CITY OF MIDDLETON

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www.middleton.id.gov

January 7, 2020

United States Environmental Protection Agency
Attention: Storm Water Program
NPDES Compliance Unit
1260 6th Avenue, Suite 900 (OCE-133)
Seattle, WA 98101

Idaho Department of Environmental Quality
Boise Regional Office
1445 N Orchard
Boise, ID 83720

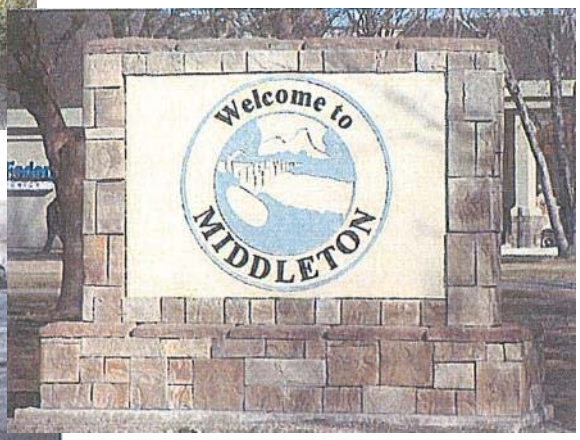
RE: NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. IDS-028100 CITY OF MIDDLETON IDAHO

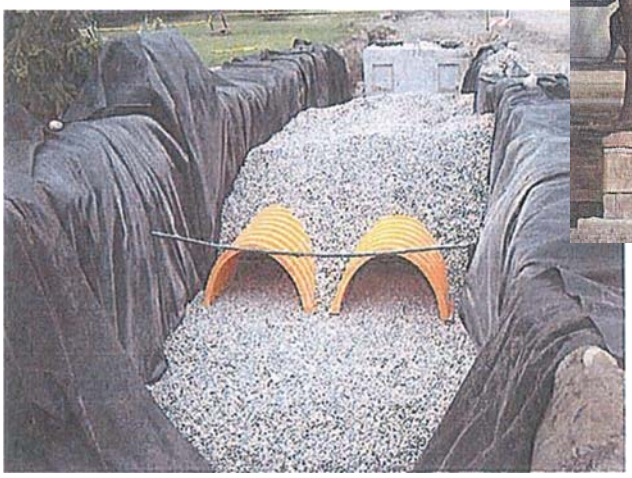
Please find attached the Year 10 Annual Report for the City of Middleton, as required by NPDES Permit No. IDS-028100. This Annual Report documents the actions taken by the City of Middleton for compliance with permit requirements during the reporting period of October 15, 2018 to October 15, 2019. A copy of the report will be made available at Middleton City Hall for public review.

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

_____

Steve Rule, Honorable Mayor
City of Middleton





2019

ANNUAL REPORT

Year 10
(October 2018 – October 2019)

City of Middleton, Idaho

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) NPDES
Permit No. IDS - 028100

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

PROFESSIONAL ENGINEER
LICENSED
17211
1/6/20
STATE OF IDAHO
RONALD MANNING II

CITY OF MIDDLETON
IDAHO

Table of Contents

Appendices

Notes:

This report is intended to meet the annual reporting requirements as specified in the City of Middleton NPDES Stormwater Permit No IDS-028100. The City's primary goal for this report is to document progress and demonstrate substantial compliance with the City's NPDES requirements.

The permit expired on October 14, 2014 and was administratively extended by the EPA on October 2, 2014. This report covers actions related to stormwater management for the period up to and including Year 10 of the extended permit, which ended on October 15, 2019.

The format generally follows the headings as given in the MS4 Permit. The Appendices referenced above, which are provided at the end of this report, form the City's Storm Water Management Program (SWMP) Plan, and are updated on a regular basis.

I. Applicability

The City of Middleton (City) is regulated under the National Pollutant Discharge Elimination System (NPDES) through the United States Environmental Protection Agency (EPA). The City owns and operates a regulated small municipal (i.e., urbanized areas with population below 100,000) separate storm sewer system (MS4) within the Nampa Urbanized Area. The EPA issued a draft NPDES permit in July 2008. Following review by the City and a public hearing, a final permit, IDS 028100, was issued with an effective date of October 15, 2009. The permit was set to expire on October 14, 2014 and was administratively extended by the EPA on October 2, 2014. It will remain effective until a new permit is issued. The City is authorized to discharge from all MS4 outfalls in accordance with the conditions and requirements set forth in the permit.

II. SWMP Requirements

General Requirements

Under the MS4 permit, the City is required to implement a Storm Water Management Program (SWMP) for all areas within the Nampa Urbanized Area served by the municipal separate storm sewer system owned or operated by the City (permittee).

Minimum Control Measures

This section presents a summary of minimum control measures (MCM) implemented under this permit. Each of the required elements is arranged in accordance with the required six MCMs outlined in the permit.

MCM 1. Public Education and Outreach

The City continues the development and implementation of public education activities:

- The City has prepared and published information for residents about upcoming changes in the EPA and NPDES permits for Middleton and the City's requirements under the NPDES MS4 permit.
- As part of the public education process, storm water grates have been permanently marked to inform the public they drain into the storm drain system, and then to either the Boise River, a tributary, or groundwater.
- The City has provided pet clean up stations at parks and other areas along with information explaining why cleanup is important.
- The City has prepared and published information to educate the public about stormwater pollution. This information includes community actions citizens can take to reduce pollution, providing maps for residents on inlet locations, listing things residents can do to help

improve water quality discharges, relevant City stormwater ordinances, and organized activities aimed at reducing stormwater pollution. This information is published in City newsletters, water bill inserts, and on the City's website.

- Stormwater quality and other water quality information is presented at public meetings. Published education and outreach materials are included in Appendix B.

MCM 2. Public Involvement/Participation

The City continues to implement efforts to encourage public involvement and participation:

- The City adheres to the public notification requirements of Idaho Code and Idaho Administrative Rules when implementing public involvement and public participation.
- The City encourages residents to keep storm drain inlets clear of debris; be mindful of snow storage on sidewalks and driveways; and keep chemical and other contaminants out of the storm drain system.
- The City continued the City-wide leaf rake-up event that began in November of 2016. During these events residents are encouraged to assist neighbors in raking leaves.
- The City continued the City-wide spring cleanup event. During these events residents are encouraged to assist neighbors in cleaning up trash along streets and roads, and hauling miscellaneous items to the dump for disposal.

MCM 3. Illicit Discharge Detection and Elimination

The City continues efforts to detect and eliminate illicit discharge. Specific efforts include the adoption of ordinances and the development of an Illicit Discharge Detection and Elimination Plan. Components of the plan include:

- Ordinances that address storm water and prohibit illegal discharges with enforcement procedures (Note: the City updated their illicit discharge code in 2019).
- A comprehensive map of the storm water facilities (See Appendix E – Storm Water Mapping). The City's storm water facilities have been mapped using the best available data and input from public works staff. The map is periodically updated to include new facilities and to include additional system information as it is collected or becomes available.
- An inventory of industrial facilities that discharge into the MS4.

MCM 3 requires screening of 20% of the City's outfalls by the end of Year 5. Based on available information there are a total of 86 outfalls. A total of 58 outfalls (or

67%) were screened through Year 7. No additional outfalls were screened in Years 8 and 9.

In April 2019 city personal observed a potential illicit discharge to an irrigation ditch located at 125 Whiffin lane and reported it to their supervisor. A report documenting the city's response is included in the attached Monitoring Report (Appendix F). Additionally, the city reviewed and revised their code to more explicitly prohibit discharge of polluted waste or waters to any area under the jurisdiction of the City (see Title 8, Chapter 1 Section 19). Based on the subsequent review of the lab results for this potential illicit discharge, the City of Middleton intends to further investigate the 125 Whiffin Lane discharge to determine if corrective measures may be justified.

MCM 4. Construction Site Storm Water Runoff Control

The City has an ongoing program that requires runoff control from construction sites. This includes compliance with the requirements of the Construction General Permit and local requirements (an Erosion and Sediment Control Plan) for all projects, including those administered by the City.

Components of the program include:

- Discharge of storm water from construction sites is prohibited into the MS4. If a property is discharging storm water off-site, or into the MS4, the responsible party must mitigate as applicable and as needed.
- The City requires storm water management plans and comprehensive drainage plans to be submitted and approved by the City along with development/construction plans and/or building plans. The plans are submitted to the City's Public Works Department as part of the building permit application package or the plat application.
- Projects disturbing one acre or greater are required to submit a Storm Water Pollution Prevention Plan (SWPPP) and file a Notice of Intent with the EPA prior to construction activities. Projects disturbing less than one acre require a Storm Water Runoff Control Plan or Erosion and Sediment Control Plan be submitted to the City for review and approval.
- The City requires new development and redevelopment construction projects to provide information associated with storm water discharges. This is accomplished through the construction plan review and approval process and the SWPPP submittal requirement by EPA.
- The City informs operators of BMPs and waste control measures throughout the SWPPP review process.

MCM 5. Post-Construction Storm Water Management in New Development and Redevelopment

The City adopted an ordinance specific to storm water runoff, storm water quality, storm water management plans, and post construction runoff from new development and redevelopment projects. The ordinance strengthened, revised, and amended requirements intended to meet the water quality objectives of the City and the community. Additionally, the City's current development policy does not allow new development to discharge storm water to the MS4 in excess of predevelopment flows.

The City currently provides onsite observation of the installation of storm water facilities to ensure installation meets approved plans and specifications. The contractor or developer, as a condition of the City's approval, will warranty the storm water infrastructure for one year. At the end of one year, the City performs an on-site inspection to identify BMPs needing remediation or other items that may affect long-term maintenance and operation of storm water controls prior to the City releasing warranty obligations of the development.

For a new development that discharges to the MS4 and is greater than one acre in size, the City requires a maintenance plan that includes regular cleaning of components included in the City's storm drain system. A list of construction activities and map showing type of system are provided in Appendix C.

MCM 6. Pollution Prevention and Good Housekeeping for Municipal Operations

The City purchased a vacuum truck in 2014 which is utilized to clean inlets and sediment traps in post construction areas. The schedule for cleaning is reviewed and updated periodically as needed (see Appendix D - MCM6).

The City conducted Water Quality BMP Training for public works maintenance staff in December 2019 (see Appendix D - MCM6). Training included:

- Upcoming changes in the Idaho Storm Water Program
- Monitoring requirements including wet and dry weather monitoring requirements.
- Allowable and non-allowable discharges (i.e. illicit discharges) into Middleton's Storm Water System.
- overview of NPDES MS4 permit requirements
- Best management practices for the protection of water quality.

The City completed the construction of a concrete pad for the City's sand storage area in 2015. Additionally, in August 2019 the City purchased the following spill containment equipment and storage lockers:

- Chemical storage containment drum pallets for chlorine containment.

- Flammable storage locker for paint
- Flammable storage locker for gas
- Containment locker for LP gas
- Portable spill containment clean up kits for 5 vehicles and one for in shop.

Discharges to Water Quality-Impaired Receiving Waters

Monitoring of storm water discharge was initiated in 2012 and was continued in 2019 (See Appendix F – 2019 Storm Water Monitoring Report). Based on these results, it appears the discharge of storm water contributes Pollutants of Concern (TSS, phosphorus and bacteria) to Section 303 (d) listed water bodies. The MCMs and other activities are targeted by the permittee to control the discharge of the pollutants of concern as shown in Table 1 below. As discussed in the "Monitoring Report" section to follow, the City will continue to focus efforts on control of bacteria, and further assess the actions that can reduce levels of phosphorus in stormwater runoff and receiving waters, including assessment of the 125 Whiffin Lane discharge.

Table 1 – Storm Water Management for MCM and Pollutants of Concern								
Number	Activities	1 Public Education	2 Public Involvement	3 Illicit Discharge	4 Const. Runoff Control	5 Post-Construction	6 Prevention / Housekeeping	Notes/Comments
PoC Reduction Activities								
1	Maintenance of basins					X	X	Storm Water Ordinance revised Jan 2013
2	Site design measures					X		Storm Water Ordinance revised Jan 2013
3	Lower Boise River Watershed Council	X	X					Supports and tracks activities
4	Storm Water Ordinance			X	X	X	X	Storm Water Ordinance revised Jan 2013
Phosphorus Reduction Activities								
1	Fertilizer management	X					X	Promote limiting use of P
2	Dry weather discharges	X	X					Newsletters and outfall screening
3	Clean up days	X	X					Spring clean up
Sediment Reduction Activities								
1	Street sweeping						X	Increasing street sweeping hours
2	Catch basin cleanout						X	Increase efforts
3	Plans and field inspections			X	X			City performs inspections
Bacteria Reduction Activities								
1	Pet waste management	X	X				X	Newsletters and website

III. Schedule

This section outlines the activities planned for Year 11(October 2019 to October 2020). In general, the City will continue actions implemented under the existing permit, which includes storm water monitoring and annual report submissions under the existing schedule. Some of the other activities planned for Year 11 are outlined below.

Public Education/Outreach Program

The City will continue to develop educational and public outreach materials and will include this information in water bills, City newsletters, the City website. The City will continue to maintain and update a webpage where educational material and the SWMP documents are available to the public. The City will also continue training for City staff to help educate residents. Storm water and other water quality information will continue to be presented at City Council meetings.

Public Involvement/Participation

The City will continue marking new storm drain inlets as they are constructed. In addition, the City will organize and conduct annual events that focus on public education and participation to promote storm water quality improvement. For example,

- An annual "Rake-up Middleton" event, in which volunteers and City staff gather to clean-up trash and debris along streets, sidewalks, and storm gutters.
- The City may organize and sponsor an annual community street and gutter clean-up day.
- A summary of water quality monitoring may be presented to the City Council and/or the community.

Illicit Discharge Detection and Elimination

The City will continue to implement the Illicit Discharge Detection and Elimination plan. This plan includes ongoing updates to an MS4 GIS database and map system, inventory of industrial facilities that discharge directly to the MS4 (to be reviewed and revised), and a spill response plan. Review or monitor Idaho Transportation Department reconstruction of Highway 44 for possible changes to outfall connections.

The City also plans to continue to identify areas where relatively high dry-weather flows occur, and assess the level of concern (i.e., potential for illicit discharge).

Additionally, the City plans further investigation in the 125 Whiffin lane outfall, identified as a potential illicit discharge.

Construction Site Storm Water Runoff Control

The City plans to continue review of SWPPPs and perform site inspections so appropriate controls can be incorporated in the plans and implemented on the ground.

Post-Construction Storm Water Management in New Development and Redevelopment

The City will continue to distribute information regarding design and long-term operations of facilities with building permit applications. The City also plans to compile and review existing BMPs and develop recommendations and guidance to be provided to developers to promote designs consistent with the City's storm water management objectives.

Pollution Prevention and Good Housekeeping for Municipal Operations

The City will continue to develop and provide Water Quality BMP training for municipal employees in Year 11. Additionally, the City hired a new employee in 2017 whose primary duty is street sweeping. The City currently has a schedule for cleaning storm drain inlets with the City's vacuum truck and plans to continue procedures for tracking street sweeping.

IV. Monitoring, Recordkeeping and Reporting

Monitoring Report

A monitoring report was prepared to meet the reporting requirements as specified in the City's NPDES Stormwater Permit No. IDS-028100 (Appendix F). The Permit requires storm sewer system (MS4) outfall monitoring. 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 10 of the permit. The permit was scheduled to end on October 15, 2014 but has been administratively extended until a new permit is issued.

There are two components of MS4 water quality monitoring: (1) outfall monitoring (WC-1.20O) and (2) dry weather screening. The water quality sampling focused on total suspended solids (TSS), total phosphorus (TP), and bacteria (*E. coli*), which were identified in the Phase II NPDES MS4 Permit (EPA 2009) as the "Pollutants of Concern.".

In 2019, additional dry weather screening samples were collected as part of ongoing assessment for potential illicit discharges. Dry weather outfall (WC-1.20O) sample results appear similar to previous year's results. The sample

collected at 125 Whiffin Lane was for a new outfall location and was collected to help determine if the discharge meets permit conditions.

Based on the results of monitoring and screening efforts, the following recommendations should help to focus implementation of storm water management actions and address pollutants of concern:

(1) Land uses and management activities upstream of the outfalls will continue to be assessed along with options for implementation of new or improved stormwater control measures. Due to occasionally elevated *E coli* and generally elevated phosphorus, efforts to reduce sources of bacteria and phosphorus will be pursued. In addition, the focus and actions to reduce these levels in storm water will be identified and implemented consistent with the City's management objectives.

(2) The Willow Creek Outfall sampling location has been assessed to determine sources of runoff water. Sampling will continue at the Willow Creek Outfall until a new permit is issued and any changes to storm water monitoring have been assessed.

(3) Based on review of the laboratory results for the 125 Whiffin Lane (a potential illicit discharge), the City of Middleton intends to further investigate the discharge to determine if corrective measures may be justified.

Quality Assurance Plan

As required by the permit, the City completed a Quality Assurance Plan and Monitoring Plan for the storm water monitoring requirements of the permit. EPA and IDEQ were both notified of the completion of these reports on October 15, 2010. The miscellaneous updates to the monitoring plan have been provided in the Monitoring Report.

V. Compliance Responsibilities

Inspections and Formal Enforcement Actions

The City has not had any formal enforcement actions associated with any construction activities during the reporting period.

Enforcement Actions from Regulatory Agencies

The City has not received any water quality related enforcement actions from any regulatory agencies during the reporting period.

BMPs Necessary Due to Monitoring

The City began monitoring in Year 3. Recommendations provided in the Monitoring Report include focus on BMP implementation.

Change in Responsibility for Permit Obligations

As shown in Appendix A, the following are changes in responsibility for tasks outlined in the approved permit include:

- New - Mayor Elect: Steve Rule (begins term on January 1, 2020)
- New – Public Works Director: Bruce Bayne
- New - Administrative and Communications Coordinator: To be determined

The City and Canyon Highway District No. 4 have an Exchange Maintenance Agreement that stipulates maintenance responsibilities for road sections that are located within both jurisdictions. Based on the City's storm water mapping, Canyon Highway District No. 4 outfalls do not discharge to Middleton's storm drainage system.

New MS4 Outfalls

Newly constructed outfalls and changes to the inventory of known outfalls in year 10 of the permit are documented below:

New or Modified Outfalls:

1. Sawtooth Lakes 2 Subdivision: DI, S&G, to Wetlands and Detention Ponds (existing ponds)
2. Blue Meadows 1 Subdivision: Drain to existing swales.

Existing Outfalls Not Previously Identified, Added to List in 2018:

1. None

VI. General Provision

Certification

"I certify under penalty of law that this document and all appendices were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and

belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations"

Steve Rule – Mayor

City of Middleton

Date

Appendix A - Middleton MS4 SWMP Staff

City of Middleton, Idaho

MS4 Stormwater Management Plan Staff List

Mayor Darin Taylor*
City of Middleton, 208-585-3133
*Through Jan 2, 2020

Mayor Steve Rule*
City of Middleton, 208-585-3133
*Beginning Jan 3, 2020

Amy J Woodruff, PE, City engineer
Civil Dynamics, PC 208-453-2028

TBD, Administrative and Communications Coordinator
City of Middleton 208-585-3133

Bruce Bayne, Public Works Director, Planning Official/Code Enforcement
City of Middleton 208-585-3133

Chad Beverage, Wastewater Treatment Plant Manager
City of Middleton 208-631-5336

Rodger Hawker, Wastewater Treatment Plant Operator
City of Middleton 208-789-3953

(Updated 11-4-19)

Appendix B - MCM1 – Educational/Outreach Materials

Community Information provided in Front Page Newsletters

Front Page October 2018: City provided notice of fall rake up activity

Calendar

City Council Public Meeting Rm. 6 N. Dewey Ave. 6:30 p.m.	October 3
City Hall Closed Columbus Day, Observed	October 8
Planning and Zoning Public Meeting Rm. 6 N. Dewey Ave. 7:00 p.m.	October 8
City Council Public Meeting Rm. 6 N. Dewey Ave. 6:30 p.m.	October 17
Spooktacular Downtown Businesses 3:30 - 5:00p.m.	October 31
Rake Up Middleton Meet at Trolley Station 10:00 a.m. Volunteers requested Contact Jennica at 208-585-3133	November 3

Front Page February 2019: information on water quality improvement projects to be presented to community and questions addressed.

Middleton Community Meeting
February 28, 2019

Everyone is invited to a city general information meeting starting at 7:00 pm. on February 28, 2019 in Trolley Station, 310 Cornell Street, Middleton, Idaho (downtown across the street from the fire station). The mayor and others will provide information, answer questions and display designs for Cemetery Road south of Highway 44, Middleton Road alignment, Highway 44/Hartley Ln. roundabout, Piccadilly Park 2019-2020 improvements, Crane Creek Park Vegetation Plan, annexations, and more. The following engineering firms are scheduled to present:

Horrocks	S. Cemetery Rd. Water mainline Duff to Kingsbury
T-O	Middleton Rd. alignment
Precision	SH44/Hartley and SH44/Middleton roundabouts
Civil Dynamics	Hartley wastewater trunk line
Kent Brough	Crane Creek Park Vegetation Plan
Becky Crofts	Piccadilly Park 2019-2020 Improvements
SPF Water	Boise River Waterline Bore
Keller	Wastewater Master Plan
HyQual	Water quality project

Front Page April 2019: Announcements that support efforts to improve water quality

Spring Clean-Up / Free Dump Day

The annual city day to clean-up along main-roads is scheduled on Wednesday April 24, 2019 at 7:00 p.m. starting and ending at Trolley Station. Everyone is invited to help, so bring your gloves and water bottles. The city provides garbage bags, and will assign individuals and groups to routes, and pick-up bags of garbage as needed along the routes.

Canyon County waived fees at the "dump" (aka land fill) on April 27, 2019, so residents can take items directly to the dump or call and notify Republic Services at 208-345-1265, BEFORE regular garbage day, that you have oversized items that need picked-up and taken to the dump.

National Arbor Day

Trees are an importation solution to many critical issues facing the planet. Trees purify our air, filter our water, and cool the earth. Arbor Day is April 26, 2019, so please take time to plant a tree in your yard or contact Becky Crofts at 208-585-3133 to donate and plant a tree in a City park.

Front Page 2019: community survey and meeting to discuss results

Community Meeting Survey
Results - shown on pages 2-7

On February 28, 2019 the city invited community members to listen to presentations from city engineers and others discussing planned city projects. Those who attended provided feedback regarding projects via annonymous on-line voting. The survey results are shown on pages 2-7.

3. Is the city heading in the right direction... IPDES permitting, pilot test, water quality effort and offsets? (Multiple Choice)

	Responses			
	Percent	Clicker	Handwritten	Total
Yes	94.73%	44	10	54
No	5.26%	3	0	3
Totals		47	10	57

Front Page August 2019: Proposed budget shows slight increase in Storm Water Fund revenues

BY CLASSIFICATION	FY 2018 ACTUAL REVENUES	FY 2019 BUDGETED REVENUES	FY 2020 PROPOSED REVENUES
PROPERTY TAX*:			
General Fund	$932,201	$1,232,400	$1,346,475
Transportation	749,512	686,000	1,441,975
Total Property Tax Revenue	**1,680,713**	**1,918,400**	**2,788,450**
OTHER REVENUE			
General Fund	2,414,207	1,526,606	1,365,572
Transportation Fund	661,077	554,525	292,230
Solid Waste Fund	612,827	640,394	720,094
Water Fund**	1,020,003	1,218,595	1,323,154
Waste Water Fund**	1,752,901	2,172,436	2,817,436
Impact Fee Fund	423,556	510,000	476,381
Storm Water Fund		53,968	60,765
Capital Construction	1,979,172	3,140,551	814,563
Fleet Management Services		81,165	0
Library Fund	437,218	465,300	396,576
Total Other Revenue	**9,300,961**	**10,363,540**	**8,266,771**
TOTAL REVENUE ALL FUNDS	**$10,981,673**	**$12,281,940**	**$11,055,221**

Front Page September 2019: Pending storm water permit listed

Pending and Anticipated Permits from Other Agencies

Idaho Dept. of Environmental Quality (IDEQ) to approval of the city's sanitary sewer master/facilities plan

IDEQ permit for the city's pollutant discharge elimination system (wastewater treatment plant)

IDEQ permit to manage stormwater

Idaho Transportation Department (ITD) permit for interim two-way stop at Highway 44/Hartley Ln.

ITD permit for roundabout at Highway 44/Hartley Ln.

Army Corp of Engineers permit for pathway along Little Drain in Blue Meadows and Falcon Valley subdivisions

Army Corp of Engineers permit to bore beneath Boise River and connect Wells 7 and 10 south of the river with the city's water system north of the river.

Idaho Dept. of Water Resources permit to divert Mill Slough water across sandy area for economical natural filtration treatment to remove nitrates and phosphorus from 10,000-12,000 farmed acres of irrigation runoff in anticipation of offsets or pollutant credit trades.

Appendix C - MCM5 – Construction Activity List for 2019

- 2019 Construction
    - Falcon Valley 5 Subdivision
        - DI, S&G, to Retention Ponds
        - Infiltration Swale along Duff Lane
    - Falcon Valley 6 Subdivision
        - DI, S&G, to Retention Ponds
    - Stonehaven 1 Subdivision
        - DI, S&G, to Seepage Beds
        - DI, S&G, to Seepage Beds along Hartley Lane
    - Stonehaven 2 Subdivision
        - DI, S&G, to Seepage Beds
    - Blue Meadows 1 Subdivision
        - Drain to existing swales
    - Tractor Supply
        - Infiltration Swales
    - Sawtooth Lake 2 Subdivision
        - DI, S&G, to Wetlands and Detention Ponds (existing ponds)
    - McKinley Meadows
        - DI, S&G, to Infiltration Swale
    - Clarity Building
        - DI, S&G, to Seepage Beds
    - South Hartley Lane
        - Infiltration Swales
    - Middleton Industrial Park
        - Infiltration Swales
- 2018 Construction
    - Falcon Valley 4 Subdivision
        - Retention Ponds
    - Traditions at Powder River Subdivision
        - DI, S&G, Seepage Beds
    - Fox Lantern Subdivision
        - DI, S&G, Seepage Beds
    - Sawtooth Lakes Subdivision
        - DI, S&G, to Wetlands and Detention Ponds (existing ponds)
    - Western Pines Subdivision
        - DI, S&G, to Retention Ponds
    - Valhalla Subdivision
        - Infiltration Swales disconnected from surface water
    - Dewey Avenue Business Park
        - DI, S&G, to existing Storm Water System with outfall at Mill Slough

- 2017 Construction
    - The Lakes No. 2 Subdivision
        - Infiltration Swales disconnected from surface water
    - Piccadilly Park
        - Infiltration swales disconnected from surface water
- 2016 Construction
    - West Highlands Phases 6, 7, & 8
        - DI, S&G, and Seepage Beds
    - Falcon Valley 3
        - Infiltration Swales along Chief Road disconnected from surface water
        - DI, S&G, and Retention Pond
    - Used car lots with seepage beds
        - 2 were completed
    - Falcon Valley 2
        - Infiltration Swales disconnected from surface water
    - Bass Lane
        - Infiltration Swales disconnected from surface water
- 2015 Construction
    - The Crossings Subdivision
        - Infiltration Swales disconnected from surface water
    - West Highlands 6 & 7
        - DI, S&G, and Seepage Beds
    - Falcon Valley 3
        - Infiltration Swales along Chief Road
        - DI, S&G, and Retention Ponds
    - Concord Street
        - DI, S&G, and Seepage Beds
- 2014 Construction
    - West Highlands Phase 5 Subdivision
        - DI, S&G, and Seepage Beds
    - The Lakes Phase 1 Subdivision
        - Infiltration Swales disconnected from surface water
    - Meadow Park Blvd
        - DI, S&G, and Seepage Bed
    - Powder River 2 Subdivision
        - Infiltration Swales disconnected from surface water

Appendix D - MCM6 – Pollution Prevention and Good House Keeping

City of Middleton Storm Water
Water Quality Best Management Practices
WORKSHOP AGENDA

December 3, 2019, 9:00 am

A. Introductions

Ron Manning, P.E. (SPF)	*rmanning@spfwater.com*
Scott McGourty, P.E. (SPF)	*smcgourty@spfwater.com*
Jack Harrison PhD, P.E. (HyQual)	*jack.hyqual@gmail.com*

B. Overview of City of Middleton's NPDES Permit

1) Storm Water Management Program (SWMP) requirements

- Reduce the discharge of pollutants to the maximum extent practicable.
- Protect water quality in receiving waters.

2) Upcoming Changes in Idaho Storm Water Program

- EPA will issue new NPDES permit, Idaho will take over primacy of this new permit

C. Illicit Discharge

- "Illicit Discharges" are:
  - non-storm water
  - not on the list of allowable non-storm water discharges
  - contaminated
- Talk to your supervisor if you have doubts!
- Examples of Illicit discharges

D. Pollution Prevention and Good Housekeeping for Municipal Operations

- Best Management Practices (BMP's)

E. Practical Permit Compliance Tips from EPA Region 10

- Talk to your neighbors
- Compliance is in the Paperwork
- How to get a permit violation (low hanging fruit)
- Be proactive
- Focus on Discharge Points

CITY OF MIDDLETON

MS4 STORMWATER TRAINING

DECEMBER 3, 2019 9:00AM

ATTENDANCE SHEET

NAME	DATE
Darren Armas	12/3/19
Art Hill	12-3-19
Denis Cemer	12/3/19
Jeremy Hammond	12/3/19
Cody Begneath	12/3/19
Terrell Mendive	12/3/19
Rodger Hawker	12-3-19
Chad Beveridge	12-3-19
Scott McGroarty	12-3-19

SPF WATER ENGINEERING

City of Middleton Storm Water

Water Quality Best Management Practices

OPERATIONS GUIDELINES FOR PROTECTION OF WATER QUALITY

December 3, 2019, 9:00 am

Sand and Road De-icers:

- Use minimal amounts of sand;
- Sand should be clean and free of pollutants;
- Be conscious about where sand is placed. Try to avoid inlets and places where sand will wash into waterways;
- Limit use of salt or chemical road deicers;
- Remove sand as soon as practical and stockpile at public works yard or send to landfill.

Fleet Maintenance and Vehicle-Washing Operations:

- Store used oils, solvents, and antifreeze in appropriate marked containers.
- Perform all vehicle and equipment washing inside the shop;
- Shop floor drains include a pretreatment vault prior to discharge to sewer system.
- If necessary, wash water outside the shop must be contained;
- Perform all vehicle maintenance inside the maintenance shop.
- Limit onsite vehicle maintenance to oil changes and routine maintenance.
- Maintain minimal amounts of maintenance fluids in on-site inventories;
- Clean-up spills immediately and dispose of clean up materials properly

Park and Open Space Maintenance Operations:

- Ensure that parks are not over irrigated;
- Encourage public to use “baggies” for pet waste.
- Do not store large quantities of fertilizer or herbicides
- Store potentially hazardous materials in the chemical shed;
- Perform soil analysis at parks to determine fertilizer needs;
- Use no phosphorus or low phosphorous fertilizers where soil conditions and plant requirements allow.

Water/Wastewater System Operations:

- Treatment activities that could pose a threat to water quality include treatment chemicals such as sodium hypochlorite.
- Ensure that treatment chemicals are properly contained and stored.

Storm Water System Maintenance:

- Establish and maintain a schedule for cleaning inlets, S&G Traps and manholes. Currently it is approximately once every 3 years. Increase if necessary.

300 E. Mallard Drive, Suite 350, Boise, Idaho 83706 Tel: 208-383-4140 Fax: 208-383-4156

- Remove trash from ponds and inlets and encourage citizens to do the same in local newsletter or mailer.
- Use vacuum truck to clean structures. Dispose of waste at landfill.
- Do not "flush" lines unless absolutely necessary.

Snow Disposal Site Operation and Maintenance/Snow Removal Practices:

- Identify sites that could potentially be used for snow disposal, such as municipal open space (e.g., parking lots or parks).
- Select sites in upland locations that are not likely to impact sensitive environmental resources should be selected first.
- Avoid dumping of snow into any waterbody, including rivers, reservoirs, ponds, or wetlands.
- Avoid disposing of snow on top of storm drain catch basins or in stormwater drainage swales or ditches.
- Avoid importing snow from outside the Wellhead Protection Area for a public water supply well.
- A silt fence or equivalent barrier should be placed securely on the downgradient side of the snow disposal site.
- Site meltwater should be directed away from the snow piles and dumping area to reduce ponding/ rutting.
- Avoid dumping snow in gravel pits since there is little opportunity for pollutants to be filtered out of the meltwater because groundwater is close to the land surface.

Materials Storage and Handling:

- To the greatest extent possible, store vehicles, equipment and materials within and under roofed structures to prevent contact with stormwater;
- Store all chemicals including solvents, paints, fertilizer, pesticide, herbicide, fuels/oils, antifreeze, sodium hypochlorite, and similar materials in the chemical storage shed when not in use. The chemical storage shed is locked, ventilated and is equipped with a floor drain that is connected to an approximate 4'x6' spill containment vault;
- Store lead-acid batteries indoors and within secondary containment;
- Do not place material stockpiles, waste stockpiles, drums or other containers close to storm drain inlets or waterways;
- Provide berms or other containment around material and waste stockpiles to prevent the migration of material and pollutants;
- Only obtain and store the amount of materials needed to finish a particular job;
- Recycle materials whenever possible; and
- Read and follow manufacturer directions for use of materials and review the associated Material Safety Data Sheet (MSDS)

Hazardous Materials Storage:

- Do not store significant quantities of potentially hazardous common chemicals such as fertilizers, herbicides, solvents, paints, cleaners, and automotive products.
- All such chemicals should be kept in the chemical shed.

Used Oil Recycling:

- Used oil should be labeled and stored in an appropriate container within the Whiffin Lane Maintenance Shop until it can be recycled.

Spill Control and Prevention Measures for Municipal Refueling Facilities:

- Perform all vehicle and equipment fueling offsite at commercial fuel stations;
- Small equipment (lawn mowers, weed eaters, etc.) requiring less than 5-gallons of fuel may be fueled on-site provided that fueling does not occur within 50-feet of a drainage inlet and that adequate spill clean-up materials are located on-site.
- Small fuel containers kept on-site shall not exceed 5-gallons in size.
- Small fuel containers shall be stored in the chemical storage building when not in use.
- Adequate spill clean-up materials shall be kept on-site. At a minimum, spill clean-up materials shall be located in the maintenance shop, chemical storage building, and at the WWTP;

Spill Response:

In the event of a spill, the following procedures will be followed

- All spills will be cleaned up immediately upon discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.
- The Public Works Foreman will be notified immediately.
- Spills of toxic or hazardous materials will be reported to the Idaho State EMS Communications Center (StateComm) at 208-334-4000. StateComm provides emergency dispatch and communications for hazardous material incidents and many other emergency situations.
- Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-800-424-8802 as well as the Idaho Department of Environmental Quality as soon as practical and within 24 hours.
- An above ground spill or overfill of petroleum that results in a release that exceeds twenty-five (25) gallons or that causes a sheen on nearby surface water shall be reported to the IDEQ within twenty-four (24) hours and owners and

operators shall begin corrective action in accordance with IDAPA 16.01, Section 01.02852.

- An above ground spill or overfill of petroleum that results in a release of less than twenty-five (25) gallons and does not cause a sheen on nearby surface water shall be reported to the IDEQ only if cleanup cannot be accomplished within twenty-four (24) hours.

Spill Prevention and Response Coordinator

The City's Public Works Foreman will be the spill prevention and response coordinator.

Street Cleaning and Maintenance

- Street sweepings are hauled to the Whiffin Lane Maintenance Yard where they are dumped in a waste stockpile.
- Do not locate temporary waste stockpiles near or adjacent to existing waterways or drainage inlets;
- Provide berms or other suitable containment as necessary to prevent pollutant transport into drainage inlets and waterways;
- Minimize waste stockpile quantities. Arrange for permanent disposal at the County landfill once accumulations warrant, approximately once per year.

City of Middleton Storm Water
Water Quality Best Management Practices
COMPLIANCE TIPS FROM EPA REGION 10

December 3, 2019, 9:00 am

Talk to Your Neighbors

The Treasure Valley is full of municipalities that have their own individual Permits and their own individual problems. Chances are if you're struggling with an issue, you're not the only one and another municipality may have a tested solution for you to implement in Middleton. Examples of these types of problems include repeated illicit discharges, street sweeper prioritization/scheduling, identifying dry weather discharge sources, etc.

- CHD#4
- City of Boise
- City of Nampa

95% Of Compliance Is in The Paperwork

- EPA doesn't have the resources to send out inspectors to every permitee every year and check every point source of stormwater runoff. Instead, they rely on the permitee to keep up with their paperwork, including construction site inspection logs, illicit discharge inspection logs and notifications, operation and maintenance logs, and regularly occurring documentation submissions to EPA and IDEQ.
- The EPA likes to consider themselves more of a resource for municipalities than a police officer trying to catch municipalities doing something wrong.
- The EPA usually only gets to visit municipalities once per permit renewal cycle.
- ***Take away point: Keep up on your paperwork and the EPA shouldn't be a problem.***

How to Get A Permit Violation – Low Hanging Fruit

- **Ignore permit requirements** - When you get a renewed permit that includes something that wasn't in the old permit (public outreach and education program) and you refuse to develop the program because it's too much work, or you forget to develop the program because you get busy, etc.
- **Don't submit your paperwork on time** - You developed the public outreach and education program, you published a public notice in the local newspaper, you posted all the educational material on the City's website, but you don't submit a report to the EPA or IDEQ before the compliance date.
- **Submit incomplete paperwork** - You submit the annual report on time every year, but it doesn't include any of the monitoring information.

- **Don’t listen/respond to citizen complaints** - A lot of the time, the EPA will decide to visit a municipality after they’ve received multiple complaints from one or a few angry citizens. These citizens decide to call the EPA because they’re dealing with a recurring issue, have submitted a formal complaint to the City, and the City won’t do anything about or doesn’t respond fast enough. An issue might look like a plugged storm drain causing stormwater to flood someone’s property every time it rains. If the City doesn’t respond to multiple complaints, the citizen turns to the EPA to complain about the municipality and that puts the municipality on the EPA’s radar for inspections.

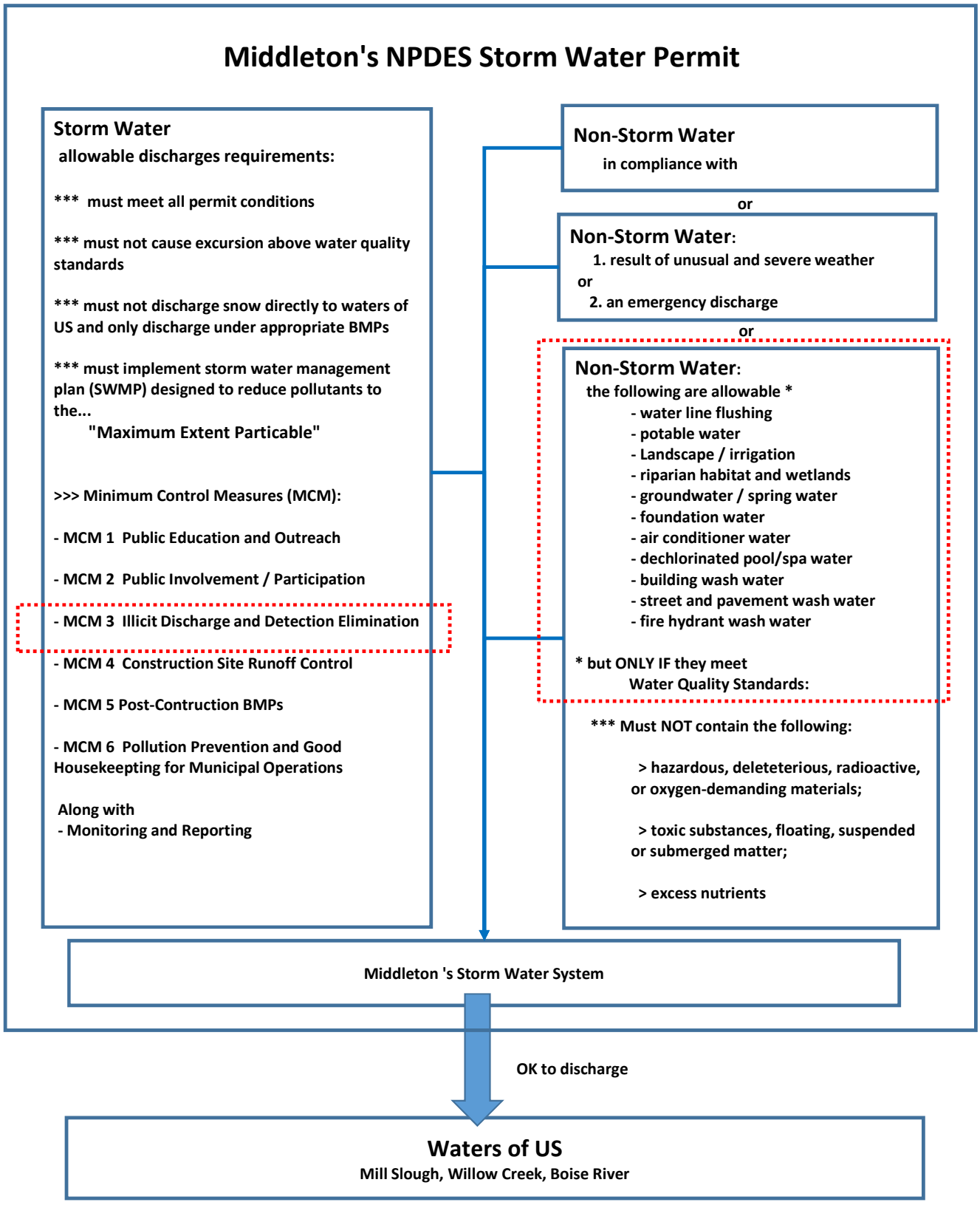
Be Proactive

You know your system better than anyone. You know where the problem areas are located. Keep up on maintenance activities and do your best to keep the system running smoothly. There should be a systematic way to respond to problems and prevent them from happening. Keep up on training for all employees new and old.

Focus on Discharge Points

Identify where stormwater enters waters of the US and prioritize maintenance activities there first. The City should use its ordinance power to reduce pollutants to the maximum extent practicable.

Middleton's NPDES Storm Water Permit



HyQual 2019

Street Sweeping & Drop Inlets

Drop Inlet Map

1

2

3

4

5

6

7

Street Sweeping Map

1

2

3

4

5

6

7

Area 1 – Storm water drop inlets and sand and grease traps located in the following area: starting at the intersection of Cemetery Rd and SH 44 then north along Cemetery Rd centerline, then west along the north ROW of Willis Rd, then south along Emmett Rd centerline, then east along SH 44 centerline to the point of beginning.

Area 2 – Storm water drop inlets and sand and grease traps located in the following area: starting at the intersection of Cemetery Rd and SH 44 then north along Cemetery Rd centerline, then east along the north ROW of Willis Rd to Willow Creek, then south to Hawthorne Dr centerline, then south along Hawthorne Dr centerline, then west along SH 44 centerline to the point of beginning.

Area 3 - Storm water drop inlets and sand and grease traps located in the following area: starting at the intersection of Hawthorne Dr and SH 44 then north along Hawthorne Dr centerline to the end of Hawthorne Dr, then east to Middleton Rd centerline, then south along Middleton Rd centerline, then west along SH 44 centerline to the point of beginning.

Area 4 - Storm water drop inlets and sand and grease traps located in the following area: starting at the intersection of Middleton Rd and SH 44 then north along Middleton Rd centerline, then east along Foothill Rd centerline, then south along Duff Ln centerline, then west along SH 44 centerline to the point of beginning.

Area 5 - Storm water drop inlets and sand and grease traps located in the following area: starting at the intersection of Hartley Ln and SH 44 then south to the centerline of the Boise River, then east along the Boise River centerline, then east on the Mill Slough centerline, then north along Hawthorne Dr centerline, then east on SH 44 centerline to the point of beginning.

Area 6 - Storm water drop inlets and sand and grease traps located in the following area: starting at the intersection of Hawthorne Dr and SH 44 then south to the centerline of the Mill Slough, then west along the Mill Slough centerline to the west property line of Middleton Lakes Subdivision No. 4, then south along Middleton Lakes Subdivision No. 4 property line to the centerline of the Boise River, then east along the Boise River centerline to S Middleton Rd, then north to SH 44 centerline, then east on SH 44 centerline to the point of beginning.

Area 7 – All storm water drop inlets and sand and grease traps located in all phases of the Lakes of Talega Subdivision.

Appendix E – Storm Water Mapping

City of Middleton
Storm Water System Type

EXPLANATION

Middleton City Boundary

Unknown Systems

Unknown Type and Unknown Outfall (if any)

Detention Pon(s), Unknown Outfall (if any)

System with Outfall to Surface Water

Detention Pond(s)

Infiltration Swales and Detention Pond(s)

Outfall

Disconnected System (no outfall to surface water)

Retention Pond(s)

Infiltration Swales

Seepage Bed(s)

Revision Date: 2019-11-18

Appendix F - 2019 Storm Water Monitoring Report

City of Middleton, Idaho
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) NPDES
Permit No. IDS - 028100

2019 Storm Water Monitoring Report

Prepared for: City of Middleton

Prepared by: Jack Harrison, Ph.D., P.E., HyQual
Ron Manning, P.E., SPF Water Engineering

Date: January 6, 2020

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

CITY OF MIDDLETON
CANYON COUNTY IDAHO

PROFESSIONAL ENGINEER
LICENSED
17211
1/6/20
STATE OF IDAHO
RONALD MANNING II

Table of Contents

Figures

Tables

Appendices

Attachment A. Water Quality Status of Willow Creek

Attachment B. Laboratory Reports for Outfall Monitoring

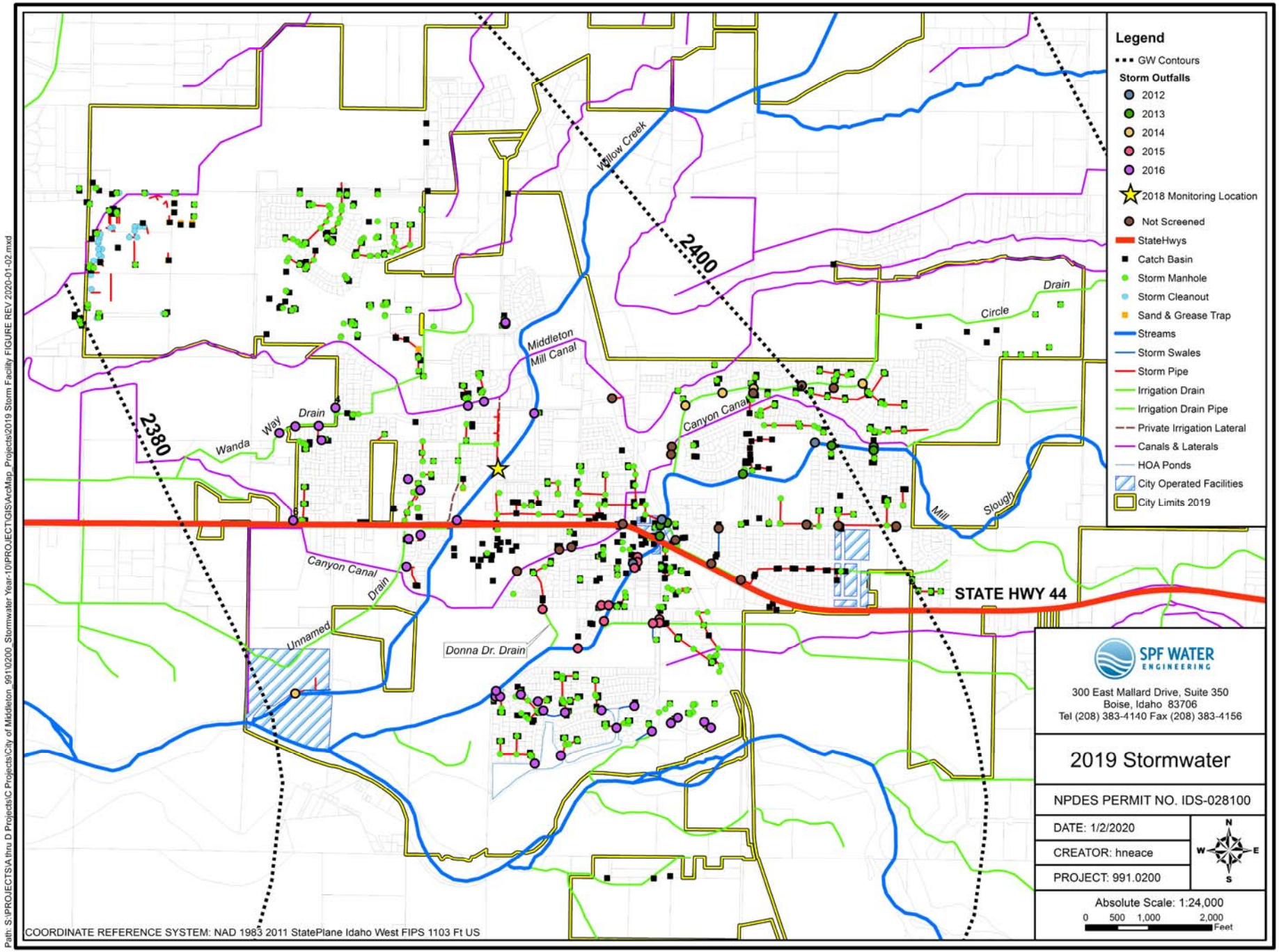
Attachment C. Illicit Discharge Amended City Code and 125 Whiffin Lane Report

I. Introduction

This report is intended to meet the monitoring reporting requirements as specified in the City of Middleton (the City) NPDES Stormwater Permit No IDS-028100, (the Permit). 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 10 of the permit, which ended on October 15, 2019.

There are two components to MS4 water quality monitoring: (1) outfall (i.e., wet weather) monitoring and (2) dry weather screening. The monitoring locations are shown in Figures 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". While dry weather screening has been completed, previously report results are summarized below.

Results of the ongoing wet weather monitoring and previous screening efforts are presented in this report along with recommendations to better focus implementation of storm water management actions on the appropriate water quality improvements.


Legend
GW Contours
Storm Outfalls
2012
2013
2014
2015
2016
2018 Monitoring Location
Not Screened
StateHwys
Catch Basin
Storm Manhole
Storm Cleanout
Sand & Grease Trap
Streams
Storm Swales
Storm Pipe
Irrigation Drain
Irrigation Drain Pipe
Private Irrigation Lateral
Canals & Laterals
HOA Ponds
City Operated Facilities
City Limits 2019
Willow Creek
2400
2380
Middleton Mill Canal
Canyon Canal
Drain
Circle
Drain
Wanda
Way
Drain
Canyon Canal
Drain
Unnamed
Donna Dr. Drain
Mill
Slough
STATE HWY 44
SPF WATER ENGINEERING
300 East Mallard Drive, Suite 350
Boise, Idaho 83706
Tel (208) 383-4140 Fax (208) 383-4156
2019 Stormwater
NPDES PERMIT NO. IDS-028100
DATE: 1/2/2020
CREATOR: hneace
PROJECT: 991.0200
N
W
E
S
Absolute Scale: 1:24,000
0 500 1,000 2,000
Feet
COORDINATE REFERENCE SYSTEM: NAD 1983 2011 StatePlane Idaho West FIPS 1103 Ft US
Path: S:\PROJECTS\A thru D Projects\C Projects\City of Middleton_991\0200_Stormwater Year-10\PROJECTGIS\ArcMap_Projects\2019 Storm Facility FIGURE REV 2020-01-02.mxd

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 conducted 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 Attachment A.

The outfall sampling location (Figure 1, WC-1.20O) 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. In addition to wet weather sampling, this outfall has been sampled during the dry weather screening presented in Section III (Table 9).

B. Results

The laboratory results for the samples collected at Outfall #WC-1.20O in Years 3 through 10 (i.e. 2012 through 2019) are summarized in Table 1 through Table 6. 2017 Outfall #WC-1.200 laboratory results and estimated annual runoff load respectively, to allow comparison between years. The Year 10 laboratory reports and other sampling documentation are provided in Attachment B.

Table 1. 2012 Outfall #WC-1.20O 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	2.00	0.20	29
1202578	1/26/2012	9:48	790	0.63	2.26	0.21	28
Average (Geomean)			315	0.41	1.60	0.45	55
Load (lb/ac)			431	0.56	2.19	0.62	--

Table 2. 2013 Outfall #WC-1.20O 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-1.20O 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	2.00	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	--

Table 5. 2016 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
3/6/2016	9:09	12	0.81	3.35	2.44	62
5/19/2016	6:28	<3	0.32	3.22	0.93	>2400
7/14/2016	10:35	3	0.34	na	ns	1
10/14/2016	9:31	47	0.41	na	0.40	<1
Average (Geomean)		21	0.47	3.29	1.26	53
Load (lb/ac)		28	0.64	4.49	1.72	--

Table 6. 2017 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
3/3/2017	9:06	4.5	0.24	3.93	0.52	200
3/30/2017	9:21	47	0.23	1.38	0.94	11
7/22/2016	7:55	77	0.32	1.55	0.49	47
Average (Geomean)		43	0.26	2.29	0.65	47
Load (lb/ac)		59	0.36	3.13	0.89	--

Table 7. 2018 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
5/9/2018	10:37	<4	0.27	1.45	<0.1	4
10/4/2018	9:12	<3	0.34	1.81	0.13	5
10/9/2018	8:45	46	0.39	0.66	1.56	650
10/29/2018	7:40	<3	0.37	0.96	0.16	>1
Average (Geomean)		46	0.34	1.22	0.62	24
Load (lb/ac)		63	0.47	1.67	0.84	--

Table 8. 2019 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
3/12/19	16:30	1.5	0.294	2.11	0.14	0.5
4/8/19	15:45	6	0.318	1.72	0.65	81
9/18/19	9:45	13	0.362	2.24	0.39	4
10/19/19	8:10	82	na	0.98	2.91	60
Average (Geomean)		26	0.32	1.76	1.02	10
Load (lb/ac)		35	0.44	2.41	1.40	--

Notes: "na" indicates not available; "red sample results" are 1/2 detection limit

Estimates of annual runoff loads are shown in Table 1 through Table 8. The load (lb/ac) estimates are based on the average concentration of constituent with an assumed annual runoff of 6-inches. The runoff area has been assessed to determine source of water, 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 water quality data collected since 2012, load for each of the pollutants of concern were plotted for comparison with applicable TMDL water quality targets (Figure 2). Also shown are the TMDL water quality targets that are applicable for either the Boise River or its tributaries.

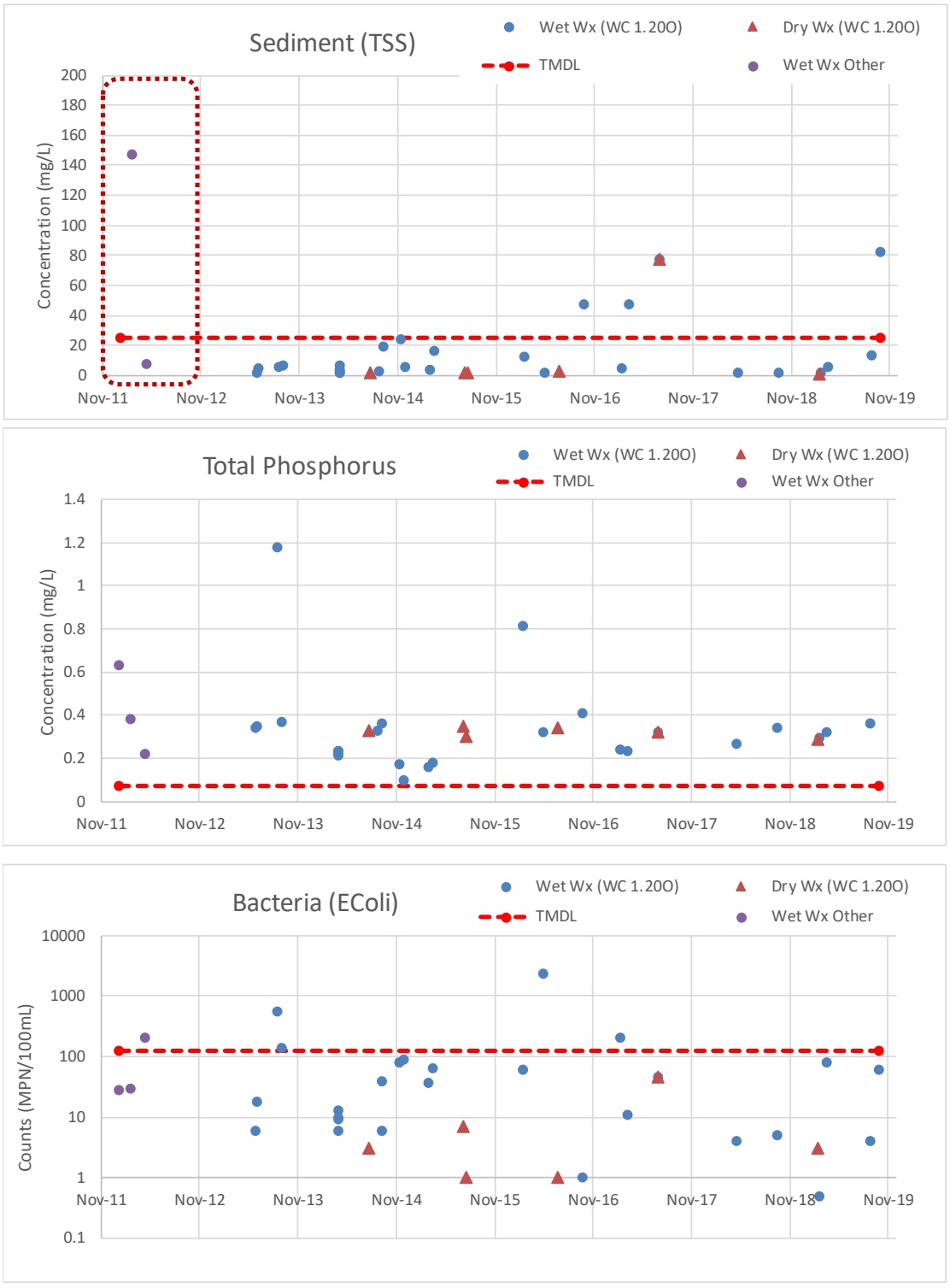


Figure 2. Water quality data collected for outfall WC1.20O since 2012; note that TSS data for 1-26-12 (790 mg/L) not shown on graph.

C. Discussion

The water quality results indicated a relatively low level of variability in TSS levels in 2013 through 2015 compared to early and latter results (Figure 2). Then beginning in 2016, some results are above TSS the TMDL target. Still, the highest TSS concentrations of 147 and 790 mg/L occurred in 2012 (Table 2). Generally, tributaries to the Boise River show elevated levels in summer 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 many relatively low TSS results, it appears source water for many of the samples is likely groundwater. However, the occasional higher TSS values indicate additional sources related to surface runoff do affect the discharge quality at times.

Total phosphorus (TP) concentrations are variable over the years, ranging from a low of 0.10 mg/L to a high of 1.18 mg/L in 2015 and 2013, respectively, with an average just above 0.3 mg/L. An apparent correlation with sediment observed in 2012 is not evident in 2013. Due to the relatively high TP and often low TSS concentrations, the most likely primary source appears to be shallow 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, in May 2016, and one of the October 2018 samples. Relatively low counts (i.e., below 10) were reported in all other years. The geomeans are somewhat variable with no observable trend.

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.*

Currently well over 20% of outfalls have been screened and no additional screening occurred since 2016.

A. Methods

In years prior, dry weather screening included the following components:

1. Completing screening form
2. Measuring or estimating flow
3. Field testing for temperature, *E. coli*, and pH
4. Collecting samples for laboratory analyses (**Error! Reference source not found.**9)

Table 9. 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

Additionally, the wet weather sampling location (WC-1.20O) was screened during this dry weather period and results are provided in the following section.

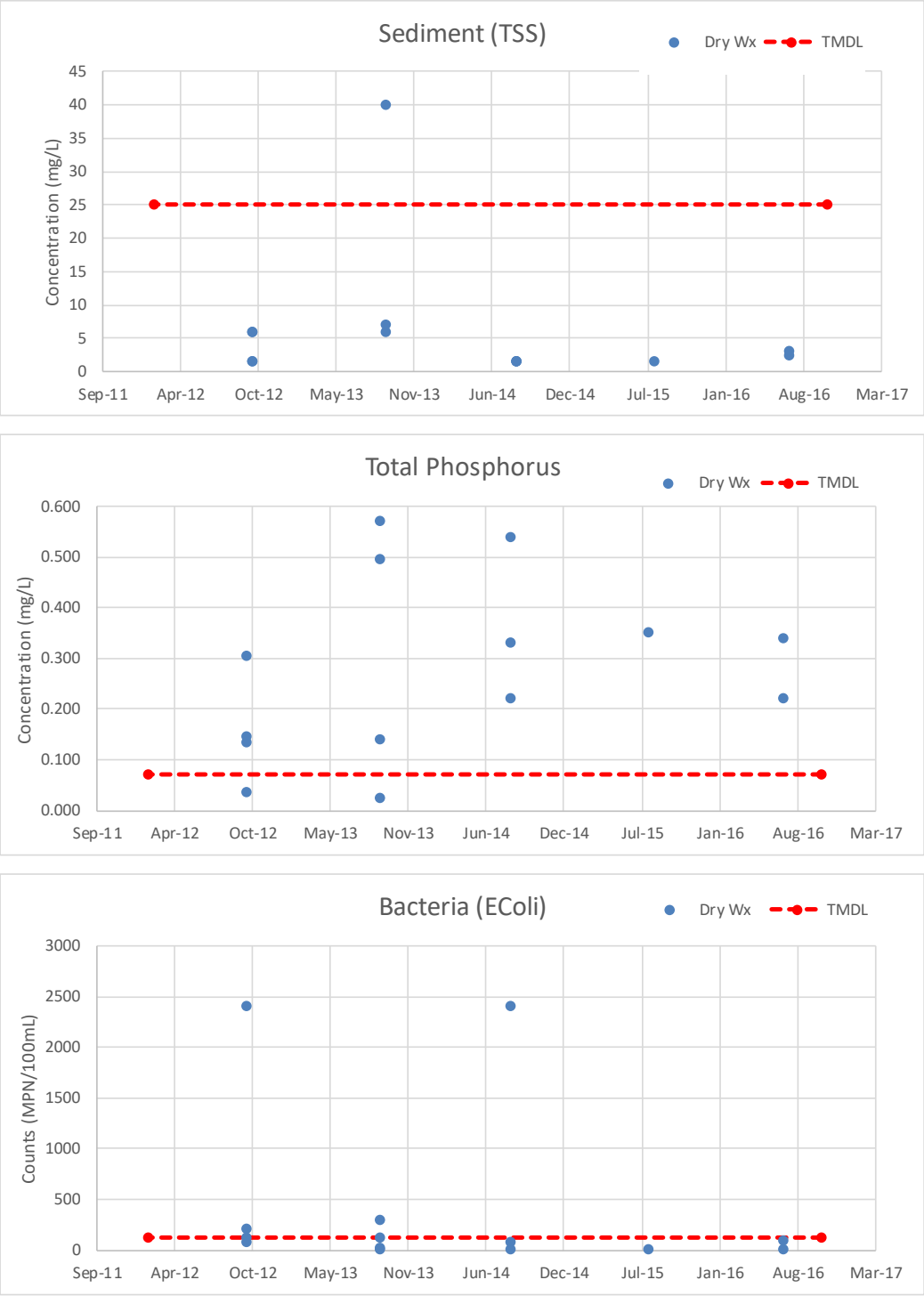
B. Results

Dry weather screening was concluded in 2016. Screening results for previous years are summarized in Table 10 below. There was no measurable precipitation for a minimum of 48 hours prior to the screening.

Results include field measurements and laboratory results for all outfalls sampled during screening, with laboratory data shown in Figure 3.

Table 10. Dry weather screening laboratory results 2012 through 2016

	Field Measurements				Laboratory Analysis		
Outfall ID	**Flow**	**pH**	**Temp**	**EC**	**TSS**	**TP**	**E. coli**
	(gpm)	**(s.u.)**	**(deg C)**	**µS**	**(mg/L)**	**(mg/L)**	**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	N/A	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	N/A	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	0.1	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
7/14/2016							
ML-4	N/A	8.19	23.6	231.5	<5	0.220	88
WC-1.20O	10-15	8.10	18.8	291.4	<6	0.340	1



* Note that TSS concentration of 896 mg/L for 9-11-2013 is not plotted.

Figure 3. Water quality data collected during dry weather screening since 2012.

In 2019, additional dry weather samples were collected as part of ongoing monitoring and the assessment of a potential illicit discharge (Table 11). Dry weather outfall (WC-1.20O) samples have been collected previous and the results are shown in Figure 2. The sample collected at 125 Whiffin Lane was for a new outfall location and was collected to help determine if the discharge meets permit conditions (Attachment C).

Table 11. Laboratory results for additional dry water sampling

Outfall	Date	Time	TSS (mg/L)	TP (mg/L)	NO3 (mg/L)	TKN (mg/L)	E coli MPN/100mL
WC-1.20O	3/5/19	12:10	1	0.288	3.32	0.15	3
125 Whiffin	4/22/19	11:00	58	1.12	.02	26.3	>2400

C. Discussion

While dry weather data collected provide an indication of source water quality, it must be noted that flow rates for the waters ranged from approximately 50 gpm to less than 0.10 gpm. Water quality results for the lower flow outfalls may not be representative of source water quality.

The dry weather screening data (Figure 3) indicates quite low levels of sediment (TSS), with most results below 25 mg/L. As noted above, the dry and wet weather TSS results for the Willow Creek outfall (Figure 2;WC-1.20O) also indicate that much of the water sampled is from shallow groundwater.

Counter to the low sediment concentrations, the phosphorus data are relatively high. While levels are still within the range observed in the Lower Boise River watershed (e.g., MaCoy 2004), most concentrations were above the Snake River–Hells Canyon TMDL target of 0.07 mg/L (IODEQ 2004).

The bacteria levels reported for most of the outfalls sampled were below the recreational criteria of 126 counts per 100 mL (IDAPA 58.01.02). While some results (i.e., 2012 and 2014) exceeded the criteria, the flow rates for these outfalls were on the lower end of the range and the elevated bacterial levels were suspected to be cause by post-discharge contamination.

Compared to the data presented from previous sampling, the results from the 125 Whiffin sample (Table 11) are more suspect with regard to source. Results show elevated levels of nitrogen (TKN), phosphorus, total suspended solids and bacteria. The primary difference from previous sampling results is the elevated TKN and TP. The highest levels previously reported 4.08 and 1.18 mg/L, respectively, which occurred in September 2013 (Table 2). Counter to this note the very low nitrate level, which is an indication of reducing conditions. This is an indication of reducing conditions and

elevated organic levels (consistent with the TKN level), which has not been observed in previous sample results.

D. Potential Illicit Discharges

For this permit cycle, the City has completed activities related to dry weather screening. However, identification of potential illicit discharges by city staff continues on an ongoing basis.

In April 2019 city personal observed a potential illicit discharge to an irrigation ditch located at 125 Whiffin lane and reported it to their supervisor. The residence is located within city boundaries just north of the the City's wastewater treatment and maintenance facilities. During a site visit the homeowner indicated that the standing water was excess artesian well water. Based on observations by City staff, the water is pumped from a collection sump located inside the residence and discharges from a buried pipe into the irrigation ditch. The irrigation ditch drains to an agricultural drain located south of the property that discharges into East Hartley Drain and then into the Boise River.

Samples of standing water were collected by the city and sent to Analytical Laboratories for constituent analyses. Results showed elevated levels of organic and/or ammonia nitrogen (TKN), phosphorus, total suspended solids (TSS) and bacteria (E coli). Based on observations and discussion with the homeowner, city staff concluded that the elevated E-Coli was the result of stagnate standing water, condition created by environment and not due to the discharge water.

No further corrective action at the site was taken by the city at that time. However, follow up after irrigation is shutoff for the year to verify stagnancy of ponding water was recommended. A report documenting the city's response is included as Attachment C. Additionally, the city reviewed and revised their code to more explicitly prohibit discharge of polluted waste or waters to any area under the jurisdiction of the City (see Title 8, Chapter 1 Section 19).

Based on the subsequent review of the lab results for this potential illicit discharge, the City of Middleton intends to further investigate the 125 Whiffin Lane discharge to determine if corrective measures may be justified.

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. Continue to assess land uses and management activities for implementation of improved storm water control measures. Due to occasionally elevated *E. coli* and

generally elevated phosphorus, actions to reduce levels in storm water should be identified and implemented consistent with the City's storm water management objectives.

2. 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.
3. The City of Middleton intends to further investigate the 125 Whiffin Lane discharge to determine if corrective measures may be justified.

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.

Attachment 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 3rd order	COLD*	Sediment

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

Attachment B – Laboratory Reports for 2019 Outfall Monitoring

Five sets of samples were collected for the calendar year of 2019, the first of the set of samples was a "Blank Standard" which was collected in March at the beginning of our collection cycle. Below are the dates the samples were collected with the start times of the storm event and the times the samples were collected.

3-5-12 - Blank Standard (Dry Weather Sample; as there was no prior rainfall event)

3-12-19 - Storm Event

1530 - Rain Start

1630 - Sample Collected

5.75 inch Water Level

4-8-19 - Storm Event

1445 - Rain Start

1545 - Sample Collected

5.5 inch Water Level

9-18-19 - Storm Event

0900 - Rain Start

0945 - Sample Collected

5.75 inch Water Level

10-19-19- Storm Event

0715 - Rain Start

0810 - Sample Collected

5.5 inch Water Level

All the rain start times are an approximate time when there would be significant collection of rain water to see flowing water into the storm drains. Between the 4-8-19 event and the 9-18-19 event there was not any significant rain accumulation to collect a sample.

CLIENT CODE=

CHAIN OF CUSTODY RECORD

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

CLIENT INFORMATION:	PROJECT INFORMATION:
Attn:	Project Manager:
Company: City of Middleton	Project Name: STORMWATER
Address: P.O. Box 487	PWS Number:
Middleton ID 83644	Purchase Order Number:
Phone: 208-585-3133 Fax: 208-585-9601	Required Due Date:
Sampled by: (Please print) Rodger Hawker	Transported by: (Please print)

TESTS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	E.Coli	TSS	TPO4 Low	Total N						Remarks:
	10-19-19	0810	WC 1.200 (19°C)	WATER	X	X	X	X						

Invoice to: *(If different than above address)*

Special Instructions:

ALLOCATION 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 circumstance will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

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

	Print Name:	Company:	Date:	Time:
Relinquished By: *(Signature)* Rodger Hawker	Rodger Hawker	City of Middleton	10-19-19	0830
Relinquished By: *(Signature)*		ESCH		
Relinquished By: *(Signature)*				
Relinquished By: *(Signature)*				
Received By: *(Signature)*				
Relinquished By: *(Signature)*				
Received at Laboratory By: *(Signature)*	Brian Estes-Peterson	ALI	10/19/19	9:40

SAMPLE RECIEPT	Total # of Containers: 2	Chains of Custody Seals Y / N / NA	Intact: Y / N / NA	Temperature Received: 2.4°C	Condition: good

Rev. 1/04

WHITE: STAYS WITH SAMPLE(S) YELLOW: LAB PINK: SAMPLER

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

Laboratory Analysis Report

Sample Number: 1952742

Attn: CHAD BEVERAGE
CITY OF MIDDLETON
1103 W MAIN ST
MIDDLETON, ID 83644

Collected By: R. HAWKER
Submitted By: R. HAWKER

Source of Sample: STORMWATER WC 1.20 D

Time of Collection: 8:10:00
Date of Collection: 10/19/2019
Date Received: 10/19/2019
Report Date: 11/4/2019

PWS:

Field PH:
Field Temp: 19
Lab PH:
Temp in Lab: 9.4

Test Requested	MCL	Result	Units	MDL	Method	Completed	Analyst
Escherichia coli		60	MPN/100mL		SM 9223	10/20/2019	RB
Media		*				10/28/2019	KDD
Nitrate + Nitrite (as N)	10	0.98	mg/L	0.02	EPA 353.2	10/22/2019	NC
Nitrogen, Total Kjeldahl (TKN)		2.91	mg/L	0.10	EPA 351.2	10/25/2019	DS
Total Nitrogen		3.89	mg/L	0.10	Calculation	10/30/2019	DS
Total Phosphate, Low Level (as P)		0.680	mg/L	0.005	EPA 365.1	11/2/2019	LW
Total Suspended Solids		82	mg/L	2	USGS I-3765	10/23/2019	EH

PRELIMINARY

Thank you for choosing Analytical Laboratorics for your testing needs.

If you have any questions concerning this report,

please contact: **Brian McGovern**

CLIENT CODE=

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION:	PROJECT INFORMATION:
Attn:	Project Manager:
Company: CITY OF Middleton	Project Name: STORMWATER
Address: P.O. BOX 487	PWS Number:
Middleton ID 83644	Purchase Order Number:
Phone: 208-585-3133 Fax: 208-585-9601	Required Due Date:
Sampled by: (Please print) Rodger Hawker	Transported by: (Please print)

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	E-Coli	TSS	TPO4 Low	TOTAL N						Remarks:
	9-18-19	0945	WC 1.200	WATER	X	X	X	X						

Invoice to: (If different than above address)

Special Instructions:

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

	Print Name:	Company:	Date:	Time:
Relinquished By: (Signature) Rodger Hawker	Rodger Hawker	CITY OF Middleton	9-18-19	10:30
Relinquished By: (Signature)	Casey Holmes	FSC	9-18-19	10:30
Relinquished By: (Signature)				
Relinquished By: (Signature)				
Received By: (Signature)				
Relinquished By: (Signature)				
Received at Laboratory By: (Signature)				

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

Rev. 1/04

WHITE: STAYS WITH SAMPLE(S) YELLOW: LAB PINK: SAMPLER

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

Laboratory Analysis Report

Sample Number: 1946937

Attn: CHAD BEVERAGE
CITY OF MIDDLETON
1103 W MAIN ST
MIDDLETON, ID 83644

Collected By: R. HAWKER
Submitted By: FLEETSTREET

Source of Sample:
WATER QUALITY WQ-WC

Time of Collection: 13:45:00
Date of Collection: 9/17/2019
Date Received: 9/18/2019
Report Date: 9/30/2019

PWS:

Field PH:
Lab PH:
Field Temp:
Temp in Lab: 5.8

Test Requested	MCL	Result	Units	MDL	Method	Completed	Analyst
Ortho Phosphate, Low Level (as P)		0.088	mg/L	0.005	EPA 365.1	9/18/2019	SMC
Total Phosphate, Low Level (as P)		0.115	mg/L	0.005	EPA 365.1	9/27/2019	LW
Total Suspended Solids		10	mg/L	2	USGS I-3765	9/19/2019	EH

PRELIMINARY

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions concerning this report,
please contact: **Brian McGovern**

CLIENT CODE=

CHAIN OF CUSTODY RECORD

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: all@analyticallaboratories.com

CLIENT INFORMATION:

Attn:

Company: CITY OF Middleton

Address: P.O. BOX 487

Middleton ID 83644

Phone: 208-585-3133 Fax: 208-585-9601

Sampled by: (Please print) Rodger Hawken

PROJECT INFORMATION:

Project Manager:

Project Name: STORMWATER

PWS Number:

Purchase Order Number:

Required Due Date:

Transported by: (Please print)

TESTS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	E.Coli	TSS	TPO4 Low	TOTAL N						Remarks:
	4-8-19	1545	WC 1.200	WATER	X	X	X	X						

Invoice to: (If different than above address)

Special Instructions:

ALLOCATION 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 circumstance will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

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

	Print Name:	Company:	Date:	Time:
Relinquished By: (Signature) Rodger Hawken	Rodger Hawken	CITY OF Middleton	4-9-19	
Relinquished By: (Signature)	Colton Coker	FSC	4-9-19	
Relinquished By: (Signature)				
Relinquished By: (Signature)				
Received By: (Signature)				
Relinquished By: (Signature)				
Received at Laboratory By: (Signature)				

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

Rev. 1/04

WHITE: STAYS WITH SAMPLE(S) YELLOW: LAB PINK: SAMPLER

Analytical Laboratories, Inc.

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

Date Report Printed: 4/16/2019 7:15:45 AM
http://www.analyticallaboratories.com
These test results relate only to the items tested.

Laboratory Analysis Report

Sample Number: 1915669

CITY OF MIDDLETON RECEIVED APR 22 2019 MS

Attn: CHAD BEVERAGE
CITY OF MIDDLETON
1103 W MAIN ST
PO BOX 487
MIDDLETON, ID 83644

Collected By: R. HAWKER
Submitted By: FLEET STREET

Source of Sample:
WC 1.20 O

Time of Collection: 15:45
Date of Collection: 4/8/2019
Date Received: 4/9/2019
Report Date: 4/16/2019

Field pH:
Lab pH:
Field Temp:
Temp Rcvd in Lab: 8.0 °C

PWS#:
PWS Name: CITY OF MIDDLETON

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Escherichia coli		81	MPN/100mL		SM 9223	4/10/2019	TJR
Nitrate + Nitrite (as N)		1.72	mg/L	0.02	EPA 353.2	4/10/2019	SMC
Nitrogen, Total Kjeldahl (TKN)		0.65	mg/L	0.10	EPA 351.2	4/10/2019	DS
Total Nitrogen		2.37	mg/L	0.10	Calculation	4/15/2019	DS
Total Phosphate, Low Level (as P)		0.318	mg/L	0.005	EPA 365.1	4/14/2019	SMC
Total Suspended Solids		6	mg/L	2	USGS I-3765	4/10/2019	EH

Email: cbeverage@middletoncity.com

4-17-19

Thank you for choosing Anaiytical Laboratories for your testing needs.

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

Brian McGovern

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

CLIENT CODE= MIDDWW

CHAIN OF CUSTODY RECORD

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

CITY OF MIDDLETON RECEIVED MAR 29 2019 MS

CLIENT INFORMATION:		PROJECT INFORMATION:	
Attn:		Project Manager:	
Company:	CITY OF Middleton	Project Name:	STORMWATER
Address:	P.O. BOX 487	PWS Number:	
	Middleton ID 83644	Purchase Order Number:	
Phone: 208-585-3133	Fax: 208-585-9601	Required Due Date:	
Sampled by: (Please print)	Rodger Hawker	Transported by: (Please print)	Fleetstreet

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	E.Coli	TSS	TPO4 Low	Total N						Remarks:
11221	3-12-19	1630	WC 1.200	WATER	X	X	X	X						

TESTS REQUESTED

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.

	Print Name	Company	Date	Time
Relinquished By: (Signature) Rodger Hawker	Rodger Hawker	CITY OF Middleton	3-13-19	1219
Relinquished By: (Signature) David M Hofacker	DAVID M. HOFACKER	FSC	3/13/19	1219
Relinquished By: (Signature)	Print Name:	Company:	Date:	Time:
Relinquished By: (Signature)	Print Name:	Company:	Date:	Time:
Received By: (Signature)	Print Name:	Company:	Date:	Time:
Relinquished By: (Signature)	Print Name:	Company:	Date:	Time:
Received at Laboratory By: (Signature) Brenda Wright	Print Name: Brenda Wright	Company: ALI	Date: 3-13-19	Time: 13:40

SAMPLE RECIEPT | Total # of Containers: | Chains of Custody Seals Y / N / NA | Intact: Y / N / NA | Temperature Received: 9.5° | Condition: good

Rev. 1/04

WHITE: STAYS WITH SAMPLE(S) YELLOW: LAB PINK: SAMPLER

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

Laboratory Analysis Report

Sample Number: 1911221

Attn: CHAD BEVERAGE
CITY OF MIDDLETON
1103 W MAIN ST
MIDDLETON, ID 83644

Collected By: R. HAWKER
Submitted By: FLEETSTREET

Source of Sample:
WC 1.20 O

Time of Collection: 16:30:00
Date of Collection: 3/12/2019
Date Received: 3/13/2019
Report Date: 3/22/2019

PWS:

Field PH: Lab PH:
Field Temp: Temp in Lab: 9.5

E-COLI RCVD PAST HOLD TIME

Test Requested	MCL	Result	Units	MDL	Method	Completed	Analyst
Escherichia coli		<1	MPN/100mL		SM 9223	3/14/2019	TJR
Nitrate + Nitrite (as N)	10	2.11	mg/L	0.02	EPA 353.2	3/20/2019	SMC
Nitrogen, Total Kjeldahl (TKN)		0.14	mg/L	0.10	EPA 351.2	3/18/2019	DS
Total Nitrogen		2.25	mg/L	0.10	Calculation	3/22/2019	DS
Total Phosphate, Low Level (as P)		0.294	mg/L	0.005	EPA 365.1	3/17/2019	SMC
Total Suspended Solids		< 3	mg/L	3	USGS I-3765	3/14/2019	BDM

PRELIMINARY

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions concerning this report,

please contact: **Brian McGovern**

CLIENT CODE=

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION:

Attn:

Company: CITY OF Middleton

Address: P.O. BOX 487

Middleton ID 83644

Phone: 208-585-3133 Fax: 208-585-9601

Sampled by: *(Please print)* Rodger Hawker

PROJECT INFORMATION:

Project Manager:

Project Name: STORMWATER

PWS Number:

Purchase Order Number:

Required Due Date:

Transported by: *(Please print)*

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: all@analyticallaboratories.com

TESTS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description (Source)	Sample Matrix	E-Coli	TSS	TPO4 Low	TOTAL N						Remarks:
	3-5-19	1211	WC 1.200	WATER	X	X	X	X						
			Blank STANDARD											

Invoice to: *(If different than above address)*

Special Instructions:

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

	Print Name:	Company:	Date:	Time:
Relinquished By: *(Signature)* Rodger Hawker	Rodger Hawker	CITY OF Middleton	3-5-19	13:00
Relinquished By: *(Signature)*	Mauricio Huerta	FSC	3-6-19	11:42
Relinquished By: *(Signature)*				
Relinquished By: *(Signature)*				
Received By: *(Signature)*				
Relinquished By: *(Signature)*				
Received at Laboratory By: *(Signature)*				

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

Rev. 1/04

WHITE: STAYS WITH SAMPLE(S) YELLOW: LAB PINK: SAMPLER

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

Laboratory Analysis Report

Sample Number: 1909926

Attn: CHAD BEVERAGE
CITY OF MIDDLETON
1103 W MAIN ST
MIDDLETON, ID 83644

Collected By: R. HAWKER
Submitted By: FLEETSTREET

Source of Sample: STORMWATER WC 1.200

Time of Collection: 12:11:00
Date of Collection: 3/5/2019
Date Received: 3/6/2019
Report Date: 3/20/2019

PWS:

Field PH: Lab PH:
Field Temp: Temp in Lab: 9.7

Test Requested	MCL	Result	Units	MDL	Method	Completed	Analyst
Escherichia coli		3	MPN/100mL		SM 9223	3/7/2019	TJR
Media		*				3/19/2019	KDD
Nitrate + Nitrite (as N)	10	3.32	mg/L	0.02	EPA 353.2	3/13/2019	SMC
Nitrogen, Total Kjeldahl (TKN)		0.15	mg/L	0.10	EPA 351.2	3/7/2019	DS
Total Nitrogen		3.47	mg/L	0.10	Calculation	3/19/2019	DS
Total Phosphate, Low Level (as P)		0.288	mg/L	0.005	EPA 365.1	3/10/2019	SMC
Total Suspended Solids		< 2	mg/L	2	USGS I-3765	3/7/2019	EH

PRELIMINARY

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions concerning this report,
please contact: **Brian McGovern**

Attachment C - Illicit Discharge Amended City Code and 125 Whiffin Lane Report

Middleton City Code Title 7, Chapter 2, Sections 10 and 11 was amended and relocated to Title 8, Chapter 1 and renumbered as Sections 19.

8-1-19: ILLICIT PROHIBITED DISCHARGES:

A. Drain Water Prohibited: It shall be unlawful for any person to discharge irrigation water or roof or surface drain water or ground drainage into the sanitary sewer system.

B. Objectionable Waste Prohibited: It shall be unlawful for any person to place or deposit in any unsanitary manner on public or private property within the City, or in any area under the jurisdiction of the City, any wastewater, human or animal excrement, garbage or other objectionable waste.

C. Discharge Of Sewage To Natural Outlet: It shall be unlawful to discharge to any natural outlet or drop inlet within the City, or in any area under the jurisdiction of the City, any wastewater sewage or other polluted waters.

PUBLIC WORKS DEPARTMENT

ILLICIT DISHARGE INSPECTION REPORT

Revision: 5/23/2019

CITY OF MIDDLETON
P O BOX 487, 1103 W. MAIN ST., MIDDLETON, ID 83644
208-585-3133, FAX: 208-585-9601
WWW.MIDDLETON.ID.GOV

Date: 4/22/2019

Investigator: CAB

Lab Used: ALI

Description of Alleged Illicit Discharge: Ponding water was discovered at 125 Whiffin ln in a dry distribution ditch by City of Middleton employee Jeremy Hammond during the first week of April 2019.

Discharge Address/Location: 125 Whiffin ln. Middleton, ID 83644

Occupant:

Name	Phone	Email

125 Whiffin ln	Middleton, ID	83644
Address	City, State	Zip

Landowner:

Name	Phone	Email

125 Whiffin ln	Middleton, ID	83644
Address	City, State	Zip

Zoning: Res **Floodplain** (y/n): N **Connected City Utilities** (y/n): N

Middleton City Code (MCC) Possibly Violated:

- ☐ Illicit Connection (MCC 7-2-1(B), 7-2-4(A))
- ☐ Unauthorized access / tampering (MCC 7-2-1(C))
- ☐ Disapproved Materials or workmanship (MCC 7-2-4(B))
- ☐ Failure to maintain stormwater facility (MCC 7-7-4 (C))
- ☒ Illicit Discharge (MCC 7-7-5(A) stormwater system, 8-1-19 sewer system)
- ☐ Improper use of system (MCC 8-1-20)

Chad Beverage _____

Printed Name Signature

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Date: 4/22/2019
Investigator: CAB
Lab Used: ALI

INVESTIGATION REPORT
CITY OF MIDDLETON
ILLICIT DISCHARGE-ILLICT CONNECTION-DETECTION ELLIMINATION PROGRAM (ID-IC-DEP)
INVESTIGATED ADDRESS: 125 WHIFFIN LN

PUBLIC WORKS DEPARTMENT

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ILLICIT DISHARGE INSPECTION REPORT

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Date: 4/22/2019

Investigator: CAB

Lab Used: ALI

Chad Beverage WWTF Manager was notified the week of April 17th at 13:00 hours and began investigation of discharge, currently the City of Middleton has yet to adopt or develop an ID-IC-DEP (Illicit Discharge – Illicit Connection – Detection Elimination Program). This report is a result of this investigation, along with the adoption of a program in preparation for the 2021 Stormwater permit under this permit such will be required. The full purpose of this report is to serve as legal documentation of results from the investigation findings and mitigation.

Ponding in secondary distribution ditch at the effluent end of a buried 4" concrete pipe discharging from the residents' home was suspect of illicit discharge. Visual Identification of discharge pipe was unobtainable due to the submergent water. Flowing discharge has not been observed, but ponding level fluctuation of three to four inches in a 12-hour period have been witnessed and documented by photos, by city staff.

Samples of standing water have been collected and sent to Analytical Laboratories for constituent testing date of Samples 4/22/2019. Please note ideal sample would consist of flowing water from the discharge, due to circumstances this was not obtainable.
Constituents tested for are from the City of Middleton's Stormwater sampling guide.

Samples include:

TSS total Suspended Solids
TP total Phosphorus
TN Total Nitrogen
TKN Total Kjeldahl Nitrogen = Nitrogen + Nitrate – Nitrite
E-Coli

Based on the sample parameters an extremely high E-Coli result triggered a face to face meeting with the home owner and the City; Mayor - Darin Taylor, City Administrator - Becky Crofts, and WWTF Manager - Chad Beverage on April 23, 2019 at 12:00 hours to establish discharge type and residents' options. Upon meeting with the home owner, it was established that the domicile is not on any city services and had been grandfathered in an agreement with the city until the property changes ownership. The discharge was identified as a sump pump under the domicile removing excess artesian well water.
In conclusion the Hi E-Coli sample is result of stagnate standing water, condition created by environment and not discharge type. No corrective action will be mitigated by the city at this time. Conditional follow up should be completed after irrigation is shutoff for the year to verify stagnancy of ponding water.

The following photos and sample results are included in this report.

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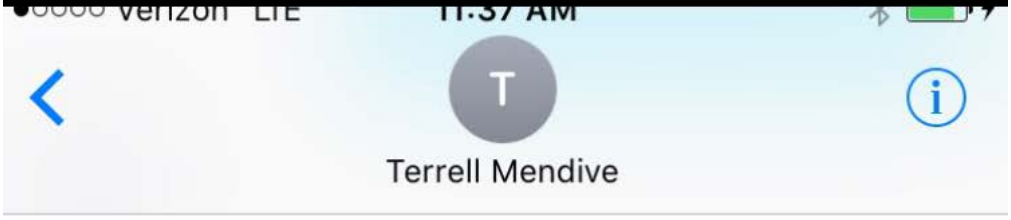
Date: 4/22/2019

Investigator: CAB

Lab Used: ALI

[redacted]



Wed, Apr 17, 4:09 PM

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PUBLIC WORKS DEPARTMENT

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WWW.MIDDLETON.ID.GOV

Date: 4/22/2019

Investigator: CAB

Lab Used: ALI

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

Laboratory Analysis Report

Sample Number: 1918129

Attn: CHAD BEVERAGE
CITY OF MIDDLETON
1103 W MAIN ST
MIDDLETON, ID 83644

Collected By: C. BEVERAGE
Submitted By: C. BEVERAGE

Source of Sample: 125 WHIFFIN GRAB

Time of Collection: 11:00:00

Date of Collection: 4/22/2019

Date Received: 4/22/2019

Report Date: 4/29/2019

PWS:

Field PH: 6.68 Lab PH:

Field Temp: Temp in Lab: 12.2

D.O. = 1.68

Test Requested	MCL	Result	Units	MDL	Method	Completed	Analyst
Escherichia coli		>2,400	MPN/100mL		SM 9223	4/23/2019	AAA
Fecal Coliforms		>1,600	MPN/100mL		SM 9221E	4/23/2019	AAA

PRELIMINARY

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PUBLIC WORKS DEPARTMENT

ILLICIT DISHARGE INSPECTION REPORT

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Date: 4/22/2019

Investigator: CAB

Lab Used: ALI

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

Laboratory Analysis Report

Sample Number: 1918130

Attn: CHAD BEVERAGE
CITY OF MIDDLETON
1103 W MAIN ST
MIDDLETON, ID 83644

Collected By: C. BEVERAGE
Submitted By: C. BEVERAGE

Source of Sample:
125 WHIFFIN GRAB

Time of Collection: 11:00:00
Date of Collection: 4/22/2019
Date Received: 4/22/2019
Report Date: 4/30/2019

PWS:

Field PH: 6.68 Lab PH:
Field Temp: Temp in Lab: 12.2
D.O. = 1.68

Test Requested	MCL	Result	Units	MDL	Method	Completed	Analyst
Nitrate + Nitrite (as N)	10	0.02	mg/L	0.02	EPA 353.2	4/24/2019	SMC
Nitrogen, Total Kjeldahl (TKN)		26.3	mg/L	0.10	EPA 351.2	4/24/2019	DS
Total Nitrogen		26.3	mg/L	0.10	Calculation	4/25/2019	DS
Total Phosphate, Low Level (as P)		1.12	mg/L	0.005	EPA 365.1	4/28/2019	SMC
Total Suspended Solids		58	mg/L	2	USGS I-3765	4/25/2019	EH

PRELIMINARY

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