 12 sampled outfalls tested positive for the presence of total coliform. None of the sampled outfalls had elevated levels of copper, positive results for phenols, or tested outside of the acceptable pH range of 6.0 to 9.0.

The Village of Brown Deer was notified of the elevated ammonia, chlorine, detergent, and coliform levels for each of these outfalls so that they could determine if additional monitoring was necessary. It is our recommendation that additional investigations be performed upstream of the suspect outfalls to pinpoint the source of the elevated contaminant levels.

Potential sources for the elevated ammonia readings could include sanitary sewage, industrial cleaners or commercial wash water. Elevated detergent readings may indicate the presence of soap or surfactants in the water, which may be from industrial cleaners, commercial or residential car washing, or sanitary sewage. Elevated chlorine readings may result from swimming pools, industrial wastewater, and sanitary sewage. Potential sources of coliform include sanitary sewage and wildlife or pet waste.

The 6 remaining outfalls that were sampled as part of the 2019 inspections had negative or neutral pollutant test results. All test results, flowing and not flowing, are shown in Table - 1 below.

Table 1 - IDDE Test Results

Structure ID	Ammonia (mg/L)	Phenols (mg/L)	Chlorine (mg/L)	Copper (mg/L)	Detergent (mg/L)	Coliform (+/-)	Temperature (°F)	pH
ST012-009	-	-	-	-	-	-	-	-
ST013-130	-	-	-	-	-	-	-	-
ST013-134	0.00	0.00	0.00	0.00	0.75	(-)	52	8.2
ST023-00A	0.00	0.00	0.00	0.00	0.00	(-)	62	8.4
ST023-00B	0.00	0.00	0.00	0.00	0.00	(-)	60	8.3
ST023-00C	-	-	-	-	-	-	-	-
ST023-00D	0.00	0.00	0.00	0.00	0.00	(-)	59	8.4
ST023-009	0.00	0.00	0.00	0.00	0.00	(-)	72	8.2
ST024-00A	-	-	-	-	-	-	-	-
ST024-044	0.00	0.00	0.00	0.00	0.00	(+)	54	8.4
ST024-097	0.00	0.00	0.00	0.00	0.25	(+)	59	8.3
ST024-098	0.75	0.00	0.10	0.00	1.00	(-)	59	8.2
ST034-00A	0.00	0.00	0.00	0.00	1.00	(-)	58	7.9
ST034-036	0.00	0.00	0.00	0.00	0.00	(+)	56	8.4
ST114-022	0.00	0.00	0.00	0.00	0.00	(-)	61	8.3
ST114-032	0.00	0.00	0.00	0.00	0.25	(-)	58	8.2

Highlighted cells indicate that the results exceed the WDNR Action Limit

FIELD INSPECTION METHODOLOGY – WATER QUALITY/QUANTITY DEVICE INSPECTIONS

To qualify as a “dry weather” inspection, WDNR suggests waiting a period of at least 48 hours without a measurable rainfall prior to the inspection. The Village of Brown Deer water quality device inspections were completed on October 30, November 1, November 5, and December 5, 2019, and February 8, 2020. The inspections were performed on days in which there was no measurable rainfall for a minimum of 48 hours leading up to the inspections.

WATER QUALITY/QUANTITY DEVICE EVALUATION RESULTS

R/M was asked to perform inspections on 26 water quality devices which are identified on the attached IDDE Map. All wet, infiltration, biofilter, permeable pavement and proprietary device inspections were

performed using a standard form which categorizes inspection requirements based on the specific device type. Once the issues categorized on the form are checked, the appropriate repair or maintenance for that issue can be determined and comments provided. Permeable pavement was evaluated using a standard form which identified several components to be inspected. The water quality device inspection results are summarized below for wet, biofilter, infiltration, permeable pavement and proprietary device inspections. Sediment depth results for the proprietary devices can be found in Table 2.

WET DEVICES

A wet device functions as a water quality and water quantity device. One wet device was inspected (WP-1) as part of this effort. At the time of inspection, the device appeared to be functioning properly. The items below were noted during the inspection and should be considered for maintenance to ensure the device continues to function properly.

The Bevy at Deerwood Drive (WP-1)

- ***The device embankment*** on the east side of the pond had woody growth that should be removed. Recommended maintenance is to maintain a buffer strip of tall grass to deter geese and mow the remainder of the embankment to the desired height.
- ***The northwest inlet pipes*** showed evidence of erosion on the surrounding embankment. It is recommended that the inlet pipes be evaluated for embankment stabilization.
- ***The freeboard of the emergency spillway*** was less than one foot in length. It is recommended that the spillway be evaluated against the designed dimensions for potential improvement.

BIOFILTER DEVICES

A biofilter functions as a water quality and water quantity device. Nine biofilter devices were inspected, all appeared to be functioning properly at the time of inspection. Items listed below were noted during inspection and should be considered to ensure proper function into the future.

Bradley Road Median Biofilters (BF-4, BF-5, BF-6, BF-7, BF-8, BF-9)

- ***Curb inlets*** had minor accumulation of gravel, mulch, and trash. The inlet riprap should be cleaned to maintain appropriate flow into the device.
- ***Vegetation*** was noted to include a minor presence of thistles and weeds. Overgrown vegetation was observed at the east curb inlets of BF-8. Excess woody growth was noted at BF-9. Unwanted vegetation should be removed to maintain the effectiveness of the device.
- ***Embankment erosion*** was noted on BF-4 and BF-9. Insufficient vegetative cover and erosion should be rectified to maintain device function.

Village Park Biofilters (BF-10A, BF-10C, BF-10D)

- ***Vegetation*** was noted to include a minor presence of weeds. Unwanted vegetation should be removed to maintain the effectiveness of the device.
- ***Minor amounts of trash*** were present. Trash should be removed.

INFILTRATION DEVICES

An infiltration device functions as a water quality and water quantity device. Two infiltration devices were inspected as part of this effort. Both devices appeared to be functioning properly at the time of inspection. Items listed below were noted during inspection and should be considered to ensure continued function.

Infiltration Device (IB-1)

- ***Vegetation*** was noted to include a minor presence of weeds. Unwanted vegetation should be removed to maintain the effectiveness of the device.

Infiltration Device (IB-2)

- ***Vegetation*** was noted to include a moderate presence of excess woody growth and weeds. Unwanted vegetation should be removed to maintain the effectiveness of the device.
- ***Plowed snow*** was noted covering the curb-cut inlets to the basin. It is recommended that snow be piled elsewhere, if possible, to avoid damage to the inlets and riprap.
- ***Additional spring inspection*** will be completed by R/M to ensure device functionality. An addendum to this report will be provided if additional recommendations are deemed necessary.

PERMEABLE PAVEMENT

Three areas of permeable pavement were inspected within the Village. Permeable pavement functions as a water quality and water quantity device. The permeable pavement areas are located at Badger Meter Park (PP-2), Fairy Chasm Park (PP-3), and Village Park (PP-4). All surfaces inspected appeared to be functioning. The following items were noted during inspection and are recommended to be monitored for potential future maintenance.

- ***Minor surface chipping/scoffing*** was present at all inspection sites. Chipping and scoffing should be monitored for potential future repair needs.
- ***Minor soil staining*** was present at PP-3. Stains should be cleaned to prevent surface clogs.

PROPRIETARY DEVICES

The proprietary devices inspected are designed to reduce the inflow of trash, sediment, and oil to the storm sewer system. Inspections for proprietary devices were completed on a form designed specifically for this type of device. Proprietary devices were inspected for sediment depth, presence of oil, sheen, unusual odor, and damage. All the proprietary devices inspected appeared to be functioning properly.

The proprietary device approximate sediment depth results can be found in Table 2.

Removal of trash and floating debris is recommended for the following proprietary devices:

- PD-06 Chamber
- PD-07 East
- PD-07 West
- PD-09 North
- PD-09 South
- PD-10 North
- PD-11
- PD-13 East
- PD-14 East
- PD-14 West
- PD-15 West
- PD-16 Northeast
- PD-16 Southwest

Removal of accumulated sediment is recommended by the manufacturer for any device with at least 2 feet of sediment accumulation. The following proprietary devices listed below and shown in Table – 2 are in need of maintenance:

- PD-06 Inlet
- PD-09 South (Inlet)
- PD-10 South
- PD-13 West
- PD-14 East
- PD-14 West

Table - 2 Proprietary Device Sediment Depths			
Structure ID	**Top of Sediment to Water Surface (Feet)**	**Bottom of Sediment to Water Surface (Feet)**	**Depth of Sediment (Feet)**
PD-6 Inlet	5.3	8.7	**3.4**
PD-6 Chamber	9	10	1
PD-7 East	9	9	0
PD-7 West	9	9.5	0.5
PD-08	8.2	9.5	1.3
PD-9 North	8.5	8.8	0.3
PD-9 South (Inlet)	6.5	8.5	**2**
PD-10 North	8	9	1
PD-10 South	6.3	8.5	**2.2**
PD-11 Inlet Grate Manhole	8.5	9.5	1
PD-12 East	8.8	9	0.2
PD-12 West	7.5	8.7	1.2
PD-13 East	7.5	8	0.5
PD-13 West	6.5	8.5	**2**
PD-14 East	5.5	8	**2.5**
PD-14 West	6.5	8.9	**2.4**
PD-15 East	5.8	6.5	0.7
PD-15 West	6.3	6.5	< 0.25
PD-16 Northeast	8.8	9.1	0.3
PD-16 Southwest (Inlet)	7.9	9.1	1.2

ATTACHMENTS

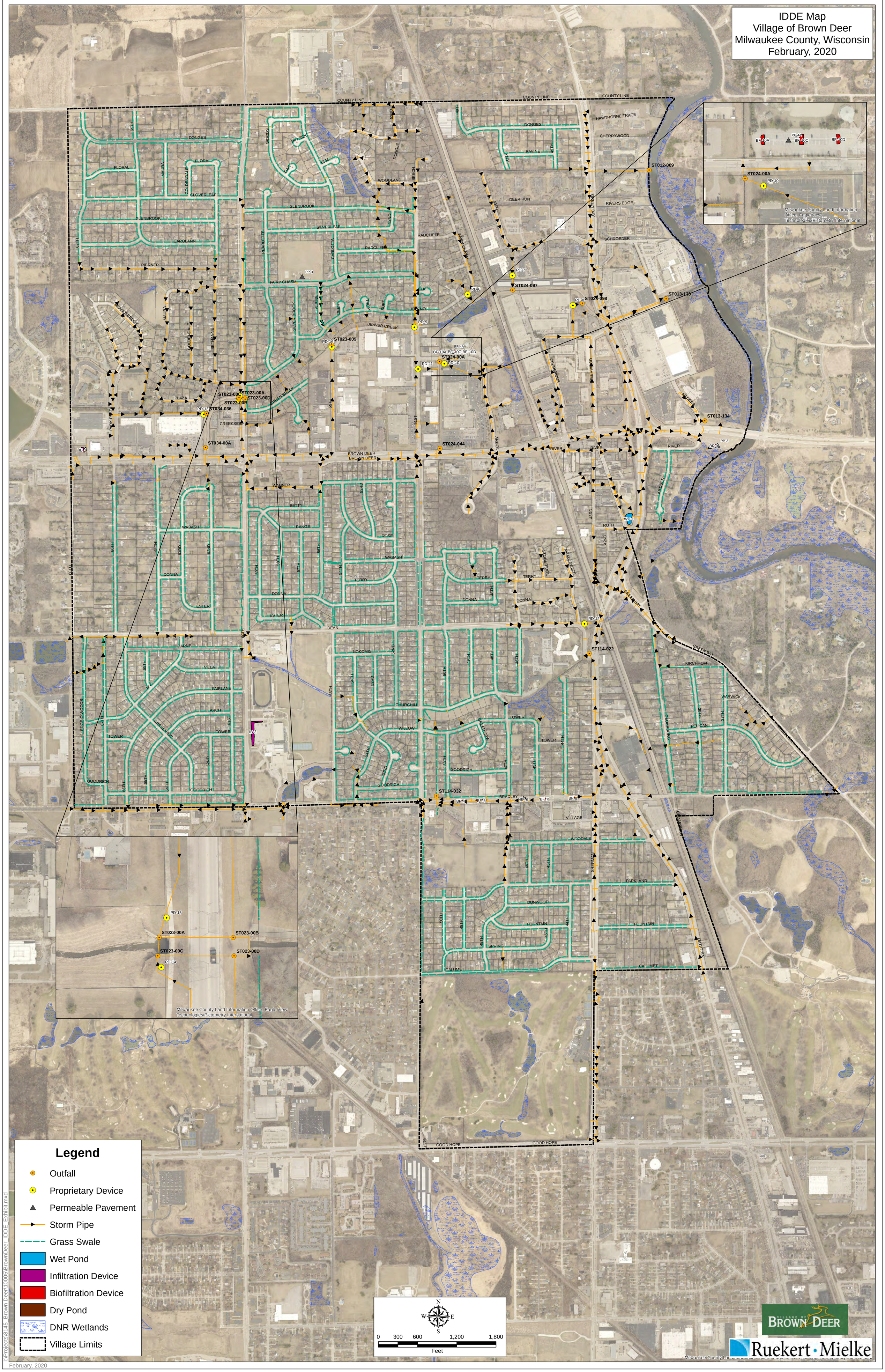
Village of Brown Deer IDDE Location Map (Prepared by Ruekert & Mielke, Inc.)

IDDE Outfall Inspection Reports with Photos

Pond/Infiltration Basin/Biofilter/Permeable Pavement Inspection Reports with Photos

Proprietary Device Inspection Reports with Photos

IDDE Map
Village of Brown Deer
Milwaukee County, Wisconsin
February, 2020



Legend

- Outfall
- Proprietary Device
- Permeable Pavement
- Storm Pipe
- Grass Swale
- Wet Pond
- Infiltration Device
- Biofiltration Device
- Dry Pond
- DNR Wetlands
- Village Limits

N W E S

0 300 600 1,200 1,800

Feet

Milwaukee County Land Information Office, Eagle View Technologies/Pictometry International

Ruekert · Mielke

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February, 2020

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST012-009
Today's date: 11/19/2019		Time (Military): 1340
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 39	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: Green Bay Rd and Rivers Edge		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	60	Yes, 2.5'
Flow Present?	☐ Yes ☑ No *If No, Skip to Section 5*			
Flow Description	☐ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☐**Yes** ☑ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?		☐ Yes ☑ No		
2. If yes, collected from:		☐ Flow ☐ Pool		
3. Samples Taken:	☐ Copper (mg/l)	☐ Phenols	☐ Surfactants	☐ Detergents (mg/l)
☐ Potassium (mg/l)	☐ Ecoli	☐ Chlorine	☐ Coliform	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

No apparent flow. Outfall in good condition. No apparent illicit discharge.

ST012-009 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:	Outfall ID: ST013-130
Today's date: 12/5/2019	Time (Military): 2145
Investigators: Mark Bruns	Form completed by: Mark Bruns
Temperature (°F): 39	Rainfall (in.): Last 24 hours: 0.0 Last 48 hours: 0.0
Nearest Intersection / Location: Green space behind residential complex near the northeast corner of the mall.	
Photo #s:	Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known): Unable to locate outfall, see Section 7 for more information.	

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage				No
Flow Present?	☐ Yes ☑ No *If No, Skip to Section 5*			
Flow Description	☐ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☐ **Yes** ☑ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?		☐ Yes	☑ No	
2. If yes, collected from:		☐ Flow	☐ Pool	
3. Samples Taken:	☐ Copper (mg/l)	☐ Phenols	☐ Surfactants	☐ Detergents (mg/l)
☐ Potassium (mg/l)	☐ Ecoli	☐ Chlorine	☐ Coliform	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Could not locate outfall or first three upstream manholes. Checked the fourth upstream manhole and there was no flow or physical indicators. Manhole checked is located in green space behind residential complex and the northeast corner of the mall.

ST013-130 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST013-134
Today's date: 11/19/2019		Time (Military): 1255
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 37	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: Brown Deer Rd and Kildeer Court		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	30	Yes, 1.9'
Flow Present?	☐ Yes ☑ No *If No, Skip to Section 5*			
Flow Description	☐ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
						52	8.2	0.0

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☑ Abnormal Vegetation	☑ Excessive ☐ Inhibited
☑ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☑ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☐ Flow ☑ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.75
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform N	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Heavy presence of cattails in flow line. Some trash. Some oily spots in pool.

ST013-134 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST023-00A	
Today's date: 11/20/2019		Time (Military): 1340	
Investigators: Mark Bruns		Form completed by: Mark Bruns	
Temperature (°F): 48	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0	
Nearest Intersection / Location: 60th St and Silverbrook Ln; Northwest outfall.			
Photo #s:		Land use in drainage area: Not recorded	
Notes (e.g., origin of outfall, if known):			

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	48	No
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
0.25	2.00	1.00	1.5			62	8.4	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☑ Outfall Damage	☑ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.00
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☐ Coliform N	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Some minor chipping and spalling around the end of the pipe. No maintenance is required at this point.

ST023-00A IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:	Outfall ID: ST023-00B
Today's date: 11/20/2019	Time (Military): 1320
Investigators: Mark Bruns	Form completed by: Mark Bruns
Temperature (°F): 48	Rainfall (in.): Last 24 hours: 0.0 Last 48 hours: 0.0
Nearest Intersection / Location: 60th St and Silverbrook Ln; Northeast outfall.	
Photo #s:	Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):	

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	60	No
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
		1.00	1.5			60	8.3	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☑ Deposits/Stains	☐ Oily ☑ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.00
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform N	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

No concerns or IDDE indicators observed in the field. Fast flow rate.

ST023-00B IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST023-00C
Today's date: 11/20/2019		Time (Military): 1340
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 48	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: 60th St and Silverbrook Ln; Southwest outfall.		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	22	No
Flow Present?	☐ Yes ☑ No *If No, Skip to Section 5*			
Flow Description	☐ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☑ Outfall Damage	☑ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?		☐ Yes ☑ No		
2. If yes, collected from:		☐ Flow ☐ Pool		
3. Samples Taken:	☐ Copper (mg/l)	☐ Phenols	☐ Surfactants	☐ Detergents (mg/l)
☐ Potassium (mg/l)	☐ Ecoli	☐ Chlorine	☐ Coliform	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Mortar is missing from the pipe opening.

ST023-00C IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:	Outfall ID: ST023-00D
Today's date: 11/20/2019	Time (Military): 1320
Investigators: Mark Bruns	Form completed by: Mark Bruns
Temperature (°F): 48	Rainfall (in.): Last 24 hours: 0.0 Last 48 hours: 0.0
Nearest Intersection / Location: 60th St and Silverbrook Ln; Southeast outfall.	
Photo #s:	Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):	

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	24	No
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
		1.0	1.5			59	8.4	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☑ Deposits/Stains	☐ Oily ☑ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.00
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform N	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

No concerns or IDDE indicators observed in the field. Fast flow rate.

ST023-00D IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST023-009
Today's date: 11/19/2018		Time (Military): 1015
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 34	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: 55th Street and Beaver Creek		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	30	No
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
0.04	0.66	1.00	2			72	8.2	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☑ Outfall Damage	☑ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☑ Deposits/Stains	☐ Oily ☑ Flow Line ☐ Paint ☐ Other:_____
☑ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.00
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform N	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

There are stains in the flow line. Brush has fallen into the flow line. There is a piece missing from the pipe endwall. The flow is a fast trickle.

ST023-009 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST024-00A
Today's date: 11/19/2019		Time (Military): 1545
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 39	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: Greenbrook Dr and Arbon Dr.		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Elliptical	38x60	Yes, 0.7'
Flow Present?	☐ Yes ☑ No *If No, Skip to Section 5*			
Flow Description	☐ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☐**Yes** ☑ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?		☐ Yes	☑ No	
2. If yes, collected from:		☐ Flow	☐ Pool	
3. Samples Taken:	☐ Copper (mg/l)	☐ Phenols	☐ Surfactants	☐ Detergents (mg/l)
☐ Potassium (mg/l)	☐ Ecoli	☐ Chlorine	☐ Coliform	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Submerged, no apparent flow.

ST024-00A IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST024-044
Today's date: 11/19/2019		Time (Military): 1615
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 39	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: Brown Deer Rd and 51st St		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	60	Yes, 1.0'
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
1.00	3.50	1.00	10			54	8.4	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☑ YES ☐ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☑ Floatables	☐ Sewage (Toilet Paper, Etc.) ☑ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☐ **Yes** ☑ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.00
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform Y	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Suds were present in the flow.

ST024-044 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST024-097
Today's date: 11/19/2019		Time (Military): 1520
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 39	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: Deerwood and Deerbrook		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Elliptical	38x60	No
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
0.15	2.00	1.00	4			59	8.3	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☑ Outfall Damage	☑ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?			☑ Yes	☐ No	
2. If yes, collected from:			☑ Flow	☐ Pool	
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.25	
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform Y		

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Algae was present in the pipe. The pipe endwall is chipping.

ST024-097 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST024-098
Today's date: 11/19/2019		Time (Military): 1500
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 39	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: Behind Wendys		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	48	No
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
0.15	1.70	1.00	8			59	8.2	0.75

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☑ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 1.00
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.10	☑ Coliform N	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Algae is present in the pipe. The outfall is in good shape.

ST024-098 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:	Outfall ID: ST034-036
Today's date: 11/20/2019	Time (Military): 1420
Investigators: Mark Bruns	Form completed by: Mark Bruns
Temperature (°F): 46	Rainfall (in.): Last 24 hours: 0.0 Last 48 hours: 0.0
Nearest Intersection / Location: Behind east end of Walmart.	
Photo #s:	Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):	

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	48	No
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
0.04	1.10	1.00	2			56	8.4	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☐ **Yes** ☑ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☐ Poor Pool Quality	☐ Odors ☐ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.00
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform Y	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

No IDDE indicators were observed during inspection.

ST034-036 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST114-022
Today's date: 11/20/2019		Time (Military): 1200
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 46	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: Sherman Ave and Dean Rd		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	54	No
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☐ Trickle ☑ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
0.20	2.00	2.00	1.5			61	8.3	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☑ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☑ Deposits/Stains	☐ Oily ☑ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☑ Poor Pool Quality	☐ Odors ☑ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☐ Excessive Algae ☑ Other: Garbage

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.00
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform N	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

The outfall had a fast flow. There was damage to the trash rack.

ST114-022 IDDE Outfall Inspection

ILLICIT DISCHARGE FIELD SCREENING SHEET

SECTION 1: BACKGROUND DATA

Subwatershed:		Outfall ID: ST114-032
Today's date: 11/20/2019		Time (Military): 1240
Investigators: Mark Bruns		Form completed by: Mark Bruns
Temperature (°F): 48	Rainfall (in.): Last 24 hours: 0.0	Last 48 hours: 0.0
Nearest Intersection / Location: 50th St and Bradley Rd		
Photo #s:		Land use in drainage area: Not recorded
Notes (e.g., origin of outfall, if known):		

SECTION 2: OUTFALL DESCRIPTION

Location	Material	Shape	Dimensions (in.)	Submerged
☑ Closed Pipe ☐ Open Drainage	Concrete	Round	48	Yes
Flow Present?	☑ Yes ☐ No *If No, Skip to Section 5*			
Flow Description	☑ Trickle ☐ Moderate ☐ Substantial			

SECTION 3: QUANTITATIVE CHARACTERIZATION

Flow Depth (ft)	Flow Width (ft)	Measured Length (ft)	Time of Travel (sec)	Volume (cu ft)	Time To Fill (sec)	Temperature (F)	pH	Ammonia (PPM)
0.25	3.00	1.00	8			58	8.2	0.00

SECTION 4: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Is Any Physical Indicator Present in the flow? ☐ YES ☑ NO

INDICATOR	DESCRIPTION
☐ Odor	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/Gas ☐ Sulfide ☐ Other : _____
☐ Color	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: _____
☐ Turbidity	☐ 1 - Slight Cloudiness ☐ 2 - Cloudy ☐ 3 - Opaque
☐ Floatables	☐ Sewage (Toilet Paper, Etc.) ☐ Suds ☐ Petroleum (Oil Sheen) ☐ Other : _____

SECTION 5: PHYSICAL INDICATORS FOR BOTH FLOWING AND NON-FLOWING OUTFALL

Are Any Physical Indicators that are not related to flow present? ☑ **Yes** ☐ **No**

INDICATOR	DESCRIPTION
☐ Outfall Damage	☐ Spalling, Cracking or Chipping ☐ Corrosion ☐ Peeling Paint
☐ Deposits/Stains	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:_____
☐ Abnormal Vegetation	☐ Excessive ☐ Inhibited
☑ Poor Pool Quality	☐ Odors ☑ Suds ☐ Floatables ☐ Yellow ☐ Oil Sheen ☑ Excessive Algae ☐ Other: _____

SECTION 6: DATA COLLECTION

1. Sample for the lab?	☑ Yes ☐ No			
2. If yes, collected from:	☑ Flow ☐ Pool			
3. Samples Taken:	☑ Copper (mg/l) 0.00	☑ Phenols 0.00	☐ Surfactants	☑ Detergents (mg/l) 0.25
☐ Potassium (mg/l)	☐ Ecoli	☑ Chlorine 0.00	☑ Coliform N	

SECTION 7: COMMENTS OR OTHER CONCERNS (e.g., trash or needed infrastructure repairs)?

Garbage in trash rack impeding flow. Poor pool quality.

ST114-032 IDDE Outfall Inspection

Ruekert · Mielke

STORMWATER POND INSPECTION

Pond Information			
Pond ID:	WP-1	Pond Type:	Wet Pond
Location:	The Bevy, Deerwood Dr and Green Bay Rd		
Subdivision:		Watershed:	MI-27
Capacity:		Acres:	
Overflow Elev:		100 Year Elev:	
Year Constructed:		Date Input:	
Water Quality:		Private:	

Inspection Details					
Inspector Name(s):	Mark Bruns				
Inspection Date:	10/30/2019	Start Time:	1440	End Time:	1520
Weather Condition:	43 Degrees, Cloudy			Last Rainfall Date:	10/27/2019

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Dry Pond							
1. Standing water or wet spots?			N/A			N/A	
2. Sediment or trash accumulation?			N/A			N/A	
3. Low flow channels unobstructed?			N/A			N/A	
4. Other?			N/A			N/A	
Wet Pond							
1. Removal of floating debris required?	Y				N		
2. Visible oil/chemical presence?	Y				N		
3. Evidence of wave action?	Y				N		
4. Safety shelf erosion or failure?	Y				N		
5. Other?			N/A			N/A	
Infiltration Basin							
1. Standing water or wet spots?			N/A			N/A	
2. Sediment or trash accumulation?			N/A			N/A	
3. Under drain functioning?			N/A			N/A	
4. Other?			N/A			N/A	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Vegetation							
1. Adequate vegetation cover?	Y				N		
2. Appropriate vegetation?	Y				N		
3. Presence of invasive or undesirable vegetation/woody growth?	Y				Y		Woody growth on top of the east berm.
4. Excessive nuisance aquatic vegetation present?	Y				N		
5. Other?	N/A				N/A		
Sediment Forebays							
1. Is sediment accumulation >50%? If yes, maintenance is needed immediately.	N/A				N/A		
2. Evidence of excessive velocity/ scour?	N/A				N/A		
3. Maintenance access clear of obstructions?	N/A				N/A		
4. Other?	N/A				N/A		
Embankment & Emergency Spillway							
1. Is the spillway level?	Y				N		
2. Adequate Freeboard? (min 1' from top of bank to highest outlet)	Y				Y		Less than 1 foot at emergency spillway.
3. Embankment erosion evident?	Y				Y		Erosion at northwest inlet pipes.
4. Cracking, bulging or sliding of embankment?	Y				N		
5. Evidence of animal burrows?	Y				N		No apparent evidence.
6. Seepage evident on exterior face of embankment?	Y				N		
7. Vertical & horizontal alignment of top of dam as per plans?	N/A				N/A		
8. Emergency spillway clear of obstructions & debris?	Y				N		
9. Maintenance access clear of obstruction?	Y				N		
10. Other?	N/A				N/A		

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Riser & Outfall Spillway							
1. Low flow orifice obstructed?	Y				N		
2. Low flow trash rack debris/ corrosion?	Y				N		
3. Weir trash rack debris/corrosion?	Y				N		
4. Excessive sediment accumulation inside the riser?	Y				N		
5. Sediment accumulation in outlet pipe?	Y			Y			Less than 1 inch.
6. Outfall channels functioning?	Y				N		No apparent issues.
7. Under drain functioning?	N/A			N/A			
8. Slope protection or rip-rap failures?	Y				N		
9. Other?	N/A			N/A			
Other							
1. Encroachments on pond or easement area?	Y			Y			Dog feces and the northwest corner.
2. Complaints from residents?	N/A			N/A			
3. Odor?	Y				N		
4. Mowing required?	Y				N		Maintain per maintenance agreement.
5. Graffiti removal needed?	Y				N		
6. Insects in excess?	Y				N		
7. Public hazards?	Y				N		
8. Other?	N/A			N/A			

Summary:	This device appears to be functioning as designed. Bank erosion is occurring at the newly installed inlet pipe from the northern development. I discussed this concern with the Village erosion control inspector for that project.
Inspector Remarks:	Continue to mow and maintain per the pond maintenance agreement.

Images

WP-1 Inspection, 10/30/2019

WP-1 Inspection, 10/30/2019

WP-1 Inspection, 10/30/2019

WP-1 Inspection, 10/30/2019

Images

WP-1 Inspection, 10/30/2019

WP-1 Inspection, 10/30/2019

Ruekert · Mielke

STORMWATER POND INSPECTION

Pond Information			
Pond ID:	BF-4	Pond Type:	Biofiltration Device
Location:	Bradley Road Median		
Subdivision:		Watershed:	MI-29
Capacity:		Acres:	
Overflow Elev:		100 Year Elev:	
Year Constructed:		Date Input:	
Water Quality:		Private:	

Inspection Details					
Inspector Name(s):	Mark Bruns				
Inspection Date:	12/5/2019	Start Time:	1155	End Time:	1200
Weather Condition:	36 Degrees, Cloudy			Last Rainfall Date:	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Dry Pond							
1. Standing water or wet spots?			N/A			N/A	
2. Sediment or trash accumulation?			N/A			N/A	
3. Low flow channels unobstructed?			N/A			N/A	
4. Other?			N/A			N/A	
Wet Pond							
1. Removal of floating debris required?			N/A			N/A	
2. Visible oil/chemical presence?			N/A			N/A	
3. Evidence of wave action?			N/A			N/A	
4. Safety shelf erosion or failure?			N/A			N/A	
5. Other?			N/A			N/A	
Infiltration Basin							
1. Standing water or wet spots?	Y			N			
2. Sediment or trash accumulation?	Y			Y			Mulch, minor trash, and gravel present in rip-rap at curb inlets to device.
3. Under drain functioning?	Y			Y			Appears to be functioning.
4. Other?			N/A			N/A	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Vegetation							
1. Adequate vegetation cover?	Y				N		
2. Appropriate vegetation?	Y				Y		Minor thistles present.
3. Presence of invasive or undesirable vegetation/woody growth?	Y				Y		Minor thistles present.
4. Excessive nuisance aquatic vegetation present?	Y				N		
5. Other?	N/A			N/A			
Sediment Forebays							
1. Is sediment accumulation >50%? If yes, maintenance is needed immediately.	N/A			N/A			
2. Evidence of excessive velocity/ scour?	N/A			N/A			
3. Maintenance access clear of obstructions?	N/A			N/A			
4. Other?	N/A			N/A			
Embankment & Emergency Spillway							
1. Is the spillway level?	N/A			N/A			
2. Adequate Freeboard? (min 1' from top of bank to highest outlet)	N/A			N/A			
3. Embankment erosion evident?	Y				Y		Some erosion at the east side of the device.
4. Cracking, bulging or sliding of embankment?	Y				N		
5. Evidence of animal burrows?	Y				N		
6. Seepage evident on exterior face of embankment?	N/A			N/A			
7. Vertical & horizontal alignment of top of dam as per plans?	N/A			N/A			
8. Emergency spillway clear of obstructions & debris?	N/A			N/A			
9. Maintenance access clear of obstruction?	N/A			N/A			
10. Other?	N/A			N/A			

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Riser & Outfall Spillway							
1. Low flow orifice obstructed?			N/A			N/A	
2. Low flow trash rack debris/ corrosion?			N/A			N/A	
3. Weir trash rack debris/corrosion?		Y			N		
4. Excessive sediment accumulation inside the riser?		Y			N		
5. Sediment accumulation in outlet pipe?			N/A			N/A	
6. Outfall channels functioning?			N/A			N/A	
7. Under drain functioning?		Y			N		Appears to be functioning.
8. Slope protection or rip-rap failures?			N/A			N/A	
9. Other?			N/A			N/A	
Other							
1. Encroachments on pond or easement area?		Y			N		
2. Complaints from residents?		Y			N		
3. Odor?		Y			N		
4. Mowing required?		Y			N		
5. Graffiti removal needed?		Y			N		
6. Insects in excess?		Y			N		
7. Public hazards?		Y			N		
8. Other?			N/A			N/A	

Summary:	The basin appears to be functioning. There is no standing water or wet spots. Mulch is displaced in select areas. The rip-rap needs to be cleaned.
Inspector Remarks:	

Images

BF-4 Inspection,12/05/2019

BF-4 Inspection,12/05/2019

BF-4 Inspection,12/05/2019

BF-4 Inspection,12/05/2019

Images

BF-4 Inspection,12/05/2019

BF-4 Inspection,12/05/2019

Ruekert · Mielke

STORMWATER POND INSPECTION

Pond Information			
Pond ID:	BF-5	Pond Type:	Biofiltration Device
Location:	Bradley Road Median		
Subdivision:		Watershed:	MI-29
Capacity:		Acres:	
Overflow Elev:		100 Year Elev:	
Year Constructed:		Date Input:	
Water Quality:		Private:	

Inspection Details					
Inspector Name(s):	Mark Bruns				
Inspection Date:	12/05/2019	Start Time:	1135	End Time:	1140
Weather Condition:	36 Degrees, Cloudy			Last Rainfall Date:	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Dry Pond							
1. Standing water or wet spots?			N/A			N/A	
2. Sediment or trash accumulation?			N/A			N/A	
3. Low flow channels unobstructed?			N/A			N/A	
4. Other?			N/A			N/A	
Wet Pond							
1. Removal of floating debris required?			N/A			N/A	
2. Visible oil/chemical presence?			N/A			N/A	
3. Evidence of wave action?			N/A			N/A	
4. Safety shelf erosion or failure?			N/A			N/A	
5. Other?			N/A			N/A	
Infiltration Basin							
1. Standing water or wet spots?	Y			N			
2. Sediment or trash accumulation?	Y			Y			Light trash removal needed.
3. Under drain functioning?	Y			Y			Appears to be functioning.
4. Other?			N/A			N/A	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Vegetation							
1. Adequate vegetation cover?	Y				N		
2. Appropriate vegetation?	Y				Y		Thistles are present.
3. Presence of invasive or undesirable vegetation/woody growth?	Y				Y		Thistles are present.
4. Excessive nuisance aquatic vegetation present?	Y				N		
5. Other?			N/A			N/A	
Sediment Forebays							
1. Is sediment accumulation >50%? If yes, maintenance is needed immediately.			N/A			N/A	
2. Evidence of excessive velocity/ scour?			N/A			N/A	
3. Maintenance access clear of obstructions?			N/A			N/A	
4. Other?			N/A			N/A	
Embankment & Emergency Spillway							
1. Is the spillway level?			N/A			N/A	
2. Adequate Freeboard? (min 1' from top of bank to highest outlet)			N/A			N/A	
3. Embankment erosion evident?	Y				N		
4. Cracking, bulging or sliding of embankment?	Y				N		
5. Evidence of animal burrows?	Y				N		
6. Seepage evident on exterior face of embankment?			N/A			N/A	
7. Vertical & horizontal alignment of top of dam as per plans?			N/A			N/A	
8. Emergency spillway clear of obstructions & debris?			N/A			N/A	
9. Maintenance access clear of obstruction?			N/A			N/A	
10. Other?			N/A			N/A	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Riser & Outfall Spillway							
1. Low flow orifice obstructed?			N/A			N/A	
2. Low flow trash rack debris/ corrosion?			N/A			N/A	
3. Weir trash rack debris/corrosion?		Y			N		
4. Excessive sediment accumulation inside the riser?		Y			N		
5. Sediment accumulation in outlet pipe?		Y			N		
6. Outfall channels functioning?			N/A			N/A	
7. Under drain functioning?		Y			N		Appears to be functioning.
8. Slope protection or rip-rap failures?			N/A			N/A	
9. Other?			N/A			N/A	
Other							
1. Encroachments on pond or easement area?		Y			N		
2. Complaints from residents?		Y			N		
3. Odor?		Y			N		
4. Mowing required?		Y			N		
5. Graffiti removal needed?		Y			N		
6. Insects in excess?		Y			N		
7. Public hazards?		Y			N		
8. Other?			N/A			N/A	

Summary:	Mulch is displaced in select areas. Thistles are present. Sediment and mulch is present in the rip-rap at curb cut-out. Inlets to device should be cleaned of light trash accumulation, sediment, and mulch.
Inspector Remarks:	

Images

BF-5 Inspection, 12/05/2019

BF-5 Inspection, 12/05/2019

BF-5 Inspection, 12/05/2019

BF-5 Inspection, 12/05/2019

Images

BF-5 Inspection, 12/05/2019

BF-5 Inspection, 12/05/2019

Ruekert · Mielke

STORMWATER POND INSPECTION

Pond Information			
Pond ID:	BF-6	Pond Type:	Biofiltration Device
Location:	Bradley Rd Median		
Subdivision:		Watershed:	MI-29
Capacity:		Acres:	
Overflow Elev:		100 Year Elev:	
Year Constructed:		Date Input:	
Water Quality:		Private:	

Inspection Details					
Inspector Name(s):	Mark Bruns				
Inspection Date:	10/30/2019	Start Time:	1610	End Time:	1620
Weather Condition:	43 Degrees, Cloudy			Last Rainfall Date:	10/26/2019

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Dry Pond							
1. Standing water or wet spots?			N/A			N/A	
2. Sediment or trash accumulation?			N/A			N/A	
3. Low flow channels unobstructed?			N/A			N/A	
4. Other?			N/A			N/A	
Wet Pond							
1. Removal of floating debris required?			N/A			N/A	
2. Visible oil/chemical presence?			N/A			N/A	
3. Evidence of wave action?			N/A			N/A	
4. Safety shelf erosion or failure?			N/A			N/A	
5. Other?			N/A			N/A	
Infiltration Basin							
1. Standing water or wet spots?			N/A			N/A	
2. Sediment or trash accumulation?			N/A			N/A	
3. Under drain functioning?			N/A			N/A	
4. Other?			N/A			N/A	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Vegetation							
1. Adequate vegetation cover?	Y				N		
2. Appropriate vegetation?	Y				Y		Thistles and weeds are present.
3. Presence of invasive or undesirable vegetation/woody growth?	Y				Y		Thistles and weeds are present.
4. Excessive nuisance aquatic vegetation present?	Y				N		
5. Other?			N/A			N/A	
Sediment Forebays							
1. Is sediment accumulation >50%? If yes, maintenance is needed immediately.			N/A			N/A	
2. Evidence of excessive velocity/ scour?			N/A			N/A	
3. Maintenance access clear of obstructions?			N/A			N/A	
4. Other?			N/A			N/A	
Embankment & Emergency Spillway							
1. Is the spillway level?			N/A			N/A	
2. Adequate Freeboard? (min 1' from top of bank to highest outlet)			N/A			N/A	
3. Embankment erosion evident?	Y				N		
4. Cracking, bulging or sliding of embankment?	Y				N		
5. Evidence of animal burrows?	Y				N		
6. Seepage evident on exterior face of embankment?			N/A			N/A	
7. Vertical & horizontal alignment of top of dam as per plans?			N/A			N/A	
8. Emergency spillway clear of obstructions & debris?			N/A			N/A	
9. Maintenance access clear of obstruction?	Y				N		
10. Other?			N/A			N/A	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Riser & Outfall Spillway							
1. Low flow orifice obstructed?			N/A			N/A	
2. Low flow trash rack debris/ corrosion?			N/A			N/A	
3. Weir trash rack debris/corrosion?			N/A			N/A	
4. Excessive sediment accumulation inside the riser?			N/A			N/A	
5. Sediment accumulation in outlet pipe?	Y				N		
6. Outfall channels functioning?			N/A			N/A	
7. Under drain functioning?	Y				N		Appears to be functioning.
8. Slope protection or rip-rap failures?			N/A			N/A	
9. Other?			N/A			N/A	
Other							
1. Encroachments on pond or easement area?	Y				N		
2. Complaints from residents?			N/A			N/A	
3. Odor?	Y				N		
4. Mowing required?	Y				N		
5. Graffiti removal needed?	Y				N		
6. Insects in excess?	Y				N		
7. Public hazards?	Y				N		
8. Other?			N/A			N/A	

Summary:	This device is in the median and appears to be functioning as designed. Remove thistles and weeds. Additional mulch should be considered in areas where the mulch has been displaced.
Inspector Remarks:	Continue to mow and maintain per maintenance agreement.

Images

BF-6 Inspection, 10/30/2019

BF-6 Inspection, 10/30/2019

BF-6 Inspection, 10/30/2019

BF-6 Inspection, 10/30/2019

Ruekert · Mielke

STORMWATER POND INSPECTION

Pond Information			
Pond ID:	BF-7	Pond Type:	Biofiltration Device
Location:	Bradley Road Median		
Subdivision:		Watershed:	MI-29
Capacity:		Acres:	
Overflow Elev:		100 Year Elev:	
Year Constructed:		Date Input:	
Water Quality:		Private:	

Inspection Details					
Inspector Name(s):	Mark Bruns				
Inspection Date:	10/30/2019	Start Time:	1600	End Time:	1620
Weather Condition:	43 Degrees, Cloudy			Last Rainfall Date:	10/26/2019

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Dry Pond							
1. Standing water or wet spots?			N/A			N/A	
2. Sediment or trash accumulation?			N/A			N/A	
3. Low flow channels unobstructed?			N/A			N/A	
4. Other?			N/A			N/A	
Wet Pond							
1. Removal of floating debris required?			N/A			N/A	
2. Visible oil/chemical presence?			N/A			N/A	
3. Evidence of wave action?			N/A			N/A	
4. Safety shelf erosion or failure?			N/A			N/A	
5. Other?			N/A			N/A	
Infiltration Basin							
1. Standing water or wet spots?			N/A			N/A	
2. Sediment or trash accumulation?			N/A			N/A	
3. Under drain functioning?			N/A			N/A	
4. Other?			N/A			N/A	

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Vegetation							
1. Adequate vegetation cover?	Y				N		
2. Appropriate vegetation?	Y				Y		Thistles and weeds are present.
3. Presence of invasive or undesirable vegetation/woody growth?	Y				Y		Thistles and weeds are present.
4. Excessive nuisance aquatic vegetation present?	Y				N		
5. Other?			N/A			N/A	
Sediment Forebays							
1. Is sediment accumulation >50%? If yes, maintenance is needed immediately.			N/A			N/A	
2. Evidence of excessive velocity/ scour?			N/A			N/A	
3. Maintenance access clear of obstructions?			N/A			N/A	
4. Other?			N/A			N/A	
Embankment & Emergency Spillway							
1. Is the spillway level?			N/A			N/A	
2. Adequate Freeboard? (min 1' from top of bank to highest outlet)			N/A			N/A	
3. Embankment erosion evident?	Y				N		
4. Cracking, bulging or sliding of embankment?	Y				N		
5. Evidence of animal burrows?	Y				N		
6. Seepage evident on exterior face of embankment?			N/A			N/A	
7. Vertical & horizontal alignment of top of dam as per plans?			N/A			N/A	
8. Emergency spillway clear of obstructions & debris?			N/A			N/A	
9. Maintenance access clear of obstruction?	Y				N		
10. Other?	Y				Y		Sediment present in the rip-rap stone at the curb inlets.

Issue	Checked			Maintenance Needed			Comments
	Y	N	N/A	Y	N	N/A	
Riser & Outfall Spillway							
1. Low flow orifice obstructed?			N/A			N/A	
2. Low flow trash rack debris/ corrosion?			N/A			N/A	
3. Weir trash rack debris/corrosion?			N/A			N/A	
4. Excessive sediment accumulation inside the riser?			N/A			N/A	
5. Sediment accumulation in outlet pipe?	Y				N		
6. Outfall channels functioning?			N/A			N/A	
7. Under drain functioning?	Y				N		Appears to be functioning.
8. Slope protection or rip-rap failures?			N/A			N/A	
9. Other?			N/A			N/A	
Other							
1. Encroachments on pond or easement area?	Y				N		
2. Complaints from residents?			N/A			N/A	
3. Odor?	Y				N		
4. Mowing required?	Y				N		
5. Graffiti removal needed?	Y				N		
6. Insects in excess?	Y				N		
7. Public hazards?	Y				N		
8. Other?			N/A			N/A	

Summary:	This device is in the median and appears to be functioning as designed. There are thistles and weeds that should be removed. There is sediment in the rip-rap at the curb inlets that should be removed.
Inspector Remarks:	Continue to mow and maintain per maintenance agreement.