

2015 Storm Water Monitoring Report



Prepared for: City of Middleton

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Date: January 8, 2016



Acknowledgements: This water quality monitoring report presents data collected by Middleton City staff and contractors to support storm water quality management as required for compliance with a NPDES Phase II Storm Water Permit.

SUBMITTED TO

United States Environmental Protection Agency
Storm Water Program
NPDES Compliance Unit
Region 10, Seattle, Washington

Idaho Department of Environmental Quality
Boise Region Office
Boise, Idaho

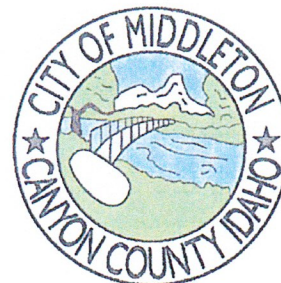


Table of Contents

I. Introduction.....	1
II. Outfall Monitoring.....	4
A. Methods.....	4
B. Results	4
C. Discussion.....	8
III. Dry Weather Screening	8
A. Methods.....	8
B. Results	9
C. Discussion.....	12
D. Potential Illicit Discharges	12
IV. Recommendations	13
V. References.....	14

Figures

Figure 1. Map showing storm water monitoring and 2015 screening locations.	3
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Tables

Table 1. 2012 Outfall #WC-1.200 laboratory results and estimated annual runoff load.....	5
Table 2. 2013 Outfall #WC-1.200 laboratory results and estimated annual runoff load.....	5
Table 3. 2014 Outfall #WC-1.200 laboratory results and estimated annual runoff load.....	5

Appendices

- Appendix A. Water quality status of Willow Creek
- Appendix B. Laboratory Reports for Outfall Monitoring
- Appendix C. Dry Weather Screening Information

I. Introduction

This report is intended to meet the monitoring reporting requirements as specified in the City of Middleton NPDES Stormwater Permit No. IDS-028100. The Permit requires municipal separate storm sewer system (MS4) outfall monitoring and dry weather screening beginning in

Year 3. The City's primary goal for meeting conditions of the Permit is to demonstrate a good faith effort by documenting substantial progress with the City's NPDES requirements for the period up to and including Year 6 of the permit which ended on October 15, 2015.

There are two components to MS4 water quality monitoring: (1) outfall monitoring and (2) dry weather screening. The monitoring and screening locations are shown in Figure 1. The primary focus of the water quality sampling was on total suspended solids (TSS), phosphorus (TP), and bacteria (E Coli), which were identified in the Phase II NPDES MS4 Permit (EPA 2009) as the "Pollutants of Concern".

Results of these monitoring and screening efforts are presented below along with recommendations to better focus implementation of storm water management actions on the needed water quality improvements.

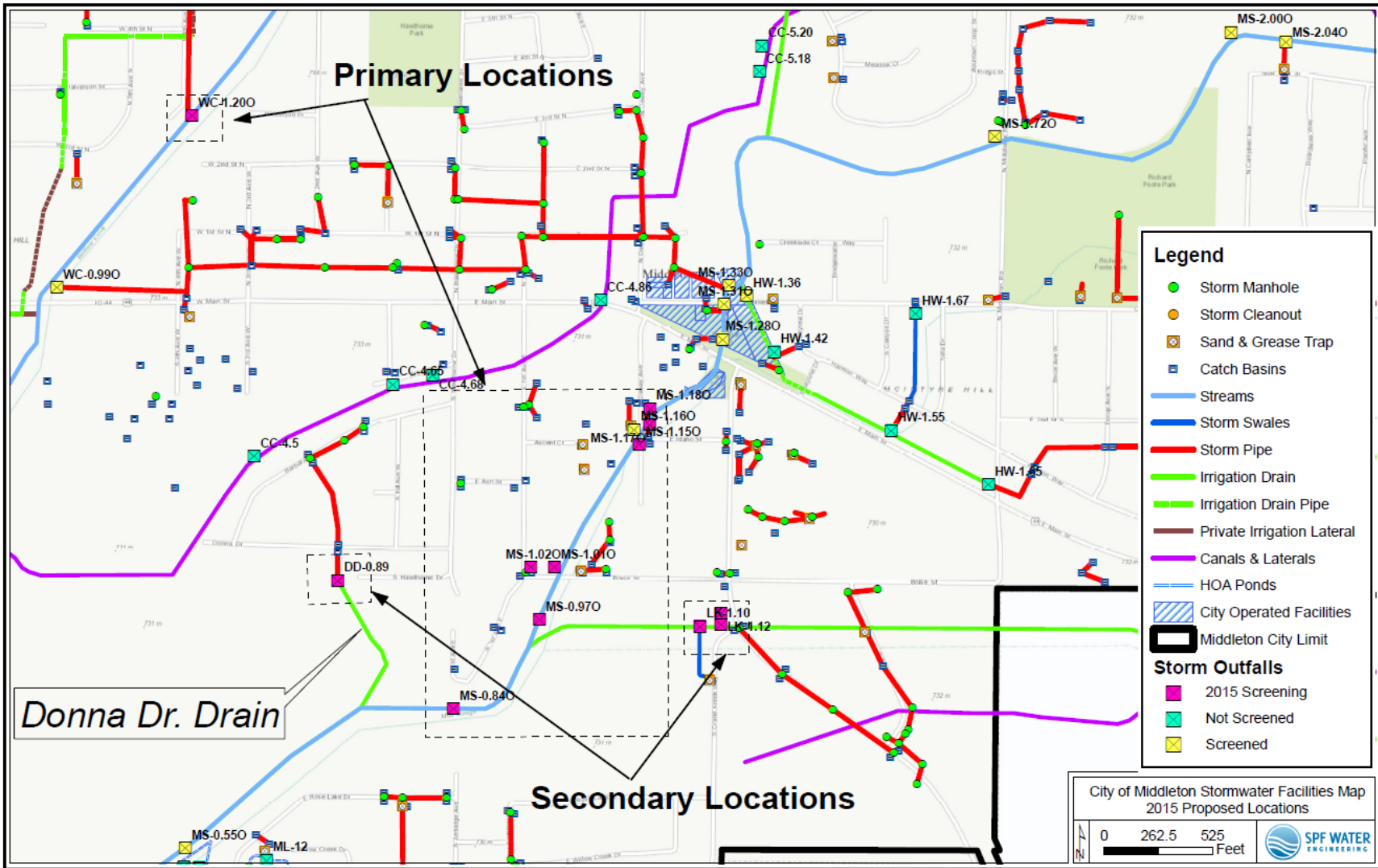


Figure 1. Map showing storm water monitoring and 2015 screening locations.

II. Outfall Monitoring

The Permit requires municipal separate storm sewer system (MS4) outfall monitoring by the City of Middleton beginning in Year 3. Outfall monitoring requirements include development and implementation of a monitoring program to:

- Estimate the pollutant loading currently discharged from the MS4s.
- Assess the effectiveness and adequacy of control measures implemented through this permit.
- Identify and prioritize those portions of the MS4 requiring additional controls.

A. Methods

As required by the MS4 permit, a Quality Assurance Plan (QAP, Middleton 2010) was prepared to direct storm water sampling by City staff. The QAP also included a Monitoring Plan that specifies a sampling location, frequency and other information needed to implement the required storm water outfall monitoring. The QAP and Monitoring Plan are provided as attachments to the Annual Report.

As stated in the Permit, the City of Middleton is required to sample at least one storm water outfall discharging to Willow Creek. The water quality status of Willow Creek is summarized in Appendix A.

The outfall sampling locations (Figure 1 WC-1.200) is situated on the west bank of Willow Creek, approximately 1.2 miles upstream of the confluence with the Boise River. The outfall is elevated near the ordinary high water mark and is fitted with a cast-iron flap type tide gate. The 15-inch diameter PVC storm drain pipeline extends northward along North 4th Avenue West. The samples for Years 3 through 6 were collected at Outfall WC-1.200 that discharges to Willow Creek near North 4th Avenue West (Figure 1). In addition to wet weather sampling, this outfall was sampled during the dry weather screening presented in Section II.

B. Results

The laboratory results for the samples collected at Outfall #WC-1.200 in Years 3, 4, 5 and 6 are summarized in Table 1 through 4, respectively, to allow comparison between years. The 2015 laboratory reports and other sampling documentation are provided in Appendix B.

Table 1. 2012 Outfall #WC-1.200 laboratory results and estimated annual runoff load.

Sample ID#	Date	Time	TSS (mg/L)	TP (mg/L)	TKN (mg/L)	NO3 (mg/L)	E coli MPN/100mL
1213087	5/4/2012	15:10	8	0.22	0.54	0.94	200
1207303	3/13/2012	9:28	147	0.38	2	0.2	29
1202578	1/26/2012	9:48	790	0.63	2.26	0.21	28
Average (Geomean)			315	0.41	1.6	0.45	55
Load (lb/ac)			431	0.56	2.19	0.62	--

Table 2. 2013 Outfall #WC-1.200 laboratory results and estimated annual runoff load.

Date	Time	TSS (mg/L)	TP (mg/L)	NO3 (mg/L)	TKN (mg/L)	E coli MPN/100mL
6/19/2013	9:30	2	0.34	2.79	0.01	6
6/24/2013	14:30	5	0.35	2.45	0.41	18
9/5/2013	10:00	6	1.18	1.36	4.08	550
9/24/2013	14:00	7	0.37	1.74	0.65	140
Average (Geomean)		5	0.56	2.09	1.29	54
Load (lb/ac)		7	0.76	2.85	1.76	--

Table 3. 2014 Outfall #WC-1.200 laboratory results and estimated annual runoff load.

Date	Time	TSS (mg/L)	TP (mg/L)	NO3 (mg/L)	TKN (mg/L)	E coli MPN/100mL
4/22/2014	9:35	7	0.23	1.91	0.2	13
4/22/2014	9:34	4	0.22	2.01	0.26	9
4/22/2014	9:32	<3	0.23	2.03	0.2	6
4/22/2014	8:56	<3	0.21	2	0.21	10
Average (Geomean)		4	0.22	1.99	0.22	9
8/13/2014	10:55	<3	0.3	2.74	0.3	86
9/16/2014	7:43	3	0.33	2.62	0.26	na
9/28/2014	7:43	19	0.36	2.36	0.89	6
9/28/2014						38
Average (Geomean)		2	0.3	2.34	0.25	21
Load (lb/ac)		3	0.41	3.2	0.34	--

Table 4. 2015 Outfall #WC-1.200 laboratory results and estimated annual runoff load.

Date	Time	TSS (mg/L)	TP (mg/L)	NO3 (mg/L)	TKN (mg/L)	E coli MPN/100mL
12/3/2014	8:40	24	0.17	0.79	0.79	82
12/20/2014	12:24	6	0.10	3.60	0.52	89
3/24/2015	9:00	4	0.16	1.11	0.78	37
4/8/2015	8:49	16	0.18	na	0.25	63
Average (Geomean)		3	0.15	2.36	0.65	59
Load (lb/ac)		4	0.20	3.22	0.89	--

A rough estimate of annual runoff load is also shown in Table 1 through 4. The “pounds per acre” estimates are based on the average concentration of constituent and an assumed annual runoff of 6-inches. The runoff area has been assessed in Year 4 to determine land uses and identify existing storm water management. However, the assessment was inconclusive and therefore the loads are given on a per acre basis.

To support assessment of the water quality, the data collected since 2012 was plot for each of the pollutants of concern (Figure 2). Also shown water TMDL water quality targets that are applicable for either the Boise River or it’s tributaries.

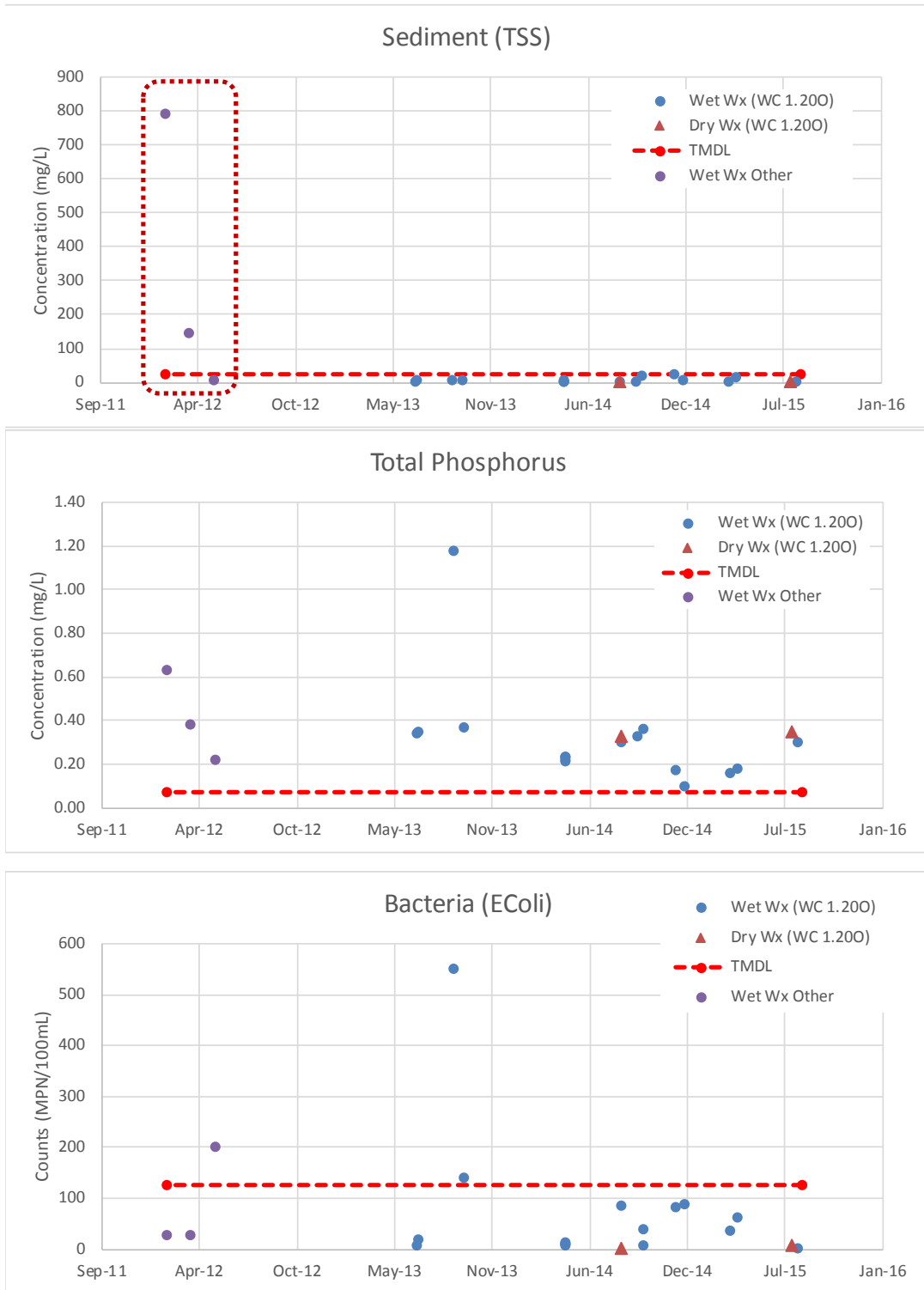


Figure 2 Water quality data collected for outfall WC1.200 since 2012

C. Discussion

The water quality results indicated a lower level of variability in TSS levels in 2013 through 2014 compared to 2012 results. The highest concentration occurred in late January 2012. The 2012 March sample is also somewhat high, but the May 2012 and all other sample concentrations are relatively low. Generally tributaries to the Boise River show elevated levels in summer often due to increased agricultural runoff, with lower concentrations in the winter when groundwater is draining from the agricultural lands (USBR 2001 and USGS 2004). Based on the generally lower TSS concentrations, it appears source water for many of the samples is likely either groundwater or canal water, the latter water originating from Lucky Peak.

Total phosphorus (TP) concentrations are variable during each year, ranging from a low of 0.10 mg/L to a high of 1.18 mg/L in 2015 and 2013, respectively. An apparent correlation with sediment observed in 2012 is not evident in 2013. Due to the relatively high TP and low TSS concentrations, the more likely source appears to be associated with groundwater, and not canal water which have much lower TP (e.g., 0.02 mg/L as reported by MaCoy 2004).

Bacteria levels (i.e., E Coli counts) were relatively high in September 2013 and in May 2012. Relatively low counts were reported in January and March 2012, June 2013, and 2014. The geomeans was slightly higher in 2015 compared to 2012 and 2013.

III. Dry Weather Screening

The Permit requires municipal separate storm sewer system (MS4) dry weather screening beginning in Year 3. As stated in the permit, the requirements include:

... dry weather field screening for non-storm water flows from all storm water outfalls. By the expiration date of the permit, at least 20% of the permittee's outfalls within the Nampa Urbanized Area must be screened for dry weather flows. The screening should include field tests of selected parameters as indicators of discharge sources.

A. Methods

All known outfalls in the MS4 were reviewed and 10 outfalls were selected for Dry Weather Screening (Table 5). Dry Weather Screening included the following components:

1. Completing screening form
2. Measuring or estimating flow
3. Field testing for: temperature, EC, and pH
4. Collecting sample for laboratory analyses (Table 5)

Table 5. Outfalls selected for 2015 Dry Weather Screening.

Outfall Number	Pipe Diameter	Pipe Material	Flow Observed	Sampled	Notes
DD-0.89				no	Could not locate; needs to be revisited
LK-1.10	18	PVC	no	no	No flow evident; no sample taken
LK-1.12	12	PVC	no	no	No flow evident; no sample taken
LK-1.13	12	PVC	no	no	No flow evident; no sample taken
MS-0.840	6	CMP	no	no	Submerge outlet; no flow evident; no sample taken
MS-0.970	12	CMP	no	no	No flow evident; no sample taken
MS-1.010	18	CMP	no	no	Partially submerge outlet; no flow evident; no sample taken
MS-1.020				no	Could not locate
MS-1.150	10	PVC	no	no	Submerge outlet; no flow evident; no sample taken
MS-1.170	6	PVC	no	no	No flow evident; no sample taken
MS-1.180	6	PVC	no	no	No flow evident; no sample taken

Additionally, the wet weather sampling location (WC-1.200) was screened during this dry weather period and results are also provided below.

Table 6. Laboratory parameters for Dry Weather Screening

ID	Parameter	Method	MDL (mg/L)
TP	Total phosphorus (low)	EPA 365.1	0.005
TSS	Total suspended solids	SM 2540D	3
E coli	E coli	SM 9223	N/A

B. Results

Dry weather screening for Year 6 (2015) of the current NPDES Stormwater Permit was performed by Breanna Paulson and Stevan Rogers on July 30th, 2015. Screening began at approximately 7:30 AM and concluded around 10:00 AM. Weather conditions were sunny, dry, and ranged from approximately 55 to 70 degrees. There had been no measureable precipitation for a minimum of 48 hours prior to the screening.

Eleven outfalls were identified for screening in 2015 including WC-1.200, which is the wet weather sampling site. Two outfalls could not be located. All other outfalls were dry except for WC-1.200.

Dry weather water quality samples were collected from 1 outfall (i.e., WC-1.200) on July 30, 2015. Field measurements and laboratory results are summarized in Tables 7, with laboratory data shown in Figure 3.

Table 7. Dry weather screening results 2012 through 2015.

Outfall ID	Field Measurements				Laboratory Analysis		
	Flow (gpm)	pH (s.u.)	Temp (deg C)	EC µS	TSS (mg/L)	TP (mg/L)	Ecoli MPN/100mL
10/1/2012							
MS-1.16O	Trickle	6.25	20.4	277.1	6	0.038	2400
MS-1.33O	Moderate	6.12	16.7	276.1	1.5	0.304	81
MS-2.00O	Substantial	6.48	15.4	154.1	1.5	0.135	210
WC-0.99O	Moderate	6.28	15.3	157.5	6	0.145	130
9/11/2013							
MS-1.28O	na	6.37	19.3	348.1	896	0.497	290
MS-1.72O	calc?	6.70	15.3	93.7	6	0.026	1
MS-2.04O	na	6.61	20.4	220.3	40	0.571	130
HW-1.36	very low	6.55	17.6	309.5	7	0.141	18
8/11/2014							
WC-1.20O	50	6.48	20.2	369.2	1.5	0.330	3
CD-5.36O	0.08	7.94	23.3	380.0	1.5	0.540	2400
CD-5.44O	2.2	7.40	22.0	491.1	1.5	0.220	82
7/30/2015							
WC-1.20O	50	6.72	18.9	371.1	1.5	0.350	7

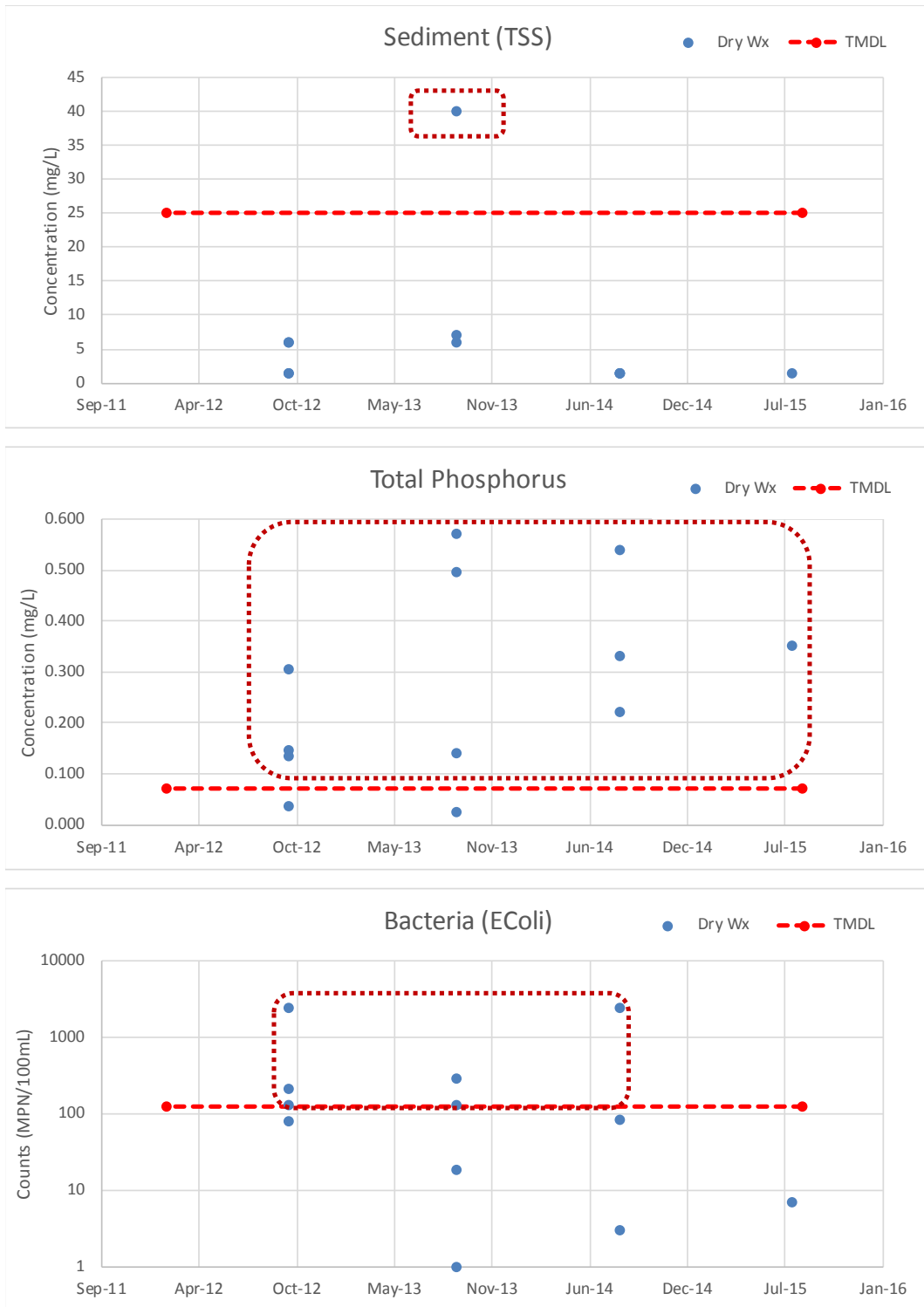


Figure 3 Water quality data collected during dry weather sampling since 2012. Note that TSS concentration of 896 mg/L for 9-11-2013 is not plotted.

C. Discussion

While data collected provide some indication of water quality, it must be noted that flow rates ranged from approximately 50 gpm to less than 0.10 gpm. The 2015 dry weather screening data (Figure 3) indicates quite low levels of sediment (TSS), with most results also below the 25 mg/L level. This is also the wet weather monitoring outfall and appears to be discharging shallow groundwater.

Counter to this, the phosphorus level was relatively high, but still within the range observed in the Lower Boise River watershed (e.g., MaCoy 2004). Similarly, most concentrations were above the Snake River-Hells Canyon TMDL target of 0.07 mg/L (IODEQ 2004).

The bacteria levels reported for the one outfall sampled in 2015 (Wc-1.200) was low compared to other results, and below the recreational criteria of 126 counts per 100 mL (IDAPA 58.01.02).

D. Potential Illicit Discharges

The flow rate for all outfalls screened this year were zero with exception of WC-1.00 estimated at 50 gpm (note that this is the Willow Creek outfall monitored during wet weather and discussed above). Phosphorus result for this outfall was elevated compared to TMDL targets. However, levels were within ranges reported by others from sampling conducted in the Boise River Watershed (e.g., USGS 2004 and 2012, USBR 2001, and ISDA 2009).

Based on the observations during the dry weather screening data collection, and the subsequent lab results, there are no apparent illicit discharges from the observed outfalls that require further investigation or action by the City of Middleton other than ongoing efforts to reduce pollutants of concern as addressed within the permit and in implementation plans for lower Boise River TMDLs.

IV. Recommendations

Based on the results of monitoring and screening efforts the following are proposed recommendations to better focus implementation of storm water management actions to address the pollutants of concern:

1. Land uses and management activities upstream of the outfalls to continue to be assessed along with options for implementation of new or improved stormwater control measures. Because of occasionally elevated E coli and generally elevated phosphorus, sources of bacteria and phosphorus should be the focus, and actions to reduce levels in storm water should be identified and implemented consistent with the City's stormwater management objectives.
2. Continue efforts to determine sources of water discharging from the Willow Creek Outfall. While an alternative sampling location may be justified in the future, sampling will continue at the Willow Creek Outfall until a new permit is issued and any changes to storm water monitoring requirements have been assessed.

V. References

- EPA. 2009. City of Middleton NPDES Permit for storm water discharges from small municipal separate storm sewer system. Permit No. IDS-028100. August 28, 2009.
- IDAPA 58.01.02. No date. Water quality standards. Idaho Department of Environmental Quality, Idaho State Office, Boise, ID.
- Idaho Department of Environmental Quality (IDEQ). 2000. Lower Boise River TMDL: Subbasin Assessment and Total Maximum Daily Loads. IDEQ, approved by Environmental Protection Agency in January 2000.
- IDEQ and Oregon Department of Environmental Quality (ODEQ). 2004. Snake River-Hells Canyon total maximum daily load (TMDL). Boise, ID: IDEQ, Boise Regional Office and Pendleton, OR: ODEQ, Pendleton Office. 480 p.
- IDEQ. (no date). Lower Boise Watershed Tributary TMDL Addendum Draft Strategy Paper. Presentation to Lower Boise Watershed Council in 2012. Idaho Department of Environmental Quality, Boise Office, Idaho.
- Idaho State Department of Agriculture (ISDA). 2009. Water Quality Monitoring Report Lower Boise River and Snake River Tributaries April 24 through October 9, 2008. Idaho State Department of Agriculture Technical Report Summary W-29. January 2009.
- MacCoy. 2004. Water-Quality and biological conditions in the Lower Boise River, Ada and Canyon Counties, Idaho 1994-2002. U.S. Geological Survey SIR 2004-5128.
- Middleton (City of). 2010a. Quality Assurance Plan (QAP) for monitoring the MS4. City of Middleton, Idaho. October 2010.
- Middleton (City of). 2010b. Monitoring Plan for MS4 Permit. City of Middleton, Idaho. October 2010
- U.S. Bureau of Reclamation (USBR). 2001. Land use effects on the quality of storm water runoff in the Boise Valley. U.S. Department of the Interior, Bureau of Reclamation. September 2001.
- U.S. Geological Survey (USGS). 2012. water-quality data web page. <http://waterdata.usgs.gov/nwis/qw>. Accessed on: December, 2012.

Appendix A - Water quality status of Willow Creek

Water quality status of Willow Creek was summarized by IDEQ (2012):

Willow Creek drains approximately 55,545 acres of mainly agricultural land and rangeland. One major canal (C-Line East) supplies water to cropland in the Willow Creek Subwatershed and one major drain (Willow Creek) receives tailwater from the croplands and pastures and drains ground water. There are no NPDES permitted facilities in the watershed.

Table A.1 Willow Creek 303(d) listing.

Assessment Unit	Beneficial Use	2010 IR 303 (d) listed pollutant
ID17050114SW015_03 3 rd order	COLD*	Sediment

* This water body is undesignated; therefore DEQ presumes that the water body can support cold water biota.

Appendix B - Laboratory Reports for 2015 Outfall Monitoring and Dry Weather Sampling

TIME RECEIVED
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REMOTE CSID

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06/03/2015 09:57 #051 P.001/009



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Laboratory Analysis Report

Sample Number: 1510872

Attn: BRAD GREEN
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By: FLEETSTREET

Source of Sample:
OUTFLOW #31

Time of Collection: 9:02
Date of Collection: 3/24/2015
Date Received: 3/24/2015
Report Date: 3/27/2015

PWS#:

Field Temp: Temp Recd in Lab: 8.7 °C

PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Escherichia coli		37	MPN/100mL		SM 9223	3/25/2015	LM

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Laboratory Analysis Report

Sample Number: 1510871

Attn: BRAD GREEN
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By: FLEETSTREET

Source of Sample:
OUTFLOW #31

Time of Collection: 9:00
Date of Collection: 3/24/2015
Date Received: 3/24/2015
Report Date: 4/8/2015

PWS#:

Field Temp:

Temp Rcvd in Lab: 8.7 °C

PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Nitrate + Nitrite (as N)		1.11	mg/L	0.02	EPA 353.2	3/31/2015	CJS
Nitrogen, Total Kjeldahl (TKN)		0.78	mg/L	0.10	EPA 351.2	3/29/2015	NC
Total Nitrogen		1.89	mg/L	0.10	Calculation	4/8/2015	DS
Total Phosphate (as P)		0.16	mg/L	0.05	EPA 365.4	3/29/2015	NC
Total Suspended Solids		4	mg/L	3	SM 2540 D	3/25/2015	GM

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MDL = Method/Minimum Detection Limit
UR = Unregulated

CHAIN OF CUSTODY RECORD

CLIENT CODE=

CLIENT INFORMATION:		PROJECT INFORMATION:	
Project Manager:		Project Name:	
Company:	<i>City of Middleton</i>	PWS Number:	<i>IDS-028100</i>
Address:	<i>P.O. Box 487</i>	Purchase Order Number:	
Phone:	<i>Middleton Id. 83644</i>	Required Due Date:	
Fax:		E-mail Address:	

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TESTS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	Remarks:
10871	<i>3/24/15</i>	<i>9:00</i>	<i>Out Flow #31</i>		<i>X</i>
10872	<i>3/24/15</i>	<i>9:02</i>	<i>Out Flow #31</i>		<i>X</i>

TS5 TN TP

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Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.

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Relinquished By: (Signature)	<i>[Signature]</i>	Print Name:	<i>Melissa Sorlien</i>	Company:	<i>City of Middleton</i>	Date:	<i>3/24/15</i>	Time:	<i>9:17 AM</i>
Relinquished By: (Signature)	<i>[Signature]</i>	Print Name:	<i>Katrice Coffey</i>	Company:	<i>City of Middleton</i>	Date:	<i>3/24/15</i>	Time:	<i>11:20 AM</i>
Relinquished By: (Signature)	<i>[Signature]</i>	Print Name:	<i>Lee Weil</i>	Company:	<i>Fleet Street</i>	Date:	<i>03/24/15</i>	Time:	<i>11:20 AM</i>
SAMPLE RECEIPT	Total # of Containers:	Intact:	<i>Y / N / NA</i>	Temperature Received:	<i>8.7</i>	Condition:	<i>ALI</i>		<i>11:00</i>
REV 2/19/12	WHITE: STAYS WITH SAMPLE(S)								

YELLOW: LAB

PINK: SAMPLER



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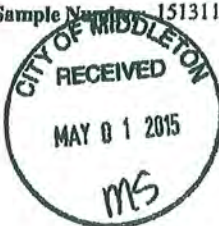
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Laboratory Analysis Report

Sample Number: 1513111

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PO BOX 487
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Collected By:
Submitted By: FLEET STREET

Source of Sample:
OUTFLOW # 31 IDS-028100

Time of Collection: 8:49
Date of Collection: 4/8/2015
Date Received: 4/8/2015
Report Date: 4/27/2015

PWS#:

Field Temp:

Temp Rcvd in Lab:

PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Nitrogen, Total Kjeldahl (TKN)		0.25	mg/L	0.10	EPA 351.2	4/24/2015	DS
Total Phosphate (as P)		0.18	mg/L	0.05	EPA 365.4	4/24/2015	DS
Total Suspended Solids		16	mg/L	3	SM 2540 D	4/10/2015	NS

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Laboratory Analysis Report

Sample Number: 1513112

Attn: BRAD GREEN
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By: FLEET STREET

Source of Sample:
OUTFLOW # 31 IDS-028100

Time of Collection: 8:51
Date of Collection: 4/8/2015
Date Received: 4/8/2015
Report Date: 4/13/2015

PWS#:
PWS Name: CITY OF MIDDLETON

Field Temp: Temp Rcvd in Lab:

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Escherichia coli		63	MPN/100mL		SM 9223	4/9/2015	LM

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions about this report, or any future analytical needs, please contact your client manager:

Brian M. McGovern



Analytical Laboratories, Inc.

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Date Report Printed: 12/17/2014 11:09:50 AM
<http://www.analyticallaboratories.com>
These test results relate only to the items tested.

Laboratory Analysis Report

Sample Number: 1447640

Attn: BRAD GREEN
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By: FLEETSTREET

Source of Sample:
OUTFLOW #31

Time of Collection: 8:40
Date of Collection: 12/3/2014
Date Received: 12/3/2014
Report Date: 12/17/2014

PWS#:

Field Temp:

Temp Revd in Lab:

PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Nitrate + Nitrite (as N)		0.79	mg/L	0.02	EPA 353.2	12/9/2014	CJS
Nitrogen, Total Kjeldahl (TKN)		0.79	mg/L	0.10	EPA 351.2	12/10/2014	DS
Total Nitrogen		1.58	mg/L	0.10	Calculation	12/17/2014	DS
Total Phosphate (as P)		0.17	mg/L	0.05	EPA 365.4	12/10/2014	DS
Total Suspended Solids		24	mg/L	3	SM 2540 D	12/5/2014	GM

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact your client manager.

Brian M. McGovern

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

CHAIN OF CUSTODY RECORD

CLIENT CODE=

CLIENT INFORMATION: Project Manager: _____ Company: <u>City of Middleton</u> Address: <u>P.O. Box 487</u> <u>Middleton Id. 83644</u> Phone: _____ Fax: _____		PROJECT INFORMATION: Project Name: _____ PWS Number: <u>IDS-028100</u> Purchase Order Number: _____ Required Due Date: _____ E-mail Address: _____	
--	--	--	--

ANALYTICAL LABS, INC.
 1804 N. 33rd Street • Boise, ID 83703
 (208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
 Website: www.analyticallaboratories.com
 E-mail: ali@analyticallaboratories.com
TESTS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	Remarks
117639	12/3/14	8:39	Out Flow #31		X
117640	12/3/14	8:40	Out Flow #31		X

E. Colo. TSS TN, TP

Special Instructions: _____

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Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.

Relinquished By: (Signature) <i>[Signature]</i>	Print Name: <u>Stevan Rogers</u>	Company: <u>City of Middleton</u>	Date: <u>12/3/14</u>	Time: <u>8:56 AM</u>
Received By: (Signature) <i>[Signature]</i>	Print Name: <u>Melissa Sorlien</u>	Company: <u>City of Middleton</u>	Date: <u>12/3/14</u>	Time: <u>8:56 AM</u>
Received By: (Signature) <i>[Signature]</i>	Print Name: <u>Melissa Sorlien</u>	Company: <u>City of Middleton</u>	Date: <u>12-3-14</u>	Time: <u>11:17 AM</u>
Received By: (Signature) <i>[Signature]</i>	Print Name: <u>Melissa Sorlien</u>	Company: <u>City of Middleton</u>	Date: <u>12.3.14</u>	Time: <u>11:17 AM</u>
Received By: (Signature) <i>[Signature]</i>	Print Name: <u>Se Sorlien</u>	Company: <u>ACI</u>	Date: <u>12/3/14</u>	Time: <u>12:05</u>
SAMPLE RECEIPT	Total # of Containers:	Intact: Y / N / NA	Temperature Received:	Condition:



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Boise, Idaho 83703
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Date Report Printed: 12/8/2014 10:02:34 AM
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Laboratory Analysis Report

Sample Number: 1447858

Attn: BRAD GREEN
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By: FLEETSTREET

Source of Sample:
OUTFLOW #31

Time of Collection: 8:37
Date of Collection: 12/4/2014
Date Received: 12/4/2014
Report Date: 12/8/2014

Field Temp: Temp Rcvd in Lab: **PWS#:**
PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Escherichia coli		82	MPN/100mL		SM 9223	12/5/2014	LM

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions about this report, or any future analytical needs, please contact your client manager:

Brian M. McGovern

CHAIN OF CUSTODY RECORD

CLIENT CODE=

CLIENT INFORMATION:
 Project Manager:
 Company: City of Middleton
 Address: P.O. Box 487
 Middleton, Id. 83644
 Phone: Fax:
PROJECT INFORMATION:
 Project Name:
 PWS Number: IDS-018100
 Purchase Order Number:
 Required Due Date:
 E-mail Address:

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 (208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
 Website: www.analyticallaboratories.com
 E-mail: ali@analyticallaboratories.com
TESTS REQUESTED

Sampled by: (Please print)		Transported by: (Please print)		Sample Matrix	Remarks:
Lab ID	Date Sampled	Time Sampled	Sample Description (Source)		
47858	12/4/14	8:37	Out Flow #31		X
47859	12/4/14	8:38	Out Flow #31		X

Invoice to: (if different than above address)

Special Instructions:

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Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.

Relinquished By: (Signature) <i>[Signature]</i>	Print Name: Steven Rogas	Company: City of Middleton	Date: 12/4/14	Time: 8:53
Received By: (Signature) <i>[Signature]</i>	Print Name: Jannica Reynolds	Company: City of Middleton	Date: 12/4/14	Time: 10:58 AM
Received By: (Signature) <i>[Signature]</i>	Print Name: Nancy Roberts	Company: Element Street	Date: 12/4/14	Time: 1:35
SAMPLE RECEIPT	Total # of Containers: Chains of Custody Seals Y / N / NA	Intact: Y / N / NA	Temperature Received:	



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Date Report Printed: 1/6/2015 9:34:47 AM
<http://www.analyticallaboratories.com>
These test results relate only to the items tested.

Laboratory Analysis Report

Sample Number: 1450349

Attn: BRAD GREEN
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By:

Source of Sample:
OUT FLOW #31

Time of Collection: 12:24
Date of Collection: 12/20/2014
Date Received: 12/20/2014
Report Date: 1/6/2015

Field Temp: Temp Rcvd in Lab: **PWS#:**
PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Nitrate + Nitrite (as N)		3.60	mg/L	0.02	EPA 353.2	12/23/2014	CJS
Nitrogen, Total Kjeldahl (TKN)		0.52	mg/L	0.10	EPA 351.2	12/31/2014	DS
Total Nitrogen		4.12	mg/L	0.10	Calculation	1/6/2015	DS
Total Phosphate (as P)		0.10	mg/L	0.05	EPA 365.4	12/31/2014	DS
Total Suspended Solids		6	mg/L	3	SM 2540 D	12/23/2014	GM

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions about this report, or any future analytical needs, please contact your client manager.

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated



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Phone (208) 342-5515

Date Report Printed: 12/22/2014 8:06:30 AM
<http://www.analyticallaboratories.com>
These test results relate only to the items tested.

Laboratory Analysis Report

Sample Number: 1450348

Attn: BRAD GREEN
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By:

Source of Sample:
OUT FLOW #31

Time of Collection: 12:23
Date of Collection: 12/20/2014
Date Received: 12/20/2014
Report Date: 12/22/2014

PWS#:

Field Temp:

Temp Rcvd in Lab:

PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Escherichia coli		89	MPN/100mL		SM 9223	12/21/2014	ZH

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
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Brian M. McGovern

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(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
Website: www.analyticallaboratories.com
E-mail: ali@analyticallaboratories.com

TESTS REQUESTED

Table with columns: Lab ID, Date Sampled, Time Sampled, Sample Description (Source), Sample Matrix, Remarks.

Project Name:
PWS Number:
Purchase Order Number:
Required Due Date:
E-mail Address:
Transported by: (Please print)

Client Information:
Project Information:
Print Name:
Signature:
Received By:
Relinquished By:
Chains of Custody Seals
Total # of Containers:
Sample Receipt

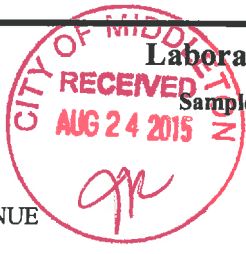
ALL LOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP), if, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure, their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstances will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.
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Date Report Printed: 8/13/2015 7:11:20 AM
<http://www.analyticallaboratories.com>
These test results relate only to the items tested.



Laboratory Analysis Report

Sample Number: 1533136

Attn: LEE SMITH
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By: FLEETSTREET

Source of Sample:
OUTFLOW #31

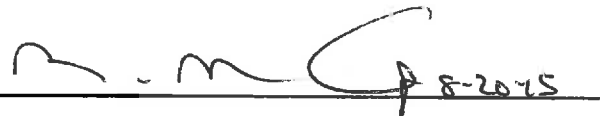
Time of Collection: 8:21
Date of Collection: 8/10/2015
Date Received: 8/10/2015
Report Date: 8/13/2015

PWS#:
PWS Name: CITY OF MIDDLETON

Field Temp: Temp Recd in Lab:

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Escherichia coli		<1	MPN/100mL		SM 9223	8/11/2015	TJR

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated


8-2015

Thank you for choosing Analytical Laboratories for your testing needs.
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Brian M. McGovern



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Boise, Idaho 83703
Phone (208) 342-5515

Date Report Printed: 8/18/2015 2:34:42 PM
<http://www.analyticallaboratories.com>
These test results relate only to the items tested.

Laboratory Analysis Report

Sample Number: 1533137

Attn: LEE SMITH
CITY OF MIDDLETON
6 NORTH DEWEY AVENUE
PO BOX 487
MIDDLETON, ID 83644

Collected By:
Submitted By: FLEETSTREET

Source of Sample:
OUTFLOW #31

Time of Collection: 8:22
Date of Collection: 8/10/2015
Date Received: 8/10/2015
Report Date: 8/18/2015

PWS#:

Field Temp:

Temp Recd in Lab:

PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Nitrate + Nitrite (as N)		3.54	mg/L	0.02	EPA 353.2	8/11/2015	CJS
Nitrogen, Total Kjeldahl (TKN)		0.13	mg/L	0.10	EPA 351.2	8/17/2015	DS
Total Nitrogen		3.67	mg/L	0.10	Calculation	8/18/2015	DS
Total Phosphate (as P)		0.30	mg/L	0.05	EPA 365.4	8/17/2015	DS
Total Suspended Solids		<3	mg/L	3	SM 2540 D	8/11/2015	GM

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact your client manager:

Brian M. McGovern

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

CHAIN OF CUSTODY RECORD

CLIENT CODE=

CLIENT INFORMATION:		PROJECT INFORMATION:	
Project Manager:	Project Name:	ANALYTICAL LABS, INC.	
Company: <i>City of Middleton</i>	PWS Number: <i>IDS-028100</i>	1804 N. 33rd Street • Boise, ID 83703	
Address: <i>P.O. Box 487</i>	Purchase Order Number:	(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773	
Middleton Id <i>83644</i>	Required Due Date:	Website: www.analyticallaboratories.com	
Phone:	E-mail Address:	E-mail: ali@analyticallaboratories.com	
Fax:	TESTS REQUESTED		

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	Remarks:
33136	8/10/15	8:21 AM	Out Flow #31		X
33137	8/10/15	8:22 AM	Out Flow #31		X

COPY TEST IN TB

Invoice to: (If different than above address) _____

Special Instructions: _____

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Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.

Relinquished By: (Signature) <i>[Signature]</i>	Print Name: <i>Steven Royce</i>	Date: <i>8-10-15</i>	Time: <i>8:27</i>
Received By: (Signature) <i>Jennica Reynolds</i>	Print Name: <i>Jennica Reynolds</i>	Date: <i>8-10-15</i>	Time: <i>8:27 AM</i>
Relinquished By: (Signature) <i>Jennica Reynolds</i>	Print Name: <i>Jennica Reynolds</i>	Date: <i>8-10-15</i>	Time: <i>10:49 AM</i>
Received By: (Signature) <i>[Signature]</i>	Print Name: <i>[Signature]</i>	Date: <i>8/10/15</i>	Time: <i>10:47</i>
SAMPLE RECEIPT	Total # of Containers: <i>2</i>	Chains of Custody Seals <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> NA	Temperature Received: _____
REV. 2/19/12	WHITE: STAYS WITH SAMPLE(S)	YELLOW: LAB	PINK: SAMPLER

Ben Buttre *BEN Buttre* *Ben Buttre* *8/19/15 11:30*

Job No. 991-0080



Analytical Laboratories, Inc.

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Date Report Printed: 8/12/2015 7:28:16 AM
<http://www.analyticallaboratories.com>
These test results relate only to the items tested.

Laboratory Analysis Report

Sample Number: 1531354

Attn: KENT GINGRICH
S P F WATER ENGINEERING, LLC
300 E MALLARD DR STE 350
BOISE, ID 83706

Collected By: B. PAULSON
Submitted By: B. PAULSON

Source of Sample:
MIDDLETON DRY WY SCREEN WC1-20

Time of Collection: 10:00
Date of Collection: 7/30/2015
Date Received: 7/30/2015
Report Date: 8/12/2015

PWS#:

Field Temp:

Temp Rcvd in Lab:

PWS Name:

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Escherichia coli		7	MPN/100mL		SM 9223	7/31/2015	LM
Nitrate + Nitrite (as N)		3.36	mg/L	0.02	EPA 353.2	8/4/2015	CJS
Nitrogen, Total Kjeldahl (TKN)		0.17	mg/L	0.10	EPA 351.2	8/9/2015	NC
Total Nitrogen		3.53	mg/L	0.10	Calculation	8/11/2015	DS
Total Phosphate (as P)		0.35	mg/L	0.05	EPA 365.4	8/9/2015	NC
Total Suspended Solids		<3	mg/L	3	SM 2540 D	8/2/2015	DP

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions about this report, or any future analytical needs, please contact your client manager:

James Hibbs

SPF ENG

CHAIN OF CUSTODY RECORD

CLIENT CODE=
CLIENT INFORMATION:
 Project Manager: Kent Gingrich
 Company: SPF Water Engineering
 Address: 300 E. Mallard # 350
 Boise, ID 83706
 Phone: 383-4140 Fax:
 E-mail Address: paulson@spfwater.com
 Transported by: (Please print) Breanna Paulson

PROJECT INFORMATION:
 Project Name: Middleton Dry Wp Screen
 PWS Number:
 Purchase Order Number:
 Required Due Date:
 E-mail Address: paulson@spfwater.com

ANALYTICAL LABS, INC.
 1804 N. 33rd Street • Boise, ID 83703
 (208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
 Website: www.analyticallaboratories.com
 E-mail: ali@analyticallaboratories.com
TESTS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	Remarks:
NC 1-20	7/30/15	10:00	NC 1-20		81354

Invoice to: (if different than above address) Special Instructions:

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Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.

Relinquished By: (Signature) <i>Breanna Paulson</i>	Print Name: Breanna Paulson	Company: SPF Water Engineering	Date: 7/30/15	Time: 12:15
Received By: (Signature)	Print Name:	Company:	Date:	Time:
Relinquished By: (Signature)	Print Name:	Company:	Date:	Time:
Received By: (Signature) <i>Breanna Paulson</i>	Print Name: Breanna Paulson	Company: AWE	Date: 7/30/15	Time: 12:15

SAMPLE RECEIPT
 Total # of Containers:
 Chains of Custody Seals Y / N / NA Temperature Received:
 Intact: Y / N / NA

Appendix C -Dry Weather Screening Forms

Section 1: Background Data

Subwatershed:		Outfall ID: <u>WC 1-20</u>	
Today's date: <u>7/30/15</u>		Time (Military): <u>9:40</u>	
Investigators: <u>BP, SR</u>		Form completed by: <u>BP</u>	
Temperature (°F):		Rainfall (in.): Last 24 hours: <input type="radio"/> Last 48 hours: <input checked="" type="radio"/>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>Main monitoring outfall</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>15</u> In Water: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If No, Skip to Section 5		
Flow Description (if present)	<input type="checkbox"/> Trickle <input checked="" type="checkbox"/> Moderate <input checked="" type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input checked="" type="checkbox"/> Flow #1	Volume	500 gpm	Liter	Bottle
	Time to fill	<u>45-50 gpm</u>	Sec	<u>visual</u>
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature	<u>18.9°C</u>	°F	Thermometer	
pH	<u>6.72</u>	pH Units	Test strip / <u>probe</u>	
Ammonia		mg/L	Test strip	

E.C. = 371.1
S.C. = 418.1

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

WLC-120

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Lime <input type="checkbox"/> Paint <input type="checkbox"/> Other.	
Abnormal Vegetation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	Willow tree roots arel moss
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other.	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other.	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

- Sample for the lab? Yes No
- If yes, collected from: Flow Pool
- Intermittent flow trap set? Yes No If Yes, type: OBM Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? *clean up vegetation.*

Section 1: Background Data

Subwatershed:		Outfall ID: MS-1.170	
Today's date: 7/30/15		Time (Military): 8:02	
Investigators: BP, SR		Form completed by: BP	
Temperature (°F): 54		Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 6-9	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): South of main st. storm drain from Idaho St. next to trailer park.			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 6 In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

MS-1.170

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables - Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight, origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	Wet grass over grown outfall, sediment in outfall
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow <input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? Need vegetation control, cleaned out

Section 1: Background Data

Subwatershed:		Outfall ID: MS-1-180	
Today's date: 7/30/15		Time (Military): 7:50	
Investigators: BP, SR		Form completed by: BP	
Temperature (°F): 54°		Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 1-5	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential some commercial		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): South of Main St, east side of Dewey. Looks like it comes from storm drains of Dewey.			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If No, Skip to Section 5		
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

MS-1180

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables - Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other.	
Abnormal Vegetation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Excessive <input type="checkbox"/> Inhibited <input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other.	over grown crab grass, not letting sediment flow, sediment at outfalls.
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other.	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

- Sample for the lab? Yes No
- If yes, collected from: Flow Pool
- Intermittent flow trap set? Yes No If Yes, type: OBM Caulk dam

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? Needs vegetation control

Section 1: Background Data

Subwatershed:		Outfall ID: MS-1.150	
Today's date: 7/30/15		Time (Military): 8:10	
Investigators: BP, SR		Form completed by: BP	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0.5 Last 48 hours: 0		
Latitude:	Longitude: 0	GPS Unit:	GPS LMK #:
Camera:		Photo #: 10-12	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): UNKNOWN origin. South side of MS. Idaho and Dewey St.			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input checked="" type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>10</u>	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input checked="" type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If No, Skip to Section 5	
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	_____ ' _____ "	Ft, In	Tape measure
	Measured length	_____ ' _____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

MS-1.150

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables - Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

- Sample for the lab? Yes No
- If yes, collected from: Flow Pool
- Intermittent flow trap set? Yes No *If Yes, type: OBM Caulk dam*

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Section 1: Background Data

Subwatershed:		Outfall ID: MS-0.840	
Today's date: 7/30/15		Time (Military): 8:45	
Investigators: BP, SR		Form completed by: BP	
Temperature (°F): 86.0	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: 22-25	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): South point at 1st Avenue East. North side of MS. Outflow from storm drain on 1st Avenue.			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input checked="" type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input checked="" type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ 6	In Water: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If No, Skip to Section 5	
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	_____ ' _____ "	Ft, In	Tape measure
	Measured length	_____ ' _____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

MS-0.840

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other.	
Abnormal Vegetation	<input type="checkbox"/>	<input checked="" type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other.	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other.	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

- Sample for the lab? Yes No
- If yes, collected from: Flow Pool
- Intermittent flow trap set? Yes No If Yes, type: OBM Caulk dam

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Section 1: Background Data

Subwatershed:		Outfall ID: MS-0.970	
Today's date: 7/30/15		Time (Military): 8:35	
Investigators: BP, SR		Form completed by: BP	
Temperature (°F): 55°	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 19-21	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): outflow from 1st St Avenue East.			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED	
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> CMP <input type="checkbox"/> HDPE	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ 12	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)					
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If No, Skip to Section 5			
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial					

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

MS-0.970

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other.	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

- Sample for the lab? Yes No
- If yes, collected from: Flow Pool
- Intermittent flow trap set? Yes No If Yes, type: OBM Caulk dam

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Section 1: Background Data

Subwatershed:		Outfall ID: MS-1010	
Today's date: 7/30/15		Time (Military): 8:20	
Investigators: BP, SR		Form completed by: BP	
Temperature (°F): 55	Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 13-10	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): at bridge on Boise and 1st Av. East, west side of bridge. unknown origin of out fall.			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED	
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> CMP <input type="checkbox"/> HDPE	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: 18	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)					
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If No, Skip to Section 5			
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial					

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

MS-1.01D

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other.	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other.	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other.	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

- Sample for the lab? Yes No
- If yes, collected from: Flow Pool
- Intermittent flow trap set? Yes No If Yes, type: OBM Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Section 1: Background Data

Subwatershed:		Outfall ID: MS-1,020	
Today's date:		Time (Military): 8:29	
Investigators: BP, SP		Form completed by: BP	
Temperature (°F):		Rainfall (in.): Last 24 hours: 0 Last 48 hours: 0	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 17-18	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): UNKNOWN location.			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If No, Skip to Section 5		
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

MS-1.02C

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables - Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow <input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Section 1: Background Data

Subwatershed:		Outfall ID: DD.089	
Today's date: 7/30/15		Time (Military): 8:58	
Investigators: BP, SR		Form completed by: BP	
Temperature (°F):		Rainfall (in.): Last 24 hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 26-27	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): outfall from dug up 6 years ago. could not find trace. outfall from Donna St., storm drain still in use, no pipe. stagnant canal			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No		If No, Skip to Section 5		
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	_____ ' _____ "	Ft, In	Tape measure
	Measured length	_____ ' _____ "	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

DP. 089

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow <input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Section 1: Background Data

Subwatershed:		Outfall ID: LK 1-10	
Today's date: 7/30/15		Time (Military): 9:19	
Investigators: BP, SR		Form completed by: BP	
Temperature (°F):		Rainfall (in.): Last 24 hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: 28-31	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): Storm drain from Crane Creek.			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____ 18	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If No, Skip to Section 5		
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Section 4: Physical Indicators for Flowing Outfalls Only
 Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)* LK-110

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Faint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Few/slight, origin not obvious	<input type="checkbox"/> 2 - Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
 Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input checked="" type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other: <input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	Stains directly off outfall
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>		

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

- Sample for the lab? Yes No
- If yes, collected from: Flow Pool
- Intermittent flow trap set? Yes No *If Yes, type: OBM Caulk dam*

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Section 1: Background Data

Subwatershed:		Outfall ID: <u>LK-1.12</u>	
Today's date: <u>7/30/15</u>		Time (Military): <u>9:26</u>	
Investigators: <u>BP, SR</u>		Form completed by: <u>BP</u>	
Temperature (°F): <u>65</u>		Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s: <u>32-35</u>	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>Bridge at Crane Creek and Middleton Rd. Outfall from storm drain on Middleton Road.</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>10</u> Depth: _____ Top Width: _____ Bottom Width: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If No, Skip to Section 5</i>				
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Section 4: Physical Indicators for Flowing Outfalls Only
 Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

LK-112

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input checked="" type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other	<i>deposits at outfall, stains</i>
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other	

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab? Yes No

2. If yes, collected from: Flow Pool

3. Intermittent flow trap set? Yes No *If Yes, type: OBM Caulk dam*

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)? *Sediment may need cleaned out in the near future.*

Section 1: Background Data

Subwatershed:		Outfall ID: <u>LK-13</u>	
Today's date: <u>7/30/15</u>		Time (Military): <u>9:33</u>	
Investigators: <u>BP, SR</u>		Form completed by: <u>BP</u>	
Temperature (°F): <u>65</u>		Rainfall (in.): Last 24 hours: <u>0</u> Last 48 hours: <u>0</u>	
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #: <u>30-40</u>	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input checked="" type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known): <u>outfall from Boise and Middleton intersection</u>			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED	
<input checked="" type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: <u>12</u> Depth: _____ Top Width: _____ Bottom Width: _____	In Water: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____		
<input type="checkbox"/> In-Stream	(applicable when collecting samples)				
Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If No, Skip to Section 5			
Flow Description (if present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

LK-1.3

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
			1 - Faint	2 - Easily detected	3 - Noticeable from a distance
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other	
Pipe benthic growth	<input checked="" type="checkbox"/>	<input type="checkbox"/> Brown <input checked="" type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other	<i>Slight coloring.</i>

Section 6: Overall Outfall Characterization

Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow <input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam</i>

Section 8: Any Non-Ilicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Appendix D -Dry Weather Screening Observations

Outfalls Screened Observations

Dry weather screening for year 6 of the current NPDES Stormwater Permit was performed by Breanna Paulson and Stevan Rogers on July 30th, 2015. The following observations were documented in a post screening memorandum to the City dated August 23, 2015.

Outfall MS-0.840

This outfall directly connects to a catch basin located at the Southern point of S 1st Avenue East. The outfall is located on the north bank of the Mill Slough Canal and consists of a 6" CMP pipe that is accessible but is almost fully submerged below the water surface. It did not appear that any water was discharging from the outfall. No water samples were taken. The pipe appeared to be in good condition, but an accurate condition assessment could not be made. It is believed that the outfall could be partially filled with sediment.



Figure 1: Outfall MS-0.840

Outfall MS-0.970

This outfall is located on the north bank of the Mill Slough Canal east of S 1st Avenue East. The outfall directly connects to two catch basins on S 1st Avenue East and consists of 12" CMP pipe located above the high water mark. No water was witnessed discharging from the outfall into the canal. There were no signs of illicit discharge. The outfall appeared to be in good condition and no concerns were noted.



Figure 2: MS-0.970

Outfall MS-1.010

This outfall is located at the west side of the canal bridge on Boise St. near the intersection with S 1st Avenue East. The outfall appears to be an approximate 18" CMP pipe. The pipe was partially submerged in the Mill Slough Canal at the time of our visit but there was no observed flow witnessed from the outfall. No water samples were taken. It is unknown where this outfall discharges from, but it is plausible that it is connected to the two catch basins at the intersection of Boise St. and S 1st Avenue East. Outfall MS-1.02 was believed to be connected to these catch basins, but could not be located.



Figure 3: MS-1.010



Figure 4: MS-1.010 Partially Submerged

Outfall MS-1.020

This outfall is located at the intersection of South 1st Avenue East and Boise Street. We attempted to screen the outfall but could not locate it. The outfall is believed to be connected to Outfall MS-1.010 or was replaced by Outfall MS-1.010.

Outfall MS-1.150

This outfall is located on the south bank of the Mill Slough Canal just west of the intersection of S. Dewey Avenue and E. Idaho Street. It is unknown where the source of this outflow comes from. The outflow consists of a 10" diameter PVC pipe that is fully submerged in the Mill Slough Canal. There did not appear to be any flow from this outfall and no water samples were taken. The outfall appeared to be in good repair and no concerns were noted, but an accurate condition assessment could not be made.



Figure 5: MS-1.150

Outfall MS-1.170

This outfall is located on the south bank of the Mill Slough Canal just north of E. Idaho Street. The outfall directly connects to two catch basins located on E. Idaho St. and consists of 6" PVC pipe located above the high water mark. The outfall was overgrown by vegetation and the pipe is partially filled with sediment. No water samples were collected. The pipe appears to be in good conditions, but deposited sediment needs removed.



Figure 6: Outfall MS-1.170



Figure 7: Outfall MS-1.170 Catch Basins

Outfall MS-1.180

This outfall discharges water from a catch basin located on the east side of S. Dewey Avenue. There was no observed flow from the outfall and no water samples were collected. The outfall consisted of a 6" PVC pipe and is located above the high water mark. The outfall is overgrown by vegetation and sediment appears to partially fill the pipe. The pipe is in good condition and no major concerns were noted but vegetation and sediment deposits need maintenance.



Figure 8: Outfall MS-1.180



Figure 9: Outfall MS-1.180 location on canal bank

Outfall DD-0.89

This outfall is located east of Hawthorne Street near the west bank of Donna Drive Drain. We attempted to screen the outfall but could not locate it. It is believed that the Outfall pipe was dug up approximately 6 years ago, but the outfall is still in use. The outfall directly connects to a catch basin located on Donna Drive. It was mentioned that this catch basin has backed up many times in the previous years. Donna Drive Drain was partially filled with stagnant water indicating recent flows. This outfall will need to be located following recent rainfall and after location is marked dry weather screening will need to be accomplished.



Figure 10: Outfall DD-0.89 Donna Drive Drain

Outfall LK-1.10

This outfall is located on the south bank of the Lawrence Kennedy Canal west of the intersection of Crane Creek Way and South Middleton Road. The source of discharge is from a sand and grease trap located on the Crane Creek Way. The storm water flows from the sand and grease trap to the outfall via an open ditch located west of Crane Creek Way. The open ditch also appears to capture run-off from the landscaped area west of the roadway and may collect flow from a small portion of the adjacent field. This outfall consists of an 18" PVC pipe. There was no flow present at the outflow or in ditch, but there are stain deposits on the cement pad directly off the outflow that indicated the presence of past flows. No water samples were taken. The outfall appeared to be in good repair and no concerns were noted.



Figure 11: Outfall LK-1.10 flow indicator



Figure 12: Outfall LK-1.10

Outfall LK-1.12

This outfall is located on the south bank of the Lawrence Kennedy Irrigation Canal west of S. Middleton Road. The outfall consists of 12" PVC pipe and has no flow present. The water source is from two catch basins on South Middleton Road. The outfall is partially filled with sediment and has water flow marks present. The outfall appeared to be in good repair and no concerns were noted.



Figure 13: Outfall LK-1.12

Outfall LK-1.12

This outfall is located on the north bank of the Lawrence Kennedy Irrigation Canal west of S. Middleton Road. The outfall directly connects to the catch basins located at the intersection of S. Middleton Road and Boise Street. There was no flow present and the outfall consisted of a 12" PVC pipe. There were no signs of illicit discharge. The outfall appeared to be in good repair and no concerns were noted.



Figure 14: Outfall LK-1.13

Outfall WC-1.20

This outfall is the outfall used by the City to monitor storm water discharge quality for the NPDES stormwater permit. The outfall to Willow Creek is the terminus of a 15-inch diameter PVC storm line that extends north in N. 4th Ave. W. The outfall is situated on the west bank, approximately 1.2 miles upstream of the confluence with the Boise River. The outfall is elevated at or above the ordinary high water mark and is fitted with a cast-iron flap type tide gate.

During the 2015 screening a visual estimate of approximately 45-50 gallons per minute present was discharging to Willow Creek. There was no apparent sign of coloration or odor from the discharged flow. The source of water could not be determined. The outfall was overgrown by willow tree roots. The pipe appears to be in good conditions, but vegetation needs removed. A water sample was taken at the outfall and was submitted for laboratory analysis. Results are provided in Attachment C.



Figure 15: Outfall WC-1.20

Attachment - City Storm Water Ordinances

6-3-8: STORMWATER MANAGEMENT:

A stormwater management plan shall be prepared addressing both construction and postconstruction control of stormwater. The introductory comments, general stormwater requirements, control method requirements, stormwater best management practices and plans to improve stormwater quality shall be detailed.

- A. When possible, retention and detention facilities should be designed as open surface facilities for multiuse.

- B. A plan for operation, maintenance, repair and replacement of the facility shall be prepared and submitted to the city for approval. Oil/water separators and catch basin inserts shall not be used alone to treat stormwater runoff, but rather in combination with other BMPs to improve water quality. For grease and sediment traps, sand filters and other maintenance intensive facilities, a life cycle cost, including cost of replacement, shall be submitted and will be considered by the city as a part of the process of deciding on acceptance or nonacceptance of that option. Generally, for facilities requiring city maintenance, an option with least postconstruction life cycle cost is preferred by the city.

- C. Retention facilities which incorporate absorption trenches and subsurface infiltration elements for stormwater management shall conform to Idaho Code title 42, chapter 39, and to the Idaho department of water resources rules for waste disposal and injection wells.

- D. Preconstruction erosion and sedimentation control methods must be installed or otherwise in effect prior to any site disturbance. (Ord. 552, 4-1-2015)

7-7-4: STORMWATER MANAGEMENT PLANS AND COMPREHENSIVE DRAINAGE PLANS:

- A. Requirements: To minimize the discharge and transport of pollutants to storm drains and prevent the deterioration of water quality, certain new developments and redevelopment projects will be required to submit for approval a stormwater management plan or a comprehensive drainage plan to control the quality, volume and rate of stormwater runoff. The Idaho department of environmental quality and common engineering practice establishes standards and guidelines for implementing BMPs and stormwater management plans and is incorporated by reference and made part of this chapter.
1. Stormwater management plans or comprehensive drainage plans are required for industrial, commercial, and institutional developments which require a building permit and all residential developments, as well as subdivision projects that have private access, which also require a building permit.
 2. Redevelopment projects may be required to submit complete stormwater management plans or operation and maintenance plans if required by the city of Middleton.
 3. Stormwater management plans and comprehensive drainage plans shall be developed in accordance with commonly accepted engineering practices and shall be stamped by a licensed professional engineer.
- B. Submission And Review Process:
1. Stormwater management plans and comprehensive drainage plans shall be submitted at the time construction plans and/or building plans are submitted. The plans shall be submitted to the city as part of the building permit or plat application. In those instances where stormwater management plans and comprehensive drainage plans are required, but no building permit is required, said plans shall be submitted as part of the development plan. The plans shall be reviewed by the city for their compliance with local, state and federal rules and regulations.
 - a. All stormwater shall be managed to support water quality. No plan shall be approved that increases the level of stormwater runoff from impervious areas, unless the plan identifies measures to control and limit runoff to levels no greater than would occur from the site if left in its natural, undeveloped condition.
 - b. No development or use of land which requires a stormwater management plan or comprehensive drainage plan as per this section shall be permitted without the city approval of such plan.
 - c. No building permit or final certificate of occupancy shall be issued without an approved stormwater management plan if required under this section. Before final occupancy is granted, the design engineer shall certify the stormwater system was constructed in substantial conformance with the approved plans.
 2. The city shall be notified of the commencement of any development covered by a

comprehensive drainage plan and the owner shall be required to provide engineering certification that the development is in conformity with the previously approved comprehensive drainage plan.

3. All modifications to comprehensive drainage plans shall be submitted to the city for approval.
4. Approval of the stormwater management plan or comprehensive drainage plan does not relieve the owner or responsible party from the duty to ensure the systems and their safety measures function as designed.
5. Approval may be suspended or revoked at any time if conditions are not as stated or shown in the approved application or implementation of the plan is not proceeding in the approved manner.
6. Approval of any plans by the city shall not create a liability on the part of or cause of action against the city.

C. Maintenance Of Stormwater Facilities:

1. Stormwater facilities shall be maintained by the facility owner.
2. Disposal of waste from maintenance of facilities shall be conducted in accordance with applicable federal, state and local laws and regulations.
3. Records of installation and maintenance and repair shall be retained by the owner for a period of five (5) years and shall be made available to the city upon request. (Ord. 553, 3-18-2015)

Attachments to: 2014 Annual Report

Available upon request