2024 Attachment A - SWMP Implementation Costs

DRAINAGE DISTRICT NO. 3
Transaction Detail by Account
October 2023 through September 2024

Type	Date	Num	Name	Memo	Split	Debit	Credit	Balance
610 · Wages								
Paycheck	10/10/2023	DD1005	Dean E Callen	Direct Deposit	106 · ICCU - Checking	967.50		967.50
Paycheck	11/10/2023	DD1006	Dean E Callen	Direct Deposit	106 · ICCU - Checking	765.00		1,732.50
Paycheck	12/08/2023	DD1007	Dean E Callen	Direct Deposit	106 · ICCU - Checking	765.00		2,497.50
Paycheck	01/10/2024	DD1008	Dean E Callen	Direct Deposit	106 · ICCU - Checking	1,012.50		3,510.00
Paycheck	02/09/2024	DD1009	Dean E Callen	Direct Deposit	106 · ICCU - Checking	1,080.00		4,590.00
Paycheck	03/08/2024	DD1010	Dean E Callen	Direct Deposit	106 · ICCU - Checking	967.50		5,557.50
Paycheck	04/10/2024	DD1011	Dean E Callen	Direct Deposit	106 · ICCU - Checking	562.50		6,120.00
Paycheck	05/10/2024	DD1012	Dean E Callen	Direct Deposit	106 · ICCU - Checking	1,100.00		7,220.00
Paycheck	06/10/2024	DD1013	Dean E Callen	Direct Deposit	100 · Wells Fargo - Checking	1,100.00		8,320.00
Paycheck	07/10/2024	DD1014	Dean E Callen	Direct Deposit	100 · Wells Fargo - Checking	945.00		9,265.00
Paycheck	08/09/2024	DD1015	Dean E Callen	Direct Deposit	100 · Wells Fargo - Checking	675.00		9,940.00
Paycheck	09/10/2024	DD1016	Dean E Callen	Direct Deposit	106 · ICCU - Checking	945.00		10,885.00
Total 610 · Wages						10,885.00	0.00	10,885.00
615 · Engineering								
615-01 · General								
Check	10/26/2023	247	QRS Consulting, LLC	Inv #1854	106 · ICCU - Checking	576.00		576.00
Check	01/09/2024	259	QRS Consulting, LLC	Inv #2006, 2006a	106 · ICCU - Checking	504.00		1,080.00
Check	03/01/2024	277	QRS Consulting, LLC	-MULTIPLE-	106 · ICCU - Checking	1,086.00		2,166.00
Check	04/05/2024	282	QRS Consulting, LLC	-MULTIPLE-	106 · ICCU - Checking	2,382.38		4,548.38
Check	04/18/2024	290	QRS Consulting, LLC	-MULTIPLE-	106 · ICCU - Checking	5,622.75		10,171.13
Check	06/12/2024	BP	QRS Consulting, LLC	-MULTIPLE-	106 · ICCU - Checking	2,611.13		12,782.26
Check	08/12/2024	BPc	QRS Consulting, LLC	Inv #2423	106 · ICCU - Checking	576.00		13,358.26
Check	09/05/2024	BPc	QRS Consulting, LLC	Inv #2483-01	106 · ICCU - Checking	288.00		13,646.26
Total 615-01 · General						13,646.26	0.00	13,646.26
615-06 · Boise Ave SHP								
Check	03/01/2024	277	QRS Consulting, LLC	Inv#2111a	106 · ICCU - Checking	684.00		684.00
Total 615-06 · Boise Ave SHP						684.00	0.00	684.00
615-07 · 112 E Boise Ave								
Check	10/26/2023	247	QRS Consulting, LLC	Inv #1904	106 · ICCU - Checking	72.00		72.00
Check	04/05/2024	282	QRS Consulting, LLC	Inv#2172-3	106 · ICCU - Checking	318.00		390.00
Check	04/18/2024	290	QRS Consulting, LLC	Inv#2188-03	106 · ICCU - Checking	72.00		462.00
Check	06/12/2024	BP	QRS Consulting, LLC	Inv#2290-03	106 · ICCU - Checking	144.00		606.00
Total 615-07 · 112 E Boise Ave						606.00	0.00	606.00
615-11 · 1606 S Chrisway Dr								
Check	04/05/2024	282	QRS Consulting, LLC	Inv. 2172-6	106 · ICCU - Checking	288.00		288.00
Check	04/18/2024	290	QRS Consulting, LLC	Inv# 2188-06	106 · ICCU - Checking	334.50		622.50
Check	06/12/2024	BP	QRS Consulting, LLC	Inv# 2290-06	106 · ICCU - Checking	288.00		910.50
Check	09/05/2024	BPc	QRS Consulting, LLC	Inv#2483-06	106 · ICCU - Checking	72.00		982.50
Total 615-11 · 1606 S Chrisway Dr						982.50	0.00	982.50
615-12 · 1500 S Chrisway Dr								
Check	06/12/2024	BP	QRS Consulting, LLC	Inv#2290-07	106 · ICCU - Checking	144.00		144.00
Check	08/12/2024	BPc	QRS Consulting, LLC	Inv#2423-02	106 · ICCU - Checking	288.00		432.00
Total 615-12 · 1500 S Chrisway Dr						432.00	0.00	432.00

DRAINAGE DISTRICT NO. 3
Transaction Detail by Account
October 2023 through September 2024

Type	Date	Num	Name	Memo	Split	Debit	Credit	Balance
615-13 · BSU Pump Station								
Check	06/12/2024	BP	QRS Consulting, LLC	Inv2290-08	106 · ICCU - Checking	144.00		144.00
Check	08/12/2024	BPc	QRS Consulting, LLC	Inv#2423-03	106 · ICCU - Checking	432.00		576.00
General Journal	08/31/2024	TJ 2028		To reclass to project #615-13	504 · Application fees		2,500.00	-1,924.00
Total 615-13 · BSU Pump Station						576.00	2,500.00	-1,924.00
Total 615 · Engineering						16,926.76	2,500.00	14,426.76
630 · Commissioners fees								
Check	11/07/2023	250	Steve Sweet	11/3/23 board meeting	106 · ICCU - Checking	100.00		100.00
Check	11/07/2023	251	Carolyn Strickling	11/3/23 board meeting	106 · ICCU - Checking	100.00		200.00
Check	11/07/2023	252	Ashley Newbry	11/3/23 board meeting	106 · ICCU - Checking	100.00		300.00
Check	01/24/2024	263	Steve Sweet	01/04/2024 board meeting	106 · ICCU - Checking	100.00		400.00
Check	01/24/2024	264	Ashley Newbry	01/04/2024 board meeting	106 · ICCU - Checking	100.00		500.00
Check	02/07/2024	265	Steve Sweet	02/02/2024 board meeting	106 · ICCU - Checking	100.00		600.00
Check	02/07/2024	266	Carolyn Strickling	02/02/2024 board meeting	106 · ICCU - Checking	100.00		700.00
Check	02/07/2024	267	Ashley Newbry	02/02/2024 board meeting	106 · ICCU - Checking	100.00		800.00
Check	04/16/2024	287	Steve Sweet	March & April board meetings	106 · ICCU - Checking	200.00		1,000.00
Check	04/16/2024	288	Carolyn Strickling	March & April board meetings	106 · ICCU - Checking	200.00		1,200.00
Check	04/16/2024	289	Ashley Newbry	March board meeting	106 · ICCU - Checking	100.00		1,300.00
Check	05/06/2024	292	Steve Sweet	May board meeting	106 · ICCU - Checking	100.00		1,400.00
Check	05/06/2024	293	Carolyn Strickling	May board meeting	106 · ICCU - Checking	100.00		1,500.00
Check	05/06/2024	294	Ashley Newbry	May board meeting	106 · ICCU - Checking	100.00		1,600.00
Check	06/12/2024	298	Steve Sweet	June board meeting	106 · ICCU - Checking	100.00		1,700.00
Check	06/12/2024	299	Ashley Newbry	June board meeting	106 · ICCU - Checking	100.00		1,800.00
Check	07/03/2024	300	Ashley Newbry	July board meeting	106 · ICCU - Checking	100.00		1,900.00
Check	07/03/2024	301	Steve Sweet	July board meeting	106 · ICCU - Checking	100.00		2,000.00
Check	08/05/2024	302	Steve Sweet	August board meeting	106 · ICCU - Checking	100.00		2,100.00
Check	08/05/2024	303	Carolyn Strickling	August board meeting	106 · ICCU - Checking	100.00		2,200.00
Check	09/09/2024	304	Steve Sweet	September board meeting	106 · ICCU - Checking	100.00		2,300.00
Check	09/09/2024	305	Carolyn Strickling	September board meeting	106 · ICCU - Checking	100.00		2,400.00
Total 630 · Commissioners fees						2,400.00	0.00	2,400.00
640 · Legal								
640-02 · NPDES								
Check	10/09/2023	244	Elam & Burke	Inv #204342	106 · ICCU - Checking	270.00		270.00
Check	11/21/2023	254	Elam & Burke	Inv #204800	106 · ICCU - Checking	382.50		652.50
Check	12/11/2023	257	Elam & Burke	Inv. #205251	106 · ICCU - Checking	630.00		1,282.50
Check	01/23/2024	261	Elam & Burke	Inv. #205736	106 · ICCU - Checking	652.50		1,935.00
Check	02/14/2024	272	Elam & Burke	Inv. #206189	106 · ICCU - Checking	3,525.00		5,460.00
Check	05/22/2024	297	Elam & Burke	Inv. #207619	106 · ICCU - Checking	575.00		6,035.00
Check	07/09/2024	1	Elam & Burke	Inv#208989	106 · ICCU - Checking	200.00		6,235.00
Check	08/19/2024	BPc	Elam & Burke	Inv. #209474	106 · ICCU - Checking	560.00		6,795.00
Check	09/18/2024	BPc	Elam & Burke	Inv. #209959	106 · ICCU - Checking	825.00		7,620.00
Total 640-02 · NPDES						7,620.00	0.00	7,620.00
Total 640 · Legal						7,620.00	0.00	7,620.00

DRAINAGE DISTRICT NO. 3
Transaction Detail by Account
October 2023 through September 2024

Type	Date	Num	Name	Memo	Split	Debit	Credit	Balance
658 · Monitoring fees								
Check	10/10/2023	246	Boise City Public Wor...	#IO369 PUB ED Q4 FY 23	106 · ICCU - Checking	866.24		866.24
Check	11/07/2023	248	ACHD	4 Qtr (July - Sep. 2023)	106 · ICCU - Checking	1,376.49		2,242.73
Check	01/23/2024	262	Boise City Public Wor...	#IO378 PRTNRS CLN WTR Q1	106 · ICCU - Checking	198.57		2,441.30
Check	02/14/2024	270	ACHD	1st Qtr (Oct - Dec. 2023)	106 · ICCU - Checking	4,301.71		6,743.01
Check	05/22/2024	296	ACHD	2nd Qtr (Jan - Mar. 2024)	106 · ICCU - Checking	3,213.53		9,956.54
Check	06/24/2024	BP-c	Boise City Public Wor...	#IO387 NPDES Q2 FY24	106 · ICCU - Checking	124.11		10,080.65
Check	07/15/2024	BPc	Boise City Public Wor...	#IO395 Partners for clean water Q3	106 · ICCU - Checking	263.75		10,344.40
Check	08/06/2024	BPc	ACHD	2nd Qtr (Jan - Mar. 2024)	106 · ICCU - Checking	2,231.97		12,576.37
Total 658 · Monitoring fees						12,576.37	0.00	12,576.37
TOTAL						**50,408.13**	**2,500.00**	**47,908.13**

2024 Attachment B - 2023 Public Education

2024 Public Education, Outreach and Involvement Program

1. Overview

The City of Boise, Ada County Highway District, Garden City, Ada County Drainage District #3, Idaho Transportation Department District #3, and Boise State University formed Partners for Clean Water (Partners) to develop a cooperative approach to educating the public on stormwater and water quality issues and ensure compliance with the Permit. The City of Boise is the lead agency for this control measure of the Permit with support from the other Partners. The overarching goal of the program is to educate the public on stormwater issues to change specific behaviors that contribute to nutrient, bacteria, temperature, and sediment pollution to the MS4 and local receiving waters.

The City's Stormwater Public Education and Outreach Program is guided by a step-by-step process when developing educational opportunities.

1. Define goals and desired outcomes
2. Identify and analyze target audiences
3. Create messaging for selected audiences
4. Distribute message through chosen methods of outreach
5. Assess the results in order to direct future efforts

The Partners conduct multiple outreach activities and messaging campaigns each year, designed to reach the various target audiences identified in the Permit and focus on stormwater issues of significance in the Permit area. The permittees collaborate each year on which topics and relevant messages the program will focus their efforts on. These activities and messages are further developed and built upon based on feedback and public participation.

Target audiences in Permit Year 3 included the general public, businesses, homeowners, neighborhood associations, pet owners, landscapers, property managers, engineers, contractors, developers, plan review staff, and students. Specific details that meet Permit Part 3.1 requirements can be found below.

2. Ongoing Efforts (throughout Permit term):

Annual Media Campaign

The Partners continue to participate in an annual media campaign which utilize messaging opportunities with radio advertisements, public service announcements, and online ads. The media campaign reaches all target audiences with general messages on water quality with a focus on pet waste, fertilizer reduction, and illicit discharge reporting in 2024.

Manuals and Reference Materials

Manuals, fact sheets and other education and outreach reference materials are available on the Partners for Clean Water website. These materials are targeted, based on content, to all our targeted audiences. Examples of these documents include 'Stormwater Facility Maintenance Best Management Practices', 'Stormwater Pollution Prevention: Commercial Landscaping', 'Operation and Maintenance of Stormwater Systems', 'Drainage Plan Checklist' and 'Stormwater Management Resource Guide', among others.

Website

The website (partnersforcleanwater.org) reaches all target audiences with specific messaging based on audience. More information can be found in section 7 below.

Boise WaterShed Environmental Education Center

The Boise WaterShed Environmental Education Center opened in May, 2008, and is designed to promote water stewardship by teaching people of all ages how to protect and conserve our precious resources for future generations.

The staff at the Boise WaterShed incorporates stormwater pollution prevention and stormwater management information into the programs, water renewal facility tours, and lessons offered to visitors. Education of personal impacts to water quality via stormwater, wastewater and pollution prevention tips are integrated throughout most exhibits, lessons, tours, and the center's library resources. Partners staff participate in events at the WaterShed, including WaterShed Weekends, Earth Day events, and summer programs.

The facility also provides an outdoor River Campus which presents a new dimension to water education with exterior exhibits that show the big picture of the Treasure Valley's water resources. Presented to simulate the workings of the Lower Boise Watershed, the interactive, walk-able, park-like setting takes visitors on a journey from Lucky Peak Reservoir and Dam, through Boise's urban streets, and the Water Renewal Facility. From here they watch cleaned water returned to the Boise River and see it flow downstream to the agricultural zone that sustains our food industry. Ultimately, visitors realize that what we do upstream not only affects downstream users, but also ultimately the overall health of the Snake River.

The Boise WaterShed is transforming into the nation's first climate and water science center. The all-ages, hands-on exhibits will explore themes of our changing watershed and how the community can take action to help make our community more resilient to the effects of climate change. The Boise Watershed is undergoing renovations and was closed during Permit Year 3. Limited programming was available through on-site K-12 lessons, homeschool days, models and kits available for checking out, and other events. Storwmater education is included in this programming.

Social Media

The City of Boise and other Partners regularly posts messaging on Twitter, Facebook, and Instagram regarding stormwater, water quality, household hazardous waste collection, leaf litter pick up information, etc. to help distribute these messages to the community through a variety of avenues.

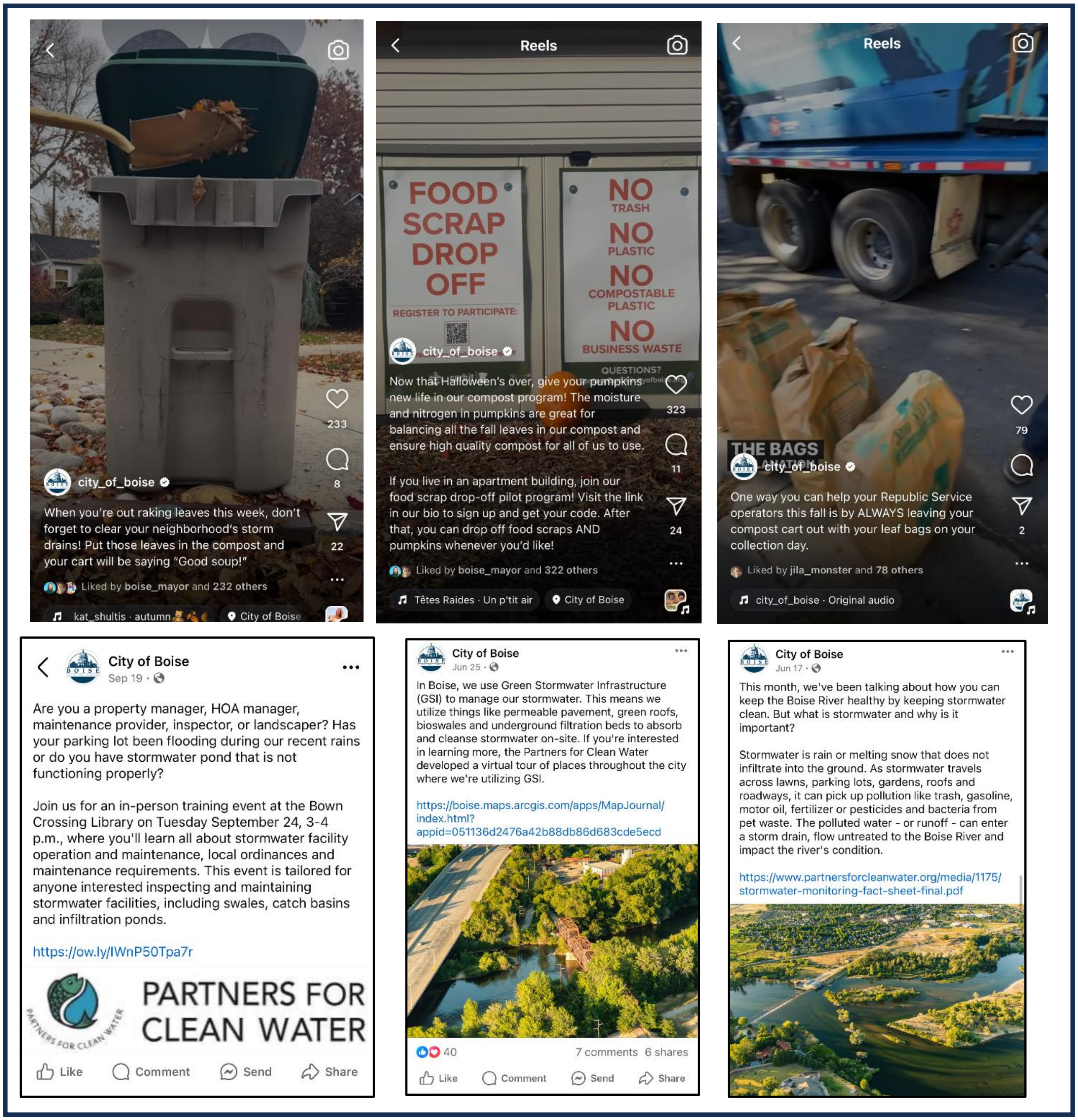


Figure 1. Examples of 2024 educational social media posts

3. 2024 Outreach Events and Activities:

Media Campaign

The media campaign for 2024 included radio ads, social media posts, and online ads on websites such as BoiseDev and KTVB.

Themes highlighted in 2024 include picking up pet waste, illicit discharge reporting, and proper fertilizer use, seen in Figure 2 below.

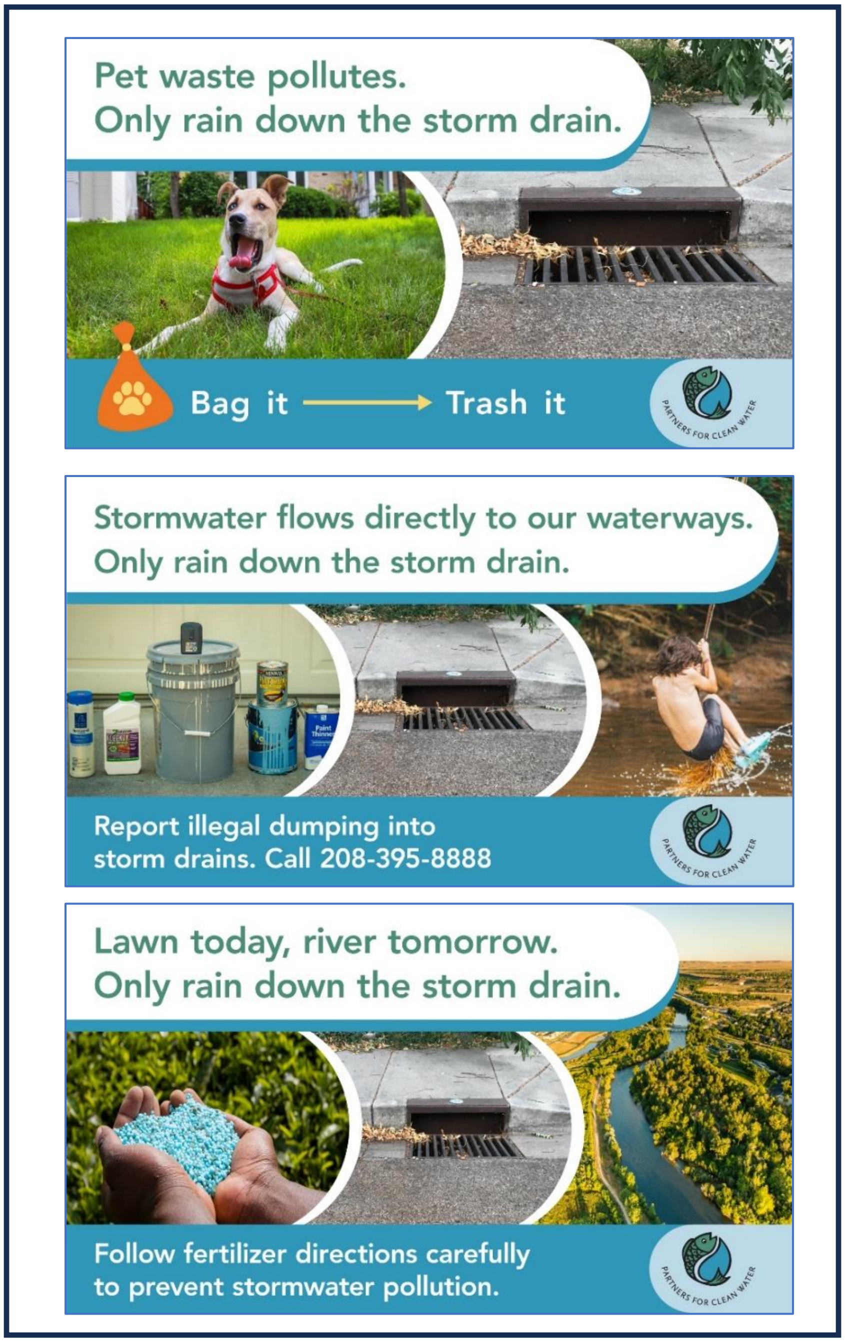


Figure 2. 2024 Stormwater Educational Graphics

Around 450 radio ads were aired on radio stations including KJOT, KRVB, KXLT, KKOO, KIZN, KKGL, LA GRAND, and LA PONDEROSA. Radio ads were broadcast in English and Spanish.

Bus Wrap

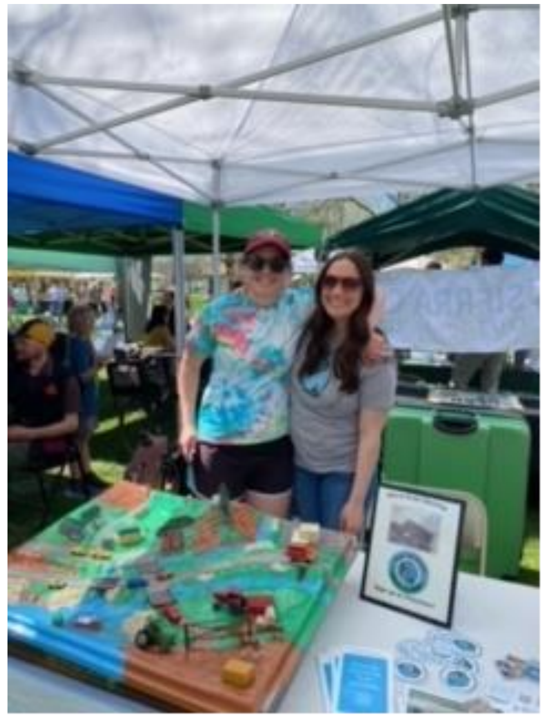
Partners coordinated with Valley Regional Transit to create a stormwater educational bus wrap to display on a regional bus from May through August. This was a general stormwater message to help people understand that stormwater flows directly to our waterways. The stormwater hotline number was also listed on the bus to report illegal dumping into storm drains. Posters were also present on the interior of the bus.

Figure 3. 2024 Bus Wrap

2024 Events

Several events were held during Permit Year 3 for stormwater education and outreach purposes. Each event targeted the general public and focused on general stormwater awareness, illicit discharge reporting, stormwater pollution prevention tips for homes and businesses, and water quality.

1. City of Boise Earth Day:



2. Neighborhood Concert Series:

3. National Night Out

4. Assessment

The Partners are consistently assessing the public's understanding of our public outreach messages and the adoption of behaviors that reduce stormwater pollution by our target audiences.

Assessment includes surveys at events that measure general stormwater knowledge to evaluate which topics are being conveyed already, and which topics need additional messaging and awareness. These surveys also resolve which media avenues are most useful to the respondents to guide our outreach in the future.

Data from website usage, radio ads, and billboard viewership is also used to assess which programs and messages are reaching the most people. The Partners website is updated based on which pages are most viewed and clicked on, in order to make popular topics more accessible (Appendix A).

The results of these continual assessments constantly shape the future of our public outreach and education programming. Focus will be given to programs that are successful in changing the public's behaviors and practices to reduce stormwater pollution.

A more targeted pilot program was started in Permit Year 2 in the Central Rim Neighborhood. The primary goal of this pilot project is to increase stormwater awareness, engage the target audience, and effectively promote proper leaf disposal. By isolating public education and outreach in this neighborhood, we are aiming to achieve higher participation in proper leaf disposal in the Central Rim Neighborhood.

In October 2023, postcards were sent out that outlined the benefits of raking your leaves such as flooding prevention and improved water quality. It also gave instructions for leaf pickup and provided a link to sign up for a free yard sign to encourage neighbors to rake leaves. Signs were displayed in the yards of Central Rim Neighborhood residents.

Figure 4. Outreach postcard sent to Central Rim Neighborhood residents

Outreach continued in 2024 at the Central Rim's National Night Out. More signs were given to residents and stormwater educational messaging and post cards were provided at a Partners for Clean Water table. Many residents exhibited enthusiasm and interest in the program.

In 2025, we will send out another post-outreach survey to the Central Rim Neighborhood to evaluate the behaviors surrounding leaf collection for the pilot neighborhood. We will compare post-outreach survey results from the Central Rim neighborhood to other neighborhoods that did not receive targeted outreach; this will allow us to assess the effectiveness of the outreach conducted. We will also compare Central Rim leaf collection data from 2021-2024 to measure if more leaves were collected from this neighborhood after outreach was conducted. This will provide estimates of self-reported behavior changes as well as leaf volume data from Republic Services to show behavior changes.

More information regarding the pilot program, follow-up outreach, and conclusions will be available in the Permit Year 4 Annual Report.

5. Tracking

A tracking spreadsheet is used by the City of Boise to track and maintain all records of our stormwater education and outreach activities, events, and trainings. This spreadsheet is shared with other permittees during regularly scheduled permittee meetings and is open to feedback and discussion. The tracking spreadsheet is used to compile the annual report.

6. Education on SWMP Control Measures

Construction Site Runoff Control Training

To provide the regional construction community with erosion and sediment control and stormwater pollution prevention education, the City and our Partners have developed the Erosion and Sediment Control (ESC) Responsible Person (RP) training and certification program. The class promotes awareness of the impact of polluted construction site runoff and soil erosion on the MS4 and the Boise River. The class curriculum covers local and state stormwater regulations, principles of ESC Best Management Practices (BMPs), installation and maintenance of common erosion and sediment controls, fugitive dust control, stormwater pollution prevention practices, dewatering, how to conduct the required construction site inspections and updating the ESC plan or SWPPP for the site.

The instructors for the City Responsible Person classes must be qualified and approved by the City. Instructors are required to submit a resume to the City detailing their educational history and experience in erosion control. They must also be able to demonstrate knowledge of the principles of erosion; sediment transport; erosion and sediment control technology, implementation, and maintenance; and local and federal ordinances regulating erosion and sediment control.

Courses are offered through third party entities: Engineering with a Mission LLC, Eagle One LLC, Jones Erosion Control, the College of Western Idaho, and Syman Company throughout the year in various locations in the Treasure Valley as well as online offerings. Boise State University's Construction

Management Program also presents the class material to their students, who may receive certification if desired. Additionally, the Nampa school district has a vocational construction site program that utilizes the ESC training presentation. The ESC Inspectors also present the RP course quarterly to train local agency personnel involved in construction projects so that they may implement BMPs on public projects and notify ESC Inspectors if they see runoff pollution and other violations at construction sites. As part of the training participants receive education materials including an illustrated ESC Field Guide to Best Management Practices specific to Idaho.

Construction site operators and contractors must renew their RP certification every 3 years by attending the training and passing an examination. The class is updated regularly to present new ideas and methods in ESC and SWPPP. The Planning and Development permitting system maintains a database of certified RPs. The database is utilized by the City of Boise, ACHD, Garden City, the City of Nampa, and City of Caldwell to verify that construction sites have an individual with ESC training onsite. The RP name and contact information is required to be listed prior to permit issuance, and the RP must have operational control to make corrective actions and knowledge to implement BMPs and work with ESC Inspectors to keep sites in compliance.

In 2024, 853 Responsible Person licenses were issued or renewed.

City staff provide ongoing awareness, education and outreach through the website, annual events, and also can provide site specific training as needed to interested parties and industry groups.

Permanent Stormwater Controls Training

The Partners conducted a permanent stormwater controls training in September 2024. The goal of this training is to provide guidance to local audiences on the operation and maintenance activities required to be performed on various stormwater facilities. The training emphasized the importance of maintaining stormwater facilities to prevent stormwater pollution. It covered local ordinances, O&M requirements, and context for property O&M agreements.

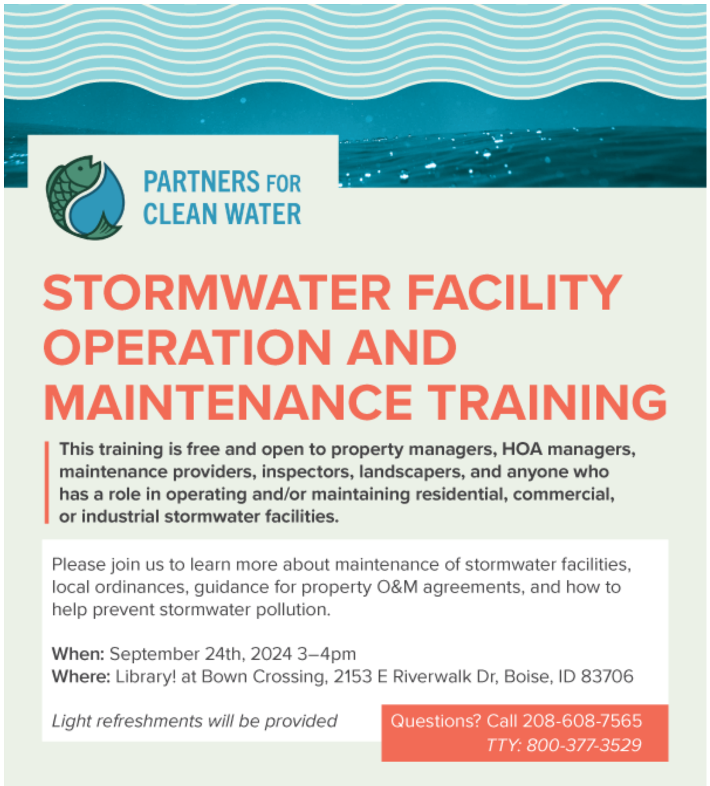


Figure 5. 2023 Permanent SW Control ad

7. Publicly Accessible Website

The City of Boise, on behalf of the Partners for Clean Water, maintains a website that educates the public on stormwater issues for multiple audiences. The website is a key source for stormwater information in Boise and the Treasure Valley.

The website contains relevant contacts for each permittee, as well as each permittee's annual reports, SWMPs, and other relevant compliance and regulation materials. The Intergovernmental Agreement (IGA) that outlines permittee responsibilities is posted, as well as the IPDES permit and the MS4 map. Regularly scheduled permittee meeting agendas and meeting notes are also posted.

The website has topics for varying target audiences, such as homeowners, pet owners, engineers, surveyors, developers, mobile businesses, landscapers, and property maintenance companies. Manuals, checklists, fact sheets and guidance documents are organized into the target audience's respective pages. Individual permittee sites are also linked for more information. Information regarding training, events, and other topics pertinent to educating the community on how to reduce stormwater pollution is easily accessible.

The website continues to be an important way to educate our target audiences and provide a central location for public education and permit compliance information. The Partners continuously develop new outreach materials to post on the website and hand out at events. QR codes that link to the Partners website are often printed on outreach materials.

Appendix A

Website data

2024 Attachment C - Stormwater Outfall Monitoring Summary WY2024

Stormwater Outfall Monitoring Summary

Water Year 2024

Prepared by
Brown and Caldwell

Prepared for
Ada County Highway District
December 19, 2024

Stormwater Outfall Monitoring Summary WY 2024

Ada County Highway District

12/19/2024

Table of Contents

1 Introduction

Ada County Highway District (ACHD), Boise State University, City of Boise, City of Garden City, Drainage District #3, and the Idaho Transportation Department District #3 (Permittees) were issued a third-cycle National Pollutant Discharge Elimination System (NPDES) Phase Permit #IDS027561 (Permit) on October 1, 2021. The Permit authorizes the Permittees to discharge from municipal separate storm sewer system outfalls to the Boise River and its tributaries. According to Permit Part 6.2.1, Wet Weather Stormwater Outfall Monitoring, Permittees are required to monitor wet weather stormwater discharges according to the NPDES Phase I Stormwater Outfall Monitoring Plan (ACHD, 2022). The following summary covers wet weather outfall monitoring activities during water year (WY) 2024 (October 1, 2023–September 30, 2024). WY 2024 represents the third year of monitoring under the new Permit cycle.

The Stormwater Outfall Monitoring Plan (SWOMP) was developed in line with the Quality Assurance Project Plan for NPDES Stormwater Permit Monitoring (QAPP) (ACHD, 2023) and describes the overall approach to stormwater outfall monitoring. Details about specific site characteristics, equipment, data collection and sample handling procedures, analytical methods, and quality assurance/quality control methodology are found in the SWOMP.

In WY 2024, data collection for the Stormwater Outfall Monitoring Program included precipitation, flow, and water quality samples. Four outfall monitoring sites within the Permit area (Lucky, Whitewater, Main, and Americana) were monitored for flow and water quality. The water quality samples were collected from wet weather discharges and included grab samples with corresponding field parameters and composite samples, which were collected throughout the duration of a storm. Additionally, four rain gauge sites (East, Front, Cynthia Mann, and Whitewater) were maintained to provide localized precipitation data. Each rain gauge location represents at least one of the monitored subwatersheds and was used to verify that storm criteria were met.

2 Monitoring Sites, Equipment, and Sample Type

The Stormwater Outfall Monitoring Program consists of four monitored subwatersheds: Lucky, Whitewater, Main, and Americana. Monitoring stations for each subwatershed are located near the outfalls with dedicated equipment installed at each location. Table 2-1 depicts the equipment types and referenced rain gauge site for each subwatershed. A vicinity map illustrating the location of each subwatershed, monitoring station, and rain gauge site is found in Figure 1 (Appendix A).

Table 2-1. Monitoring Station Equipment

Monitoring Site	Lucky	Whitewater	Main	Americana
Sampler type	Hach AS950	ISCO 6712	Hach AS950	ISCO 6712
Flowmeter type	Hach AV9000	ISCO Signature	Hach AV9000	ISCO Signature
Referenced rain gauge	Cynthia Mann	Whitewater	Front	Front and East
Rain gauge equipment types	Global Water tipping bucket/HOBO event logger	Hach tipping bucket/ISCO Signature	Global Water tipping bucket/HOBO event logger	Global Water tipping bucket/HOBO event logger

2.1 Sample Types

The sample types collected during WY 2024 included grab samples and composite samples. Grab samples represent a discrete measurement from the overall storm discharge while composite samples represent the entire discharge.

Grab samples were manually collected using a swing sampler. The grab samples were submitted to the Boise City Public Works Water Quality Laboratory (WQL) and analyzed for *E. coli*. At the time that the grab samples were collected, field parameters (temperature, pH, dissolved oxygen [DO], and conductivity) were measured using In-Situ smarTROLL or In-Situ AquaTROLL handheld instruments.

Composite samples were collected using automatic samplers, which worked in conjunction with flowmeters. After a predetermined volume of flow was discharged, the flowmeters triggered the samplers to collect a subsample. Each subsample was deposited into a 15-liter carboy, resulting in a flow-proportional composite sample. The composite samples were submitted to the WQL, where they were split for analysis. The following constituents were analyzed during WY 2024: biological oxygen demand, 5-day (BOD_5); chemical oxygen demand (COD); hardness as calcium carbonate ($CaCO_3$); turbidity; total suspended solids (TSS); total dissolved solids (TDS); total phosphorus as P(TP); orthophosphate, as P (ortho-P); ammonia, as N; nitrate + nitrite, as N; total Kjeldahl nitrogen (TKN); total arsenic; dissolved and total cadmium; dissolved copper; dissolved and total lead; total mercury; and dissolved zinc.

3 Stormwater Outfall Monitoring Results

Wet weather stormwater samples were collected according to the procedures listed in the SWOMP. One of the goals in the SWOMP is to collect three accepted (unqualified) grab and composite samples from each monitoring station during each water year. In WY 2024, samples were attempted during five storms to meet this goal. A summary of the storm dates and sample types collected is shown in Table 3-1. Storm setup and sampling information are included in Table 1 (Appendix B). Storm Event Reports were created after each stormwater sampling event to monitor the status of the SWOMP and discuss the hydrological and analytical data from the grab and composite samples. These Storm Event Reports include details about the storm and weather monitoring, hydrographs, sample collection times, and water quality results. Individual Storm Event Reports for the five sampling events during WY 2024 are included in Appendix C.

Table 3-1. Storm Events and Sample Types

Date	Lucky	Whitewater	Main	Americana
October 10, 2023	G, C [1, 2]	G	–	G, C [3]
November 19, 2023	G, C	G, C	G, C	G [4], FD, FB, C
February 1, 2024	G [5], FD, FB, C	G [5], C [6], CD	G [5], C	G [5], C
February 26, 2024	G, C	G, C	G, FD, FB, C [7]	G, C
March 28, 2024	–	C	G, FD, FB, C	G, CB

Sample types: G = grab, C = composite

QC Sample types: FD = field duplicate, FB = field blank, CD = lab duplicate/composite split, CB = field blank composite

[1] Composite sample qualified due to lack of representativeness (50%–75%).

[2] Incomplete water quality analysis due to low composite sample volume.

[3] Composite sample qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

[4] Incomplete field parameter collection on the grab sample data form due to field error.

[5] *E. coli* sample qualified due to exceeded hold time.

[6] Composite sample rejected due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented more than 10% of the composite volume.

[7] Composite sample qualified due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented less than 10% of the composite volume.

3.1 Wet Weather Analytical Results

Field parameter results are presented in Table 2 and analytical results are presented in Table 3 (Appendix B). Graphical representation of the analytical results is provided in Figures 2–5 (Appendix A). The following assessment provides minimum and maximum measured values for WY 2024. Qualified data are included in the range of measured/reported values as well as the data analysis. Rejected data are not included in the analysis or data discussion below; however, they are presented in the tables. All measurements were recorded in accordance with QAPP and SWOMP procedures.

DO and oxygen demand

- DO ranged from 4.920 to 10.88 milligrams per liter (mg/L).
- Biological oxygen demand, 5-day (BOD_5) concentrations ranged from 5.03 to 61.9 mg/L.
- Chemical oxygen demand (COD) concentrations ranged from 39.0 to 167 mg/L.

pH, temperature, conductivity, and hardness

- pH values ranged from 5.66 to 8.27 standard units.
- Temperature ranged from 4.75 to 17.17 degrees Celsius.
- Conductivity ranged from 81.35 to 749.2 micro-siemens per centimeter.
- Hardness ranged from below the method detection limit (MDL) (< 0.100) to 102 mg/L as calcium carbonate.

Bacteria

- *E. coli* ranged from below the MDL (< 1.0) to 2,720 most probable number per 100 milliliters.

Sediment

- Turbidity ranged from 8.60 to 103 nephelometric turbidity units.
- TSS ranged from 8.63 to 131 mg/L.
- TDS ranged from 44.2 to 236 mg/L.

Nutrients

- Ammonia, as N ranged from 0.173 to 0.829 mg/L.
- Chloride ranged from 5.19 to 64.1 mg/L
- Nitrate + nitrite, as N ranged from 0.145 to 0.969 mg/L.
- TKN ranged from 0.894 to 2.43 mg/L.

Phosphorus

- TP ranged from 0.143 to 0.958 mg/L.
- Ortho-P ranged from 0.0494 to 0.768 mg/L as P.

Metals

- Total arsenic ranged from 0.66 to 5.5 micrograms per liter (µg/L).
- Dissolved cadmium ranged from below the MDL (< 0.0100) to 0.032 µg/L.
- Total cadmium ranged from 0.024 to 0.13 µg/L.
- Dissolved copper ranged from 1.9 to 8.2 µg/L.

- Dissolved lead ranged from 0.028 to 0.21 µg/L.
- Total lead ranged from 0.33 to 6.1 µg/L.
- Total mercury ranged from below the MDL (< 0.0100) to 0.0191 µg/L.
- Dissolved zinc ranged from 9.80 to 51.7 µg/L.

3.2 Monitored Event Pollutant Loading Results

Pollutant loading estimates in pounds per acre (lbs/ac) were calculated for the following constituents of concern: TSS; TP; ammonia, as N; nitrate + nitrite, as N; and TKN. The reported concentrations were combined with runoff volumes measured during the storm event at each monitoring station. Formulas that were used, including conversion factors to estimate the loading in lbs/ac, are described in the SWOMP. Table 4 (Appendix B) presents the estimated pollutant loading of the constituents for each monitored storm. The pollutant loading contributions for each site are shown graphically in Figure 6 (Appendix A). Table 5 (Appendix B) is a summary of event loading estimates in pounds per acre for comparison between monitored drainage areas. Rejected data are not included in the analysis or data discussion below; however, they are presented in the tables. A summary of the estimated ranges of pollutant loading for the storm events monitored during WY 2024 is presented below.

- TSS loading estimates ranged from 0.0400 to 3.52 lbs/ac.
- TP loading estimates ranged from 0.000617 to 0.0114 lbs/ac.
- Ammonia, as N loading estimates ranged from 0.000771 to 0.0170 lbs/ac.
- Nitrate + nitrite, as N loading estimates ranged from 0.00162 to 0.0168 lbs/ac.
- TKN loading estimates ranged from 0.00367 to 0.0453 lbs/ac.

3.3 Precipitation Results

Precipitation data from the Front, East, Cynthia Mann, and Whitewater rain gauges were used to validate all targeted storms during WY 2024. Each monitoring station is associated with a rain gauge. Precipitation data recorded for each of the targeted storms can be found in Table 1 (Appendix B). Monthly totals for WY 2024 are shown in Figure 7 (Appendix A).

4 Quality Assurance/Quality Control

Quality assurance (QA) and quality control (QC) measures for the Stormwater Outfall Monitoring Program are presented in detail in the QAPP and SWOMP. No deviations from the QAPP and SWOMP occurred during WY 2024. QA and QC measures conducted during the water year are discussed below.

4.1 Data Quality Discussion

A data validation review process was used to evaluate the analytical and field parameter results. These checklists were used to compare monitoring methods and monitoring data collected against performance criteria established to meet the data quality objectives described in the QAPP. Field parameter results and analytical results that were qualified are identified in Tables 2 and 3 (Appendix B), respectively. Further information regarding qualified samples is included in the Storm Event Reports located in Appendix C.

The following program criteria are used to identify storm events and representative composite samples.

- Storm criteria are met when the precipitation amount is greater than 0.10 inch, and the storm was preceded by a minimum 72 hours of dry weather from the previous measurable storm event (rainfall greater than 0.10 inch).

- Composite samples are considered representative of stormwater runoff when aliquots represent greater than 75 percent of total runoff volume from the storm or greater than 6 hours of the storm, including the first hour of runoff.

For WY 2024, samples collected during the following storm events were qualified for reasons discussed below:

October 10, 2023

- The composite sample collected from the Lucky monitoring station on October 10, 2023, was qualified due to lack of representativeness (50%–75%) during the storm event, as well as an incomplete water quality analysis due to low composite sample volume.
- The composite samples collected from Americana monitoring station were qualified due to lack of representativeness (50%–75%) of the calculated flow.

November 19, 2023

- The grab sample collected from the Americana monitoring station on November 19, 2023, was qualified due to incomplete field parameters, resulting from a field error.

February 1, 2024

- The grab samples collected for each monitoring station on February 1, 2024, were qualified due to *E. coli* samples exceeding hold time.

February 26, 2024

- The composite sample collected from the Main monitoring station on February 26, 2024, was qualified due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented less than 10% of the composite volume.

4.2 QC Sample Results

QC sampling during WY 2024 consisted of a combination of field QC samples, laboratory QC samples, and equipment QC samples. Field QC sampling intervals followed a predetermined schedule, included in the SWOMP. Equipment QC samples were collected during fall maintenance. Sample results for all field QC samples are included in Table 6 (Appendix B).

4.2.1 Field QC Samples

Field QC samples include field duplicates, field blanks, and composite blanks.

Field duplicates are field grab samples that were taken alongside a parent grab sample to compare the accuracy of the data. For *E. coli,* allowable logarithmic relative percent difference (RPD) between the duplicate sample and the parent sample is 40 percent, for values where the parent and duplicates are greater than 10 MPN/100mL. Due to the variability associated with extremely low numbers indicating little to no association between MPN results with a concentration of less than 10 MPN/100 mL, all sample pairs that are both less than 10 MPN/100mL will be automatically included in the database without qualifier flags. All field duplicate samples collected during WY 2024 met the RPD standard or had values below 10 MPN/100mLs.

Analytical results from field blanks and composite blanks are expected to be less than the MDL. If a water quality parameter is detected in a field blank or composite blank, all analytical results associated with the blank that exhibit a concentration of less than five times the concentration detected in the blank, are qualified. All field blank and composite blank samples collected had results less than the MDLs for the analyzed constituents.

4.2.2 Laboratory QC Samples

Laboratory QC samples are composite duplicate samples that are split at WQL. This type of sample serves as a check on the laboratory's ability to representatively split a composite sample and is a test of analytical precision. The allowable RPD for all parameters is 20 percent. All parameters from the composite duplicate sample collected during WY 2024 met the RPD standard.

4.2.3 Equipment QC Samples

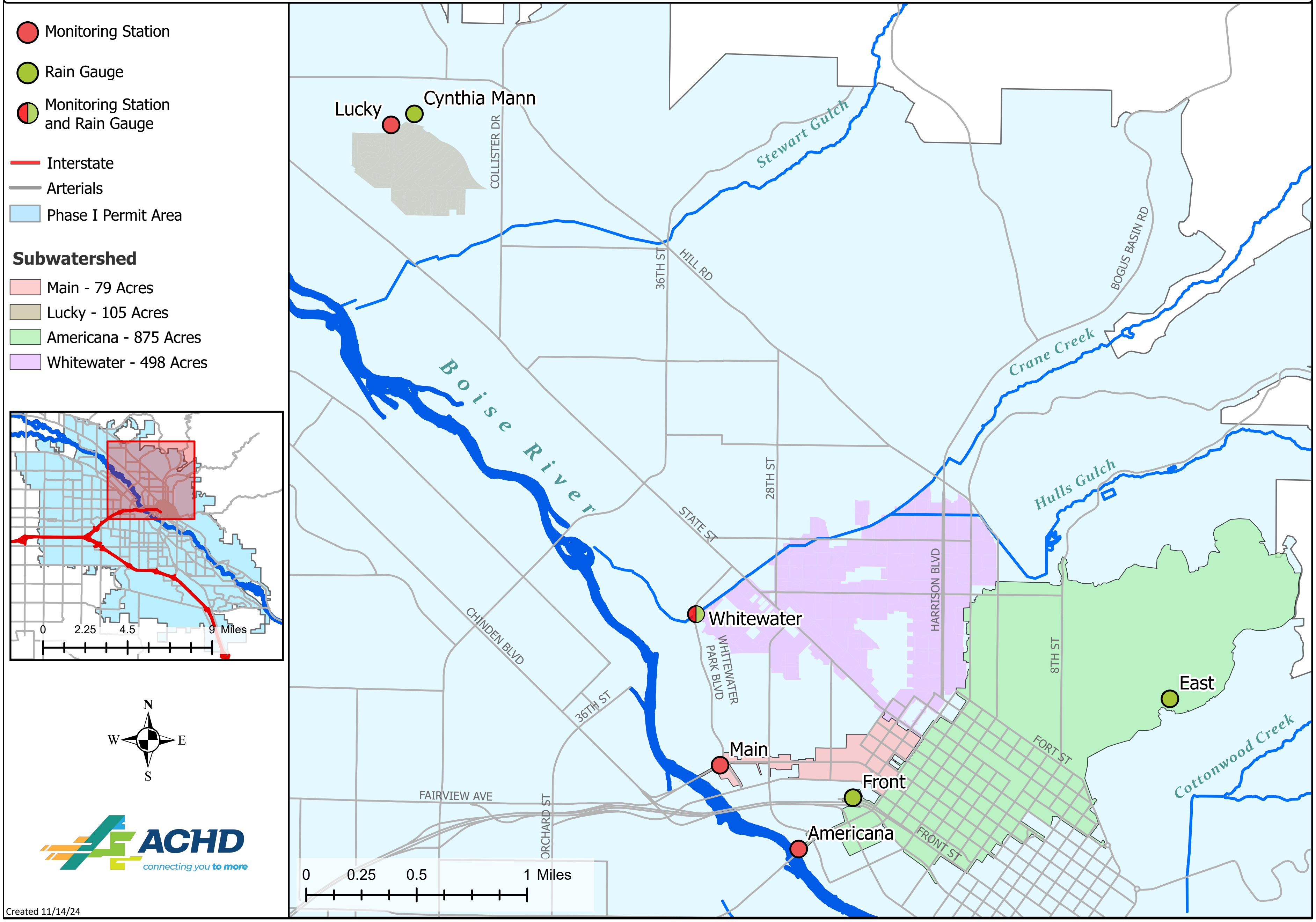
Equipment QC samples include an equipment blank and a rinsate blank, both serving as a check on equipment decontamination procedures.

The equipment blank is collected before sampling for the water year begins and when new equipment is installed. For WY 2024, the equipment blanks were collected on October 2, 4, and 5, 2023, at the Main, Whitewater, Americana, and Lucky monitoring stations. Dissolved copper and dissolved zinc were detected in all blank samples. Dissolved copper results throughout the WY that are less than five times the value detected in the blank, have been qualified and are considered estimates. Dissolved zinc samples throughout the WY are unqualified for all sites. Ammonia and COD were detected in the Main blank sample. Total lead was detected in the blank at Lucky while total and dissolved lead was detected in the blank at Whitewater. However, no ammonia, COD, or total and dissolved lead samples collected throughout the WY were less than five times the value detected in the blank and are therefore unqualified. All other results were greater than five times the detected value in the equipment blank and are unqualified.

The rinsate blank is collected after sampling for the water year has been completed. The rinsate blanks for WY 2024 were collected on September 10 and 17, 2024, at the Main, Whitewater, and Americana monitoring stations. Dissolved copper was detected in all blank samples. Dissolved copper results that were collected throughout WY 2024 are less than five times the value detected in the blank have been qualified and considered estimates. Orthoposphate, as P and TSS were detected in the Whitewater and Americana blank samples, respectively, and total lead was detected in both samples. Dissolved zinc was detected in the Main and Americana blank samples. However, no orthophosphate, as P; TSS; total lead; or dissolved zinc results collected during WY 2024 were less than five times the concentration detected in the respective rinsate blanks and are therefore unqualified. All other results were greater than five times the detected value in the rinsate blank and are unqualified.

Appendix A: Figures

Figure 1: Vicinity Map
Phase I NPDES Outfall Sampling Stations



ACHD
connecting you to more

Created 11/14/24

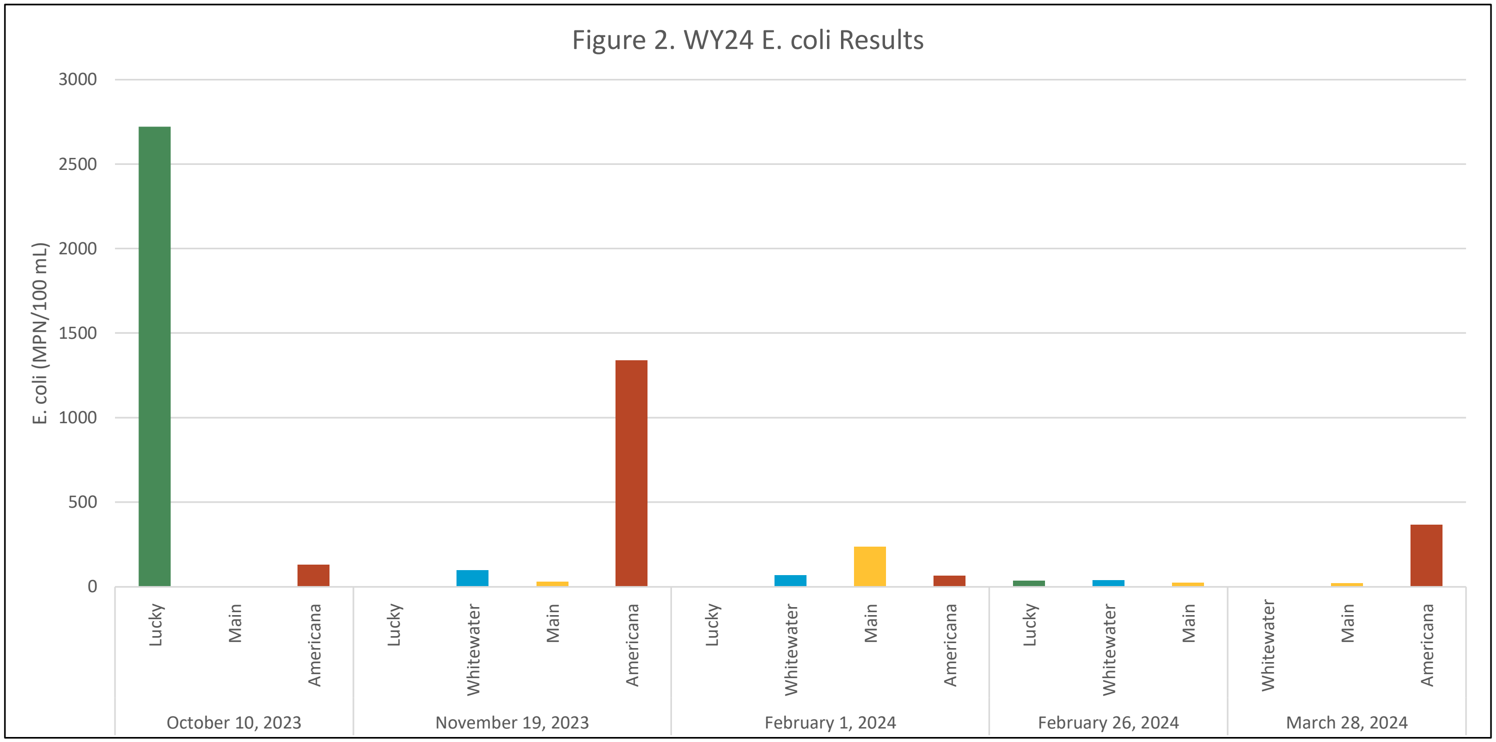


Figure 2. WY24 E. coli Results
E. coli (MPN/100 mL)
3000
2500
2000
1500
1000
500
0
Lucky
Main
Americana
Lucky
Whitewater
Main
Americana
Lucky
Whitewater
Main
Americana
Lucky
Whitewater
Main
Whitewater
Main
Americana
October 10, 2023
November 19, 2023
February 1, 2024
February 26, 2024
March 28, 2024

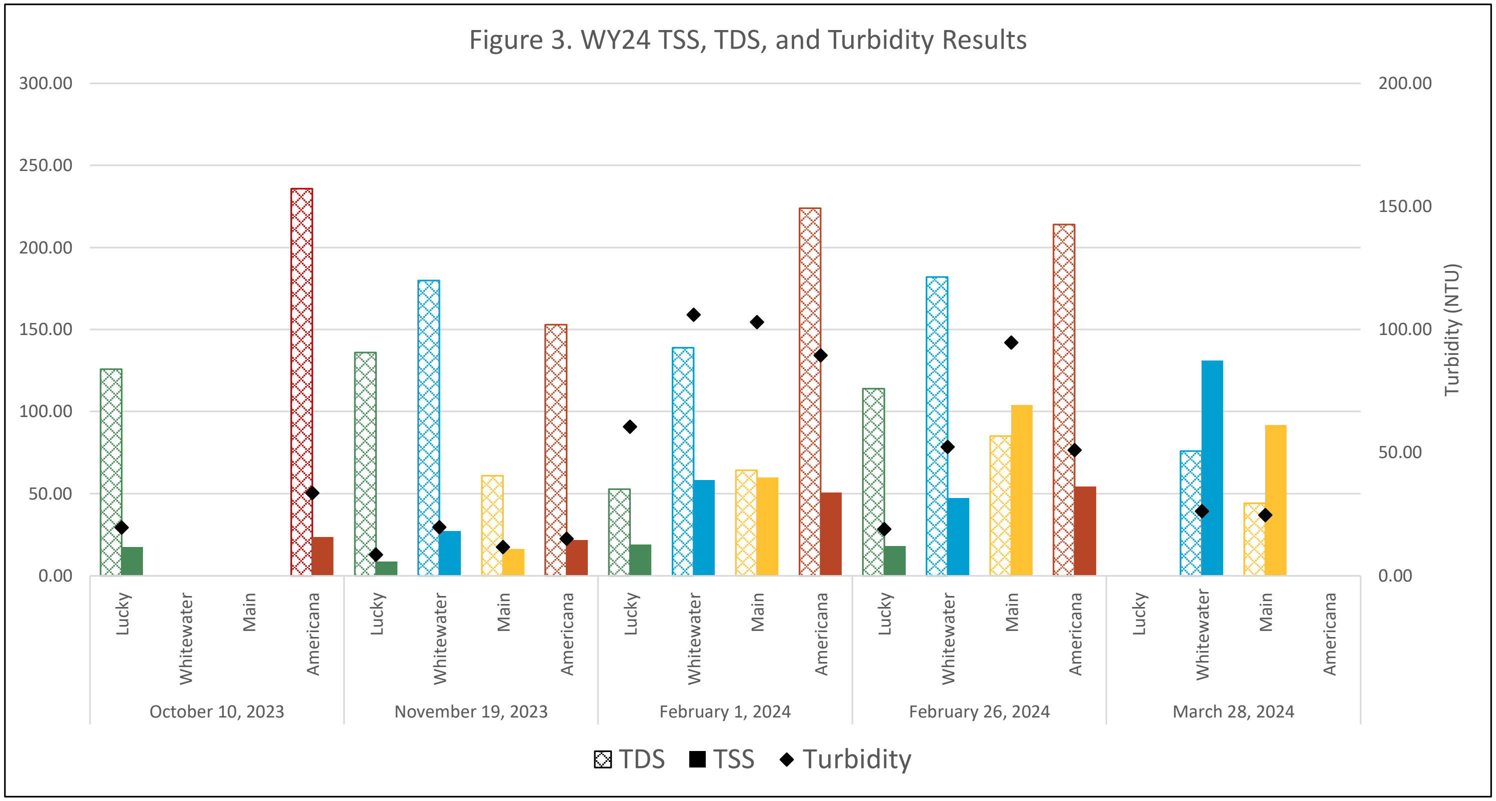


Figure 3. WY24 TSS, TDS, and Turbidity Results
300.00
250.00
200.00
150.00
100.00
50.00
0.00
200.00
150.00
100.00
50.00
0.00
Turbidity (NTU)
Lucky
Whitewater
Main
Americana
October 10, 2023
November 19, 2023
February 1, 2024
February 26, 2024
March 28, 2024
TDS
TSS
Turbidity

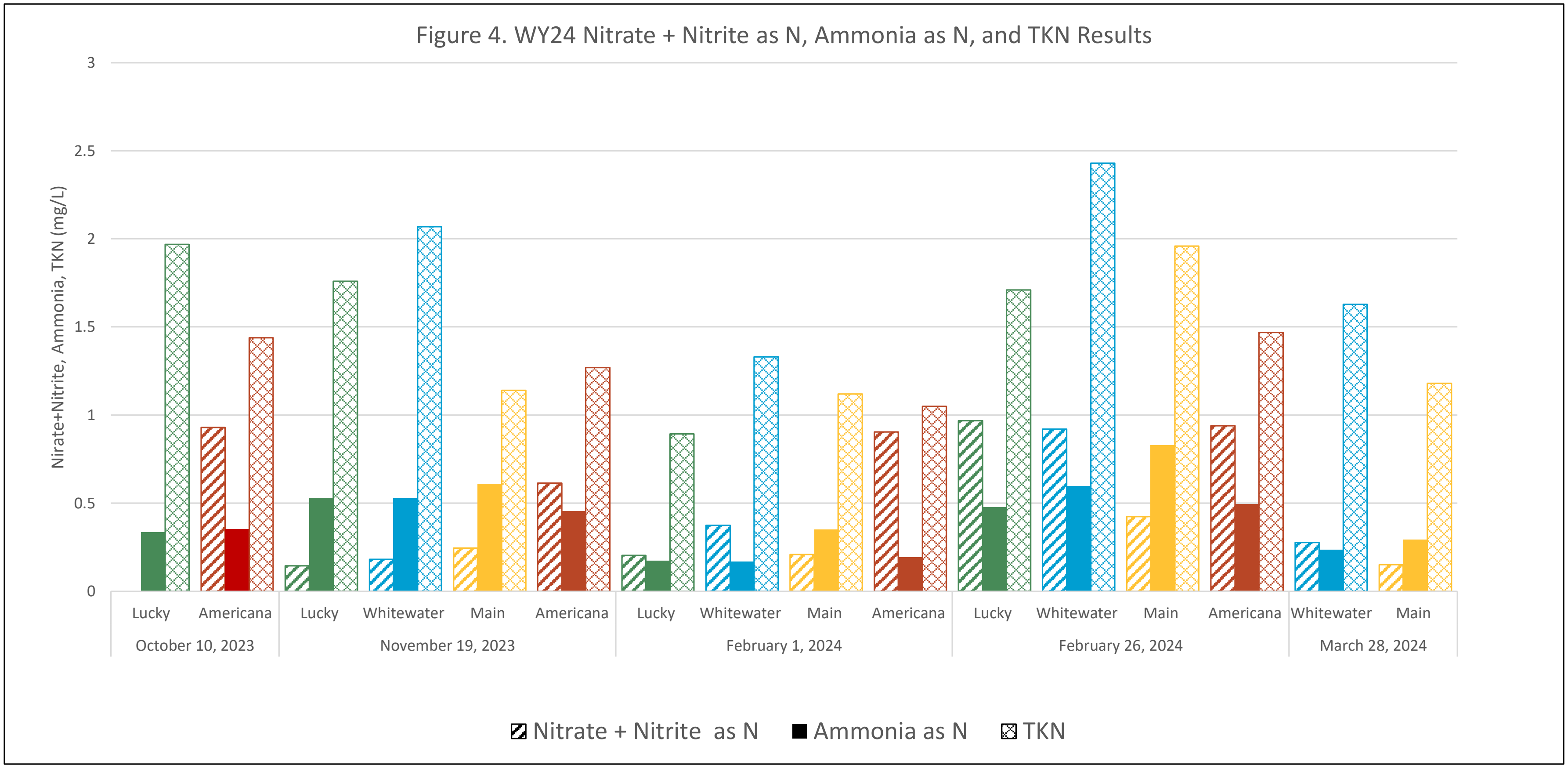


Figure 4. WY24 Nitrate + Nitrite as N, Ammonia as N, and TKN Results
Nirate+Nitrite, Ammonia, TKN (mg/L)
3
2.5
2
1.5
1
0.5
0
Lucky
Americana
Lucky
Whitewater
Main
Americana
Lucky
Whitewater
Main
Americana
Lucky
Whitewater
Main
Americana
Whitewater
Main
October 10, 2023
November 19, 2023
February 1, 2024
February 26, 2024
March 28, 2024
Nitrate + Nitrite as N
Ammonia as N
TKN

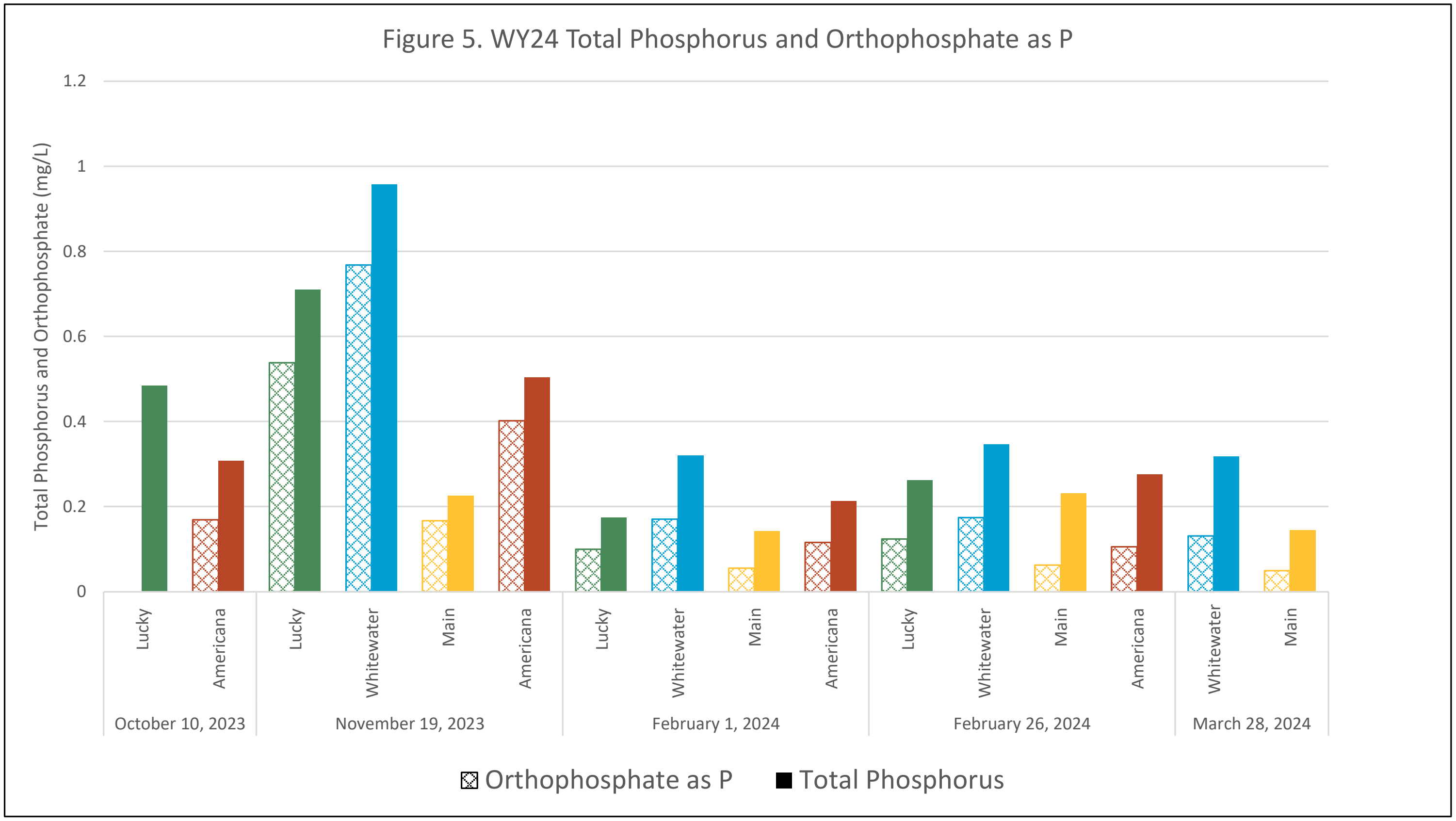


Figure 5. WY24 Total Phosphorus and Orthophosphate as P
Total Phosphorus and Orthophosphate (mg/L)
1.2
1
0.8
0.6
0.4
0.2
0
Lucky
Americana
Lucky
Whitewater
Main
Americana
Lucky
Whitewater
Main
Americana
Lucky
Whitewater
Main
Americana
Whitewater
Main
October 10, 2023
November 19, 2023
February 1, 2024
February 26, 2024
March 28, 2024
Orthophosphate as P
Total Phosphorus

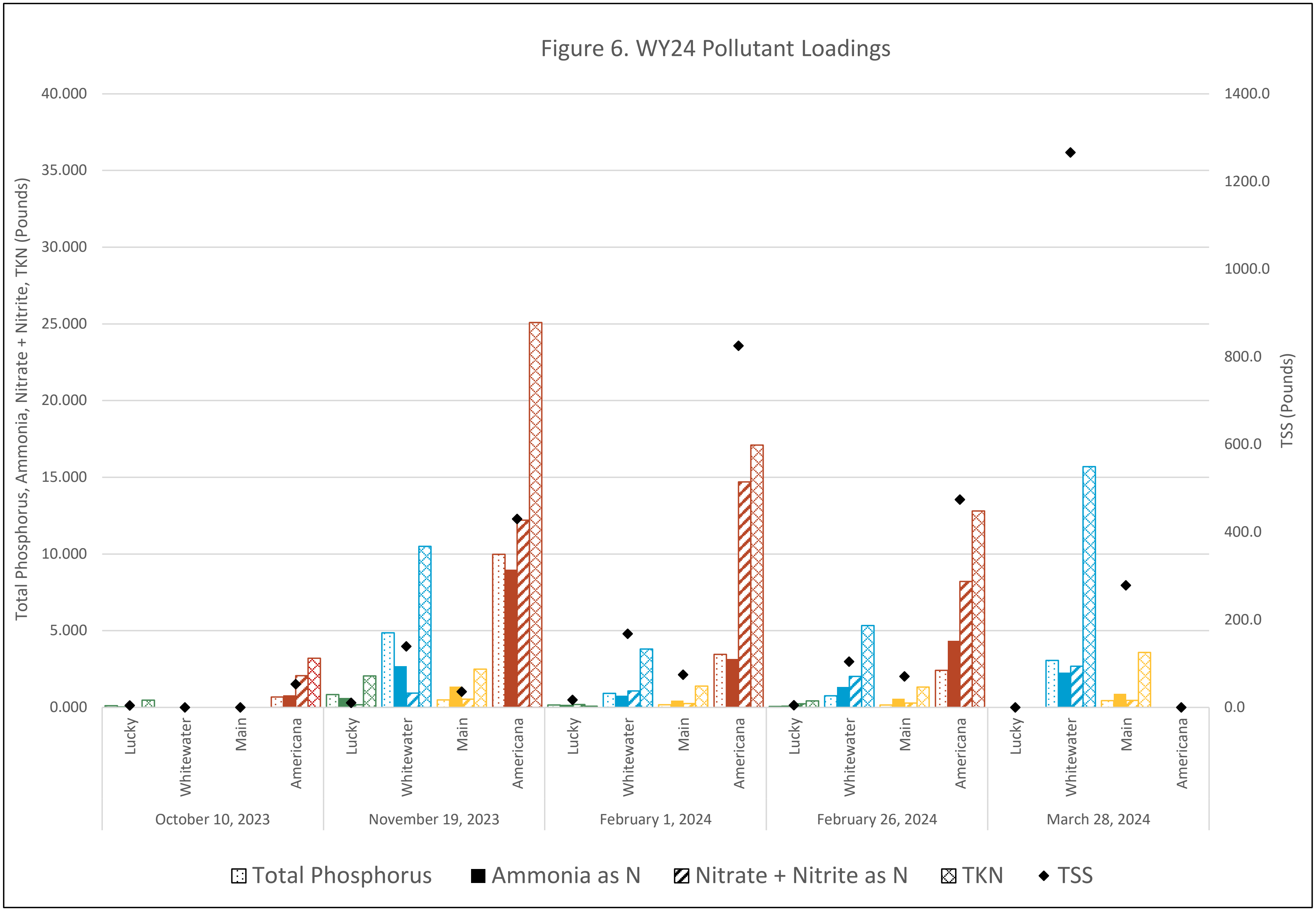


Figure 6. WY24 Pollutant Loadings
Total Phosphorus, Ammonia, Nitrate + Nitrite, TKN (Pounds)
TSS (Pounds)
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
1400.0
1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
Lucky
Whitewater
Main
Americana
October 10, 2023
November 19, 2023
February 1, 2024
February 26, 2024
March 28, 2024
Total Phosphorus
Ammonia as N
Nitrate + Nitrite as N
TKN
TSS

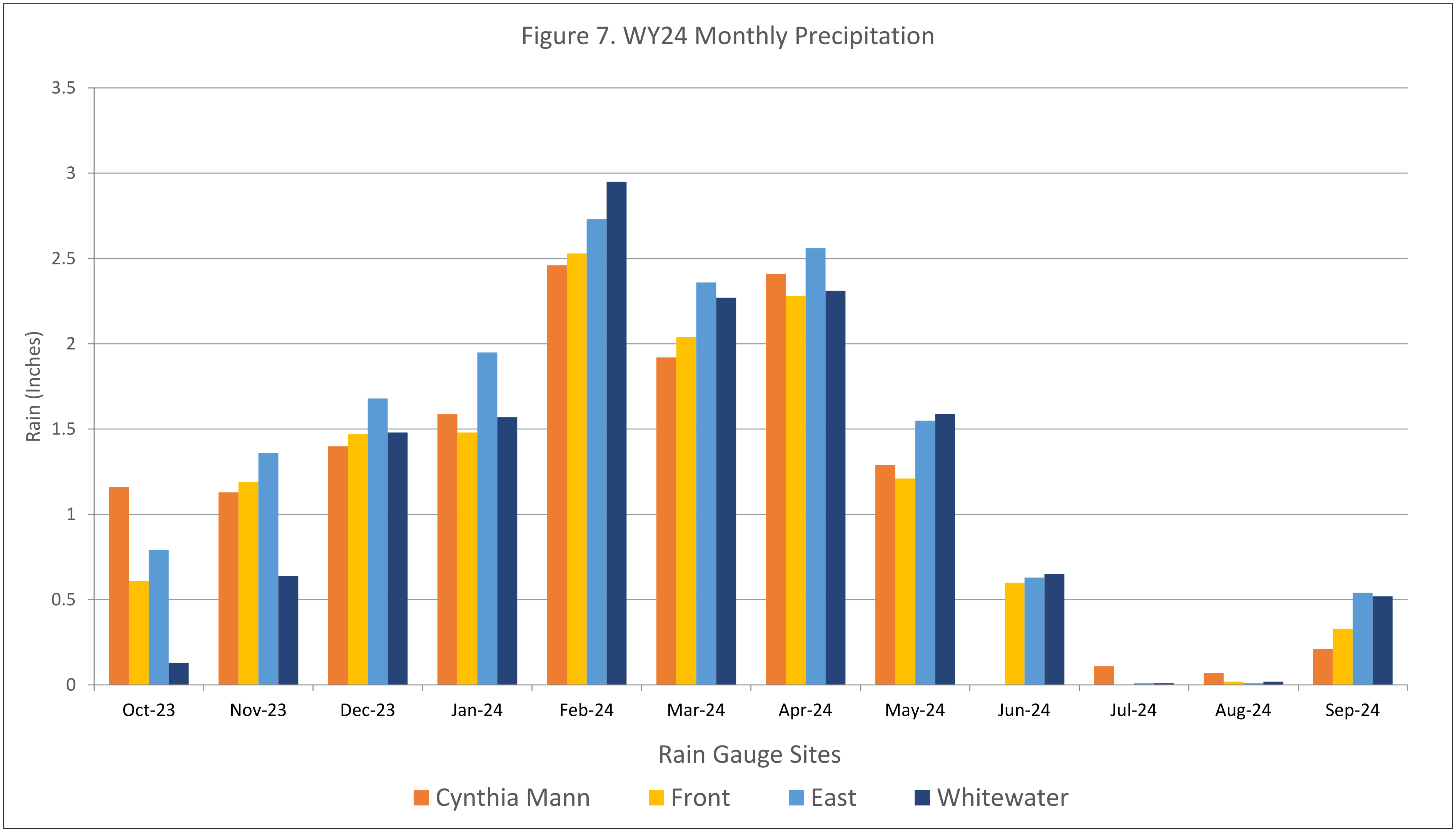


Figure 7. WY24 Monthly Precipitation
Rain (Inches)
3.5
3
2.5
2
1.5
1
0.5
0
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Rain Gauge Sites
Cynthia Mann
Front
East
Whitewater

Appendix B: Tables

Table 1. Monitored Storms and Samples Collected					
Event Date	**Sampling Information**	**Lucky**	**Whitewater**	**Main**	**Americana**
October 10, 2023	Grab samples collected and submitted?	YES	YES	NO	YES
	Composite samples collected and submitted?	YES	NO	NO	YES
	Trigger volume	2,895 gal	800 ft^3	–	2,960 ft^3
	Sampler enable condition (in)	Level > 3.02	Level > 2.60	–	Level > 5.1
	Percent of storm flow sampled	63%	–	–	71% [a]
	Composite sample duration (hrs.)	2	–	–	5
	Storm precipitation (in)	0.18	0.13	0.10	0.10/0.18
November 19, 2023	Grab samples collected and submitted?	YES	YES	YES	YES
	Composite samples collected and submitted?	YES	YES	YES	YES
	Trigger volume	2,895 gal	800 ft^3	3,411 gal	2,960 ft^3
	Sampler enable condition (in)	–	Level > 1.9	–	Level > 6.96
	Percent of storm flow sampled	94%	91%	80%	79%
	Composite sample duration (hrs.)	11	13	13.5	12.5
	Storm precipitation (in)	0.42	0.61	0.50	0.50/0.58
February 1, 2024	Grab samples collected and submitted?	YES	YES	YES	YES
	Composite samples collected and submitted?	YES	YES	YES	YES
	Trigger volume	7,899 gal	2,185 ft^3	9,313 gal	8,071 ft^3
	Sampler enable condition (in)	Level > 2.68	Level > 2.55 [b]	Level > 2.06	Level > 6.46
	Percent of storm flow sampled	90%	104% [c]	89%	83%
	Composite sample duration (hrs.)	14.5	40 [b]	13	13.5
	Storm precipitation (in)	0.31	0.33	0.31	0.31/0.37
February 26, 2024	Grab samples collected and submitted?	YES	YES	YES	YES
	Composite samples collected and submitted?	YES	YES	YES	YES
	Trigger volume	2,895 gal	800 ft^3	3,411 gal	2,960 ft^3
	Sampler enable condition (in)	Level > 2.72	Level > 3.05	Level > 1.87	Level > 7.59
	Percent of storm flow sampled	90%	87%	103% [c]	83%
	Composite sample duration (hrs.)	6.5	9.5	17 [b]	7
	Storm precipitation (in)	0.13	0.21	0.18	0.18/0.18
March 28, 2024	Grab samples collected and submitted?	NO	NO	YES	YES
	Composite samples collected and submitted?	NO	YES	YES	NO
	Trigger volume	–	800 ft^3	3,411 gal	–
	Sampler enable condition (in)	–	Level > 3.3	Level > 1.84	–
	Percent of storm flow sampled	–	82%	77%	–
	Composite sample duration (hrs.)	–	13	11	–
	Storm precipitation (in)	0.53	0.59	0.53	0.53/0.56

Notes:

-- = No data.

[a] Flow data rejected due to area-velocity sensor errors. The EPA runoff calculation was used to estimate the total and sampled event runoff.

[b] Programming error occurred at setup.

[c] Non-stormwater samples were collected prior to the start of storm precipitation or runoff.

Table 2. Field Parameter Results					
Event Date	Monitoring Station	Field Parameters			
		Dissolved Oxygen	pH	Conductivity	Temperature
		mg/L	S.U.	µS/cm	C
October 10, 2023	Lucky	7.38	5.66	81.35	16.47
	Whitewater	7.65	6.28	95.09	17.17
	Main	–	–	–	–
	Americana	8.4	6.53	247.08	16.78
November 19, 2023	Lucky	5.09	7.27	506.44	15.70
	Whitewater	5.82	7.34	460.32	12.96
	Main	9.48	7.64	174.43	10.54
	Americana	– [3J]	– [3J]	– [3J]	14.16
February 1, 2024	Lucky	4.92	7.15	593.29	14.62
	Whitewater	8.42	7.60	287.02	11.10
	Main	10.11	8.03	353.6	6.30
	Americana	10.05	7.73	552.2	8.34
February 26, 2024	Lucky	9.89	8.27	125.9	4.75
	Whitewater	10.88	7.74	749.2	5.97
	Main	9.79	7.94	165.88	9.53
	Americana	10.54	7.53	470.55	8.74
March 28, 2024	Lucky	–	–	–	–
	Whitewater	–	–	–	–
	Main	10.02	7.82	116.08	10.91
	Americana	10.57	7.28	255.40	9.79

Notes:

-- = No data.

[3J] Incomplete field parameter collection on the grab sample data form due to field error.

Table 3. Analytical Results Summary

Event Date	Monitoring Station	Sample ID	Analytical Parameters																			
			E. coli	BOD_5	COD	Chloride	Hardness as CaCO3	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			MPN/100 mL	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
October 10, 2023	Lucky	231010-03-WG/WC	2720.0	17.5 [1J]	83.0 [1J]	–	47.2 [1J]	19.6 [1J]	17.4 [1J]	126 [1J]	0.485 [1J]	–	0.336 [1J]	–	1.97 [1J]	2.6 [1J]	–	0.035 [1J]	–	–	0.65 [1J]	0.0118 [1J]	–
	Whitewater	231010-11-WG	1990.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Main	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Americana	231010-14-WG/WC	129.6	19.7 [2J]	77.0 [2J]	–	< 0.100 [2J]	33.6 [2J]	23.6 [2J]	236 [2J]	0.308 [2J]	0.169 [2J]	0.353 [2J]	0.930 [2J]	1.44 [2J]	5.5 [2J]	0.021 [2J]	0.072 [2J]	8.2 [2J]	0.095 [2J]	2.4 [2J]	< 0.0100 [2J]	22.0 [2J]
November 19, 2023	Lucky	231119-03-WG/WC	2.0	59.5	137	–	35.8	8.6	8.63	136	0.710	0.538	0.530	0.145	1.76	0.93	0.012	0.030	3.5	0.085	0.33	< 0.0100	32.7
	Whitewater	231119-11-WG/WC	99.0	61.9	167	–	45.0	19.7	27.3	180	0.958	0.768	0.527	0.182	2.07	1.7	< 0.0100	0.041	5 [2]	0.21	2.2	< 0.0100	32.3
	Main	231119-12-WG/WC	30.9	19.9	61.0	–	19.3	11.7	16.2	61.0	0.226	0.167	0.610	0.246	1.14	0.66	0.015	0.045	2.7	0.12	1.7	< 0.0100	25.9
	Americana	231119-14-WG/WC	1340.0	36.5	94.0	–	57.8	15.0	21.7	153	0.504	0.402	0.454	0.614	1.27	2.1	0.022	0.061	4.0 [1]	0.11	1.9	< 0.0100	27.2
February 1, 2024	Lucky	240201-03-WG/WC	< 1.0 [4J]	7.27	39.0	6.25	16.0	60.5	18.8	52.8	0.174	0.100	0.173	0.204	0.894	0.85	< 0.0100	0.024	2 [2]	0.056	0.82	< 0.0100	17.5
	Whitewater	240201-11-WG/WC	68.9 [4J]	9.34 [1R]	82.0 [1R]	14.5 [1R]	43.0 [1R]	106 [1R]	58.4 [1R]	139 [1R]	0.321 [1R]	0.171 [1R]	0.169 [1R]	0.375 [1R]	1.33 [1R]	2.4 [1R]	< 0.0100 [1R]	0.058 [1R]	3.9 [2, 1R]	0.18 [1R]	4.8 [1R]	0.0148 [1R]	25.7 [1R]
	Main	240201-12-WG/WC	238.2 [4J]	5.74	77.0	12.7	18.3	103	59.8	64.2	0.143	0.0557	0.351	0.209	1.12	1.4	0.012	0.066	3.6	0.084	4.1	0.0112	18.4
	Americana	240201-14-WG/WC	65.0 [4J]	6.98	55.0	64.1	93.3	89.6	50.7	224	0.213	0.116	0.193	0.905	1.05	3.4	0.016	0.063	3.4 [1]	0.090	4.2	< 0.0100	17.3
February 26, 2024	Lucky	240226-03-WG/WC	37.9	13.5	60.0	8.92	53.2	18.9	18.1	114	0.262	0.124	0.476	0.969	1.71	2.6	0.011	0.031	4.5	0.028	0.72	0.0150	13.5
	Whitewater	240226-11-WG/WC	38.3	12.6	84.0	44.4	77.8	52.3	47.3	182	0.347	0.174	0.596	0.921	2.43	2.6	0.014	0.062	4.4 [2]	0.093	3.8	0.0151	24.5
	Main	240226-12-WG/WC	24.3	13.9 [5J]	119 [5J]	17.0 [5J]	29.8 [5J]	94.7 [5J]	104 [5J]	85.2 [5J]	0.231 [5J]	0.0631 [5J]	0.829 [5J]	0.424 [5J]	1.96 [5J]	1.5 [5J]	0.032 [5J]	0.13 [5J]	5.6 [5J]	0.12 [5J]	6.1 [5J]	0.0191 [5J]	51.7 [5J]
	Americana	240226-14-WG/WC	125.9	12.6	85.0	56.1	102	51.1	54.3	214	0.276	0.106	0.496	0.940	1.47	3.3	0.021	0.097	4.0 [1]	0.063	3.9	0.0148	24.3
March 28, 2024	Lucky	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Whitewater	240328-11-WC	–	8.20	84.0	14.9	31.9	26.2	131	76.0	0.318	0.131	0.236	0.277	1.63	2.0	< 0.0100	0.074	1.9 [2]	0.097	5.8	0.0151	9.8
	Main	240328-12-WG/WC	21.6	5.03	104	5.19	12.6	24.6	91.7	44.2	0.145	0.0494	0.293	0.151	1.18	1.1	< 0.0100	0.071	2.3	0.068	5.9	0.0171	14.7
	Americana	240328-14-WG	365.4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Notes:

– = No data.

[1] Analytical parameter is qualified due to being less than five times the value detected in the rinsate blank. See Table 6 for rinsate blank results.

[2] Analytical parameter is qualified due to being less than five times the value detected in the equipment blank. See Table 6 for equipment blank results.

[1J] Data qualified due to lack of representativeness (50%–75%).

[2J] Data qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

[4J] *E. coli* sample qualified due to exceeded hold time.

[5J] Composite sample qualified due to non-stormwater sample volume comprising less than 10% of the total composite sample volume.

[1R] Composite sample rejected due to non-stormwater sample volume comprising 10% or more of the total composite sample volume.

WG = Wet grab sample.

WC = Wet composite sample.

Table 4. Event Loading for Monitored Drainages in Pounds						
Event Date	Monitoring Station	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
October 10, 2023	Lucky	4.20 [1J]	0.118 [1J]	0.0810 [1J]	–	0.477 [1J]
	Whitewater	–	–	–	–	–
	Main	–	–	–	–	–
	Americana	52.6 [2J]	0.686 [2J]	0.786 [2J]	2.07 [2J]	3.21 [2J]
November 19, 2023	Lucky	10.1	0.832	0.621	0.170	2.06
	Whitewater	139	4.87	2.68	0.926	10.5
	Main	35.5	0.496	1.34	0.540	2.50
	Americana	430	9.98	8.99	12.2	25.1
February 1, 2024	Lucky	16.9	0.157	0.156	0.184	0.805
	Whitewater	168 [1R]	0.92 [1R]	0.750 [1R]	1.08 [1R]	3.81 [1R]
	Main	74.4	0.178	0.437	0.260	1.39
	Americana	825	3.46	3.140	14.7	17.1
February 26, 2024	Lucky	4.48	0.0648	0.118	0.240	0.423
	Whitewater	104	0.762	1.31	2.02	5.34
	Main	70.6 [5J]	0.157 [5J]	0.563 [5J]	0.288 [5J]	1.33 [5J]
	Americana	474	2.41	4.33	8.21	12.8
March 28, 2024	Lucky	–	–	–	–	–
	Whitewater	1266	3.07	2.28	2.68	15.7
	Main	278.2	0.440	0.889	0.458	3.58
	Americana	–	–	–	–	–

Notes:

-- = No data

[1J] Data qualified due to lack of representativeness (50%–75%).

[2J] Data qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

[5J] Composite sample qualified due to non stormwater sample volume comprising less than 10% of the total composite sample volume.

[1R] Composite sample rejected due to non stormwater sample volume comprising 10% or more of the total composite sample volume.

Table 5. Event Loading in Pounds/Acre						
Event Date	Monitoring Station	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
October 10, 2023	Lucky	0.0400 [1J]	0.00112 [1J]	0.000771 [1J]	–	0.00454 [1J]
	Whitewater	–	–	–	–	–
	Main	–	–	–	–	–
	Americana	0.0601 [2J]	0.000784 [2J]	0.000898 [2J]	0.00237 [2J]	0.00367 [2J]
November 19, 2023	Lucky	0.0962	0.00792	0.00591	0.00162	0.0196
	Whitewater	0.279	0.00978	0.00538	0.00186	0.0211
	Main	0.449	0.00628	0.0170	0.00684	0.0316
	Americana	0.491	0.0114	0.0103	0.0139	0.0287
February 1, 2024	Lucky	0.161	0.00150	0.00149	0.00175	0.00767
	Whitewater	0.337 [1R]	0.00185 [1R]	0.00151 [1R]	0.00217 [1R]	0.00765 [1R]
	Main	0.942	0.00225	0.00553	0.00329	0.0176
	Americana	0.943	0.00395	0.00359	0.0168	0.0195
February 26, 2024	Lucky	0.043	0.000617	0.00112	0.00229	0.00403
	Whitewater	0.209	0.00153	0.00263	0.00406	0.0107
	Main	0.894 [5J]	0.00199 [5J]	0.00713 [5J]	0.00365 [5J]	0.0168 [5J]
	Americana	0.542	0.00275	0.00495	0.00938	0.0146
March 28, 2024	Lucky	–	–	–	–	–
	Whitewater	2.54	0.00616	0.00458	0.00538	0.0315
	Main	3.52	0.00557	0.0113	0.00580	0.0453
	Americana	–	–	–	–	–

Notes:

-- = No data.

[1J] Data qualified due to lack of representativeness (50%–75%).

[2J] Data qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

[5J] Composite sample qualified due to non stormwater sample volume comprising less than 10% of the total composite sample volume.

[1R] Composite sample rejected due to non stormwater sample volume comprising 10% or more of the total composite sample volume.

Table 6. QC Sample Summary																							
Event Date	Parent Sample	Sample ID	QC Sample Type	Analytical Parameters																			
				E. coli	BOD_5	COD	Hardness as $CaCO_3$	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate (Ortho-P)	Ammonia	Nitrate + Nitrite	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
				MPN/100 mL	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
October 2, 2023	-	231002-12-003	Equipment blank	-	<2.00	7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<0.003	0.0560	<0.0250	<0.200	<0.0700	<0.0100	<0.100	0.18	<0.009	<0.0100	<0.0100	0.80
October 4, 2023	-	231004-11-003	Equipment blank	-	<2.00	<7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<0.003	<0.0350	<0.0250	<0.200	<0.0700	<0.0100	<0.0100	2.2	0.018	0.0250	<0.0100	1.4
October 5, 2023	-	231005-03-003	Equipment blank	-	<2.00	<7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<0.003	<0.0350	<0.0250	<0.200	<0.0700	<0.0100	<0.0100	0.41	<0.009	0.0210	<0.0100	1.4
	-	231005-14-003	Equipment blank	-	<2.00	<7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<0.003	<0.0350	<0.0250	<0.200	<0.0700	<0.0100	<0.0100	0.50	<0.009	0.0140	<0.0100	0.55
November 19, 2023	Americana grab	231119-14-001	Field blank	< 1.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Americana grab	231119-14-101	Field duplicate	866.4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calculated parent/duplicate RPD			**4%**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
February 1, 2024	Lucky grab	240201-03-001	Field blank	< 1.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Lucky grab	240201-03-101	Field duplicate	2 [4J]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calculated parent/duplicate RPD			**100%**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Whitewater Composite	240201-11-103	Lab duplicate/composite split	—	8.9	83.0	42.4	113	53.8	140	0.312	0.172	0.170	0.378	1.35	2.4	0.011	0.052	3.7	0.19	4.9	0.0127	26.6
February 26, 2024	Main grab	240226-12-001	Field blank	< 1.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Main grab	240226-12-101	Field duplicate	26.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calculated parent/duplicate RPD			**2%**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
March 28, 2024	Main grab	240328-12-001	Field blank	< 1.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Main grab	240328-12-101	Field duplicate	17.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calculated parent/duplicate RPD			**5%**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	240328-14-002	Field blank composite	–	< 2.00	< 7.00	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.003	< 0.0450	< 0.0250	< 0.100	< 0.0700	< 0.0100	< 0.0100	< 0.150	<0.009	< 0.0100	< 0.0100	< 0.500
September 10, 2024	-	240910-11-004	Rinsate blank	–	< 2.00	< 7.00	< 0.100	< 0.3	< 0.900	< 25.0	< 0.0120	0.00795	< 0.0450	< 0.0250	< 0.100	< 0.0500	< 0.0100	< 0.0200	0.38	< 0.0100	0.017	< 0.0100	< 0.500
	–	240910-14-004	Rinsate blank	–	< 2.00	< 7.00	< 0.100	< 0.3	1.00	< 25.0	< 0.0120	< 0.003	< 0.0450	< 0.0250	< 0.100	< 0.0500	< 0.0100	< 0.0200	0.91	< 0.0100	0.026	< 0.0100	1.3
September 17, 2024	–	240917-12-004	Rinsate blank	–	< 2.00	< 7.00	< 0.100	< 0.3	< 0.900	< 25.0	< 0.0120	< 0.003	< 0.0450	< 0.0250	< 0.100	< 0.0500	< 0.0100	< 0.0200	0.20	< 0.0100	< 0.0100	< 0.0100	1.1
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

– = No data.

[4J] *E. coli* sample qualified due to exceeded hold time.

Cells highlighted in gray are flagged for discussion.

Appendix C: Storm Event Reports

Storm Event Report No. 1: October 10, 2023

Storm Event Report No. 2: November 19, 2023

Storm Event Report No. 3: February 1, 2024

Storm Event Report No. 4: February 26, 2024

Storm Event Report No. 5: March 28, 2024

Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2024

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for October 10, 2023

Date: February 14, 2024

To: Monica Lowe

Cc: Steven Turner

Kristen Chisholm

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Limitations:

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES Permit), effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the October 10, 2023, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C[1,2]	G	--	G, C[3]	--
Unqualified Samples:	1G	1G	--	1G	--
Samples Remaining:	2G, 3C	2G, 3C	3G, 3C	2G, 3C	3G, 3C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

[1] Composite samples qualified due to lack of representativeness (50% – 75%).

[2] Incomplete water quality analysis due to low composite sample volume.

[3] Composite samples qualified due to lack of representativeness (50% – 75%) of the calculated flow volume.

Section 3: Storm Event Summary

The October 10, 2023, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from October 10, 2023, is included in Attachment A for reference.

Tuesday, October 10, 2023 – Wednesday, October 11, 2023

- On the morning of October 10, the National Weather Service issued a forecast for widespread rain in the Boise area, starting October 10 at 1800 and ending on October 11 at 0600. The chance of precipitation was 80%, with 0.10 to 0.20 inches of precipitation forecasted.
- Setup was accomplished early morning of October 10. An expected precipitation depth of 0.11 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.
- The runoff started approximately on October 10 at 1216 and ended on October 11 at 2300. There was a runoff break in between October 10 at 0936 and October 11 at 0738.
- Precipitation totals ranged between 0.10 and 0.18 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrograph for the Lucky, Whitewater, and Americana site showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Lucky, Whitewater, Americana and AS_6 monitoring stations were set up on October 10, 2023, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programed into the Lucky, Whitewater, and Americana flowmeters. A site-specific velocity cutoff value was programmed into the AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

Two, two-member team mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on October 10 at 1823. Grab samples for Lucky, Whitewater and Americana were submitted to the West Boise Water Quality Lab (WQL) at 2003 on October 10. Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Lucky and Americana monitoring station and submitted to the West Boise WQL at 1242 on October 11. Whitewater collected two composite samples and was not submitted to the WQL. A partial water quality analysis was conducted on the Lucky composite samples due to low composite sample volume. The volume of the Americana composite sample was sufficient for analysis of all parameters. Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

No quality control samples were collected during the October 10, 2023, storm event.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A. An accepted composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. The composite sample collected at Lucky was qualified because it represented 63% of the storm runoff and lasted approximately 2 hours. The composite sample collected at Americana was calculated using the EPA runoff calculation. After thorough flow and precipitation data review, it was determined that the area-velocity sensor showed inaccurate flow level readings and did not align with the precipitation data. The EPA runoff calculation estimates the total event runoff and sampled runoff values based on impervious surface of the drainage basin (see Figure 4-1 for EPA's runoff calculation equation). Based on the estimated values, approximately 71% of the total storm runoff was sampled therefore the Americana composite samples were qualified. See Table 4-1 for total and sampled runoff calculations and Attachment B.

Runoff Calculation

$$R = P * Pj * Rv$$

Where:

R = Event Runoff (inches)

P = Event Rainfall (inches)

Pj = Fraction of annual rainfall events that produce runoff (0.9)

Rv = Runoff Coefficient

Figure 4-1: EPA Runoff Calculation

Table 4-1. Total and Sample Runoff Calculations					
From Table 2-1 of the Stormwater Outfall Monitoring Plan:					
Americana Subwatershed Area =	875 acres				
Percent Impervious Groundcover =	39 %				
Impervious Groundcover =	481 acres				
Total Runoff from the Americana Watershed:			Sampled Runoff from the Americana Site:		
P =	0.14	inches	P =	0.1	inches
Pj =	0.9		Pj =	0.9	
Rv =	0.39		Rv =	0.39	
R =	0.049	inches	R =	0.035	inches
Calculated Sampled Runoff Precipitation					
Sampled/ Total Sampled Runoff x 100 =	71%				

The acceptance and performance criteria for analytical and non-analytical criteria, except for Lucky and Americana composite samples, were met for this storm event.

Section 5: Notes and Recommendations

Americana

During set-up, a "Replace pump tubing" warning message was encountered when the sampler program was started. The ISCO Operating Manual was used to reset the program settings and reset the pump count. The message did not appear again when the sampler program was restarted.

Main

During set-up, the Main flow meter was providing positive flow readings, but no flow was observed in the storm drain pipe. The flow module was replaced, but this did not resolve the issue. Therefore, the Main site was not targeted at this event.

Data Tables

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	NO	YES	NO
Composite samples collected and submitted?	YES	NO	NO	YES	NO
Trigger volume (gal or ft^3)	2,895 gal	800 ft^3	--	2960 ft^3	221 ft^3
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	Level > 3.02"	Level > 2.60"	--	Level > 5.1"	--
Runoff start time	1216 [1]	1407 [1]	--	1602 [2]	--
Grab sample collection time	1829	1904	--	1823	--
Composite sample stop time	0906	--	--	1150	--
Runoff stop time	1110 [2]	2300 [2]	--	1630 [2]	--
Volume of Discharge Sampled (ft^3)	2,439	--	--	111,486 [2,3]	--
Total runoff volume (ft^3)	3,882	5,838	--	156,081 [2,3]	--
Percent of storm flow sampled (%)	63%	--	--	71% [3]	--
Composite sample duration (hrs)	2	--	--	5	--
Storm Precipitation (in)	0.18	0.13	0.10	0.10/0.18	0.10/0.18
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	8	2	--	11	--
Number of composite bottles filled	1	--	--	1	--
Composite sample volume (Approx.; ml)	5,000	--	--	5,750	--

Notes:

[1] Runoff started on 10/10/23.

[2] Runoff ended on 10/11/23.

[3] Flow data rejected due to area-velocity sensor errors . The EPA runoff calculation was used to estimate the total and sampled event runoff.

Table 2. Field and Analytical Data Summary

Monitoring Station	Sample Date	Sample ID Grab	Field Parameters				Analytical Parameters						
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli	Sample ID Composite	BOD_5	COD	Hardness as $CaCO_3$	Turbidity	TSS
			mg/L	S.U.	uS/cm	C	mpn/100 mL		mg/L	mg/L	mg/L	NTU	mg/L
Lucky	10/10/2023	231010-03-WG	7.38	5.66	81.35	16.47	2720.0	231010-03-WC	17.5 [1J]	83 [1J]	47.2 [1J]	19.6 [1J]	17.4 [1J]
Whitewater	10/10/2023	231010-11-WG	7.65	6.28	95.09	17.17	1990.0	--	--	--	--	--	--
Main	10/10/2023	--	--	--	--	--	--	--	--	--	--	--	--
Americana	10/10/2023	231010-14-WG	8.4	6.53	247.08	16.78	129.6	231010-14-WC	19.7 [2J]	77 [2J]	<0.100 [2J]	33.6 [2J]	23.6 [2J]
AS_6	10/10/2023	--	--	--	--	--	--	--	--	--	--	--	--

Monitoring Station	Analytical Parameters (cont.)														
	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Lucky	126 [1J]	0.485 [1J]	--	0.336 [1J]	--	1.97 [1J]	2.6 [1J]	--	0.035 [1J]	--	--	0.65 [1J]	0.0118 [1J]	--
Whitewater	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Main	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Americana	236 [2J]	0.308 [2J]	0.169 [2J]	0.353 [2J]	0.930 [2J]	1.44 [2J]	5.5 [2J]	0.021 [2J]	0.072 [2J]	8.2 [2J]	0.095 [2J]	2.4 [2J]	<0.0100 [2J]	22.0 [2J]
AS_6	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

- = No data.

[1J] Data qualified due to lack of representativeness (50% - 75%).

[2J] Data qualified due to lack of representativeness (50% - 75%) of the calculated flow volume.

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	10/10/2023	4.20 [1J]	0.118 [1J]	0.0810 [1J]	--	0.477 [1J]
Whitewater	10/10/2023	--	--	--	--	--
Main	10/10/2023	--	--	--	--	--
Americana	10/10/2023	52.6 [2J]	0.686 [2J]	0.786 [2J]	2.07 [2J]	3.21 [2J]
AS_6	10/10/2023	--	--	--	--	--

Notes:

– = No data.

[1J] Data qualified due to lack of representativeness (50% - 75%).

[2J] Data qualified due to lack of representativeness (50% - 75%) of the calculated flow volume.

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 10/10/2023	Time: 4:10 PM	Initials: ML
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)		Yes

Past 72 hr Precip	0.02”
Date and time of expected event	10/10/2023 6 PM – 10/11/2023 6 AM
Expected amount of precipitation	0.10” – 0.20”
Percent chance of precipitation	80%
Percent chance of >0.10” over 12 hours	71%

NWS Update

Targeted Station & Samples

Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☒ Grab	☐ Grab	☒ Grab	☒ Grab	☐ Grab
☒ Composite	☒ Composite	☐ Composite	☒ Composite	☒ Composite	☐ Composite

Type of Forecasted Precipitation

☐ Light Rain ☒ Rain ☐ Rain on Snow
☐ Scattered Showers ☒ Thunder Showers ☐ Snowmelt
☐ Other:

Reasons for Not Targeting a Forecasted Storm and/or Stations

☐ Holiday
☐ Waiting on Antecedent Dry Period – Expires:
☒ Equipment Concerns: Problems with Main measuring flow when none present. Suspect AV sensor.
☐ Other:

Text Forecast

NWS Forecast for: Garden City ID
Issued by: National Weather Service Boise, ID
Last Update: 2:53 pm MDT Oct 10, 2023

This Afternoon: Showers likely and possibly a thunderstorm. Mostly cloudy, with a high near 68. West southwest wind around 6 mph. Chance of precipitation is 60%.
Tonight: Showers and possibly a thunderstorm. Low around 47. West southwest wind around 6 mph becoming calm. Chance of precipitation is 90%. New rainfall amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.
Wednesday: Showers and possibly a thunderstorm before 1pm, then a chance of showers. High near 58. West northwest wind 5 to 14 mph, with gusts as high as 23 mph. Chance of precipitation is 90%.
Wednesday Night: A 30 percent chance of showers before 1am. Patchy fog after 4am. Otherwise, cloudy, then gradually becoming partly cloudy, with a low around 42. Northwest wind 5 to 14 mph, with gusts as high as 23 mph.
Thursday: Patchy fog before 1pm. Otherwise, sunny, with a high near 63. Northwest wind 5 to 10 mph.
Thursday Night: Mostly clear, with a low around 42.
Friday: Sunny, with a high near 68.
Friday Night: Partly cloudy, with a low around 48.

Saturday: Mostly cloudy, with a high near 67.
Saturday Night: A 20 percent chance of showers after 1am. Mostly cloudy, with a low around 49.
Sunday: A 20 percent chance of showers. Partly sunny, with a high near 70.
Sunday Night: Mostly cloudy, with a low around 50.
Monday: Partly sunny, with a high near 74.
Monday Night: A 30 percent chance of showers. Mostly cloudy, with a low around 52.
Tuesday: A chance of showers. Mostly cloudy, with a high near 66.

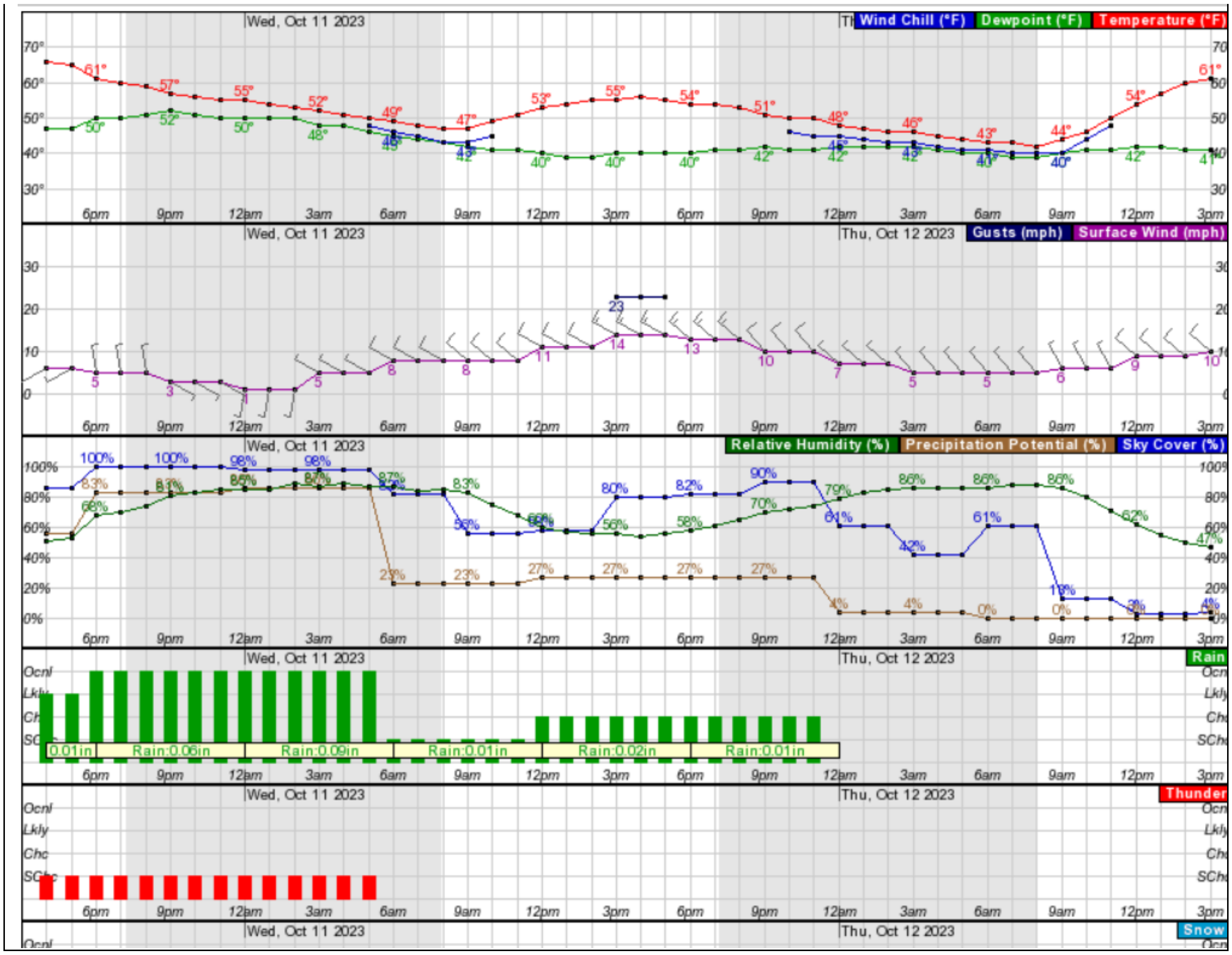
Forecast Discussion

Area Forecast Discussion
National Weather Service Boise ID
233 PM MDT Tue Oct 10 2023

.SHORT TERM...Tonight through Thursday night...Showers have steadily increased through the day in eastern Oregon, and as of 2 PM MDT showers were also getting into the Treasure Valley and Weiser River Valley. No **lightning** has been observed yet, but the incoming upper **trough** is expected to provide enough **instability** later this afternoon and evening for **isolated** thunderstorms within about 50 miles either side of the OR/ID border. Showers will become widespread tonight in western Idaho, then decrease Wednesday morning except along the ID/NV border and the Boise Mountains and eastern Valley County. Total precipitation tonight through Wednesday should be .10 to .20 inch in the valleys and .25 to .50 inch in the mountains, including 1-2 inches of snow above 6500 feet **MSL**. Later Wednesday the main upper low off the northwest coast will move rapidly inland and bring another chance of showers to eastern Oregon, then into western Idaho early Wednesday evening. Late Wednesday night the low will be in eastern Wyoming and clouds will decrease in our **CWA**. Clearing skies will allow **radiational cooling** resulting in patchy **fog** in the valleys Thursday morning. Thursday afternoon and night look **mostly clear**. Winds will be light to moderate westerly tonight and Wednesday morning, then increase almost to advisory speeds Wednesday afternoon in south-central Idaho. Winds will die down rapidly Wednesday night.

.LONG TERM...Friday through Tuesday...A warming and drying trend is forecast Friday through Monday, possibly Tuesday, as another upper **ridge** builds inland from the Pacific. High temps will reach at least the mid 70s in the valleys by Monday, with a 10 percent chance of 80 degrees again. Low temps will moderate more slowly. Unfortunately, latest models bring a lot of **high clouds** in from the Pacific on Saturday which may spoil the view of the annular solar eclipse Saturday morning.

Hourly Forecast



Wed, Oct 11 2023
Thu, Oct 12 2023
Wind Chill (°F)
Dewpoint (°F)
Temperature (°F)
Gusts (mph)
Surface Wind (mph)
Relative Humidity (%)
Precipitation Potential (%)
Sky Cover (%)
Rain
Thunder
Snow
0.01in
Rain:0.06in
Rain:0.09in
Rain:0.01in
Rain:0.02in
Rain:0.01in
6pm 9pm 12am 3am 6am 9am 12pm 3pm 6pm 9pm 12am 3am 6am 9am 12pm 3pm
Ocnl
Lkly
Chc
SChc

Storm Event QA/QC Checklist – Phase I

STORM DATE 231010

A. Event and Data Completeness	Yes	No	N/A	Notes
1. Field data sheets filled out completely and clearly	X			
2. Field parameters reviewed, and any problems/issues addressed	X			WW field parameters difficult to read: verified
3. All samples collected as specified	X			DO is 7.65 mg/L + Sp. Cond. is 95.09 w/Chad Shwend
4. All samples delivered to lab promptly (review chain of custody rpts)	X			
5. Inconsistencies/clarifications discussed with sampling team member	X			
6. All analytical reports from lab received	X			

B. Validation and Verification Methods	Yes	No	N/A	Notes
1. Outliers and unexpected values discussed with lab			X	
2. Appropriate analytical methods used	X			
3. All lab QA samples were within method acceptance criteria	X			
4. All samples reviewed and data qualifiers assigned if needed	X			
5. Data quality objective achieved	X			

C. Specific Storm and Sample QA/QC Criteria	Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)	0.03	0.00	—	0.01	0.01	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.18	0.13	—	0.10/0.18	0.10/0.18	> 0.10"	X		
3. Sampled amount (% of total run-off)	63%	—	—	71%	—	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject		X	
4. Composite sample duration (hours)	2.0	—	—	5.0	—				
4. Ecoli sample holding time (hours)	2.0	1.5	~~2.0~~	2	—	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	—	—	—	1.5	—	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

Lucky – No diss. parameters due to low volume and qualified due to lack of representativeness
WW – composite discarded due to low sample volume (2 subsamples)
Main – Not setup for storm due to flow ~~[illegible]~~ sensor error. Flow readings when no flow present
Americana – Composites qualified for ~~represent~~ lack of representativeness and *Americana flow rejected. Runoff coefficients used to calculate total event runoff + sampled runoff values.
AS-6 – No grabs or composites collected due to low flow.

Reviewed by Steven Turner **Date** 2/12/24 **Approved by** Monica Lowe **Date** 2/12/24

Updated 220718 TL

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.
Step 2. Enter expected precipitation depth (in) in blue cell.
Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth =	0.11
Aliquots per Sample =	17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft^3)	Trigger Vol (ft^3)
Lucky	105	0.157	6582.5	**387**
Whitewater	498	0.069	13621.3	**801**
Main	79	0.246	7760.0	**456**
Main Alt	60	0.200	4791.6	**282**
Americana	875	0.144	50311.8	**2960**
AS_6	204	0.046	3747.0	**220**
State	34	0.160	2172.2	**128**

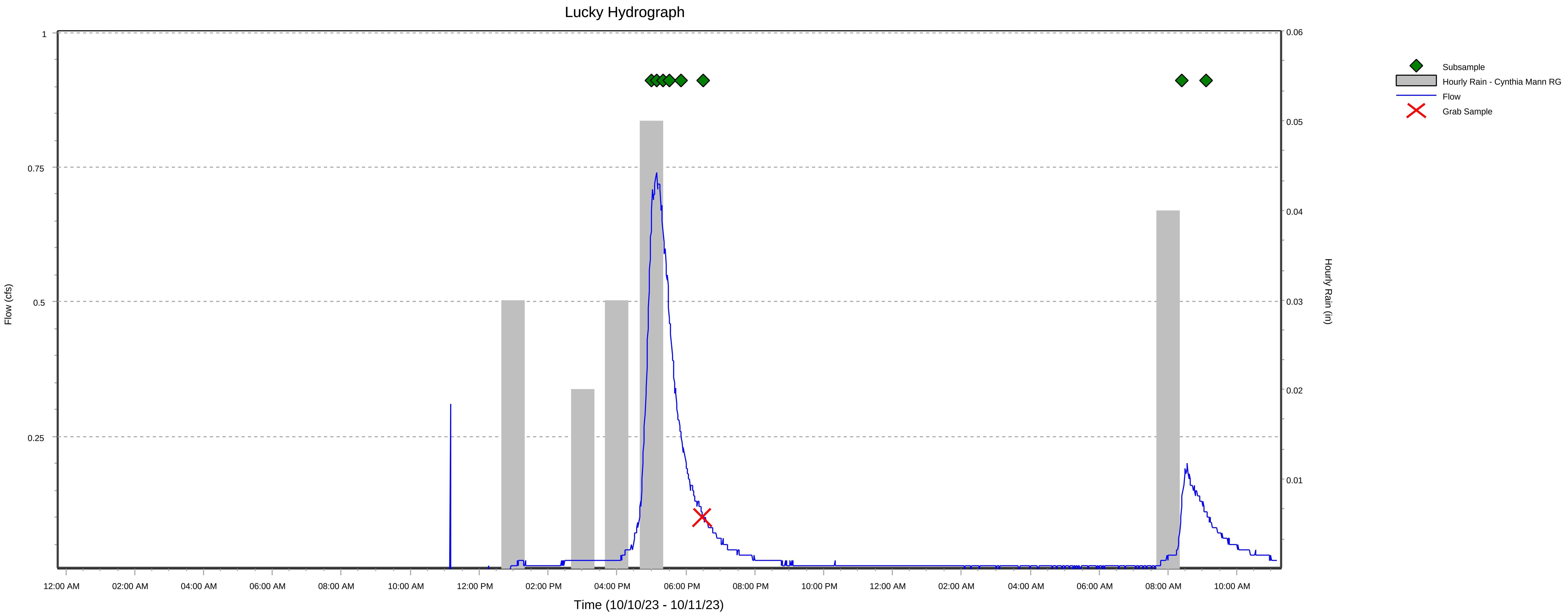
Notes:

Calculated RC = Average (precip (ft) / [volume (ft^3) x area (ft^2)])

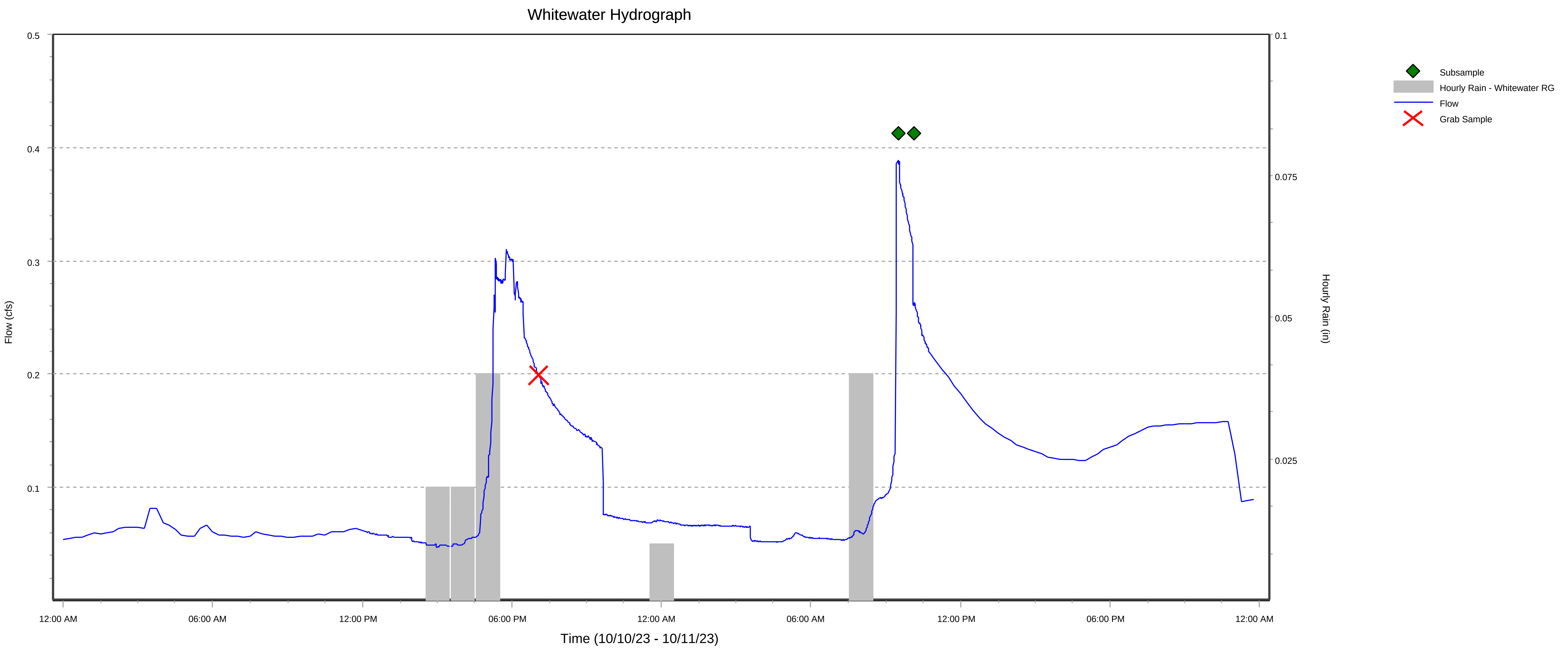
Where precip (ft) is the measured amount from local rain guage, and volume (ft^3) is the measured discharge, and area (ft^2) is the watershed area

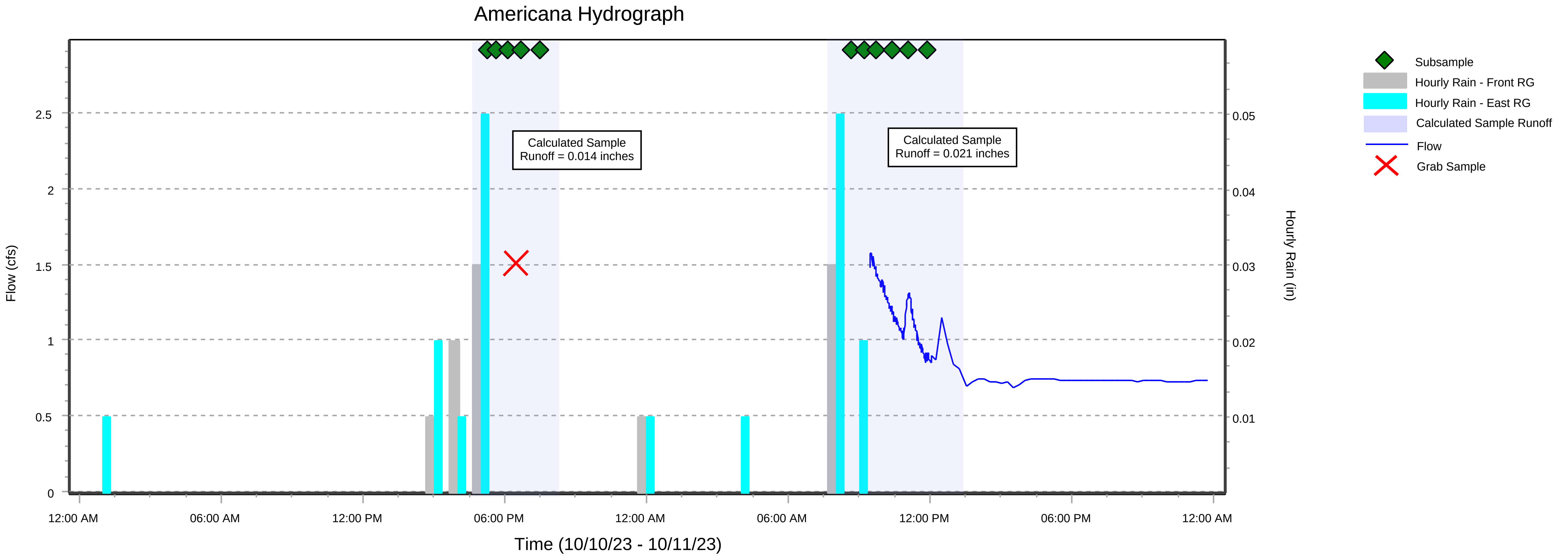
Expected volume (ft^3) = RC x expected precip (ft) x area (ft^2)

Attachment B: Storm Event Hydrographs



Lucky Hydrograph
1
0.75
0.5
0.25
Flow (cfs)
0.06
0.05
0.04
0.03
0.02
0.01
Hourly Rain (in)
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
Time (10/10/23 - 10/11/23)
Subsample
Hourly Rain - Cynthia Mann RG
Flow
Grab Sample


Whitewater Hydrograph
Flow (cfs)
0.5
0.4
0.3
0.2
0.1
Hourly Rain (in)
0.1
0.075
0.05
0.025
12:00 AM
06:00 AM
12:00 PM
06:00 PM
12:00 AM
06:00 AM
12:00 PM
06:00 PM
12:00 AM
Time (10/10/23 - 10/11/23)
Subsample
Hourly Rain - Whitewater RG
Flow
Grab Sample


Americana Hydrograph
Calculated Sample Runoff = 0.014 inches
Calculated Sample Runoff = 0.021 inches
Flow (cfs)
Hourly Rain (in)
0
0.5
1
1.5
2
2.5
0.01
0.02
0.03
0.04
0.05
12:00 AM
06:00 AM
12:00 PM
06:00 PM
12:00 AM
06:00 AM
12:00 PM
06:00 PM
12:00 AM
Time (10/10/23 - 10/11/23)
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Calculated Sample Runoff
Flow
Grab Sample

Attachment C: Field Forms

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Lucky

SET UP

Personnel: KC, ST

Date/Time On-Site: 10/10/23 1042

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
10:51	2.02	0.0	0.0	13.4V

Enable Condition or Velocity Cutoff:	3.02
Deadband:	1.0"
Trigger Volume:	2895 gal

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: KC, ST

Date/Time On-Site: ~~10/10/23 0902~~ KC

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1108	2.15	10.72	0.15		
~~0917~~	~~2.34~~	~~0.41~~	~~0.37~~		12.7

Downloaded to:	Rugged to KC

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	☐ Reset logging interval to 15 minutes
☒ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Composite Sample Collection

STATION: Lucky **Bottle** 1 **of** 1

Personnel: KC, ST **Date/Time On-Site:** 10/11/23 0830

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	231010 ~~-#~~ KC #03 KC -WC
Approx Sample Volume (mL):	5000 ml
Clarity (ex. Clear, Cloudy, Silty):	Clear
Color (ex. Clear, Gray, Tan, Brown, Black):	brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	10/10/23 1700	Successful	13		
2	10/10/23 1710		14		
3	10/10/23 1720		15		
4	10/10/23 1732		16		
5	10/10/23 1751		17		
6	10/10/23 1831		18		
7	10/11/23 0823		19		
8	10/11/23 0906		20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☐ Keep flowmeter running	☐ Install new 15L bottle, add ice
☐ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ________
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: Lucky

Personnel: ZL, CS **Date/Time On-Site:** 10/10/23 1815 pm

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1819	~~[illegible]~~ 2.23	~~[illegible]~~ 7.35	~~[illegible]~~ 0.09	12.9	10/10/23 17:00	

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	231010-03 -WG	10/10/23	1829	☒
Field Duplicate *E.Coli*	231010-03 -101	10/10/23		☐
Field Blank *E.Coli*	231010-03 -001	10/10/23		☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	1830	16.47	7.38	5.66	81.35

Sampler Current Status	
First Subsample Date/Time	10/10/23 1700
Last Subsample Date/Time	10/10/23 1832
# of Subsamples taken	6

Comments:

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: Whitewater

SET UP

Personnel: KC, ST

Date/Time On-Site: 10/10/2023 1146

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1146	1.47	0.06	0.41	—
Enable Condition:	2.6			
Hysteresis:	1.0"			
Flow Pulse Interval:	400 cf			

On-Site
- [x] Replace flowmeter battery, install sampler battery
- [x] Perform decon. cycle
- [x] Install 15L sample bottle, with ice
- [x] Leave bottle lid at site, in a clean re-sealable plastic bag
- [x] Set sampler program parameters
- [x] Check date/time on sampler
- [x] Verify all cable and tubing connections
- [x] Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)
- [x] Direct or Remote; Date/time 10/10/23 1150
- [x] Retrieve data and review recent flow history
- [x] Change Wireless Power Control to Storm Event
- [x] Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- [x] Enable Sampler: On Trigger, and set Sampler Enable equation
- [x] Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: KC, ST

Date/Time On-Site: 10/10/23 0902 1040

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0917	2.34	0.11	0.37	—
Downloaded to:	Rugged 6 / USB			
1040	2.06	0.22	0.90	—

On-Site
- [ ] Replace flowmeter battery ~~batt~~ KC Always connected to power. Not on battery.
- [x] Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)
- [x] Direct or Remote; Date/time 0905
- [x] Retrieve data
- [x] Change Wireless Power Control to Dry Weather
- [x] Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- [x] Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Whitewater

Bottle 1 **of** ____

Personnel: KC, ST

Date/Time On-Site: 10/11/23 1040

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	10/11/23 0920	Successful	13		
2	↓ 0958	|	14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

Sample discarded. wat

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☐ Keep flowmeter running	☐ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ____
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: whitewater

Personnel: ZL, CS **Date/Time On-Site:** 10/10/23 1851

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1851	2.09	0.90	0.81	–	10/10/10 1600	0.08in

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	231010-11 -WG	10/10/23	1904	☒
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

***Note: time on bottle for QC samples is 1200**

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	1904	17.17	7.55	6.28	95.09

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	

Comments:
@1900 No composite samples taken yet. only grabs.

Revised 210924 TL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

TATION: Main

SET UP

Personnel: KC, ST

Date/Time On-Site: 10/10/23 1228

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1230				13.5

Enable Condition or Velocity Cutoff:	
Deadband:	
Trigger Volume:	

- ☒ Install batteries on flowmeter and sampler
- ☐ Perform decon. cycle
- ☐ Install 15L sample bottle, with ice
- ☐ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Verify all cable and tubing connections
- ☐ Check date and time on flowmeter and sampler
- ☐ Set flowmeter program and sampler program parameters
- ☐ Set logging interval to 1 minute
- ☐ Start flowmeter program and sampler program
- ☐ Verify running

flow meter giving readings even though no flow in pipe. Tried swapping flow meter out for a new one. Same readings given. Not targetting Main for this event. Sensor appears to be reading incorrectly.

Comments:

SHUT DOWN

Personnel:

Date/Time On-Site:

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)

Downloaded to:	

If flow monitoring is complete:	**If continuing to monitor flow:**
☐ Halt program on flowmeter	☐ Replace flowmeter battery
☐ Download flowmeter data	☐ Reset logging interval to 15 minutes
☐ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Composite Sample Collection

STATION: ______________________ **Bottle** _____ **of** ______

Personnel: ______________________ **Date/Time On-Site:** ______________________

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1			13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle, add ice
- ☐ Restart program from beginning

Date/Time Restarted: ________________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: Americana

SET UP

Personnel: KC, ST

Date/Time On-Site: 10/10/23 1247

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0916	3.81	0.72	1.544	11.59

Enable Condition:	5.1"
Hysteresis:	1.0"
Flow Pulse Interval:	2960 cf

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time 10/10/23 0920
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments: "Replace pump tubing" warning when program started. Followed manual directions to select pump tube alarm & reset pump count. Error message went away.

SHUT DOWN

Personnel: KC, ST

Date/Time On-Site: 10/11/23 1151

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1151	4.34	0.9	1.593	12.13
Downloaded to:	USB			

On-Site

- ☐ Replace flowmeter battery
- ☐ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☐ Direct or Remote; Date/time 10/11/23 1203
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Americana **Bottle** 1 **of** 1

Personnel: KC, ST **Date/Time On-Site:** 10/10/23 1815

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	231011 - 14 -WC
Approx Sample Volume (mL):	5750 ml
Clarity (ex. Clear, Cloudy, Silty):	Silty
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	10/10/23 17:13	Success	13		
2	1736		14		
3	1804		15		
4	1839		16		
5	1926		17		
6	10/11 839		18		
7	908		19		
8	942		20		
9	1020		21		
10	1103		22		
11	1150		23		
12			24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☒ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☒ Keep flowmeter running	☐ Install new 15L bottle; add ice
☒ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ____________
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: Americana

Personnel: KC ST **Date/Time On-Site:** 101023 18:15

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1817	5.5	1.41	1.768	12.04		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	231010-14 -WG	10/10/23	1823	☒
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	1826	16.78	8.40	6.53	247.08

Sampler Current Status	
First Subsample Date/Time	10/10/23 1713
Last Subsample Date/Time	10/10/23 1804
# of Subsamples taken	3

Comments:

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS-6

SET UP

Personnel: KC, ST

Date/Time On-Site: 10/10/23 1352

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1352	0.0	0.0	0.0	12.5

Enable Condition or Velocity Cutoff:	0.02
Deadband:	
Trigger Volume:	221 cf

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments: Using ~~480~~ 490 mL for sample volume

SHUT DOWN

Personnel: KC, ST

Date/Time On-Site: 10/10/23 950

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1008	0.922	0.01	0.37	198	12.3
Downloaded to:	Rugged 6				

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☐ Download flowmeter data	☐ Reset logging interval to 15 minutes
☐ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments: No composite or grab samples submitted due to low flow levels.

Composite Sample Collection

STATION: ______________________________ **Bottle** _____ **of** ______

Personnel: ______________________________ **Date/Time On-Site:** __________________________

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1			13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle, add ice
- ☐ Restart program from beginning

Date/Time Restarted: ______________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Attachment D: Storm Event Analytical Reports

Report Date: 10/25/2023 11:20

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00321-01	ACST1B	231010-03-WG	Water		10/10/2023	10/10/2023
AC00321-02	ACST1B	231010-11-WG	Water		10/10/2023	10/10/2023
AC00321-03	ACST1B	231010-14-WG	Water		10/10/2023	10/10/2023

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 10/25/2023 11:20

Analysis Report

Location:	ACST1B	Location Description:	231010-03-WG
Date/Time Collected:	10/10/2023 18:29		
Lab Number:	AC00321-01	Sample Collector:	C.S
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234049	2720.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	10/10/23 20:25	10/11/23 20:25	LRF	D
Wet Chemistry										
Chlorine Screen	B234050	Absent				SM 4500-CL G-2000 mod	10/10/23	10/10/23 20:11	JAL	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 10/25/2023 11:20

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	231010-11-WG
Date/Time Collected:	10/10/2023 19:04		
Lab Number:	AC00321-02	Sample Collector:	C.S
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234049	1990.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	10/10/23 20:25	10/11/23 20:25	LRF	D
Wet Chemistry										
Chlorine Screen	B234050	Absent				SM 4500-CL G-2000 mod	10/10/23	10/10/23 20:11	JAL	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 10/25/2023 11:20

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	231010-14-WG
Date/Time Collected:	10/10/2023 18:23		
Lab Number:	AC00321-03	Sample Collector:	K.C
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234049	129.6	MPN/100 mL	1.0	1.0	IDEXX - Colilert	10/10/23 20:25	10/11/23 20:25	LRF	
Wet Chemistry										
Chlorine Screen	B234050	Absent				SM 4500-CL G-2000 mod	10/10/23	10/10/23 20:11	JAL	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 10/25/2023 11:20

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B234049									
Blank (B234049-BLK1)									
E. Coli	Absent						10/11/2023	LRF	
LCS (B234049-BS1)									
E. Coli				Present			10/11/2023	LRF	
Duplicate (B234049-DUP2)	Source ID: AC00321-01RE1								
E. Coli					Pass	128	10/11/2023	LRF	

Report Date: 10/25/2023 11:20

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

The contents of this report apply to the sample(s) analyzed in accordance with the Chain of Custody document.
No duplication of this report is allowed, except in its entirety

Ada County Highway District
Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Steven Turner
Chad Schwend
& Zuly Lopa

Lab# AC00321

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-01	10/10/23		1829		231010-03-WG	CS	X	X												X					1
-02	↓		1904		231010-11-WG	CS	X	X												X					1
-03	↓		1823		231010-14-WG	KC	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Krist Chisholm	10/10/23 2003	[signature] 10.10.23	2003

Report Date: 12/04/2023 12:04

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00322-01	ACST1C	231010-03-WC	Water		10/11/2023	10/11/2023
Comments: Low volume. No dissolved parameters were collected.						
AC00322-02	ACST1C	231010-14-WC	Water		10/11/2023	10/11/2023

Report Date: 12/04/2023 12:04

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	231010-03-WC
Date/Time Collected:	10/10/2023 17:00 - 10/11/2023 09:06		
Lab Number:	AC00322-01	Sample Collector:	K.C
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234335	0.336	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/28/23	10/28/23 12:02	MEC	
BOD5	B234067	17.5	mg/L	2.00	2.00	SM 5210 B-2016	10/12/23	10/17/23 9:13	RKT	
COD	B234066	83.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	10/12/23	10/12/23 9:31	JAL	
TKN	B234085	1.97	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	10/13/23	10/13/23 18:35	EDM	
Total Dissolved Solids	B234048	126	mg/L	20.0	20.0	SM 2540 C-2015	10/12/23	10/13/23 11:02	RKT	
Total Suspended Solids	B234076	17.4	mg/L	0.900	0.900	SM 2540 D-2015	10/12/23	10/12/23 9:41	RKT	
Turbidity	B234051	19.6	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	10/11/23	10/11/23 13:52	KMR	
Total Metals										
Mercury	B234059	0.0118	ug/L	0.0100	0.0100	EPA 245.1	10/12/23	10/13/23 8:03	SAS	
Arsenic	B234105	2.6	ug/L	0.070	0.070	EPA 200.8	10/18/23	10/19/23 15:37	DMW	
Cadmium	B234105	0.035	ug/L	0.010	0.010	EPA 200.8	10/18/23	10/19/23 15:37	DMW	
Calcium	B234177	15.8	mg/L	0.0400	0.0400	EPA 200.7	10/19/23	10/20/23 10:04	AMO	
Lead	B234105	0.65	ug/L	0.010	0.010	EPA 200.8	10/18/23	10/19/23 15:37	DMW	
Magnesium	B234177	1850	ug/L	80.0	80.0	EPA 200.7	10/19/23	10/20/23 10:04	AMO	
Phosphorus as P	B234177	0.485	mg/L	0.0120	0.0120	EPA 200.7	10/19/23	10/20/23 10:04	AMO	
Hardness	B234177	47.2	mg/L	0.100	0.100	SM 2340 B-2011	10/19/23	10/20/23 10:04	AMO	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 12/04/2023 12:04

Analysis Report

Location:	ACST1C	Location Description:	231010-14-WC
Date/Time Collected:	10/10/2023 17:13 - 10/11/2023 11:50		
Lab Number:	AC00322-02	Sample Collector:	K.C
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234335	0.353	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/28/23	10/28/23 11:59	MEC	
BOD5	B234067	19.7	mg/L	2.00	2.00	SM 5210 B-2016	10/12/23	10/17/23 9:06	RKT	
COD	B234066	77.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	10/12/23	10/12/23 9:31	JAL	
Nitrate-Nitrite, as N	B234143	0.930	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	10/17/23	10/17/23 15:14	BAK	
TKN	B234085	1.44	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	10/13/23	10/13/23 18:36	EDM	
Total Dissolved Solids	B234048	236	mg/L	20.0	20.0	SM 2540 C-2015	10/12/23	10/13/23 11:03	RKT	
Total Suspended Solids	B234076	23.6	mg/L	0.900	0.900	SM 2540 D-2015	10/12/23	10/12/23 9:42	RKT	
Turbidity	B234051	33.6	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	10/11/23	10/11/23 14:00	KMR	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234046	0.169	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	10/11/23	10/11/23 14:01	JAL	
Total Metals										
Mercury	B234059	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	10/12/23	10/13/23 7:14	SAS	U
Arsenic	B234105	5.5	ug/L	0.070	0.070	EPA 200.8	10/18/23	10/19/23 15:46	DMW	
Cadmium	B234105	0.072	ug/L	0.010	0.010	EPA 200.8	10/18/23	10/19/23 15:46	DMW	
Calcium	B234177	<0.0400	mg/L	0.0400	0.0400	EPA 200.7	10/19/23	10/20/23 10:09	AMO	U
Lead	B234105	2.4	ug/L	0.010	0.010	EPA 200.8	10/18/23	10/19/23 15:46	DMW	
Magnesium	B234177	<80.0	ug/L	80.0	80.0	EPA 200.7	10/19/23	10/20/23 10:09	AMO	U
Phosphorus as P	B234799	0.308	mg/L	0.0120	0.0120	EPA 200.7	11/30/23	12/1/23 10:09	AMO	
Hardness	B234177	<0.100	mg/L	0.100	0.100	SM 2340 B-2011	10/19/23	10/20/23 10:09	AMO	U
Dissolved Metals										
Cadmium	B233966	0.021	ug/L	0.010	0.010	EPA 200.8	10/13/23	10/13/23 17:50	DMW	
Copper	B233966	8.2	ug/L	0.15	0.15	EPA 200.8	10/13/23	10/13/23 17:50	DMW	
Lead	B233966	0.095	ug/L	9.00E-3	9.00E-3	EPA 200.8	10/13/23	10/13/23 17:50	DMW	
Zinc	B233966	22.0	ug/L	0.50	0.50	EPA 200.8	10/13/23	10/13/23 17:50	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B234048									
Blank (B234048-BLK1)									
Total Dissolved Solids	<20	mg/L					10/13/2023	RKT	U
LCS (B234048-BS1)									
Total Dissolved Solids			95.4	90-110			10/13/2023	RKT	
Duplicate (B234048-DUP1) Source ID: RW00036-02									
Total Dissolved Solids					0.322	10	10/13/2023	RKT	
Batch: B234051									
Blank (B234051-BLK1)									
Turbidity	<0.3	NTU					10/11/2023	KMR	U
LCS (B234051-BS1)									
Turbidity			102	90-110			10/11/2023	KMR	
Duplicate (B234051-DUP1) Source ID: AC00322-01									
Turbidity					0.340	25	10/11/2023	KMR	
Batch: B234066									
Blank (B234066-BLK1)									
COD	<7	mg/L					10/12/2023	JAL	U
LCS (B234066-BS1)									
COD			99.3	90-110			10/12/2023	JAL	
Duplicate (B234066-DUP1) Source ID: RW00036-05									
COD					2.44	10	10/12/2023	JAL	
Duplicate (B234066-DUP2) Source ID: AC00322-01									
COD					1.20	10	10/12/2023	JAL	
Batch: B234067									
Blank (B234067-BLK1)									
BOD5	<2	mg/L					10/17/2023	RKT	U
LCS (B234067-BS1)									
BOD5			102	84.6-115.4			10/17/2023	RKT	
LCS (B234067-BS2)									
BOD5			107	84.6-115.4			10/17/2023	RKT	
Duplicate (B234067-DUP1) Source ID: BB03290-02									
BOD5					1.56	30	10/17/2023	RKT	D

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Wet Chemistry (Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Batch: B234076									
Blank (B234076-BLK1)									
Total Suspended Solids	<0.9	mg/L					10/12/2023	RKT	U
LCS (B234076-BS1)									
Total Suspended Solids			97.2	90-110			10/12/2023	RKT	
Duplicate (B234076-DUP1) Source ID: BB03292-01									
Total Suspended Solids					1.65	20	10/12/2023	RKT	
Duplicate (B234076-DUP2) Source ID: ST00053-02									
Total Suspended Solids					1.26	20	10/12/2023	RKT	
Batch: B234085									
Blank (B234085-BLK1)									
TKN	<0.2	mg/L					10/13/2023	EDM	U
LCS (B234085-BS1)									
TKN			97.9	80-120			10/13/2023	EDM	
Duplicate (B234085-DUP1) Source ID: WB02755-06									
TKN					1.60	20	10/13/2023	EDM	D
Matrix Spike (B234085-MS1) Source ID: WB02755-06									
TKN			89.1	80-120			10/13/2023	EDM	D
Matrix Spike Dup (B234085-MSD1) Source ID: WB02755-06									
TKN			89.8	80-120	0.285	20	10/13/2023	EDM	D
Batch: B234143									
Blank (B234143-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					10/17/2023	BAK	U
Blank (B234143-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					10/17/2023	BAK	U
LCS (B234143-BS1)									
Nitrate-Nitrite, as N			97.8	90-110			10/17/2023	BAK	
LCS (B234143-BS2)									
Nitrate-Nitrite, as N			96.0	90-110			10/17/2023	BAK	
Duplicate (B234143-DUP1) Source ID: BB03281-02									
Nitrate-Nitrite, as N					0.457	10	10/17/2023	BAK	
Duplicate (B234143-DUP2) Source ID: RW00037-01									
Nitrate-Nitrite, as N					0.344	10	10/17/2023	BAK	
Duplicate (B234143-DUP3) Source ID: WB02749-07									
Nitrate-Nitrite, as N					0.195	10	10/17/2023	BAK	D
Matrix Spike (B234143-MS1) Source ID: BB03281-02									
Nitrate-Nitrite, as N			97.7	90-110			10/17/2023	BAK	
Matrix Spike (B234143-MS2) Source ID: RW00037-01									
Nitrate-Nitrite, as N			91.7	90-110			10/17/2023	BAK	
Matrix Spike (B234143-MS3) Source ID: WB02749-07									
Nitrate-Nitrite, as N			92.9	90-110			10/17/2023	BAK	D

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B234143 (Continued)									
Matrix Spike Dup (B234143-MSD1) Source ID: BB03281-02									
Nitrate-Nitrite, as N			95.1	90-110	1.49	10	10/17/2023	BAK	
Matrix Spike Dup (B234143-MSD2) Source ID: RW00037-01									
Nitrate-Nitrite, as N			91.9	90-110	0.117	10	10/17/2023	BAK	
Matrix Spike Dup (B234143-MSD3) Source ID: WB02749-07									
Nitrate-Nitrite, as N			91.6	90-110	0.567	10	10/17/2023	BAK	D
Batch: B234335									
Blank (B234335-BLK1)									
Ammonia, as N	<0.035	mg/L					10/28/2023	MEC	U
LCS (B234335-BS1)									
Ammonia, as N			104	90-110			10/28/2023	MEC	
Duplicate (B234335-DUP1) Source ID: BB03292-01									
Ammonia, as N					0.0151	10	10/28/2023	MEC	
Duplicate (B234335-DUP2) Source ID: WB02765-06									
Ammonia, as N					1.26	10	10/28/2023	MEC	
Matrix Spike (B234335-MS1) Source ID: BB03292-01									
Ammonia, as N			103	80-120			10/28/2023	MEC	
Matrix Spike (B234335-MS2) Source ID: WB02765-06									
Ammonia, as N			108	80-120			10/28/2023	MEC	
Matrix Spike Dup (B234335-MSD1) Source ID: BB03292-01									
Ammonia, as N			102	80-120	0.611	10	10/28/2023	MEC	
Matrix Spike Dup (B234335-MSD2) Source ID: WB02765-06									
Ammonia, as N			109	80-120	0.658	10	10/28/2023	MEC	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Wet Chemistry									
Batch: B234046									
Blank (B234046-BLK1)									
Orthophosphate, as P	<0.003	mg/L					10/11/2023	JAL	U
LCS (B234046-BS1)									
Orthophosphate, as P			98.8	90-110			10/11/2023	JAL	
Duplicate (B234046-DUP1) Source ID: LS01715-02									
Orthophosphate, as P					2.17	10	10/11/2023	JAL	D
Duplicate (B234046-DUP2) Source ID: WB02755-08									
Orthophosphate, as P					0.279	10	10/11/2023	JAL	D
Matrix Spike (B234046-MS1) Source ID: LS01715-02									
Orthophosphate, as P			98.4	90-110			10/11/2023	JAL	D
Matrix Spike (B234046-MS2) Source ID: WB02755-08									
Orthophosphate, as P			100	90-110			10/11/2023	JAL	D
Matrix Spike Dup (B234046-MSD1) Source ID: LS01715-02									
Orthophosphate, as P			97.1	90-110	0.659	10	10/11/2023	JAL	D
Matrix Spike Dup (B234046-MSD2) Source ID: WB02755-08									
Orthophosphate, as P			100	90-110	0.0201	10	10/11/2023	JAL	D

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 12/04/2023 12:04

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B234059									
Blank (B234059-BLK1)									
Mercury	<0.01	ug/L					10/13/2023	SAS	U
LCS (B234059-BS1)									
Mercury			99.0	85-115			10/13/2023	SAS	
Duplicate (B234059-DUP1) Source ID: AC00322-02									
Mercury					NR	20	10/13/2023	SAS	U
Duplicate (B234059-DUP2) Source ID: RW00036-06									
Mercury					NR	20	10/13/2023	SAS	U
Matrix Spike (B234059-MS1) Source ID: AC00322-02									
Mercury			108	70-130			10/13/2023	SAS	
Matrix Spike (B234059-MS2) Source ID: RW00036-06									
Mercury			111	70-130			10/13/2023	SAS	
Matrix Spike Dup (B234059-MSD1) Source ID: AC00322-02									
Mercury			107	70-130	0.688	20	10/13/2023	SAS	
Matrix Spike Dup (B234059-MSD2) Source ID: RW00036-06									
Mercury			110	70-130	0.399	20	10/13/2023	SAS	
Batch: B234105									
Blank (B234105-BLK1)									
Arsenic	<0.070	ug/L					10/19/2023	DMW	U
Cadmium	<0.010	ug/L					10/19/2023	DMW	U
Lead	<0.010	ug/L					10/19/2023	DMW	U
LCS (B234105-BS1)									
Arsenic			96.6	85-115			10/19/2023	DMW	
Cadmium			98.7	85-115			10/19/2023	DMW	
Lead			101	85-115			10/19/2023	DMW	
Duplicate (B234105-DUP1) Source ID: AC00322-01									
Arsenic					0.428	20	10/19/2023	DMW	
Cadmium					5.71	20	10/19/2023	DMW	
Lead					1.07	20	10/19/2023	DMW	
Matrix Spike (B234105-MS1) Source ID: AC00322-01									
Arsenic			96.8	70-130			10/19/2023	DMW	
Cadmium			99.6	70-130			10/19/2023	DMW	
Lead			99.3	70-130			10/19/2023	DMW	
Matrix Spike Dup (B234105-MSD1) Source ID: AC00322-01									
Arsenic			94.6	70-130	1.86	20	10/19/2023	DMW	
Cadmium			98.6	70-130	0.985	20	10/19/2023	DMW	
Lead			98.6	70-130	0.635	20	10/19/2023	DMW	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Total Metals (Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Batch: B234177									
Blank (B234177-BLK1)									
Calcium	<0.04	mg/L					10/20/2023	AMO	U
Magnesium	<80	ug/L					10/20/2023	AMO	U
Phosphorus as P	<0.012	mg/L					10/20/2023	AMO	U
LCS (B234177-BS1)									
Calcium			98.9	85-115			10/20/2023	AMO	
Magnesium			102	85-115			10/20/2023	AMO	
Phosphorus as P			105	85-115			10/20/2023	AMO	
Duplicate (B234177-DUP1) Source ID: LS01721-06									
Calcium					0.292	20	10/20/2023	AMO	
Magnesium					2.76	20	10/20/2023	AMO	
Phosphorus as P					5.61	20	10/20/2023	AMO	
Matrix Spike (B234177-MS1) Source ID: LS01721-06									
Calcium			77.5	70-130			10/20/2023	AMO	
Magnesium			91.3	70-130			10/20/2023	AMO	
Phosphorus as P			97.6	70-130			10/20/2023	AMO	
Matrix Spike Dup (B234177-MSD1) Source ID: LS01721-06									
Calcium			98.3	70-130	9.81	20	10/20/2023	AMO	
Magnesium			103	70-130	10.2	20	10/20/2023	AMO	
Phosphorus as P			112	70-130	11.9	20	10/20/2023	AMO	
Batch: B234661									
Blank (B234661-BLK1)									
Phosphorus as P	<0.012	mg/L					11/22/2023	AMO	U
LCS (B234661-BS1)									
Phosphorus as P			100	85-115			11/22/2023	AMO	
Duplicate (B234661-DUP1) Source ID: BB03382-01									
Phosphorus as P					2.18	20	11/22/2023	AMO	
Matrix Spike (B234661-MS1) Source ID: BB03382-01									
Phosphorus as P			94.0	70-130			11/22/2023	AMO	
Matrix Spike Dup (B234661-MSD1) Source ID: BB03382-01									
Phosphorus as P			93.7	70-130	0.164	20	11/22/2023	AMO	

Report Date: 12/04/2023 12:04

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B234799									
Blank (B234799-BLK1)									
Phosphorus as P	<0.012	mg/L					12/01/2023	AMO	U
LCS (B234799-BS1)									
Phosphorus as P			104	85-115			12/01/2023	AMO	
Duplicate (B234799-DUP1) Source ID: EP00294-01									
Phosphorus as P					0.399	20	12/01/2023	AMO	
Matrix Spike (B234799-MS1) Source ID: EP00294-01									
Phosphorus as P			101	70-130			12/01/2023	AMO	
Matrix Spike Dup (B234799-MSD1) Source ID: EP00294-01									
Phosphorus as P			101	70-130	0.280	20	12/01/2023	AMO	
Dissolved Metals									
Batch: B233966									
Blank (B233966-BLK1)									
Cadmium	<0.010	ug/L					10/13/2023	DMW	U
Copper	<0.15	ug/L					10/13/2023	DMW	U
Lead	<0.0090	ug/L					10/13/2023	DMW	U
Zinc	<0.50	ug/L					10/13/2023	DMW	U
LCS (B233966-BS1)									
Cadmium			91.2	85-115			10/13/2023	DMW	
Copper			92.8	85-115			10/13/2023	DMW	
Lead			93.2	85-115			10/13/2023	DMW	
Zinc			95.4	85-115			10/13/2023	DMW	
Duplicate (B233966-DUP1) Source ID: NP00059-05									
Cadmium					NR	10	10/13/2023	DMW	U
Copper					0.902	10	10/13/2023	DMW	
Lead					9.73	10	10/13/2023	DMW	
Zinc					1.54	10	10/13/2023	DMW	
Matrix Spike (B233966-MS1) Source ID: NP00059-05									
Cadmium			94.2	70-130			10/13/2023	DMW	
Copper			87.9	70-130			10/13/2023	DMW	
Lead			90.5	70-130			10/13/2023	DMW	
Zinc			91.6	70-130			10/13/2023	DMW	
Matrix Spike Dup (B233966-MSD1) Source ID: NP00059-05									
Cadmium			93.3	70-130	0.903	10	10/13/2023	DMW	
Copper			88.5	70-130	0.546	10	10/13/2023	DMW	
Lead			90.2	70-130	0.360	10	10/13/2023	DMW	
Zinc			92.5	70-130	0.902	10	10/13/2023	DMW	

Report Date: 12/04/2023 12:04

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Steven Turner

Lab# AC00322	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-01	10/10/23	10/11/23	1700	0906	231010-03-WC	KC	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-02	10/10/23	10/11/23	1713	1150	231010-~~18~~ 14-WC	KC	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)
Kristen Chisholm	10/11/23 1242	Sandra We[illegible]

Comments/Special Instructions:

Low volume samples. Please try to split for optimum number of analysis listed above.
AC00322-01: no dissolved parameters collected.
Sample AC00322-02 correct name is 231010-14-WC.
See attached email. -Alb on back

AC00322

April Griffith

From: Kristen Chisholm <Kchisholm@achdidaho.org>
Sent: Wednesday, October 11, 2023 1:33 PM
To: April Griffith
Cc: Steven Turner; Monica Lowe
Subject: [External] Re: Site ID

Hi April,

Sorry, the correct ID is 14.

Thank you!

On Oct 11, 2023, at 1:30 PM, April Griffith <agriffith@cityofboise.org> wrote:

Caution: This is an external email and has a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your IT Department

Hi Steven,

Sorry, I forgot to include you in this email.

Thanks,
April

From: April Griffith
Sent: Wednesday, October 11, 2023 1:30 PM
To: Kristen Chisholm <Kchisholm@achdidaho.org>
Cc: Monica Lowe <mlowe@achdidaho.org>
Subject: Site ID

Hi Kristen,

One of the sites on the COC says -12, but the container says -14. Which is correct?

Thanks,
April

ACHD SAMPLE FILTRATION, SPLITTING, AND COMPOSITING FOR METALS

	Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
#1	Lims#: AC00322-01 Location: ACSTIC Sample Date: 10-11-23 Sample ID: -03	Split Date: 10-11-23 Start Split: 1300 Start Filter: N/A Comp Time: N/A Analyst: EDM/DKT	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: CC00047-20 Comp Jug: N/A SS Tubing: CC00047-39 SSA2 SS Helper: ↓ Stir Bar: SS00047-22 Connector: CC00040-06 (x2)	☒Teflon Total ☒TKN ~~☒Teflon Diss (F)~~ ☒NH_3 ☒Hg CVAA ~~☒NO_x (F)~~ ☒BOD ~~☒ortho-P (F)~~ ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	High capacity 0.45µm No DISS. Parameters
#2	Lims#: AC00322-02 Location: ACSTIC Sample Date: 10-11-23 Sample ID: -14	Split Date: 10-11-23 Start Split: 1311 Start Filter: 1315 Comp Time: N/A Analyst: EDM/DKT/SAS	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: Comp Jug: N/A SS Tubing: CC00047-26 SS Helper: SSA4 Stir Bar: CC00047-22 Connector: CC00041-31 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	High capacity 0.45µm
#3	Lims#: Location: Sample Date: Sample ID: No other samples	Split Date: Start Split: Start Filter: Comp Time: Analyst:	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: Comp Jug: SS Tubing: CC00044-92 SS Helper: SSA5 ↓ Stir Bar: CC00047-25 Connector: CC00039-71 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	High capacity 0.45µm
#4	Lims#: Location: Sample Date: Sample ID:	Split Date: Start Split: Start Filter: Comp Time: Analyst:	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: Comp Jug: SS Tubing: CC00047-18 SS Helper: SSA7 ↓ Stir Bar: CC00041-AC Connector: CC00040-06 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	High capacity 0.45µm
#5	Lims#: Location: Sample Date: Sample ID:	Split Date: Start Split: Start Filter: Comp Time: Analyst:	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: Comp Jug: SS Tubing: CC00047-39 SS Helper: SS9 ↓ Stir Bar: CC00044-AD Connector: CC00039-71 CC00040-06	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	High capacity 0.45µm

ACHD Sample Filtration, Splitting, and Compositing for metals

#6

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: ___ Location: NO other samples Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: ___ Comp Jug: ___ SS Tubing: CC00039-99 SS Helper: SS17 ↓ Stir Bar: CC00044-AD Connector: CC00041-06 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐___ ☒COD ☐___	High capacity 0.45µm
Lims#: ___ Location: ___ Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☐Other: ___	Coll Jug: ___ Comp Jug: ___ SS Tubing: ___ SS Helper: ___ Stir Bar: ___ Connector: ___	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐___ ☒COD ☐___	
Lims#: ___ Location: ___ Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☐Other: ___	Coll Jug: ___ Comp Jug: ___ SS Tubing: ___ SS Helper: ___ Stir Bar: ___ Connector: ___	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐___	
Lims#: ___ Location: ___ Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☐Other: ___	Coll Jug: ___ Comp Jug: ___ SS Tubing: ___ SS Helper: ___ Stir Bar: ___ Connector: ___	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐___ ☒COD ☐___	
Lims#: ___ Location: ___ Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☐Other: ___	Coll Jug: ___ Comp Jug: ___ SS Tubing: ___ SS Helper: ___ Stir Bar: ___ Connector: ___	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐___ ☒COD ☐___	

Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2024

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for November 19, 2023

Date: February 14, 2023

To: Monica Lowe

Cc: Steven Turner

Kristen Chisholm

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES Permit), effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the November 19, 2023, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C[1,2]	G	--	G, C[3]	--
November 19, 2023	G, C	G, C	G, C	G[4], C	G, C
Unqualified Samples:	2G, 1C	2G, 1C	1G, 1C	2G, 1C	1G, 1C
Samples Remaining:	1G, 2C	1G, 2C	2G, 2C	1G, 2C	2G, 2C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

[1] *Composite samples qualified due to lack of representativeness (50% – 75%).*

[2] *Incomplete water quality analysis due to low composite sample volume.*

[3] *Composite samples qualified due to lack of representativeness (50% – 75%) of the calculated flow volume.*

[4] *Grab sample qualified due to incomplete field parameter collection.*

Section 3: Storm Event Summary

The November 19, 2023, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from November 19, 2023, is included in Attachment A for reference.

Saturday, November 18, 2023 (Sampling Event Communication and Set Up)

- On the afternoon of November 18, the National Weather Service issued a forecast for widespread rain in the Boise area, starting November 18 at 2100 and ending on November 19 at 0000. The chance of precipitation was greater than 80%, with 0.20 to 0.30 inches of precipitation forecasted.
- Setup was accomplished in the afternoon of November 18. An expected precipitation depth of 0.11 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.

Sunday, November 19, 2023 (Storm Event)

- Moderate rain first started at approximately November 19 at 0000 and ended at 1642.
- Precipitation totals ranged between 0.42 and 0.61 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrograph for the Lucky, Whitewater, Main, Americana and AS_6 site showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Lucky, Whitewater, Main, Americana and AS_6 monitoring stations were set up on November 18, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programed into the Whitewater and Americana flowmeters. A site-specific velocity cutoff value was programmed into Lucky, Main, and AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

Two, two-member team mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on November 19 at 0110. Grab samples for Lucky, Whitewater, Main, and Americana were submitted to the West Boise Water Quality Lab (WQL) at 0758 on November 19. The AS_6 grab sample was submitted at 1342 on November 19 to the WQL.

Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Whitewater, Main, and Americana monitoring station and submitted to the WQL at 1716 on November 19. The composite samples at the AS_6 monitoring station was submitted at 1342 and the Lucky monitoring station at 1603 on November 19 to the WQL.

Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the November 19, 2023, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Americana monitoring station. The analytical results for these samples are included in Table 4.

Table 4-1. Quality Control Samples

Sample ID	Sample Type	Parent Sample	Conclusions
231119-14-001	Field blank	Americana grab	No *E. coli* detection was reported in the field blank.
231119-14-101	Field duplicate	Americana grab	Relative percent difference was within the acceptable range.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A.

An acceptable composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. All composite samples met the criteria.

The acceptance and performance criteria for analytical and non-analytical criteria were met for this storm event.

Section 5: Notes and Recommendations

Whitewater

The small sampler battery died at approximately 0537 on Bottle No. 2. The battery was replaced, and the sampler program was then restarted at 0800 and continued until the end of the storm event. The battery issue resulted due to setting up the sampler program earlier in the week. It is advised to check on the small battery prior to the storm event if set-up is completed a day earlier.

AS_6

The AS_6 composite samples had two distribution errors at 0650 and 0740 on Bottle No. 2. The AS_6 sampler battery later died after taking the last composite sample but was then replaced. The sample program was restarted at 0826. There was also a No-Liquid-Error at 0953, but no succeeding errors occurred until the end of the event. It is advised to check on the small battery prior to the storm event if set-up is complete a day earlier.

Data Tables

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	YES	YES	YES
Composite samples collected and submitted?	YES	YES	YES	YES	YES
Trigger volume (gal or ft^3)	2895 gal	800 ft^3	3411 gal	2960 ft^3	221 ft^3
Velocity cutoff (fps)	0.02	--	0.02	--	0.02
Sampler enable condition (in)	--	Level > 1.9"	--	Level > 6.96"	--
Runoff start time	0038	0102	0029	0000	0251
Grab sample collection time	0156	0247	0122	0151	0620
Composite sample stop time	1328	1528	1442	1407	1221
Runoff stop time	1500	1552	1446	1642	1615
Volume of Discharge Sampled (ft^3)	17,699	73,819	28,140	251,136	19,247
Total runoff volume (ft^3)	18,782	81,522	35,160	317,217	21,217
Percent of storm flow sampled (%)	94%	91%	80%	79%	91%
Composite sample duration (hrs)	11	13	13.5	12.5	9
Storm Precipitation (in)	0.42	0.61	0.50	0.50/0.58	0.50/0.58
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	46	82	60	88	81
Number of composite bottles filled	2	3	3	4	4
Composite sample volume (Approx.; ml)	27,250	36,750	36,000	50,000	54,500

Notes:

– = No data.

Table 2. Field and Analytical Data Summary

Monitoring Station	Sample Date	Sample ID Grab	Field Parameters				Analytical Parameters																					
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli	Sample ID Composite	BOD_5	COD	Hardness as $CaCO_3$	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			mg/L	S.U.	uS/cm	C	mpn/100 mL		mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Lucky	11/19/2023	231119-03-WG	5.09	7.27	506.44	15.7	2.0	231119-03-WC	59.5	137	35.8	8.6	8.63	136	0.710	0.538	0.530	0.145	1.76	0.93	0.012	0.030	3.5	0.085	0.33	<0.0100	32.7
Whitewater	11/19/2023	231119-11-WG	5.82	7.34	460.32	12.96	99.0	231119-11-WC	61.9	167	45.0	19.7	27.3	180	0.958	0.768	0.527	0.182	2.07	1.7	<0.0100	0.041	5.0	0.21	2.2	<0.0100	32.3
Main	11/19/2023	231119-12-WG	9.48	7.64	174.43	10.54	30.9	231119-12-WC	19.9	61.0	19.3	11.7	16.2	61.0	0.226	0.167	0.610	0.246	1.14	0.66	0.015	0.045	2.7	0.12	1.7	<0.0100	25.9
Americana	11/19/2023	231119-14-WG	-- [3J]	-- [3J]	-- [3J]	14.16	1340.0	231119-14-WC	36.5	94.0	57.8	15.0	21.7	153	0.504	0.402	0.454	0.614	1.27	2.1	0.022	0.061	4.0	0.11	1.9	<0.0100	27.2
AS_6	11/19/2023	231119-206-WG	9.44	7.18	184.28	9.04	1732.9	231119-206-WC	162	329	43.3	21.1	28.7	263	2.06	1.71	0.563	0.136	3.17	1.7	0.029	0.059	8.5	0.93	3.3	<0.0100	61.8

Notes:

-- = No data.

[3J] Grab sample qualified due to incomplete field parameter collection.

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	11/19/2023	10.1	0.832	0.621	0.170	2.06
Whitewater	11/19/2023	139	4.87	2.68	0.926	10.5
Main	11/19/2023	35.5	0.496	1.34	0.540	2.50
Americana	11/19/2023	430	9.98	8.99	12.2	25.1
AS_6	11/19/2023	38.0	2.73	0.746	0.180	4.20

Table 4. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli mpn/100 mL
11/19/2023	231119-14-WG	231119-14-001	Field Blank	<1.0
11/19/2023	231119-14-WG	231119-14-101	Field Duplicate	866.4
Calculated parent/duplicate RPD				4%
Allowable RPD				40%

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 11/18/2023	Time: 2:30 PM	Initials: ST
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)		Yes

Past 72 hr Precip	0.00”
Date and time of expected event	11/18/2023
Expected amount of precipitation	0.2 – 0.3”
Percent chance of precipitation	90%
Percent chance of >0.10” over 12 hours	Upper 80%

NWS Update

Steven from the NWS said that the rain will be moving in between 9:00 PM and midnight.
It will taper off around 6:00 – 7:00 AM on Sunday morning.
Between those times, their models are predicting .16 - .42”. I asked if he could narrow the amount down and he said 0.26” is the average.
The heavier rain will start later around 11:00 PM to 1:00 AM.

Targeted Station & Samples

Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab
☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite

Type of Forecasted Precipitation

☐ Light Rain
☒ Rain
☐ Rain on Snow
☐ Scattered Showers
☐ Thunder Showers
☐ Snowmelt
☐ Other:

Reasons for Not Targeting a Forecasted Storm and/or Stations

☐ Holiday
☐ Waiting on Antecedent Dry Period – Expires:
☐ Equipment Concerns:
☐ Other:

Text Forecast

Forecast Discussion

Hourly Forecast

Storm Event QA/QC Checklist – Phase I

STORM DATE 11/19/23				
A. Event and Data Completeness	**Yes**	**No**	**N/A**	**Notes**
1. Field data sheets filled out completely and clearly	X			
2. Field parameters reviewed, and any problems/issues addressed	X			Noted missed parameters in sample status
3. All samples collected as specified	X			
4. All samples delivered to lab promptly (review chain of custody rpts)	X			
5. Inconsistencies/clarifications discussed with sampling team member	X			Americana field parameters were incomplete.
6. All analytical reports from lab received	X			
B. Validation and Verification Methods	**Yes**	**No**	**N/A**	**Notes**
1. Outliers and unexpected values discussed with lab			X	
2. Appropriate analytical methods used	X			
3. All lab QA samples were within method acceptance criteria	X			
4. All samples reviewed and data qualifiers assigned if needed	X			
5. Data quality objective achieved	X			

C. Specific Storm and Sample QA/QC Criteria	Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)	0.00"	0.00"	0.00"	0.00"	0.00"	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.42	0.61	0.50	0.50/0.58	0.50/0.58	> 0.10"	X		
3. Sampled amount (% of total run-off)	94%	91%	80%	79%	91%	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		
4. Composite sample duration (hours)	11	13	13.5	12.5	9				
4. Ecoli sample holding time (hours)	7.5	6.5	7.5	7.0	7.5	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	3.0	2.5	3.5	3.5	1.5	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

Americana – Field parameters (DO, pH, cond) not recorded during grab sample collection.

Reviewed by Steven Turner **Date** 2/12/24 **Approved by** Monica Lowe **Date** 2/12/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.
Step 2. Enter expected precipitation depth (in) in blue cell.
Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth = 0.11
Aliquots per Sample = 17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft^3)	Trigger Vol (ft^3)
Lucky	105	0.157	6582.5	**387**
Whitewater	498	0.069	13621.3	**801**
Main	79	0.246	7760.0	**456**
Main Alt	60	0.200	4791.6	**282**
Americana	875	0.144	50311.8	**2960**
AS_6	204	0.046	3747.0	**220**
State	34	0.160	2172.2	**128**

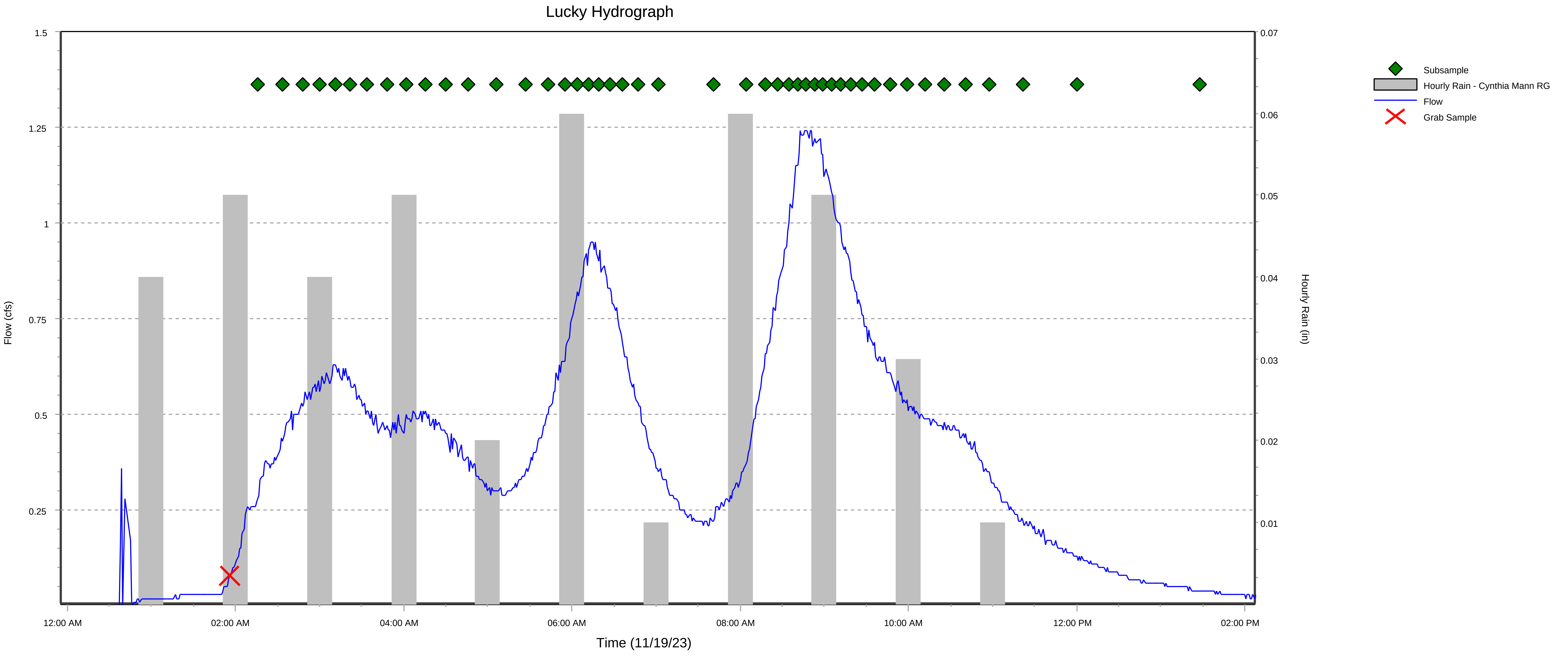
Notes:

Calculated RC = Average (precip (ft) / [volume (ft^3) x area (ft^2)])

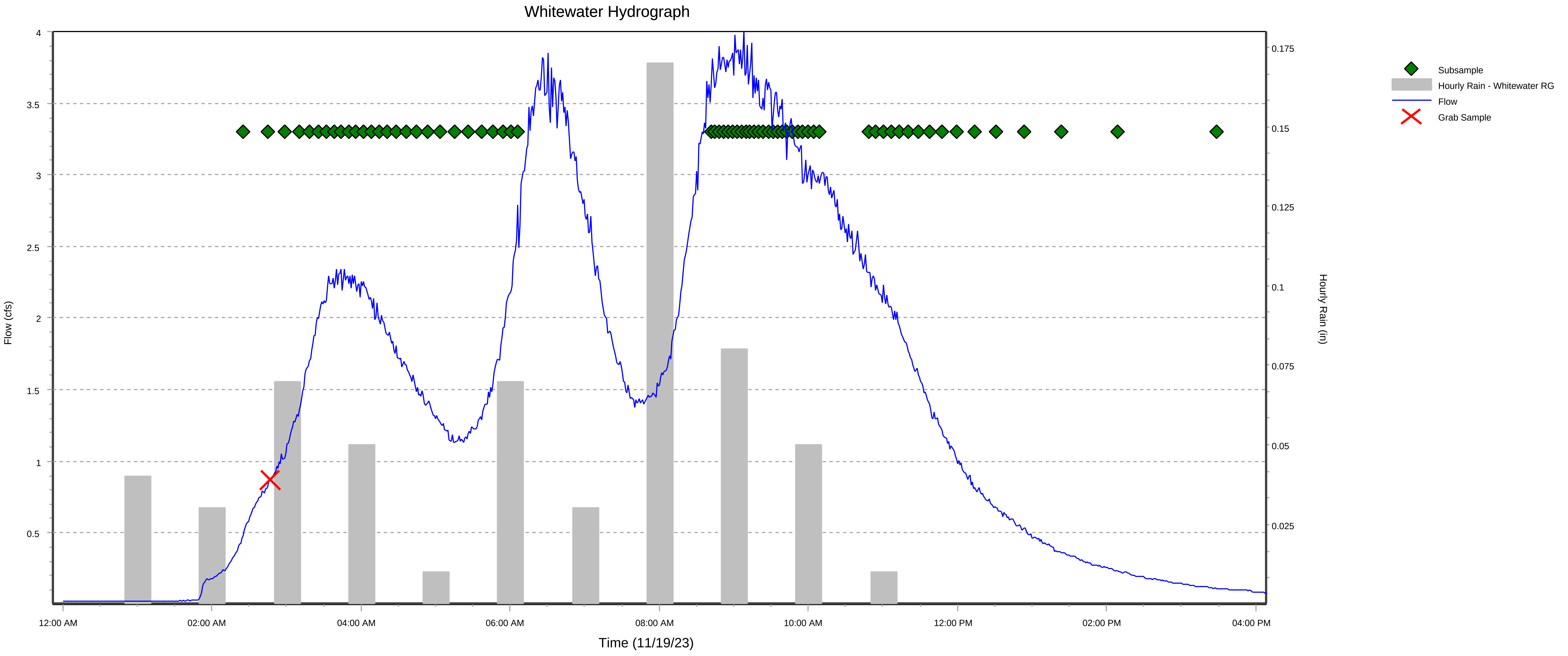
Where precip (ft) is the measured amount from local rain guage, and volume (ft^3) is the measured discharge, and area (ft^2) is the watershed area

Expected volume (ft^3) = RC x expected precip (ft) x area (ft^2)

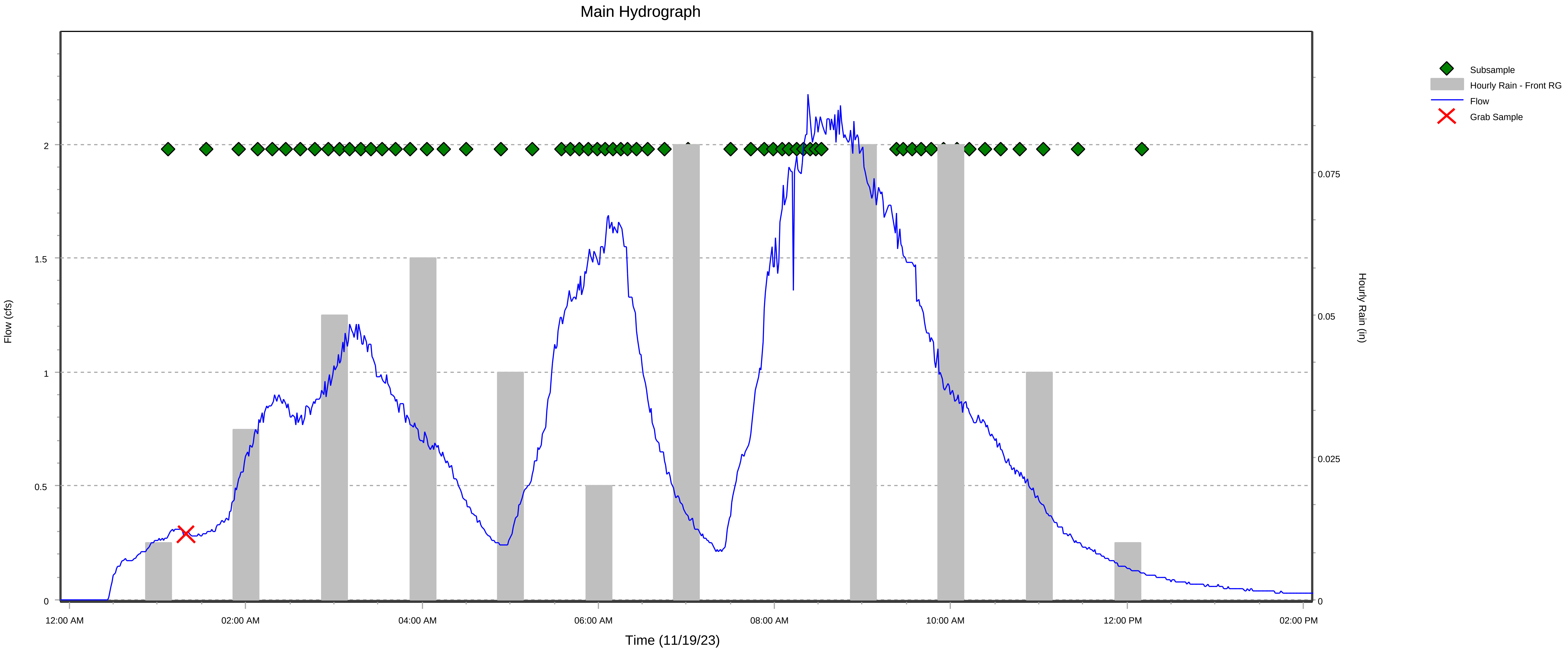
Attachment B: Storm Event Hydrographs

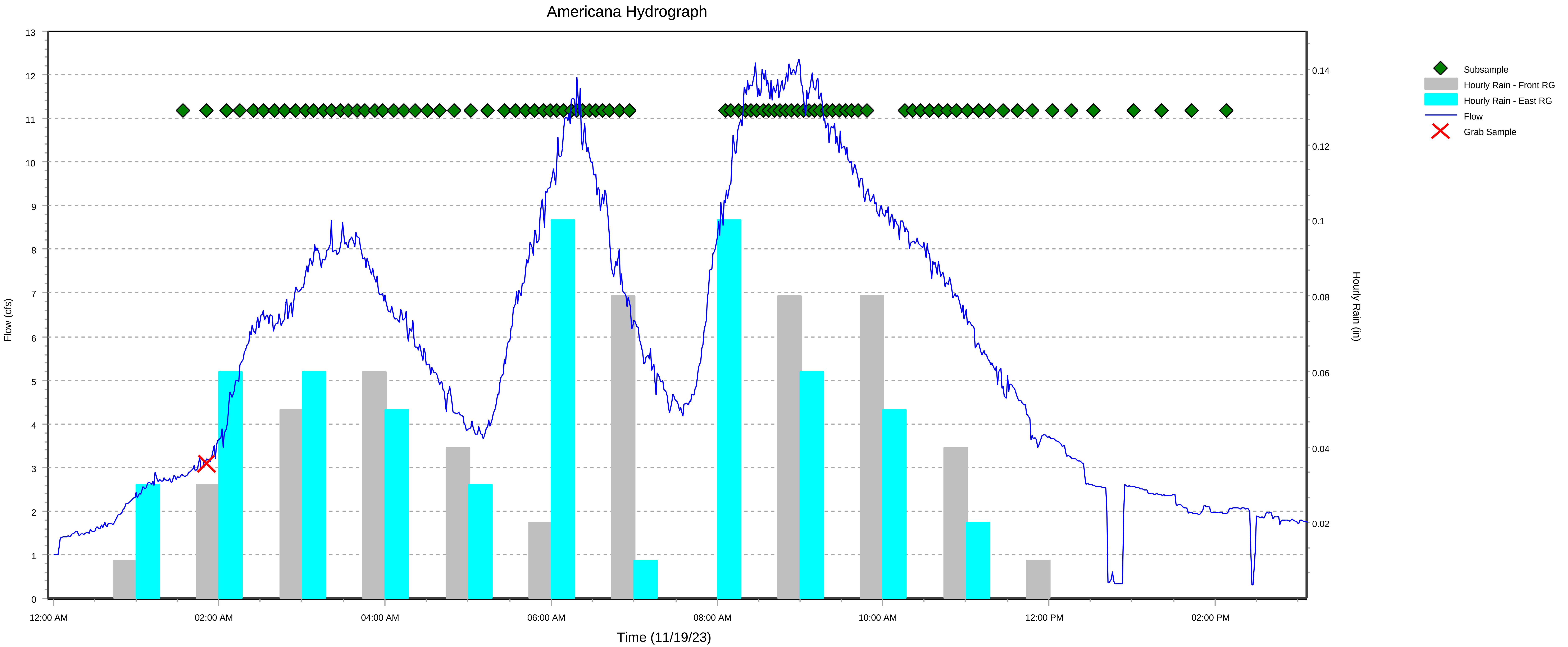


Lucky Hydrograph
Flow (cfs)
1.5
1.25
1
0.75
0.5
0.25
Hourly Rain (in)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
Time (11/19/23)
Subsample
Hourly Rain - Cynthia Mann RG
Flow
Grab Sample

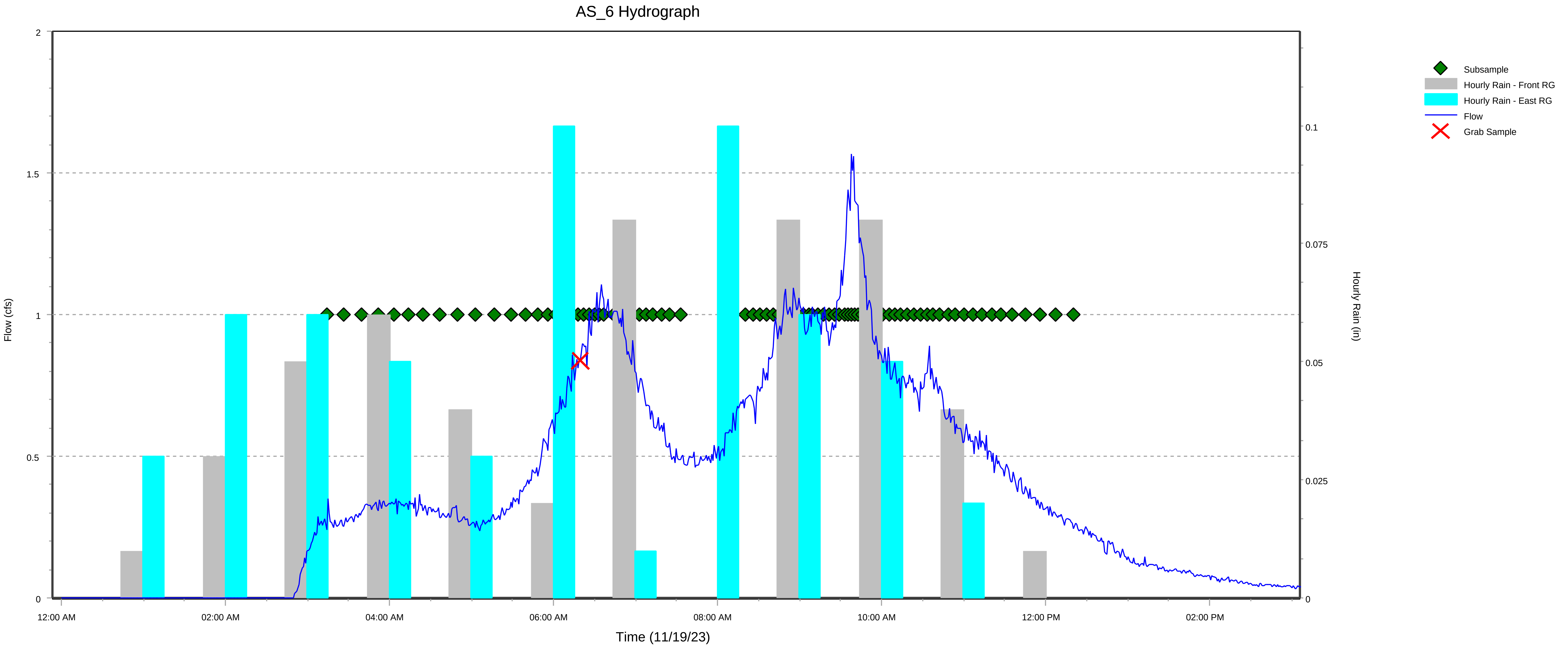


Whitewater Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (11/19/23)
4
3.5
3
2.5
2
1.5
1
0.5
0.175
0.15
0.125
0.1
0.075
0.05
0.025
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
Subsample
Hourly Rain - Whitewater RG
Flow
Grab Sample


Main Hydrograph
Subsample
Hourly Rain - Front RG
Flow
Grab Sample
Flow (cfs)
Hourly Rain (in)
Time (11/19/23)
0
0.5
1
1.5
2
0
0.025
0.05
0.075
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM



Americana Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (11/19/23)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
0.02
0.04
0.06
0.08
0.1
0.12
0.14
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample


AS_6 Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (11/19/23)
0
0.5
1
1.5
2
0
0.025
0.05
0.075
0.1
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample

Attachment C: Field Forms

Brown AND Caldwell

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

LOCATION: Lucky

SET UP

Personnel: ST, KC

Date/Time On-Site: 11/17/23 13:34

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
13:47	1.8	73.34	1.36	13.1
13 52	1.7	0.00	0	

Enable Condition or Velocity Cutoff:	vc ~~2895 gal~~ 0.02
Deadband:	1.0
Trigger Volume:	2895 gal

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☐ Start flowmeter program and sampler program
- ☐ Verify running

Comments: Readings when first turned on, now reading 0's after updating. No flow in Pipe.

SHUT DOWN

Personnel: ST, KC

Date/Time On-Site: 11/19/23 15:18

Time	Level (in)	Flow (~~cfs~~ GPM)	Velocity (fps)	Total (cf)	Battery (V)
1522	1.91	5.76	0.1		12.8
Downloaded to:		USB-3 @ 15:22			

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	☐ Reset logging interval to 15 minutes
☒ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Composite Sample Collection

STATION: Lindsey
Personnel: ST, KC

Bottle 1 **of** 2
Date/Time On-Site: 11/19/23 710

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	231119-63 -WC
Approx Sample Volume (mL):	1400mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	11/19/23 216	Success	13	506	
2	234		14	527	
3	248		15	543	
4	300		16	555	
5	311		17	604	
6	322		18	612	
7	334		19	619	
8	348		20	627	
9	402		21	636	
10	416		22	647	
11	430		23	702	
12	446		24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☒ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle, add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
	Date/Time Restarted: 11/19/23 712
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

TATION: Lucky Bottle 2 of 2
onnel: ST, KC Date/Time On-Site: ______________

[x] Halt Sampler program	
[x] Put lid on sample bottle; label sample bottle	
Sample ID:	23119-03 -WC
Approx Sample Volume (mL):	13250
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	9/19/23 741	Success	13	927	
2	804		14	936	
3	815		15	947	
4	827		16	959	
5	835		17	1012	
6	841		18	1026	
7	847		19	1041	
8	853		20	1058	
9	859		21	1122	
10	905		22	1200	
11	912		23	1328	
12	919		24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
[x] Power off sampler	☐ Keep flowmeter running
[x] Verify flowmeter is running	☐ Install new 15L bottle; add ice
[x] Add ice to sample transport cooler	☐ Restart program from beginning
☐ Complete COC form; arrange transport to lab	**Date/Time Restarted:** ______________
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

HJ
GK

Grab Sample Data Form

STATION: Lucky

Personnel: Hannah Johnson + Gabi Karoa **Date/Time On-Site:** 11/19/2023 1:30 AM

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
2:06 am	2.11	9.46 gpm	0.13	12.8		

9.46 ? ?

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	231119-03 -WG	11/19/23	01:38 am	☑
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

***Note: time on bottle for QC samples is 1200**

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	0156 am	15.70	5.09	7.27	506.44

Sampler Current Status	
First Subsample Date/Time	N/A @ 2:06 am
Last Subsample Date/Time	
# of Subsamples taken	

Comments:

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

STATION: Whitewater

SET UP

Personnel: KC, ST

Date/Time On-Site: 11/17/23 1418

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1418	0.88	0.02	0.28	12.8

Enable Condition:	1.9
Hysteresis:	1
Flow Pulse Interval:	800 cf

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☐ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time Set w/ keypad
- ☐ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: ST

Date/Time On-Site: 11/20 1248

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1259	3.08	0.495	1.083	12.6
Downloaded to:	Steven's USB			

On-Site

- ☐ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 1248
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Whitewater **Bottle** 1 **of** 3
Personnel: ST, KC **Date/Time On-Site:** 11/14/2023 522

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	231119 - 11 -WC
Approx Sample Volume (mL):	11750 mL
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	11/19/23 224	Success	13	408	
2	244		14	414	
3	258		15	421	
4	304		16	428	
5	318		17	436	
6	325		18	444	
7	332		19	453	
8	338		20	503	
9	344		21		
10	350		22		
11	355		23		
12	401		24		

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning

Date/Time Restarted: 11/19/23 505
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 2 **of** 3
Personnel: KC, ST **Date/Time On-Site:** 11/19/23 ~800

☐ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	231119 - 11 -WC
Approx Sample Volume (mL):	15500 ml
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 514	Success	13		
2	526	↓	14		
3	537	Power failed	15		
4	546		16		
5	554		17		
6	600		18		
7	606	↓	19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments: Used same bottle with 24 samples on next Page.

If sampling is complete:
- ☐ Power off sampler
- ☐ Verify Flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- KC ~~☒ Install new 15L bottle; add ice~~ Used same bottle w/ two samples.
- ☒ Restart program from beginning
- **Date/Time Restarted:** 11/19/23 ~800
- ☒ Verify running

Liquid Vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** ~~3~~ 2 **of** 3
Personnel: KC, ST **Date/Time On-Site:** 11/19/23 1045

☒ Halt Sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	231119-11 -WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 ~~821~~ KC 841	Success	13	923	
2	~~7~~ 844		14	927	
3	848		15	931	
4	851		16	935	
5	855		17	938	
6	858		18	942	
7	902		19	946	
8	905		20	951	
9	909		21	955	
10	912		22	959	
11	916		23	1004	
12	920		24	1008	

Comments: Used same bottle with 2 samples on previous page.

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler	☒ Keep flowmeter running
☐ Verify flowmeter is running	☒ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
☐ Complete COC form; arrange transport to lab	**Date/Time Restarted:** 11/19/23 1047
	☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 3 **of** 3
Personnel: KC, ST **Date/Time On-Site:** 11/19/23 1625

☒ Halt Sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	231119-11 -WC
Approx Sample Volume (mL):	9500
Clarity (ex. Clear, Cloudy, Silty):	Murky / Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 1048	Success ~~1048~~ KC	13	1253	Success
2	1054	~~1052~~	14	1323	
3	1100		15	1405	
4	1106		16	1528	
5	1113		17		
6	1120		18		
7	1128		19		
8	1137		20		
9	1147		21		
10	1159		22		
11	1213		23		
12	1231		24		

Comments:

If sampling is complete:
- ☒ Power off sampler
- ☒ Verify flowmeter is running
- ☒ Add ice to sample transport cooler
- ☒ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning
- **Date/Time Restarted:** ______________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: WhiteWater

Personnel: HRJ GTK **Date/Time On-Site:** 11/19/23 2:35 am

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
02:51 am	3.91	0.94	1.44			

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	231119-11 -WG	11/19/23	02 39 am	☑
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

***Note: time on bottle for QC samples is 1200**

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	02:47 am	12.96	5.82	7.34	460.32

Sampler Current Status	
First Subsample Date/Time	2:24 am 11/19/23
Last Subsample Date/Time	2 44 11/19
# of Subsamples taken	~~3~~ 2

Comments:

Revised 210924 TL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

ATION: Main

SET UP

Personnel: KC, ST

Date/Time On-Site: 11/17/23 1507

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1511	0.85	0.00	0.00	12.8
			Enable Condition or Velocity Cutoff:	0.02
			Deadband:	1
			Trigger Volume:	3411

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time On-Site: 11/20 12:13

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1232	1.37	0	0		12.4
Downloaded to:	Fronteir USB				

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	☐ Reset logging interval to 15 minutes
☒ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Composite Sample Collection

STATION: Main

Bottle 1 **of** 3

Personnel: ST, KC

Date/Time On-Site: 11/19/23 0524

☑ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	231119-12 -WC
Approx Sample Volume (mL):	12500 ml
Clarity (ex. Clear, Cloudy, Silty):	Clear/silty
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	11/19/2023 107	Success	13	325	
2	133		14	333	
3	155		15	342	
4	208		16	352	
5	218		17	403	
6	227		18	415	
7	237		19	430	
8	247		20	454	
9	256		21	515	
10	304		22		
11	311		23		
12	318		24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☒ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle, add ice
☐ Add ice to sample transport cooler	☑ Restart program from beginning
	Date/Time Restarted: 11/19/23 0525
	☑ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Main
Bottle 2 **of** 3
Personnel: KC, ST
Date/Time On-Site: 11/19/23 751

☐ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	231119 - 12 -WC
Approx Sample Volume (mL):	14750
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 535	Success	13	701	
2	541		14	730	
3	547		15	744	
4	553		16	753	
5	559		17	759	
6	605		18	805	
7	610		19	810	
8	615		20	815	
9	620		21	820	
10	626		22	824	
11	634		23	828	
12	645		24	832	

Comments:

If sampling is complete:
- ☐ Power off sampler
- ☐ Verify Flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning
- **Date/Time Restarted:** ____________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Main
Bottle 3 **of** 3
Personnel: KC, ST
Date/Time On-Site: 11/19/23 10:20

☒ Halt Sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	231119 – 12 -WC
Approx Sample Volume (mL):	8750 ml
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 923	Success	13	1127	Success
2	928		14	1210	
3	934		15	1442	
4	940		16		
5	947		17		
6	955		18		
7	1004		19		
8	1013		20		
9	1023		21		
10	1034		22		
11	1047		23		
12	1103		24		

Comments:

If sampling is complete:
- ☒ Power off sampler
- ☒ Verify flowmeter is running
- ☒ Add ice to sample transport cooler
- ☒ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: ____________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: Main

Personnel: ST, KC **Date/Time On-Site:** 11/19/2023 01:11

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1:11	3.67	140.41	0.91	12.6		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	231119-12 -WG	~~1:19~~ ST 11/19/23	1:19	☒
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	1:22	10.54	9.48	7.64	194.43

Sampler Current Status	
First Subsample Date/Time	11/19/2023 1:07
Last Subsample Date/Time	11/19/2023 1:07
# of Subsamples taken	1

Comments:

Set Up/ Shut Down Form – ISCO

STATION: Americana

SET UP

Personnel: KC, ST

Date/Time On-Site: 11/17/23 1537

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1541	5.43	-0.23	-0.291	11.78

Enable Condition:	6.96
Hysteresis:	1
Flow Pulse Interval:	~~8~~ KC 2960 cf

On-Site

- ☒ Replace flowmeter battery, install sampler battery.
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time directly on keypad 1541
- ☐ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: ST

Date/Time On-Site: 11/20 11:47

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
11:54	5.2	1.272	1.716	12.12
Downloaded to:		Stevens USB		

On-Site

- ☐ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 11/27 3:58PM
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Didn't change settings back to dry weather till 11/27. Battery was dead and the last time that was read was 11/27 @ 00:02. -ST

Composite Sample Collection

STATION: Americana **Bottle** 1 **of** 4

Personnel: **Date/Time On-Site:**

☒ Halt sampler program			
☒ Put lid on sample bottle; label sample bottle			
Sample ID:	231119-14	-WC	
Approx Sample Volume (mL):	11750 ml		
Clarity (ex. Clear, Cloudy, Silty):	Cloudy		
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan/yellow		
QA/QC Sample ID:		-103	(Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	11/19/23 132	Success	13	320	
2	149		14	326	
3	204		15	332	
4	214		16	338	
5	223		17	344	
6	231		18	351	
7	239		19	357	
8	246		20	405	
9	254		21		
10	301		22		
11	307		23		
12	314		24		

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning
- **Date/Time Restarted:** 11/19/23 0411
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Americana **Bottle** 2 **of** 4

rsonnel: ____________ **Date/Time On-Site:** ____________

☐ Halt Sampler program			
☐ Put lid on sample bottle; label sample bottle			
Sample ID:	231119-14-	-WC	
Approx Sample Volume (mL):	13250		
Clarity (ex. Clear, Cloudy, Silty):	Silty		
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan		
QA/QC Sample ID:		-103	(Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 412	Success	13	558	
2	420		14	603	
3	425		15	608	
4	438		16	613	
5	449		17	617	
6	501		18	621	
7	513		19	626	
8	525		20	631	
9	533		21	636	
10	540		22	641	
11	547		23	648	
12	553		24	655	

Comments:

If sampling is complete:
- ☐ Power off sampler
- ☐ Verify flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: 0700
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Americana **Bottle** 3 **of** 4
Personnel: KC, ST **Date/Time On-Site:** 11/19/23 1005

☑ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	231119 - 14 -WC
Approx Sample Volume (mL):	13250mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 804	Success	13	857	Success
2	809		14	901	
3	814		15	905	
4	819		16	909	
5	823		17	913	
6	827		18	918	
7	832		19	922	
8	836		20	927	
9	840		21	932	
10	844		22	936	
11	848		23	941	
12	852		24	947	

Comments:

If sampling is complete:
- ☐ Power off sampler
- ☐ Verify Flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☑ Keep flowmeter running
- ☑ Install new 15L bottle; add ice
- ☑ Restart program from beginning

Date/Time Restarted: 11/19/23 1010
- ☑ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Americana
Bottle 4 **of** 4
Personnel: KC, ST
Date/Time On-Site: 11/19/23 1141

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	231119-14 -WC
Approx Sample Volume (mL):	11750 mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	**Date/Time**	**Error Message/ Subsample Result**	**Trigger #**	**Date/Time**	**Error Message/ Subsample Result**
1	11/19/23 1014	Success	13	11/19/23 1147	Success
2	1020		14	1201	
3	1026		15	1215	
4	1032		16	1231	
5	1039		17	1300	
6	1045		18	1320	
7	1052		19	1342	
8	1100		20	1407	
9	1108		21		
10	1116		22		
11	1126		23		
12	1136		24		

Comments:

If sampling is complete:
- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: ______________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: Amarama

Personnel: KC, ST **Date/Time On-Site:** 11/19/23 140

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0145	7.28	2.99	2.462	12.00		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	231119 - 14 -WG	11/19/23	153	☒
Field Duplicate *E.Coli*	231119-14 -101	11/19/23	156	☒
Field Blank *E.Coli*	231119-14 -001	11/19/23	159	☒

***Note: time on bottle for QC samples is 1200**

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	0151	14.16			

Sampler Current Status	
First Subsample Date/Time	11/19/23 0132
Last Subsample Date/Time	11/19/23 0132
# of Subsamples taken	1

Comments:

field parameters (DO, pH, + cond) accidentally not recorded in field. [initials]

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

ATION: AS_6

SET UP

Personnel: KC, ST

Date/Time On-Site: 11/17/23 ~~1619~~ 1719

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1731	0.0	0.0	0.0	12.2

Enable Condition or Velocity Cutoff:	0.02
Deadband:	
Trigger Volume:	221 cf

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☐ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

Sample volume set to 490ml due to calibration issues.

SHUT DOWN

Personnel: ST

Date/Time On-Site: 11/20 1103

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
11:11	0.0	0.0	0.0		12.8
Downloaded to:	Rugged 6				

If flow monitoring is complete:
- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:
- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: AS-6 **Bottle** 1 **of** 4
Personnel: KC, ST **Date/Time On-Site:** 11/19/23 613

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	231119 - 206 -WC
Approx Sample Volume (mL):	13250 mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Dark Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	11/19/23 314		13	540	
2	327		14	549	
3	340		15	556	
4	352		16	602	
5	403		17	608	
6	414		18	613	
7	425		19	618	
8	437		20	622	
9	450		21	626	
10	503		22	630	
11	517		23	634	
12	529		24	637	

Comments:

Here at 2:20 but not enough flow for Grab sample.

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle, add ice
- ☒ Restart program from beginning

Date/Time Restarted: 11/19/23 642
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: AS-6 **Bottle** 2 **of** 4

Personnel: ST, KC **Date/Time On-Site:** 11/19/23 810

☐ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	231119-206 -WC
Approx Sample Volume (mL):	17750
Clarity (ex. Clear, Cloudy, Silty):	Silty
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 644	Success	13		
2	650	distr. error	14		
3	658	Success	15		
4	703	Success	16		
5	708		17		
6	713		18		
7	719		19		
8	725		20		
9	733		21		
10	740	Distr. error	22		
11			23		
12			24		

Comments: Bottle completely full + water in tubing. Battery was dead. Replaced battery + restarted

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler	☒ Keep flowmeter running
☐ Verify flowmeter is running	☒ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
☐ Complete COC form; arrange transport to lab	**Date/Time Restarted:** 11/19/23 826
	☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: AS_6 **Bottle** 3 **of** 4
Personnel: VC, ST **Date/Time On-Site:** ______

☒ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	231119-206 -WC
Approx Sample Volume (mL):	12500
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	11/19/23 821		13	910	
2	826		14	914	
3	831		15	918	
4	836		16	922	
5	841		17	926	
6	845		18	929	
7	849		19	935	
8	852		20	936	
9	856		21	938	
10	859		22	941	
11	903		23	943	
12	907		24	946	

Comments:

If sampling is complete:
- ☐ Power off sampler
- ☐ Verify Flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: ______
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: AS-6 **Bottle** 4 **of** 4
Personnel: KC, ST **Date/Time On-Site:** 11/19/23 1150

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	11,000
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	11/19/23 953	No liquid err	13	1049	Success
2	957	Success	14	1054	
3	10:01		15	11:01	
4	1006		16	1107	
5	1010		17	1114	
6	1014		18	1121	
7	1019		19	11:28	
8	1024		20	1136	
9	1029		21	1146	
10	1034		22	1156	
11	1038		23	1208	
12	1043		24	1221	

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☒ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☒ Keep flowmeter running	☐ Install new 15L bottle; add ice
☒ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ______
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: AS-6

Personnel: KC, ST **Date/Time On-Site:** 11/19/23 0613

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
622	5.794	0.90	1.62	11.7		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	231119-206 -WG	11/19/23	622	☐
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	620	9.04	9.44	7.18	184.28

Sampler Current Status	
First Subsample Date/Time	11/19/2023 314
Last Subsample Date/Time	11/19/2023 622
# of Subsamples taken	20

Comments:

Attachment D: Storm Event Analytical Reports

Report Date: 12/08/2023 12:41

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00323-01	ACST1B	231119-03-WG	Water		11/19/2023	11/19/2023
AC00323-02	ACST1B	231119-11-WG	Water		11/19/2023	11/19/2023
AC00323-03	ACST1B	231119-12-WG	Water		11/19/2023	11/19/2023
AC00323-04	ACST1B	231119-14-WG	Water		11/19/2023	11/19/2023
AC00323-05	ACST1B	231119-14-101	Water		11/19/2023	11/19/2023
AC00323-06	ACST1B	231119-14-001	Water		11/19/2023	11/19/2023

Report Date: 12/08/2023 12:41

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	231119-03-WG
Date/Time Collected:	11/19/2023 01:38		
Lab Number:	AC00323-01	Sample Collector:	GK
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	2.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	231119-11-WG
Date/Time Collected:	11/19/2023 02:39		
Lab Number:	AC00323-02	Sample Collector:	GK
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	99.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B		Location Description:	231119-12-WG
Date/Time Collected:	11/19/2023 01:19			
Lab Number:	AC00323-03		Sample Collector:	S.T
Sample Type:	Grab		Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	30.9	MPN/100 mL	1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 12/08/2023 12:41

Analysis Report

Location:	ACST1B	Location Description:	231119-14-WG
Date/Time Collected:	11/19/2023 01:53		
Lab Number:	AC00323-04	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	1340.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	D
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 12/08/2023 12:41

Analysis Report

Location:	ACST1B	Location Description:	231119-14-101
Date/Time Collected:	11/19/2023 12:00		
Lab Number:	AC00323-05	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	866.4	MPN/100 mL	1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	231119-14-001
Date/Time Collected:	11/19/2023 12:00		
Lab Number:	AC00323-06	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	11/19/23 08:58	11/20/23 9:22	SMC	U
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/19/23 8:36	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/08/2023 12:41

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B234656									
Blank (B234656-BLK1)									
E. Coli	Absent						11/20/2023	SMC	
LCS (B234656-BS1)									
E. Coli				Present			11/20/2023	SMC	
Duplicate (B234656-DUP2) Source ID: AC00323-04RE1									
E. Coli					Pass	128	11/20/2023	SMC	

The contents of this report apply to the sample(s) analyzed in accordance with the Chain of Custody document.
No duplication of this report is allowed, except in its entirety

Report Date: 12/08/2023 12:41

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK
Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Steven Turner
Kristen Chisholm
Hannah Johnston
Gabriella Kanoa

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 -EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
AC00323 -01	11/19/23		0138		231119-03-WG	GK	X	X												X					1
-02			0239		231119-11-WG	GK	X	X												X					1
-03			0119		231119-12-WG	ST	X	X												X					1
-04			0153		231119-14-WG	ST	X	X												X					1
-05			1200		231119-14-~~W~~ 101	ST	X	X												X					1
-06			1200		231119-14-001	ST	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Hannah Johnston	4:04 11/19/23	ASE	Received samples 11-19-23 0758

#AC00323

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00324-01	ACST1B	231119-206-WG	Water		11/19/2023	11/19/2023
AC00324-02	ACST1C	231119-206-WC	Water		11/19/2023	11/19/2023
AC00324-03	ACST1C	231119-03-WC	Water		11/19/2023	11/19/2023
AC00324-04	ACST1C	231119-11-WC	Water		11/19/2023	11/19/2023
AC00324-05	ACST1C	231119-12-WC	Water		11/19/2023	11/19/2023
AC00324-06	ACST1C	231119-14-WC	Water		11/19/2023	11/19/2023

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	231119-206-WG
Date/Time Collected:	11/19/2023 06:22		
Lab Number:	AC00324-01	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B234656	1732.9	MPN/100 mL	1.0	1.0	IDEXX - Colilert	11/19/23 13:58	11/20/23 13:59	SMC	
Wet Chemistry										
Chlorine Screen	B234655	Absent				SM 4500-CL G-2000 mod	11/19/23	11/20/23 13:52	ASE	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	231119-206-WC
Date/Time Collected:	11/19/2023 03:14 - 11/19/2023 12:21		
Lab Number:	AC00324-02	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.563	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:36	JAL	
BOD5	B234673	162	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:42	MEC	
COD	B234668	329	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.136	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:43	JAL	
TKN	B234964	3.17	mg/L	0.800	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	12/15/23	12/15/23 10:46	JAL	D
Total Dissolved Solids	B234678	263	mg/L	20.0	20.0	SM 2540 C-2015	11/20/23	11/22/23 9:26	RKT	
Total Suspended Solids	B234665	28.7	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 12:06	NTS	
Turbidity	B234675	21.1	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:00	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	1.71	mg/L	0.0300	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:43	JAL	D
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:22	SAS	U
Arsenic	B234724	1.7	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:05	DMW	
Cadmium	B234724	0.059	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:05	DMW	
Calcium	B234692	11.8	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:43	EDM	
Lead	B234724	3.3	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:05	DMW	
Magnesium	B234692	3370	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:43	EDM	
Phosphorus as P	B234692	2.06	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:43	EDM	
Hardness	B234692	43.3	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:43	EDM	
Dissolved Metals										
Cadmium	B234723	0.029	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:25	DMW	
Copper	B234723	8.5	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:25	DMW	
Lead	B234723	0.93	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:25	DMW	
Zinc	B234723	61.8	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:25	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	231119-03-WC
Date/Time Collected:	11/19/2023 02:16 - 11/19/2023 13:28		
Lab Number:	AC00324-03	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.530	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:41	JAL	
BOD5	B234673	59.5	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:24	MEC	
COD	B234668	137	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.145	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:44	JAL	
TKN	B234779	1.76	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	11/30/23	12/1/23 10:11	ALN	
Total Dissolved Solids	B234678	136	mg/L	20.0	20.0	SM 2540 C-2015	11/20/23	11/22/23 9:28	RKT	
Total Suspended Solids	B234665	8.63	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 10:04	NTS	
Turbidity	B234675	8.6	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:04	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	0.538	mg/L	0.0150	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:45	JAL	D
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:08	SAS	U
Arsenic	B234724	0.93	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:15	DMW	
Cadmium	B234724	0.030	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:15	DMW	
Calcium	B234692	8.66	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:38	EDM	
Lead	B234724	0.33	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:15	DMW	
Magnesium	B234692	3430	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:38	EDM	
Phosphorus as P	B234692	0.710	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:38	EDM	
Hardness	B234692	35.8	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:38	EDM	
Dissolved Metals										
Cadmium	B234723	0.012	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:35	DMW	
Copper	B234723	3.5	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:35	DMW	
Lead	B234723	0.085	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:35	DMW	
Zinc	B234723	32.7	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:35	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	231119-11-WC
Date/Time Collected:	11/19/2023 02:24 - 11/19/2023 15:28		
Lab Number:	AC00324-04	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.527	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:53	JAL	
BOD5	B234673	61.9	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:17	MEC	
COD	B234668	167	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.182	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:45	JAL	
TKN	B234779	2.07	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	11/30/23	12/1/23 10:12	ALN	
Total Dissolved Solids	B234678	180	mg/L	20.0	20.0	SM 2540 C-2015	11/20/23	11/22/23 9:29	RKT	
Total Suspended Solids	B234665	27.3	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 11:05	NTS	
Turbidity	B234675	19.7	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:15	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	0.768	mg/L	0.0150	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:46	JAL	D
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:25	SAS	U
Arsenic	B234724	1.7	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:17	DMW	
Cadmium	B234724	0.041	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:17	DMW	
Calcium	B234692	13.3	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:40	EDM	
Lead	B234724	2.2	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:17	DMW	
Magnesium	B234692	2850	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:40	EDM	
Phosphorus as P	B234692	0.958	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:40	EDM	
Hardness	B234692	45.0	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:40	EDM	
Dissolved Metals										
Cadmium	B234723	<0.0100	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:37	DMW	U
Copper	B234723	5.0	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:37	DMW	
Lead	B234723	0.21	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:37	DMW	
Zinc	B234723	32.3	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:37	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	231119-12-WC
Date/Time Collected:	11/19/2023 01:07 - 11/19/2023 14:42		
Lab Number:	AC00324-05	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.610	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:49	JAL	
BOD5	B234673	19.9	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:10	MEC	
COD	B234668	61.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.246	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:46	JAL	
TKN	B234779	1.14	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	11/30/23	12/1/23 10:14	ALN	
Total Dissolved Solids	B234678	61.0	mg/L	20.0	20.0	SM 2540 C-2015	11/20/23	11/22/23 9:30	RKT	
Total Suspended Solids	B234665	16.2	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 11:04	NTS	
Turbidity	B234675	11.7	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:12	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	0.167	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:33	JAL	
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:36	SAS	U
Arsenic	B234724	0.66	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:20	DMW	
Cadmium	B234724	0.045	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:20	DMW	
Calcium	B234692	5.87	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:22	EDM	
Lead	B234724	1.7	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:20	DMW	
Magnesium	B234692	1120	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:22	EDM	
Phosphorus as P	B234692	0.226	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:22	EDM	
Hardness	B234692	19.3	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:22	EDM	
Dissolved Metals										
Cadmium	B234723	0.015	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:39	DMW	
Copper	B234723	2.7	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:39	DMW	
Lead	B234723	0.12	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:39	DMW	
Zinc	B234723	25.9	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:39	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	231119-14-WC
Date/Time Collected:	11/19/2023 01:32 - 11/19/2023 14:07		
Lab Number:	AC00324-06	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B234817	0.454	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	12/01/23	12/1/23 13:45	JAL	
BOD5	B234673	36.5	mg/L	2.00	2.00	SM 5210 B-2016	11/20/23	11/25/23 13:06	MEC	
COD	B234668	94.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	11/20/23	11/20/23 12:29	BAK	
Nitrate-Nitrite, as N	B234773	0.614	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	11/29/23	11/29/23 13:47	JAL	
TKN	B234779	1.27	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	11/30/23	12/1/23 10:15	ALN	
Total Dissolved Solids	B234678	153	mg/L	20.0	20.0	SM 2540 C-2015	11/21/23	11/22/23 9:31	RKT	
Total Suspended Solids	B234665	21.7	mg/L	0.900	0.900	SM 2540 D-2015	11/20/23	11/20/23 10:03	NTS	
Turbidity	B234675	15.0	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	11/20/23	11/20/23 13:07	JAL	
Dissolved Wet Chemistry										
Orthophosphate, as P	B234672	0.402	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	11/20/23	11/20/23 11:37	JAL	
Total Metals										
Mercury	B234760	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	11/29/23	11/30/23 9:39	SAS	U
Arsenic	B234724	2.1	ug/L	0.070	0.070	EPA 200.8	11/25/23	11/26/23 14:22	DMW	
Cadmium	B234724	0.061	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:22	DMW	
Calcium	B234692	17.4	mg/L	0.0400	0.0400	EPA 200.7	11/21/23	11/22/23 17:24	EDM	
Lead	B234724	1.9	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/26/23 14:22	DMW	
Magnesium	B234692	3490	ug/L	80.0	80.0	EPA 200.7	11/21/23	11/22/23 17:24	EDM	
Phosphorus as P	B234692	0.504	mg/L	0.0120	0.0120	EPA 200.7	11/21/23	11/22/23 17:24	EDM	
Hardness	B234692	57.8	mg/L	0.100	0.100	SM 2340 B-2011	11/21/23	11/22/23 17:24	EDM	
Dissolved Metals										
Cadmium	B234723	0.022	ug/L	0.010	0.010	EPA 200.8	11/25/23	11/25/23 16:42	DMW	
Copper	B234723	4.0	ug/L	0.15	0.15	EPA 200.8	11/25/23	11/25/23 16:42	DMW	
Lead	B234723	0.11	ug/L	9.00E-3	9.00E-3	EPA 200.8	11/25/23	11/25/23 16:42	DMW	
Zinc	B234723	27.2	ug/L	0.50	0.50	EPA 200.8	11/25/23	11/25/23 16:42	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name		Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology										
Batch: B234656										
Blank (B234656-BLK1)										
E. Coli		Absent						11/20/2023	SMC	
LCS (B234656-BS1)										
E. Coli					Present			11/20/2023	SMC	
Duplicate (B234656-DUP2)	Source ID: AC00323-04RE1									
E. Coli						Pass	128	11/20/2023	SMC	
Wet Chemistry										
Batch: B234665										
Blank (B234665-BLK1)										
Total Suspended Solids		<0.9	mg/L					11/20/2023	NTS	U
LCS (B234665-BS1)										
Total Suspended Solids				97.5	90-110			11/20/2023	NTS	
Duplicate (B234665-DUP1)	Source ID: WB02817-07									
Total Suspended Solids						3.88	20	11/20/2023	NTS	
Duplicate (B234665-DUP2)	Source ID: LS01764-02									
Total Suspended Solids						3.33	20	11/20/2023	NTS	
Batch: B234668										
Blank (B234668-BLK1)										
COD		<7	mg/L					11/20/2023	BAK	U
LCS (B234668-BS1)										
COD				101	90-110			11/20/2023	BAK	
Duplicate (B234668-DUP1)	Source ID: AC00324-02									
COD						0.304	10	11/20/2023	BAK	
Batch: B234673										
Blank (B234673-BLK1)										
BOD5		<2	mg/L					11/25/2023	MEC	U
LCS (B234673-BS2)										
BOD5				110	84.6-115.4			11/25/2023	MEC	
Duplicate (B234673-DUP1)	Source ID: ST00061-02									
BOD5						1.13	30	11/25/2023	MEC	D
Duplicate (B234673-DUP2)	Source ID: AC00324-03									
BOD5						3.79	30	11/25/2023	MEC	

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B234675									
Blank (B234675-BLK1)									
Turbidity	<0.3	NTU					11/20/2023	JAL	U
LCS (B234675-BS1)									
Turbidity			97.9	90-110			11/20/2023	JAL	
Duplicate (B234675-DUP1) Source ID: AC00324-06									
Turbidity					5.41	25	11/20/2023	JAL	
Batch: B234678									
Blank (B234678-BLK1)									
Total Dissolved Solids	<20	mg/L					11/22/2023	RKT	U
LCS (B234678-BS1)									
Total Dissolved Solids			95.5	90-110			11/22/2023	RKT	
Duplicate (B234678-DUP1) Source ID: AC00324-02									
Total Dissolved Solids					0.286	10	11/22/2023	RKT	
Batch: B234773									
Blank (B234773-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					11/29/2023	JAL	U
Blank (B234773-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					11/29/2023	JAL	U
LCS (B234773-BS1)									
Nitrate-Nitrite, as N			98.7	90-110			11/29/2023	JAL	
LCS (B234773-BS2)									
Nitrate-Nitrite, as N			98.8	90-110			11/29/2023	JAL	
Duplicate (B234773-DUP1) Source ID: BB03404-02									
Nitrate-Nitrite, as N					8.87	10	11/29/2023	JAL	
Duplicate (B234773-DUP2) Source ID: RW00047-01									
Nitrate-Nitrite, as N					0.228	10	11/29/2023	JAL	
Duplicate (B234773-DUP3) Source ID: WB02832-06									
Nitrate-Nitrite, as N					0.449	10	11/29/2023	JAL	
Matrix Spike (B234773-MS1) Source ID: BB03404-02									
Nitrate-Nitrite, as N			100	90-110			11/29/2023	JAL	
Matrix Spike (B234773-MS2) Source ID: RW00047-01									
Nitrate-Nitrite, as N			97.9	90-110			11/29/2023	JAL	
Matrix Spike (B234773-MS3) Source ID: WB02832-06									
Nitrate-Nitrite, as N			103	90-110			11/29/2023	JAL	
Matrix Spike Dup (B234773-MSD1) Source ID: BB03404-02									
Nitrate-Nitrite, as N			101	90-110	0.293	10	11/29/2023	JAL	
Matrix Spike Dup (B234773-MSD2) Source ID: RW00047-01									
Nitrate-Nitrite, as N			97.8	90-110	0.0212	10	11/29/2023	JAL	
Matrix Spike Dup (B234773-MSD3) Source ID: WB02832-06									
Nitrate-Nitrite, as N			104	90-110	0.135	10	11/29/2023	JAL	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier

Wet Chemistry (Continued)

Batch: B234779

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Blank (B234779-BLK1)									
TKN	<0.2	mg/L					12/01/2023	ALN	U
Blank (B234779-BLK2)									
TKN	<0.2	mg/L					12/01/2023	ALN	U
LCS (B234779-BS1)									
TKN			100	80-120			12/01/2023	ALN	
LCS (B234779-BS2)									
TKN			99.5	80-120			12/01/2023	ALN	
Duplicate (B234779-DUP2) Source ID: BB03404-01									
TKN					2.65	20	12/01/2023	ALN	D
Duplicate (B234779-DUP3) Source ID: LS01768-02									
TKN					3.57	20	12/01/2023	ALN	D
Duplicate (B234779-DUP4) Source ID: RW00047-02									
TKN					2.40	20	12/01/2023	ALN	D
Matrix Spike (B234779-MS2) Source ID: BB03404-01									
TKN			95.4	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MS3) Source ID: LS01768-02									
TKN			102	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MS4) Source ID: RW00047-02									
TKN			105	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MS5) Source ID: EP00286-01									
TKN			81.5	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MS6) Source ID: EP00287-01									
TKN			101	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MS7) Source ID: EP00288-01									
TKN			97.9	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MS8) Source ID: EP00289-01									
TKN			105	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MS9) Source ID: EP00290-01									
TKN			99.1	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MSA) Source ID: EP00291-01									
TKN			102	80-120			12/01/2023	ALN	D
Matrix Spike (B234779-MSC) Source ID: EP00294-01									
TKN			104	80-120			12/01/2023	ALN	D
Matrix Spike Dup (B234779-MSD2) Source ID: BB03404-01									
TKN			98.0	80-120	1.43	20	12/01/2023	ALN	D
Matrix Spike Dup (B234779-MSD3) Source ID: LS01768-02									
TKN			102	80-120	0.104	20	12/01/2023	ALN	D
Matrix Spike Dup (B234779-MSD4) Source ID: RW00047-02									
TKN			108	80-120	1.54	20	12/01/2023	ALN	D

Report Date: 12/20/2023 13:21

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B234817									
Blank (B234817-BLK1)									
Ammonia, as N	<0.035	mg/L					12/01/2023	JAL	U
LCS (B234817-BS1)									
Ammonia, as N			110	90-110			12/01/2023	JAL	
Duplicate (B234817-DUP1) Source ID: BB03379-02									
Ammonia, as N					0.316	10	12/01/2023	JAL	
Duplicate (B234817-DUP2) Source ID: BB03389-01									
Ammonia, as N					0.892	10	12/01/2023	JAL	
Matrix Spike (B234817-MS1) Source ID: BB03379-02									
Ammonia, as N			105	80-120			12/01/2023	JAL	
Matrix Spike (B234817-MS2) Source ID: BB03389-01									
Ammonia, as N			102	80-120			12/01/2023	JAL	
Matrix Spike Dup (B234817-MSD1) Source ID: BB03379-02									
Ammonia, as N			105	80-120	0.156	10	12/01/2023	JAL	
Matrix Spike Dup (B234817-MSD2) Source ID: BB03389-01									
Ammonia, as N			104	80-120	1.30	10	12/01/2023	JAL	
Batch: B234948									
Blank (B234948-BLK1)									
TKN	<0.2	mg/L					12/13/2023	EDM	U
LCS (B234948-BS1)									
TKN			100	80-120			12/13/2023	EDM	
Duplicate (B234948-DUP1) Source ID: BB03406-01									
TKN					1.18	20	12/13/2023	EDM	D
Duplicate (B234948-DUP2) Source ID: BB03408-01									
TKN					0.505	20	12/13/2023	EDM	D
Matrix Spike (B234948-MS1) Source ID: BB03406-01									
TKN			96.3	80-120			12/13/2023	EDM	D
Matrix Spike (B234948-MS2) Source ID: BB03408-01									
TKN			105	80-120			12/13/2023	EDM	D
Matrix Spike (B234948-MS4) Source ID: EP00293-01RE1									
TKN			99.4	80-120			12/13/2023	EDM	D
Matrix Spike (B234948-MS5) Source ID: EP00295-01									
TKN			103	80-120			12/13/2023	EDM	D
Matrix Spike Dup (B234948-MSD1) Source ID: BB03406-01									
TKN			92.3	80-120	1.14	20	12/13/2023	EDM	D
Matrix Spike Dup (B234948-MSD2) Source ID: BB03408-01									
TKN			104	80-120	0.586	20	12/13/2023	EDM	D

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B234964									
Blank (B234964-BLK1)									
TKN	<0.2	mg/L					12/15/2023	JAL	U
LCS (B234964-BS1)									
TKN			93.6	80-120			12/15/2023	JAL	
Duplicate (B234964-DUP2) Source ID: BB03420-03									
TKN					4.44	20	12/15/2023	JAL	D
Duplicate (B234964-DUP3) Source ID: AC00324-02RE2									
TKN					15.8	20	12/15/2023	JAL	D
Matrix Spike (B234964-MS2) Source ID: BB03420-03									
TKN			98.0	80-120			12/15/2023	JAL	D
Matrix Spike (B234964-MS3) Source ID: AC00324-02RE2									
TKN			95.8	80-120			12/15/2023	JAL	D
Matrix Spike Dup (B234964-MSD2) Source ID: BB03420-03									
TKN			106	80-120	3.42	20	12/15/2023	JAL	D
Matrix Spike Dup (B234964-MSD3) Source ID: AC00324-02RE2									
TKN			110	80-120	11.9	20	12/15/2023	JAL	D
Dissolved Wet Chemistry									
Batch: B234672									
Blank (B234672-BLK1)									
Orthophosphate, as P	<0.003	mg/L					11/20/2023	JAL	U
LCS (B234672-BS1)									
Orthophosphate, as P			95.7	90-110			11/20/2023	JAL	
Duplicate (B234672-DUP1) Source ID: AC00324-05									
Orthophosphate, as P					0.720	10	11/20/2023	JAL	
Matrix Spike (B234672-MS1) Source ID: AC00324-05									
Orthophosphate, as P			99.0	90-110			11/20/2023	JAL	
Matrix Spike Dup (B234672-MSD1) Source ID: AC00324-05									
Orthophosphate, as P			99.7	90-110	0.267	10	11/20/2023	JAL	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B234692									
Blank (B234692-BLK1)									
Calcium	<0.04	mg/L					11/22/2023	EDM	U
Magnesium	<80	ug/L					11/22/2023	EDM	U
Phosphorus as P	<0.012	mg/L					11/22/2023	EDM	U
LCS (B234692-BS1)									
Calcium			100	85-115			11/22/2023	EDM	
Magnesium			99.6	85-115			11/22/2023	EDM	
Phosphorus as P			98.6	85-115			11/22/2023	EDM	
Duplicate (B234692-DUP1) Source ID: AC00324-06									
Calcium					0.0422	20	11/22/2023	EDM	
Magnesium					0.465	20	11/22/2023	EDM	
Phosphorus as P					0.357	20	11/22/2023	EDM	
Matrix Spike (B234692-MS1) Source ID: AC00324-06									
Calcium			100	70-130			11/22/2023	EDM	
Magnesium			101	70-130			11/22/2023	EDM	
Phosphorus as P			99.0	70-130			11/22/2023	EDM	
Matrix Spike Dup (B234692-MSD1) Source ID: AC00324-06									
Calcium			99.9	70-130	0.151	20	11/22/2023	EDM	
Magnesium			100	70-130	0.422	20	11/22/2023	EDM	
Phosphorus as P			99.3	70-130	0.191	20	11/22/2023	EDM	
Batch: B234724									
Blank (B234724-BLK1)									
Arsenic	<0.070	ug/L					11/26/2023	DMW	U
Cadmium	<0.010	ug/L					11/26/2023	DMW	U
Lead	<0.010	ug/L					11/26/2023	DMW	U
LCS (B234724-BS1)									
Arsenic			96.0	85-115			11/26/2023	DMW	
Cadmium			99.8	85-115			11/26/2023	DMW	
Lead			99.9	85-115			11/26/2023	DMW	
Duplicate (B234724-DUP1) Source ID: AC00324-02									
Arsenic					3.50	20	11/26/2023	DMW	
Cadmium					13.9	20	11/26/2023	DMW	
Lead					1.94	20	11/26/2023	DMW	
Matrix Spike (B234724-MS1) Source ID: AC00324-02									
Arsenic			96.2	70-130			11/26/2023	DMW	
Cadmium			99.4	70-130			11/26/2023	DMW	
Lead			95.5	70-130			11/26/2023	DMW	
Matrix Spike Dup (B234724-MSD1) Source ID: AC00324-02									
Arsenic			99.6	70-130	2.94	20	11/26/2023	DMW	
Cadmium			102	70-130	2.75	20	11/26/2023	DMW	
Lead			97.1	70-130	1.27	20	11/26/2023	DMW	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B234760									
Blank (B234760-BLK1)									
Mercury	<0.01	ug/L					11/30/2023	SAS	U
LCS (B234760-BS1)									
Mercury			98.9	85-115			11/30/2023	SAS	
Duplicate (B234760-DUP1) Source ID: AC00324-03									
Mercury					NR	20	11/30/2023	SAS	U
Duplicate (B234760-DUP2) Source ID: EP00285-01									
Mercury					NR	20	11/30/2023	SAS	U
Matrix Spike (B234760-MS1) Source ID: AC00324-03									
Mercury			103	70-130			11/30/2023	SAS	
Matrix Spike (B234760-MS2) Source ID: EP00285-01									
Mercury			101	70-130			11/30/2023	SAS	
Matrix Spike Dup (B234760-MSD1) Source ID: AC00324-03									
Mercury			103	70-130	0.0974	20	11/30/2023	SAS	
Matrix Spike Dup (B234760-MSD2) Source ID: EP00285-01									
Mercury			104	70-130	2.73	20	11/30/2023	SAS	
Dissolved Metals									
Batch: B234723									
Blank (B234723-BLK1)									
Cadmium	<0.010	ug/L					11/25/2023	DMW	U
Copper	<0.15	ug/L					11/25/2023	DMW	U
Lead	<0.0090	ug/L					11/25/2023	DMW	U
Zinc	<0.50	ug/L					11/25/2023	DMW	U
LCS (B234723-BS1)									
Cadmium			94.9	85-115			11/25/2023	DMW	
Copper			94.3	85-115			11/25/2023	DMW	
Lead			96.9	85-115			11/25/2023	DMW	
Zinc			93.8	85-115			11/25/2023	DMW	
Duplicate (B234723-DUP1) Source ID: AC00324-02									
Cadmium					5.41	10	11/25/2023	DMW	
Copper					0.546	10	11/25/2023	DMW	
Lead					1.75	10	11/25/2023	DMW	
Zinc					0.526	10	11/25/2023	DMW	
Matrix Spike (B234723-MS1) Source ID: AC00324-02									
Cadmium			96.5	70-130			11/25/2023	DMW	
Copper			104	70-130			11/25/2023	DMW	
Lead			93.1	70-130			11/25/2023	DMW	
Zinc			103	70-130			11/25/2023	DMW	
Matrix Spike Dup (B234723-MSD1) Source ID: AC00324-02									
Cadmium			97.9	70-130	1.50	10	11/25/2023	DMW	
Copper			103	70-130	0.713	10	11/25/2023	DMW	
Lead			94.5	70-130	1.37	10	11/25/2023	DMW	
Zinc			99.7	70-130	0.915	10	11/25/2023	DMW	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Steven Turner
Kristen Chisholm

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Collilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
AC00324-01	11/19/23		622	622	231119-206-WG	ST		X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Steven Turner	11/19/2023 1:42 pm	Brett [illegible] 1:42 11/19/23	

#AC00324

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Steven Turner, Kristen Chisholm

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 -EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
AC00324-02	11/19/23	←	314	1221	231119-206-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	4

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Steven Turner	11/19/2023 142pm	[signature] BK 1342 11/19/23	

#AC00324

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Christofferson
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
AC00324-03	11/19/23		216	1328	231119-03-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	2

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Christofferson	11/19/23 1603	[signature] 1603	11/19/23

#AC00324-03

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Steven Turner
Kristen Chisholm

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Collilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
AC00324-04	11/19/23		0224	1528	231119-11-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	3
-05			0107	1442	231119-12-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	3
-06			0132	1407	231119-14-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	4

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	11/19/23 1716	[signature] 1716	11/19/23

#AC00324-04, -05, -06

ACHD Sample Filtration, Splitting, and Compositing for Metals

	Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots 47-32, 47-73, 47-20	Bottles Split		Comments
#1	Lims#: AC00324-02 Location: ACSTIC Sample Date: 11-19-23 Sample ID: 23119-206-WC	Split Date: 11-19-23 Start Split: 1402 Start Filter: 1402 Comp Time: 1356 Analyst: DMW/NRT	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: 47-73 Comp Jug: CC00023-78 SS Tubing: CC00044-92 SS Helper: SSA5 ↓ Stir Bar: CC00047-50 Connector: CC00044-99 (x2)	☒Teflon Total ☒Teflon Diss (F) ☒Hg CVAA ☒BOD ☒TSS ☒TDS ☒COD	☒TKN ☒NH3 ☒NOx (F) ☒ortho-P (F) ☒Turb ☐____ ☐____	0.45µm High Capacity colprof Very black-looking; leaves minimal debris 4 jugs
#2	Lims#: AC00324-03 Location: ACSTIC Sample Date: 11-19-23 Sample ID: 23119-03-WC	Split Date: 11-19-23 Start Split: 1620 Start Filter: 1620 Comp Time: 1617 Analyst: DMW/NRT	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: 47-32, 47-88, 33-23 Comp Jug: ~~CC00030-63~~ SS Tubing: CC00047-43 SS Helper: SSA8 ↓ Stir Bar: CC00047-50 Connector: CC00047-89 (x2)	☒Teflon Total ☒Teflon Diss (F) ☒Hg CVAA ☒BOD ☒TSS ☒TDS ☒COD	☒TKN ☒NH3 ☒NOx (F) ☒ortho-P (F) ☒Turb ☐____ ☐____	0.45µm High Capacity Dark minimal debris 2 jugs
#3	Lims#: AC00324-06 Location: ACSTIC Sample Date: 11-19-23 Sample ID: 23119-14-WC	Split Date: 11-19-23 Start Split: 1728 Start Filter: 1728 Comp Time: 1723 Analyst: DMW/NRT	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: 47-32, 47-88, 47-32 Comp Jug: CC0010-72 SS Tubing: CC00047-43 SS Helper: SS12 ↓ Stir Bar: CC00047-50 Connector: CC00040-06 (x2)	☒Teflon Total ☒Teflon Diss (F) ☒Hg CVAA ☒BOD ☒TSS ☒TDS ☒COD	☒TKN ☒NH3 ☒NOx (F) ☒ortho-P (F) ☒Turb ☐____ ☐____	0.45µm High Capacity Minimal debris (1) of the 16L jugs didn't have cert label. 4 jugs
#4	Lims#: AC00324-04 Location: ACSTIC Sample Date: 11-19-23 Sample ID: 23119-71-WC	Split Date: 11-19-23 Start Split: 1752 Start Filter: 1752 Comp Time: 1748 Analyst: DMW/NRT	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: 47-73, 47-32, Comp Jug: CC00023-78 SS Tubing: CC00039-99 SS Helper: SS17 ↓ Stir Bar: CC00047-67 Connector: CC00040-06 (x2)	☒Teflon Total ☒Teflon Diss (F) ☒Hg CVAA ☒BOD ☒TSS ☒TDS ☒COD	☒TKN ☒NH3 ☒NOx (F) ☒ortho-P (F) ☒Turb ☐____ ☐____	0.45µm High Capacity (1) of the 16L jugs missing cert. label. Minimal debris 3 jugs
#5	Lims#: AC00324-05 Location: ACSTIC Sample Date: 11-19-23 Sample ID: 23119-12-WC	Split Date: 11-19-23 Start Split: 1814 Start Filter: 1814 Comp Time: 1811 Analyst: DMW/NRT	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: 47-73, 47-88, Comp Jug: CC0011-67 SS Tubing: CC00047-85 SS Helper: SSA2 ↓ Stir Bar: CC00047-67 Connector: CC000~~40~~ 39-76 (x2)	☒Teflon Total ☒Teflon Diss (F) ☒Hg CVAA ☒BOD ☒TSS ☒TDS ☒COD	☒TKN ☒NH3 ☒NOx (F) ☒ortho-P (F) ☒Turb ☐____ ☐____	0.45µm High Capacity (1) of the 16L missing cert. label. minimal debris 3 jugs

ACHD Sample Filtration, Splitting, and Compositing for Metals

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
#6 Lims#: ___ Location: ___ Sample Date: 11-19-23 Sample ID: ___	Split Date: 11-19-23 Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: DMW/NDRI	Filter: ⊠Voss ⊠0.45µm ☐1.0µm ⊠5.0µm ⊠Other: 10.0µm	Coll Jug: ___ Comp Jug: ___ SS Tubing: CC000047-39 SS Helper: SS9 ↓ Stir Bar: CC000047-90 Connector: CC000041-46 (x2)	⊠Teflon Total ⊠TKN ⊠Teflon Diss (F) ⊠NH_3 ⊠Hg CVAA ⊠NO_x (F) ⊠BOD ⊠ortho-P (F) ⊠TSS ⊠Turb ⊠TDS ☐___ ⊠COD ☐___	0.45µm High Capacity Not Needed
Lims#: ___ Location: ___ Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ⊠Voss ⊠0.45µm ☐1.0µm ⊠5.0µm ☐Other: ___	Coll Jug: ___ Comp Jug: ___ SS Tubing: ___ SS Helper: ___ Stir Bar: ___ Connector: ___	⊠Teflon Total ⊠TKN ⊠Teflon Diss (F) ⊠NH_3 ⊠Hg CVAA ⊠NO_x (F) ⊠BOD ⊠ortho-P (F) ⊠TSS ⊠Turb ⊠TDS ☐___ ⊠COD ☐___	
Lims#: ___ Location: ___ Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ⊠Voss ⊠0.45µm ☐1.0µm ⊠5.0µm ☐Other: ___	Coll Jug: ___ Comp Jug: ___ SS Tubing: ___ SS Helper: ___ Stir Bar: ___ Connector: ___	⊠Teflon Total ⊠TKN ⊠Teflon Diss (F) ⊠NH_3 ⊠Hg CVAA ⊠NO_x (F) ⊠BOD ⊠ortho-P (F) ⊠TSS ⊠Turb ⊠TDS ☐___	
Lims#: ___ Location: ___ Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ⊠Voss ⊠0.45µm ☐1.0µm ⊠5.0µm ☐Other: ___	Coll Jug: ___ Comp Jug: ___ SS Tubing: ___ SS Helper: ___ Stir Bar: ___ Connector: ___	⊠Teflon Total ⊠TKN ⊠Teflon Diss (F) ⊠NH_3 ⊠Hg CVAA ⊠NO_x (F) ⊠BOD ⊠ortho-P (F) ⊠TSS ⊠Turb ⊠TDS ☐___ ⊠COD ☐___	
Lims#: ___ Location: ___ Sample Date: ___ Sample ID: ___	Split Date: ___ Start Split: ___ Start Filter: ___ Comp Time: ___ Analyst: ___	Filter: ⊠Voss ⊠0.45µm ☐1.0µm ⊠5.0µm ☐Other: ___	Coll Jug: ___ Comp Jug: ___ SS Tubing: ___ SS Helper: ___ Stir Bar: ___ Connector: ___	⊠Teflon Total ⊠TKN ⊠Teflon Diss (F) ⊠NH_3 ⊠Hg CVAA ⊠NO_x (F) ⊠BOD ⊠ortho-P (F) ⊠TSS ⊠Turb ⊠TDS ☐___ ⊠COD ☐___	

Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2024

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for February 1, 2024

Date: April 23, 2024

To: Monica Lowe

Cc: Steven Turner

Kristen Chisholm

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Limitations:

This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated October 10, 2023. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES Permit), effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the February 1, 2024, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C[1,2]	G	--	G, C[3]	--
November 19, 2023	G, C	G, C	G, C	G[4], C	G, C
February 1, 2024	G[5], C	G[5], C[6]	G[5], C	G[5], C	G[5], C
Unqualified Samples:	2G, 2C	2G, 1C	1G, 2C	1G, 2C	1G, 2C
Samples Remaining:	1G, 1C	1G, 2C	2G, 1C	2G, 1C	2G, 1C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

[1] Composite samples qualified due to lack of representativeness (50%–75%).

[2] Incomplete water quality analysis due to low composite sample volume.

[3] Composite samples qualified due to lack of representativeness (50%–75%) of the calculated flow volume.

[4] Grab sample qualified due to incomplete field parameter collection.

[5] E. coli sample qualified due to exceeded hold time.

[6] Composite sample rejected due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented more than 10% of the composite volume.

Section 3: Storm Event Summary

The February 1, 2024, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from February 1, 2024, is included in Attachment A for reference.

Wednesday, January 31, 2024 (Sampling Event Communication and Set Up)

- On the morning of January 31, the National Weather Service issued a forecast for widespread rain in the Boise area, starting February 1 at 0500 and ending on February 2 at 1100. The chance of precipitation was greater than 90%, with 0.50 inches of precipitation forecasted.
- Setup was accomplished in the afternoon of January 31. An expected precipitation depth of 0.3 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.

Thursday, February 1, 2024 to Friday, February 2, 2024 (Storm Event)

- Moderate rain first started at approximately February 1 at 1607 and ended on February 2 at 1305.
- Precipitation totals ranged between 0.31 and 0.37 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrograph for the Lucky, Whitewater, Main, Americana and AS_6 site showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Lucky, Whitewater, Main, Americana and AS_6 monitoring stations were set up on January 31, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programed into the Lucky, Whitewater, Main and Americana flowmeters. A site-specific velocity cutoff value was programmed into AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

Two, two-member teams mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on February 1 at 1800. Grab samples for Lucky, Whitewater, Main, Americana, and AS_6 were submitted to the West Boise Water Quality Lab (WQL) at 2032 on February 1.

Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Main, Americana and AS_6 monitoring station and submitted to the WQL at 1101 and 1102 on February 2. The composite samples at Lucky and Whitewater monitoring stations were submitted to the WQL at 1154 on February 2.

Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the February 1, 2024, storm event is presented below in Table 4-1. A field blank and field duplicate was collected from the Lucky monitoring station and a lab duplicate/composite split was collected from the Whitewater monitoring station. The analytical results for these samples are included in Table 4-1.

Table 4-1. Quality Control Samples

Sample ID	Sample Type	Parent Sample	Conclusions
240201-03-001	Field blank	Lucky grab	No *E. coli* detection was reported in the field blank.
240201-03-101	Field duplicate	Lucky grab	Relative percent difference was not within the acceptable range. Field duplicate qualified due to exceeding *E. coli* hold time.
240201-11-103	Lab duplicate/composite split	Whitewater composite	The Whitewater composite parent sample was rejected due to non-stormwater subsamples, leading to an inaccurate relative percent difference.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A.

An acceptable composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. All composite samples, except for Whitewater, met the criteria. However, all the grab samples, including the QC field duplicate were qualified due to *E. coli* exceeding hold time. A grab sample is qualified if the sample is prepared 8 to 16 hours after sample collection. Samples are rejected if prepared 16 hours or later after sample collection. All samples were prepared within approximately 12 hours of sample collection and are therefore qualified.

Prior to the start of the storm precipitation or runoff, five subsamples were successfully collected by the automatic sampler at the Whitewater monitoring site. These subsamples are considered non-stormwater, as there was no evidence of flow or precipitation during the morning of January 31st through the afternoon of February 1st. Following the SWOMP guidelines, calculations were conducted to determine if the non-stormwater subsample volume accounted for 10% of the total composite sample volume. The non-stormwater composite subsamples accounted for 12% of the total composite sample volume (see Table 4-2), rejecting the Whitewater composite sample.

Table 4-2. Non-Stormwater Subsample Evaluation

Composite Sample Volume (ft^3)	Non-Stormwater Subsample Volume (ft^3)	Non-stormwater Subsample Ratio
74,325	8,744	12 %

Section 5: Notes and Recommendations

Whitewater

The sampling team identified the automatic sampler's clock was not synchronized with the flowmeter, resulting in incorrect subsample times displayed on the sampler. The sampling team recorded actual composite subsample times from the flow meter prior to submitting the chain of custody form to the WQL. Additionally, the five subsamples collected before the start of storm flow were due to a flowmeter programming error. It was determined the STORM EVENT and SAMPLER ENABLE equations were assigned the wrong threshold conditions. Specifically, STORM EVENT had the threshold condition assigned rather than the timetable condition. SAMPLER ENABLE had the timetable equation set. Therefore, the flowmeter was incorrectly programmed to enable the sampler 24 hours a day and pull a sample every 2185 cubic feet without a minimum level condition. The early subsamples appear to be equally spaced apart because of the poor velocity signal, which resulted in the velocity reading a constant value before the start of storm flow. In the case of poor velocity signal readings, the flowmeter will continue to record the last velocity reading until it is able to get another valid reading. For this reason, the sampler was collecting subsamples before increased levels as expected during storm flows.

AS_6

After collecting the grab sample at AS_6, the sampling team noticed a build-up of leaves on the sensor. The sampling team immediately cleared the sensor, and flow started moving rapidly. The removal of leaves seemed to normalize the flow.

Data Tables

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	YES	YES	YES
Composite samples collected and submitted?	YES	YES	YES	YES	YES
Trigger volume (gal or ft^3)	7899 gal	2185 ft^3	9313 gal	8071 ft^3	601 ft^3
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	Level > 2.68"	Level > 2.55" [4]	Level > 2.06"	Level > 6.46"	--
Runoff start time	1747 [1]	1647 [1]	1657 [1]	1607 [1]	1823 [1]
Grab sample collection time	1825	1859	1815	1841	1906
Composite sample stop time	0926	1016	0757	0936	0936
Runoff stop time	1135 [2]	1305 [2]	1132 [2]	1220 [2]	1108 [2]
Volume of discharge sampled (ft^3)	12,963	74,325 [3]	17,733	216,570	13,220
Volume of non-stormwater subsamples (ft^3)	--	8,744	--	--	--
Total runoff volume (ft^3)	14,425	71,141	19,927	260,647	15,912
Percent of storm flow sampled (%)	90%	104% [3]	89%	83%	83%
Percent of non-stormwater volume to total discharge sampled volume (%)	--	12%	--	--	--
Composite sample duration (hrs)	14.5	40 [3]	13	13.5	10.5
Storm Precipitation (in)	0.31	0.33	0.31	0.31/0.37	0.31/0.37
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	13	36	15	29	24
Number of composite bottles filled	1	2	1	2	2
Composite sample volume (Approx.; ml)	7,250 ml	19000 ml	10250 ml	14500 ml	24400 ml

Notes:

– = No data.

[1] Storm runoff started on 2/1/24

[2] Storm runoff ended on 2/2/24

[3] Non stormwater samples were collected prior to the start of storm percipitation or runoff

[4] Programming error occurred at setup

Table 2. Field and Analytical Data Summary

Monitoring Station	Sample Date	Sample ID Grab	Field Parameters				Analytical Parameters						
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli	Sample ID Composite	BOD_5	COD	Hardness as $CaCO_3$	Turbidity	TSS
			mg/L	S.U.	uS/cm	C	mpn/100 mL		mg/L	mg/L	mg/L	NTU	mg/L
Lucky	2/1/2024	240201-03-WG	4.92	7.15	593.29	14.62	<1.0 [4J]	240201-03-WC	7.27	39.0	16.0	60.5	18.8
Whitewater	2/1/2024	240201-11-WG	8.42	7.60	287.02	11.10	68.9 [4J]	240201-11-WC	9.34 [1R]	82 [1R]	43 [1R]	106 [1R]	58.4 [1R]
Main	2/1/2024	240201-12-WG	10.11	8.03	353.6	6.30	238.2 [4J]	240201-12-WC	5.74	77.0	18.3	103	59.8
Americana	2/1/2024	240201-14-WG	10.05	7.73	552.2	8.34	65.0 [4J]	240201-14-WC	6.98	55.0	93.3	89.6	50.7
AS_6	2/1/2024	240201-206-WG	9.33	8.03	542.9	5.55	290.9 [4J]	240201-206-WC	11.6	108	16.8	143	70.3

Monitoring Station	Analytical Parameters (continued)													
	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Lucky	52.8	0.174	0.100	0.173	0.204	0.894	0.85	<0.0100	0.024	2.0	0.056	0.82	<0.0100	17.5
Whitewater	139 [1R]	0.321 [1R]	0.171 [1R]	0.169 [1R]	0.375 [1R]	1.33 [1R]	2.4 [1R]	<0.0100 [1R]	0.058 [1R]	3.9 [1R]	0.18 [1R]	4.8 [1R]	0.0148 [1R]	25.7 [1R]
Main	64.2	0.143	0.0557	0.351	0.209	1.12	1.4	0.012	0.066	3.6	0.084	4.1	0.0112	18.4
Americana	224	0.213	0.116	0.193	0.905	1.05	3.4	0.016	0.063	3.4	0.090	4.2	<0.0100	17.3
AS_6	116	0.464	0.285	0.159	0.191	1.83	3.0	0.013	0.077	4.5	0.29	6.7	0.0168	10.5

Notes:

– = No data.

[1R] Composite sample rejected due to non stormwater sample volume comprising 10% or more of the the total composite sample volume

[4J] E. coli sample qualified due to exceeded hold time

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	2/1/2024	16.9	0.157	0.156	0.184	0.805
Whitewater	2/1/2024	168 [1R]	0.92 [1R]	0.750 [1R]	1.08 [1R]	3.81 [1R]
Main	2/1/2024	74.4	0.178	0.437	0.260	1.39
Americana	2/1/2024	825	3.46	3.140	14.7	17.1
AS_6	2/1/2024	69.8	0.46	0.158	0.190	1.82

Notes:

[1R] Composite sample rejected due to non stormwater sample volume comprising 10% or more of the the total composite sample volume

Table 4. QC Sample Summary

Date	Parent Sample	Sample ID	Type	E. coli	BOD_5	COD	Hardness as CaCO3	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
				mpn/100 mL	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
2/1/2024	240201-03-WG	240201-03-001	Field Blank	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/1/2024	240201-03-WG	240201-03-101	Field Duplicate	2 [4J]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calculated parent/duplicate RPD [1]				100%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
2/1/2024	240201-11-WC	240201-11-103	Lab Duplicate/Composite Split	--	8.9	83.0	42.4	113	53.8	140	0.312	0.172	0.170	0.378	1.35	2.4	0.011	0.052	3.7	0.19	4.9	0.0127	26.6
Calculated parent/duplicate RPD [2]				--	5%	1%	1%	6%	8%	1%	3%	1%	1%	1%	1%	0%	10%	11%	5%	5%	2%	15%	3%
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

Notes:

[1] Relative percent difference was not within the acceptable range. Field duplicate qualified due to exceeding E. Coli hold time

[2] The Whitewater composite parent sample was rejected due to non-stormwater subsamples, leading to an innacurate relative percent difference

[4J] E.coli sample qualified due to exceeded hold time

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 01/31/2024	Time: 9:39 AM	Initials: ML
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)	Yes	

Past 72 hr Precip	0.06”
Date and time of expected event	2/1/2024 5am – 2/2/2024 5am-11am?
Expected amount of precipitation	Up to 0.5”
Percent chance of precipitation	9O%
Percent chance of >0.10” over 12 hours	30-40% during Thursday 5am-5Pm

NWS Update

I spoke with Bill from the NWS. They said precip could start as early as 5-8am Thursday morning but are only expecting maybe a tenth throughout the day. Precip expected to pick up in the afternoon and into the evening especially after 5PM. The storm is predicted to be continuous and widespread once it starts with breaks and rain shadowing unlikely. Storm should be over ~5am but could be as late as 11am depending pace of storm.

Targeted Station & Samples

Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab
☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite

Type of Forecasted Precipitation

☐ Light Rain	☒ Rain	☐ Rain on Snow
☐ Scattered Showers	☐ Thunder Showers	☐ Snowmelt
☐ Other:		

Reasons for Not Targeting a Forecasted Storm and/or Stations

☐ Holiday
☐ Waiting on Antecedent Dry Period – Expires:
☐ Equipment Concerns:
☐ Other:

Text Forecast

NWS Forecast for: 2 Miles NNW Garden City ID
Issued by: National Weather Service Boise, ID
Last Update: 3:29 am MST Jan 31, 2024

Today: Mostly sunny, with a high near 63. Southeast wind 7 to 17 mph, with gusts as high as 26 mph.
Tonight: A 20 percent chance of rain after 11pm. Mostly cloudy, with a low around 44. East southeast wind 13 to 15 mph, with gusts as high as 24 mph.
Thursday: Rain. High near 56. Southeast wind 14 to 16 mph, with gusts as high as 25 mph. Chance of precipitation is 90%. New precipitation amounts between a tenth and quarter of an inch possible.
Thursday Night: Rain. Low around 39. Southeast wind 5 to 9 mph becoming light and variable in the evening. Chance of precipitation is 80%. New precipitation amounts between a quarter and half of an inch possible.
Friday: Rain likely, mainly before 11am. Mostly cloudy, with a high near 48. West northwest wind 3 to 8 mph. Chance of precipitation is 60%.
Friday Night: A 40 percent chance of rain. Mostly cloudy, with a low around 35.
Saturday: A 30 percent chance of rain, mainly before 11am. Mostly cloudy, with a high near 45.
Saturday Night: Mostly cloudy, with a low around 31.

Sunday: Mostly sunny, with a high near 47.
Sunday Night: A 40 percent chance of rain, mainly after 11pm. Mostly cloudy, with a low around 35.
Monday: A chance of rain and snow. Mostly cloudy, with a high near 49. Chance of precipitation is 50%.
Monday Night: A 50 percent chance of rain. Mostly cloudy, with a low around 36.
Tuesday: A 50 percent chance of rain. Mostly cloudy, with a high near 49.

Forecast Discussion

National Weather Service Boise ID
243 AM MST Wed Jan 31 2024

.SHORT TERM...Today through Friday night...A pattern shift towards **normal** late winter conditions is expect on Thursday as the large **upper level** low reaches the Pacific Northwest. However, until then, unseasonably warm temperatures will continue today with record high temperatures forecast for several valley locations. The approaching Pacific system will enhance the pressure **gradient** for gusty southeast winds in the Snake Plain today. Gusts are expected to be in the 30-40 mph range.

Expect record temperatures in the Treasure Valley today aid by a much stronger southeasterly winds in response to the approaching **upper level** low. Model guidance has consistently under forecast temperatures the last 6 days and looks to be under forecasting today by another 3 to 5 degrees. Thus, used a bias corrected **analog** which has worked well the last couple of nights. This correction gives a 70% chance of Boise reaching 64 degrees or greater today. The forecast high of 64 would not only break the daily record of 61, but also tie the all-time record of 63 (set on Jan 9, 1953). Temperatures will start to cool down on Thursday with the arrival of widespread clouds and precipitation. A **Public Information Statement**, BOIPNSBOI, includes the updated forecast highs and records.

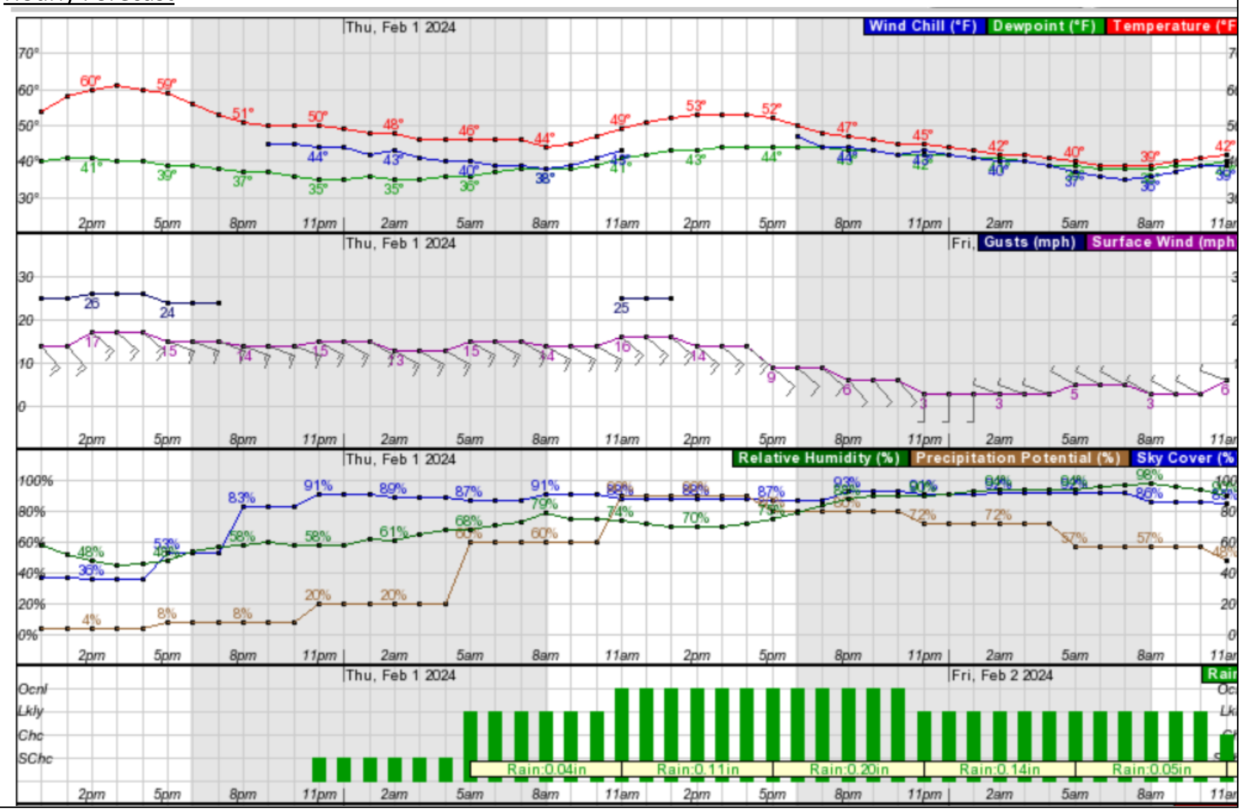
Fog and **stratus** has remained persistent across the valleys of Southeast Oregon the last couple of days. However, this should begin to dissipate today with better mixing and increased surface winds ahead of the next system.

A very moist plume of Pacific moisture off the west coast, known as an atmospheric river, associated with an upper level low pressure system, will move inland this afternoon. This will spread the moisture across our area late tonight into Thursday. Snow levels near 7000 feet today will lower to around 6000 feet on Thursday. Accumulating snow will be limited to the mountains. Precipitation totals of up to a half inch in the valleys and an inch in the mountains are expected.

.LONG TERM...Saturday through Wednesday...A weak **upper level trough** remains over the region Saturday and Sunday continuing the threat for light snow showers in the mountains and a mix of rain and snow in the valleys. The **low pressure system** over the west coast will again interact with another plume of **moisture** from the Central Pacific (or Atmospheric River) on Sunday which which looks to spread across our area from the southwest on Monday. Snow levels remain around 4000 feet for snow in the mountains and cold rain in the valleys. There is growing confidence in the system for Monday however, there is quite a large spread on the amount of **moisture** that makes it into the Intermountain West. Colder but drier conditions follow as the

the region remains on under a **large scale** **trough** as the low
center continues south along the California coast.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE 2/1/24

A. Event and Data Completeness	**Yes**	**No**	**N/A**	**Notes**
1. Field data sheets filled out completely and clearly	X			
2. Field parameters reviewed, and any problems/issues addressed	X			Whitewater FM and SA Clocks weren't synced during setup
3. All samples collected as specified	X			
4. All samples delivered to lab promptly (review chain of custody rpts)	X			
5. Inconsistencies/clarifications discussed with sampling team member			X	
6. All analytical reports from lab received	X			
B. Validation and Verification Methods	**Yes**	**No**	**N/A**	**Notes**
1. Outliers and unexpected values discussed with lab			X	
2. Appropriate analytical methods used	X			
3. All lab QA samples were within method acceptance criteria	X			
4. All samples reviewed and data qualifiers assigned if needed	X			
5. Data quality objective achieved	X			

C. Specific Storm and Sample QA/QC Criteria	**Lucky**	**Whitewater**	**Main**	**Americana**	**AS_6**	**Program Criteria**	**Met**	**Qualify**	**Reject**
1. Antecedent dry period (inches in previous 72-hours)	0.00	0.00	0.00	0.00	0.00	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.31	0.33	0.31	0.31/0.37	0.31/0.37	> 0.10"	X		
3. Sampled amount (% of total run-off)	90%	104%*	89%	83%	83%	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		X ww
4. Composite sample duration (hours)	14.5	40	13	13.5	10.5				
4. Ecoli sample holding time (hours)	12	11.5	12	12	12	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject		X	
5. Filtering of samples for dissolved parameter analysis (hours)	3.5	2.0	3.0	2.0	2.0	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

E. Coli samples were qualified due to exceeded holding times from all sites.
* Whitewater composite rejected due to >10% total sample volume composed of non-Stormwater.

Reviewed by Steven Turner **Date** ~~3~~ 4/4/24 **Approved by** Monica Love **Date** 4/9/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.
Step 2. Enter expected precipitation depth (in) in blue cell.
Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth =	0.3
Aliquots per Sample =	17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft^3)	Trigger Vol (ft^3)
Lucky	105	0.157	17952.2	**1056**
Whitewater	498	0.069	37149.1	**2185**
Main	79	0.246	21163.6	**1245**
Main Alt	60	0.200	13068.0	**769**
Americana	875	0.144	137214.0	**8071**
AS_6	204	0.046	10219.2	**601**
State	34	0.160	5924.2	**348**

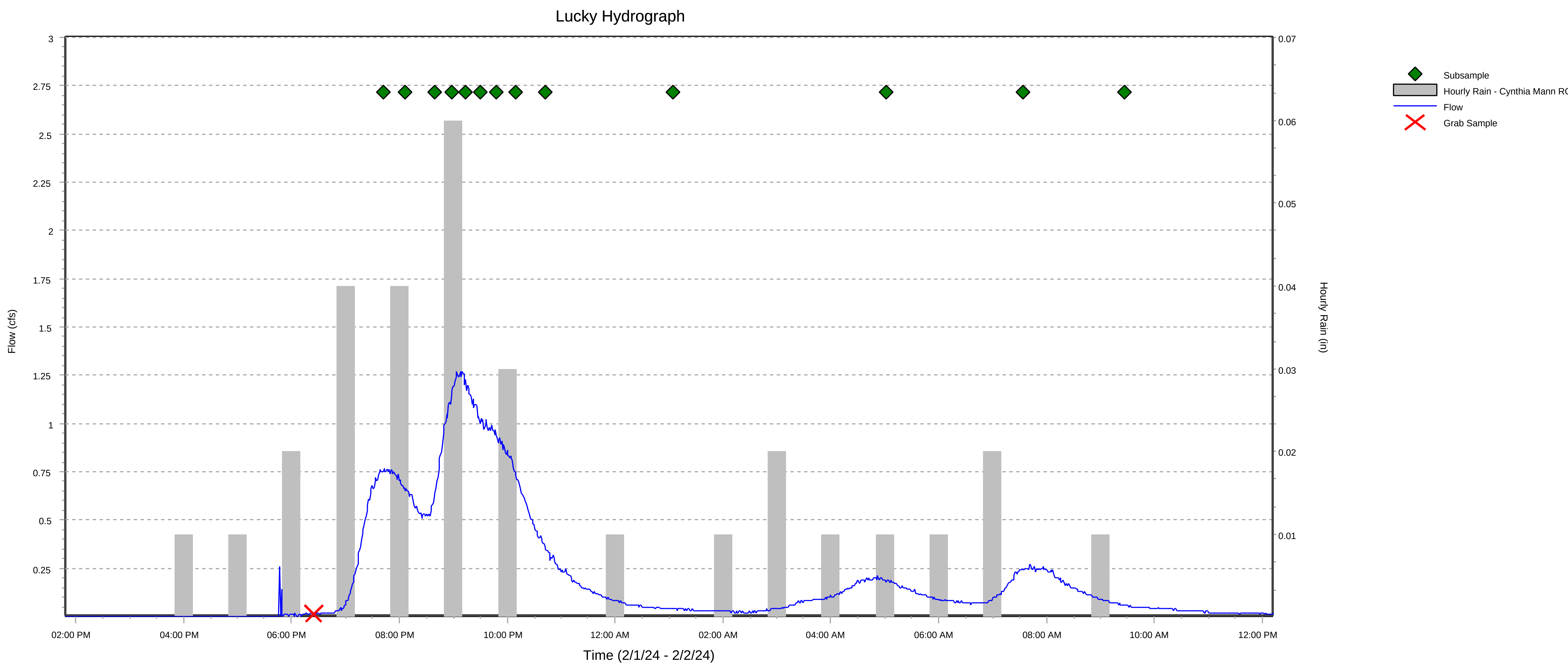
Notes:

Calculated RC = Average (precip (ft) / [volume (ft^3) x area (ft^2)])

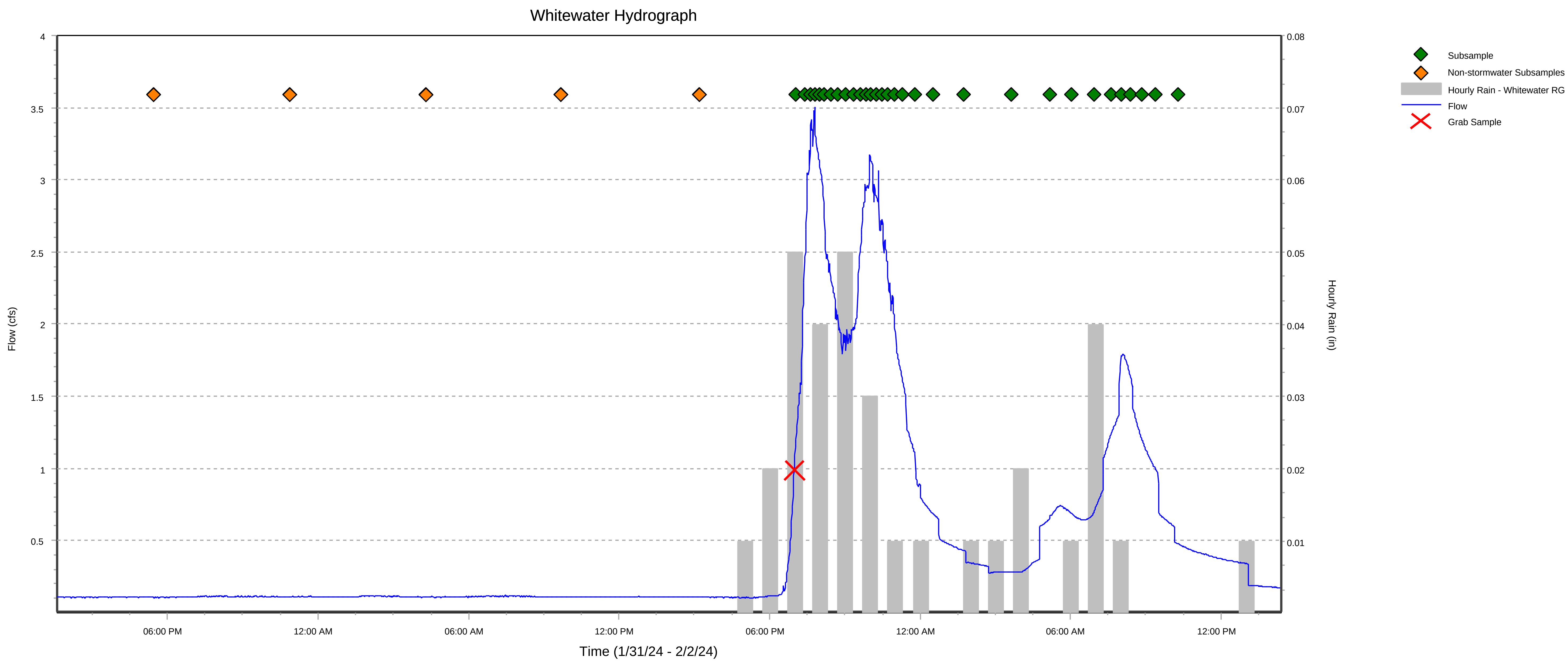
Where precip (ft) is the measured amount from local rain guage, and volume (ft^3) is the measured discharge, and area (ft^2) is the watershed area

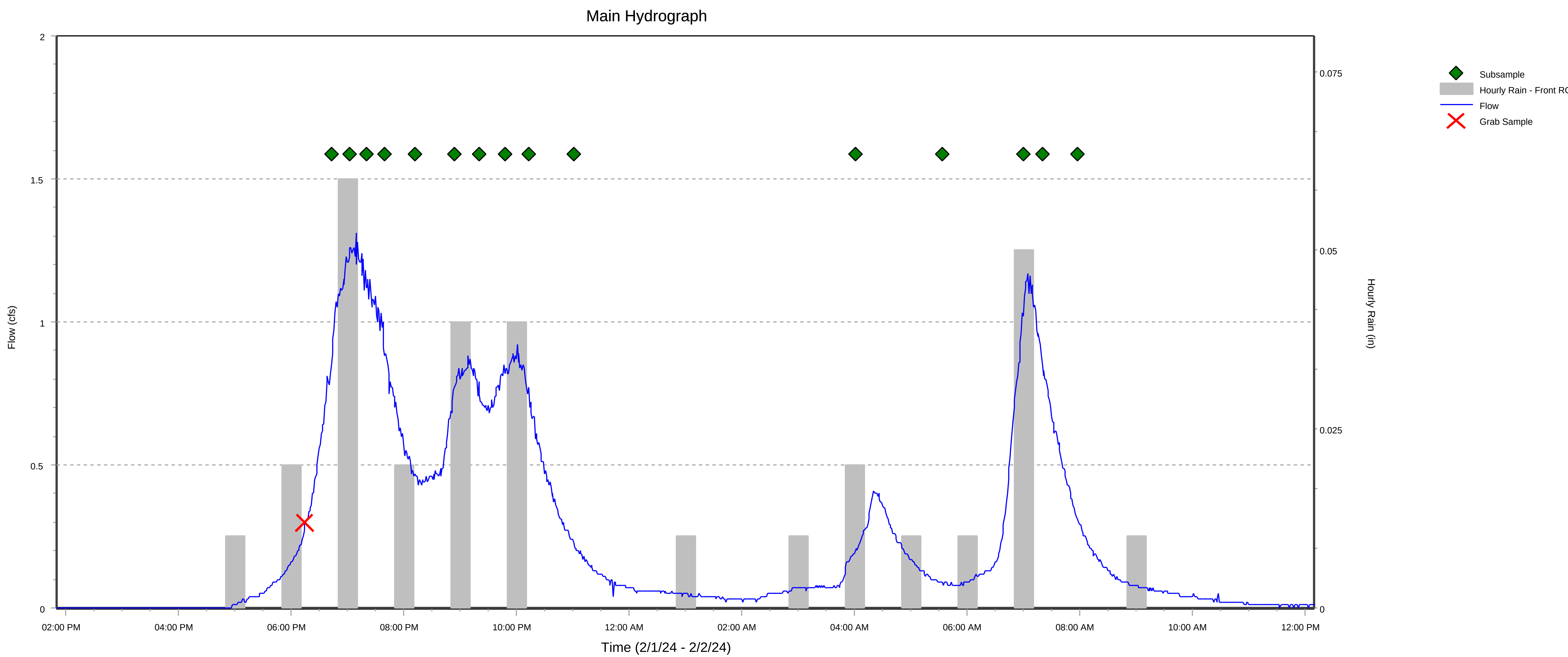
Expected volume (ft^3) = RC x expected precip (ft) x area (ft^2)

Attachment B: Storm Event Hydrographs

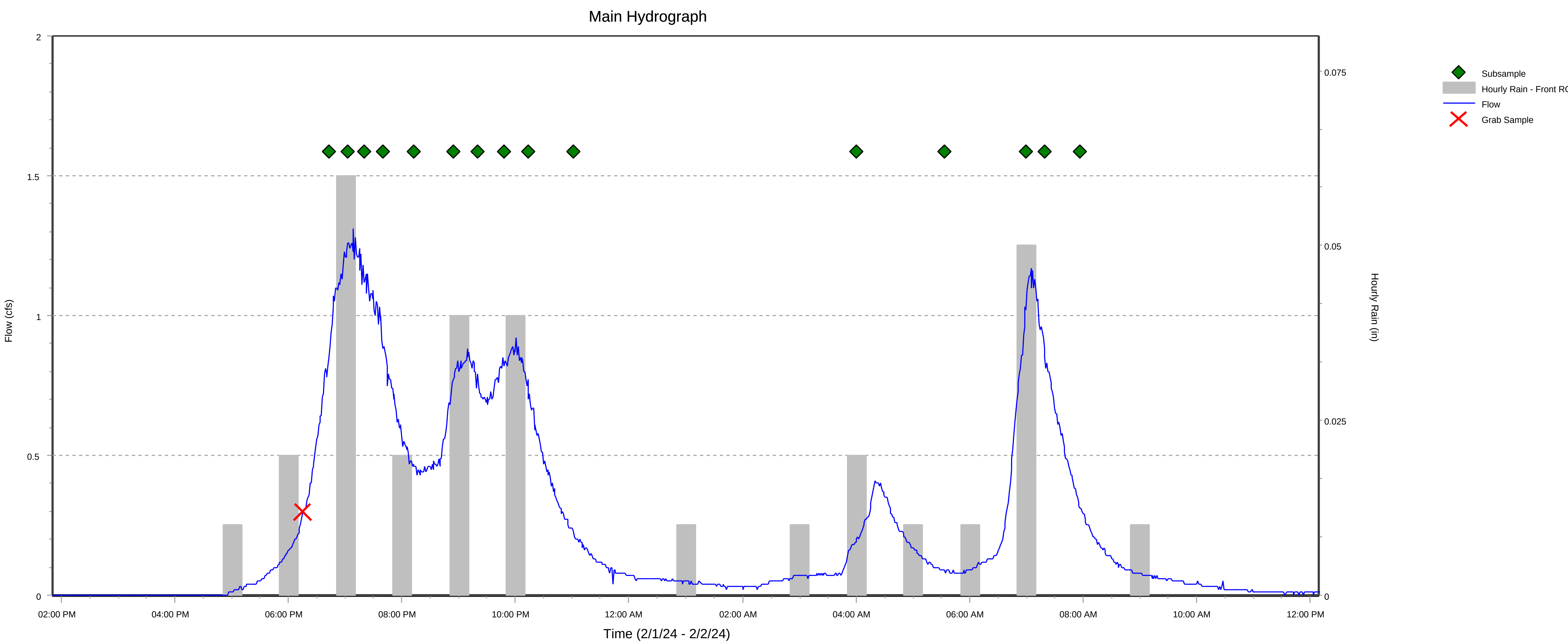

Lucky Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (2/1/24 - 2/2/24)
Subsample
Hourly Rain - Cynthia Mann RG
Flow
Grab Sample
3
2.75
2.5
2.25
2
1.75
1.5
1.25
1
0.75
0.5
0.25
0.07
0.06
0.05
0.04
0.03
0.02
0.01
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM

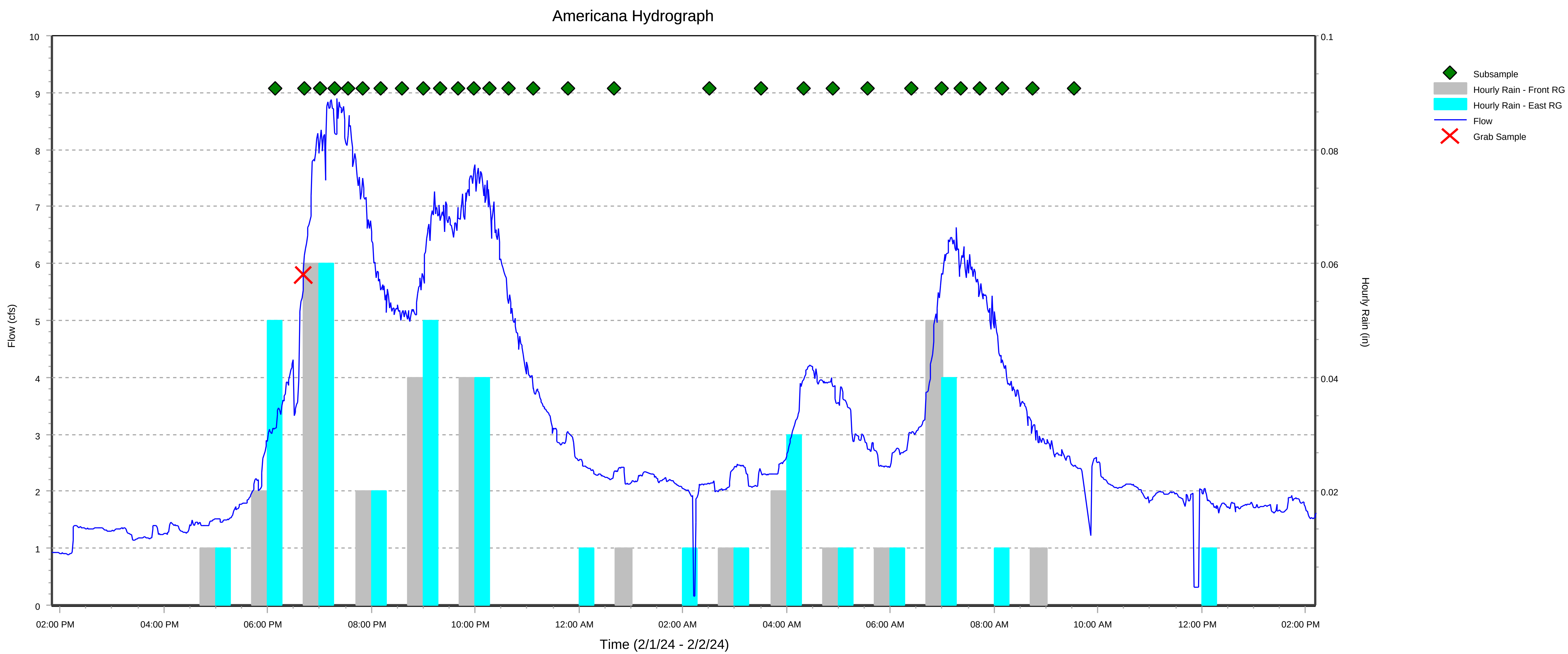
Whitewater Hydrograph



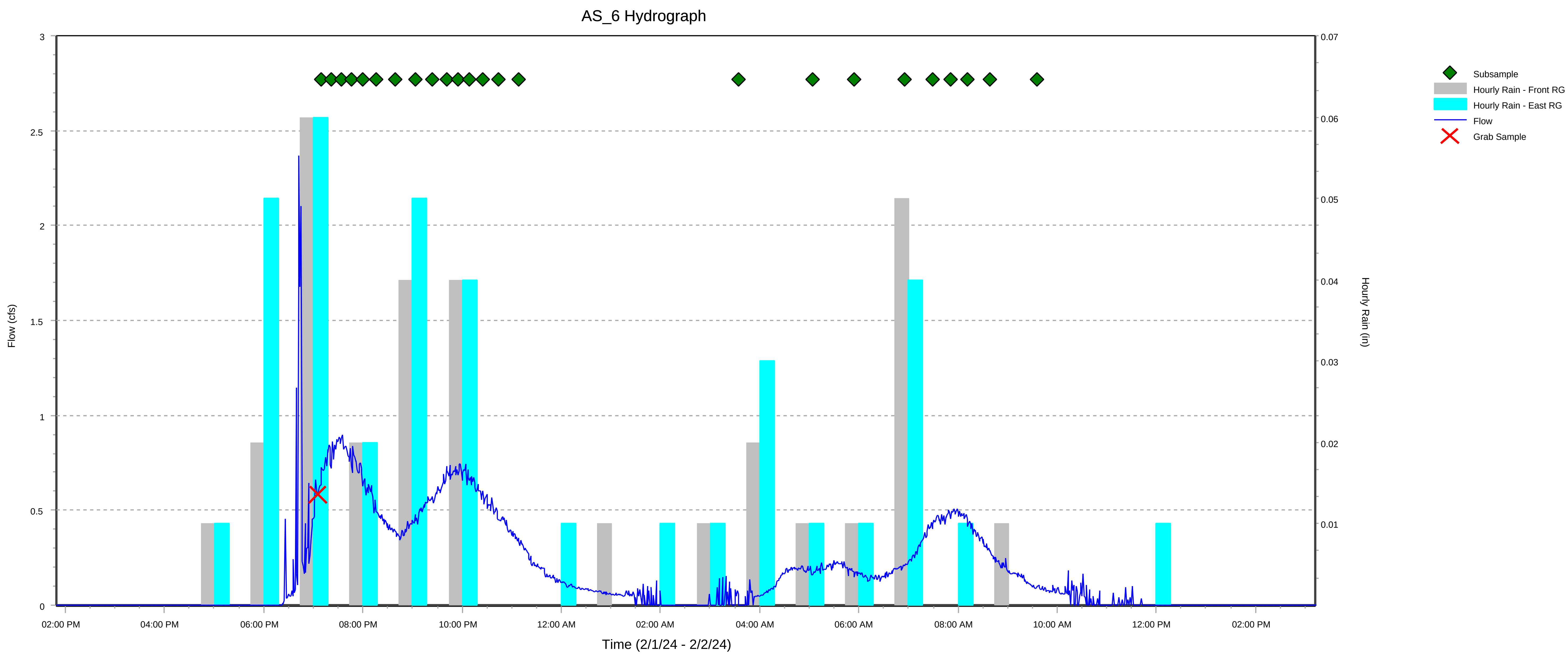


Main Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (2/1/24 - 2/2/24)
2
1.5
1
0.5
0
0.075
0.05
0.025
0
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
Subsample
Hourly Rain - Front RG
Flow
Grab Sample


Main Hydrograph
Flow (cfs)
2
1.5
1
0.5
0
Hourly Rain (in)
0.075
0.05
0.025
0
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
Time (2/1/24 - 2/2/24)
Subsample
Hourly Rain - Front RG
Flow
Grab Sample



Americana Hydrograph
Flow (cfs)
Hourly Rain (in)
10
9
8
7
6
5
4
3
2
1
0
0.1
0.08
0.06
0.04
0.02
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
Time (2/1/24 - 2/2/24)
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample



AS_6 Hydrograph
Flow (cfs)
3
2.5
2
1.5
1
0.5
0
0.07
0.06
0.05
0.04
0.03
0.02
0.01
Hourly Rain (in)
02:00 PM
04:00 PM
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
Time (2/1/24 - 2/2/24)
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample

Attachment C: Field Forms

Grab Sample Data Form

STATION: Luckey

Personnel: Jim / Chad **Date/Time On-Site:** ~~1807~~ 1800 2/1/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1807	1.96"	2.55	.06	12.8	2/1/24 1800	

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240201-03 -WG	2 1 24 ~~1830~~	~~1820~~ 1825	☑
Field Duplicate *E.Coli*	240201-03- -101	2 1 24	1830	☑
Field Blank *E.Coli*	240201-03 -001	2 1 24	1820	☑

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
~~1019508~~ MP11	1819	14.62	4.92	7.15	593.29

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	0/0

Comments:

Grab Sample Data Form

STATION: WhiteWater

Personnel: Chad Tim **Date/Time On-Site:** 2/1/24 1846

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1846	2.79	.27	0.67	—	-	-

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	24020111 -WG	2124	1859	☒
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
~~1019508~~ MP11	1855	11.10	8.42	7.60	287.03

Sampler Current Status	
First Subsample Date/Time	~~08/28~~ 2/1 1337
Last Subsample Date/Time	2/1 1904
# of Subsamples taken	6

Comments:

Grab Sample Data Form

STATION: Main

Personnel: MB, KC **Date/Time On-Site:** 1804 2/1/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1804	3.17"	79.57	0.64	12.7		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240201-12 -WG	2/1/24	18:15	☒
Field Duplicate *E.Coli*	240201-12 -101	2/1/24	18:18	☒
Field Blank *E.Coli*	240201-12 -001	~~1-1-12~~ 2/1/24 KC	1812	☒

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	1819	6.3	10.11	8.03	353.6

Sampler Current Status	
First Subsample Date/Time	NA
Last Subsample Date/Time	
# of Subsamples taken	NA

Comments:

main - alternate QC site. Lucky grab QC ~~Successful~~ successful, so main QC discarded and not submitted to lab. MH

Grab Sample Data Form

STATION: Americana 03/01/2024

Personnel: MB, KC Date/Time On-Site: 1835 ~~02/01/24~~ MB

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1835	8.54	3.29	2.172	12.1		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240301r14 -WG	2/1/24	1841	☒
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	1845	8.34	10.05	7.73	552.2

Sampler Current Status	
First Subsample Date/Time	1811 03/01/24
Last Subsample Date/Time	
# of Subsamples taken	1

Comments:

Offsite @ 1850

Grab Sample Data Form

STATION: AS-6

Personnel: MB-KC **Date/Time On-Site:** 02/01/2024 1855

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1911	4.67	0.71	1.76	12.5		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240201-20a -WG	02/01/2024	1906	☒
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	1910	5.55	9.33	8.03	540.9

Sampler Current Status	
First Subsample Date/Time	1846 02/01/24
Last Subsample Date/Time	1909 02/01/24
# of Subsamples taken	2 (1 missed)

Comments:

missed sample:
First two sample had rinse error
cleaned leaves off rinse tubing

offsite @ 1913

Revised 210924 TL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Lucky

SET UP

Personnel: MB, SJ, TA, ST, KC

Date/Time On-Site: Jan 31, 24 11:02

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
~~1110~~ MB	~~0.31~~ MB		~~0.00~~ MB	~~13.0~~ MB
	~~0.31~~ MB			
1131	1.68	0 gal/min	0.00	13.0
Enable Condition or Velocity Cutoff:			~~2.88"~~ 2.68" MB	
Deadband:			1"	
Trigger Volume:			7899 gal	

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

liquid detection sensor knob keeps falling off

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/5/24 12:28

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1230	~~0.00~~ ST 1.74	0.00	0.00		12.3
Downloaded to:	Stevens USB				

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	☐ Reset logging interval to 15 minutes
☒ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Composite Sample Collection

STATION: Lucky
Bottle 1 **of** 1
Personnel: KC, ST
Date/Time On-Site: 2/1/24 2032

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240201-03 -WC
Approx Sample Volume (mL):	7250 ml
Clarity (ex. Clear, Cloudy, Silty):	Clear
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/1/24 1942	Success	13	0926	1
2	2/1/24 2007		14		
3	2039		15		
4	2059		16		
5	2114		17		
6	2130		18		
7	2148		19		
8	2209		20		
9	2242		21		
10	2/2/24 ~~4~~ 0104		22		
11	0502		23		
12	0734		24		

Comments:

If sampling is complete:
- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle, add ice
- ☐ Restart program from beginning

Date/Time Restarted: ______________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: White water

SET UP

Personnel: ST, MB, TA, ST, KC

Date/Time On-Site: 1/31/24 11:53

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
11:53	1.52	0.11	0.08	—

Enable Condition:	2.55
Hysteresis:	1
Flow Pulse Interval:	2185

On-Site
- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)
- ☒ Direct or Remote; Date/time ~~11:55~~ 1/31/24 11:57
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments: Time off site 12:22

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/5/24 1313

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1313	1.84	0.03	0.14	–
Downloaded to:	Stevens USB			

On-Site
- ☐ Replace flowmeter battery
- ☐ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)
- ☒ Direct or Remote; Date/time 2/5 1314
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Whitewater **Bottle** 1 **of** 2
Personnel: KC, SR **Date/Time On-Site:**

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240201 -11- ~~10~~ KC -WC
Approx Sample Volume (mL):	~12500
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	240201 -11 -103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	1/1/24 1337	Success	13	1654	
2	1904		14	1713	
3	1/2/24 0028		15	1731	
4	552		16	1749	
5	1122		17	1802	
6	1513		18	1814	
7	1536		19	1826	
8	1548		20	1839	
9	1559		21	1853	
10	1610		22	1909	
11	1622		23	1930	
12	1637		24	1958	

Comments: Samples taken successfully. Timing does not make sense. Collected subsample times from flowmeter to submit to lab.
Actual begin time: 2/1/24 4:16 — 2/1/24 2346

Post storm determined FM+SA not sync'd for time during setup. MK

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning

Date/Time Restarted: 2/2/24 00:04
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 2 **of** 2
Personnel: KC, ST **Date/Time On-Site:** 2/2/24 1040

☒ Halt Sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240201-11- -WC
Approx Sample Volume (mL):	6500
Clarity (ex. Clear, Cloudy, Silty):	~~Tan~~ ~~ve~~ Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	2/2/24 0032	Success	13		
2	0143		14		
3	0338		15		
4	0511		16		
5	0602		17		
6	0657		18		
7	0736		19		
8	0802		20		
9	0823		21		
10	0849		22		
11	0922		23		
12	1016		24		

Comments: Date/time on sampler is incorrect. Real subsample times are on the flowmeter.

Desiccant changed on flowmeter 2/2/24 1049

Post-storm determined FM + SA not sync'd for time during setup. ud

If sampling is complete:
- ☒ Power off sampler
- ☒ Verify flowmeter is running
- ☒ Add ice to sample transport cooler
- ☒ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: ______________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Main

SET UP

Personnel: SJ, TA, MB, ST, KC

Date/Time On-Site: 1/31/24 13:18

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
~~13:41~~	~~1.05~~	~~0.46 gpm~~	~~0.27~~	~~12.9~~ SJ
13:45	1.06	0.00 gpm	0.00	12.9

Enable Condition or Velocity Cutoff:	~~0.02~~ SJ 2.06
Deadband:	1
Trigger Volume:	9313

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/5/24 1328

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1328	0.88	0.00 gpm	0.000		12.4
Downloaded to:		Stevens USB			

If flow monitoring is complete:
- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:
- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Main **Bottle** 1 **of** 1
Personnel: ST KC **Date/Time On-Site:** 2/1/24 2110

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	~~231~~ ST 240201- 12 -WC
Approx Sample Volume (mL):	10250 mL
Clarity (ex. Clear, Cloudy, Silty):	Silty, Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	**Date/Time**	**Error Message/ Subsample Result**	**Trigger #**	**Date/Time**	**Error Message/ Subsample Result**
1	2/1/24 1843	Success	13	0700	
2	1903		14	0720	
3	1920		15	0757	
4	1940		16		
5	2012		17		
6	2054		18		
7	2120		19		
8	2148		20		
9	2213		21		
10	2301		22		
11	2/2/24 0401		23		
12	0534		24		

Comments:

If sampling is complete:
☒ Power off sampler, if separate from flowmeter
☒ Keep flowmeter running
☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
☐ Keep flowmeter running
☐ Install new 15L bottle, add ice
☐ Restart program from beginning
Date/Time Restarted: ________
☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

STATION: Americana

SET UP

Personnel: ST, KC, TA, MB, SJ

Date/Time On-Site: 1/31/24 1404

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1406	5.13	1.36	1.881	12.5

Enable Condition:	6.46
Hysteresis:	1
Flow Pulse Interval:	8071 cf

On-Site
- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)
- ☒ Direct or Remote; Date/time 1/31/24 1411
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

offsite 14:40

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/5/24 13:55

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1355	5.58	1.54	1.885	11.82
Downloaded to:	Stevens USB			

On-Site
- ☒ Replace flowmeter battery
- ☐ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)
- ☒ Direct or Remote; Date/time 2/5 1357
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Americana **Bottle** 1 **of** 2

Personnel: ST, KC **Date/Time On-Site:** 2/1/24 2123

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240201-14 -WC
Approx Sample Volume (mL):	9500mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy Silty
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/1/24 1811	Success	13	2/1/24 2220 ~~2202~~	
2	1845 ~~1831~~		14	2242 ~~2220~~	
3	1904 ~~1845~~		15	2311 ~~2242~~	
4	1921 ~~1904~~		16	2351 ~~2311~~	
5	1937 ~~1921~~		17	2/2/24 0045 ~~2351~~	
6	1953 ~~1937~~		18	~~2/2/24 0045~~	
7	2013 ~~1953~~		19		
8	2038 ~~2013~~		20		
9	2103 ~~2038~~		21		
10	2123 ~~2103~~		22		
11	2144 ~~2123~~		23		
12	2022 ~~2144~~		24		

Comments: Accidentally turned off sampler + it restarted the program. Chose to put on new bottle since we had to start program from the beginning.

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☒ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
	Date/Time Restarted: 2/2/24 101
	☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Americana
Personnel: ST, KC

Bottle 2 of 2
Date/Time On-Site: 2/2/24 0940

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240201-14-~~WC~~ KC -WC
Approx Sample Volume (mL):	5000ml
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/2/24 0233	Success	13		
2	0334		14		
3	0423		15		
4	0457		16		
5	0538		17		
6	0627		18		
7	0702		19		
8	0724		20		
9	0746		21		
10	0812		22		
11	0848		23		
12	0936		24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☒ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☒ Keep flowmeter running	☐ Install new 15L bottle; add ice
☒ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ______
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS_6

SET UP

Personnel: SJ, TA, MB, ST, KC

Date/Time On-Site: 1/31/24 1454

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1503	0.0	0.0	0.0	12.4

Enable Condition or Velocity Cutoff:	0.02
Deadband:	1
Trigger Volume:	~~6.0 fc~~ 601 cf ST

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments: Time off site: 1512

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/6/24 0941

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
0943	0.000	0.00	0.00	88302	11.3
Downloaded to:	Rugged6				

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	☐ Reset logging interval to 15 minutes
☒ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Composite Sample Collection

STATION: AS-6 **Bottle** 1 **of** 2
Personnel: KC, ST **Date/Time On-Site:**

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240201-206 -WC
Approx Sample Volume (mL):	19400
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/1/24 1846	Rinse error	13	2/1/24 2209	Success
2	1909	Success	14	2225	
3	1922		15	2244	
4	1934		16	2308	
5	1946		17	2353	distributor error
6	2000		18		
7	2016		19		
8	2039		20		
9	2104		21		
10	2124		22		
11	2141		23		
12	2155		24		

Comments: Bottle completely full to rim. New bottle installed & program restarted.

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☒ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle, add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
	Date/Time Restarted: 2/2/24 0035
	☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

15"

Composite Sample Collection

STATION: AS-6 **Bottle** 2 **of** 2
Personnel: KC, ST **Date/Time On-Site:** 2/2/24 1005

☑ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240201 - 206 -WC
Approx Sample Volume (mL):	5000 ml
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/2/24 0335	Success	13		
2	0504		14		
3	0554		15		
4	0656		16		
5	0729		17		
6	0751		18		
7	0812		19		
8	0839		20		
9	0936		21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☒ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☒ Keep flowmeter running	☐ Install new 15L bottle; add ice
☒ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ________
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Attachment D: Storm Event Analytical Reports

Report Date: 02/12/2024 16:32

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00327-01	ACST1B	240201-03-WG	Water		02/01/2024	02/02/2024
AC00327-02	ACST1B	240201-03-101	Water		02/01/2024	02/02/2024
AC00327-03	ACST1B	240201-03-001	Water		02/01/2024	02/02/2024
AC00327-04	ACST1B	240201-11-WG	Water		02/01/2024	02/02/2024
AC00327-05	ACST1B	240201-12-WG	Water		02/01/2024	02/02/2024
AC00327-06	ACST1B	240201-14-WG	Water		02/01/2024	02/02/2024
AC00327-07	ACST1B	240201-206-WG	Water		02/01/2024	02/02/2024

Report Date: 02/12/2024 16:32

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240201-03-WG
Date/Time Collected:	02/01/2024 18:25		
Lab Number:	AC00327-01	Sample Collector:	T.A
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240390	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/02/24 06:23	2/3/24 8:23	MEC	H U
Wet Chemistry										
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:05	LRF	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 02/12/2024 16:32

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240201-03-101
Date/Time Collected:	02/01/2024 12:00		
Lab Number:	AC00327-02	Sample Collector:	T.A
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240390	2.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/02/24 07:23	2/3/24 8:23	MEC	H
Wet Chemistry										
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:18	LRF	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 02/12/2024 16:32

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240201-03-001
Date/Time Collected:	02/01/2024 12:00		
Lab Number:	AC00327-03	Sample Collector:	T.A
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240390	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/02/24 07:23	2/3/24 8:23	MEC	H U
Wet Chemistry										
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:18	LRF	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 02/12/2024 16:32

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240201-11-WG
Date/Time Collected:	02/01/2024 18:59		
Lab Number:	AC00327-04	Sample Collector:	C.S
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240390	68.9	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/02/24 06:34	2/3/24 8:23	MEC	H
Wet Chemistry										
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:09	LRF	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 02/12/2024 16:32

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240201-12-WG
Date/Time Collected:	02/01/2024 18:15		
Lab Number:	AC00327-05	Sample Collector:	K.C
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240390	238.2	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/02/24 06:10	2/3/24 8:23	MEC	H
Wet Chemistry										
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:05	LRF	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 02/12/2024 16:32

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240201-14-WG
Date/Time Collected:	02/01/2024 18:41		
Lab Number:	AC00327-06	Sample Collector:	M.B
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240390	65.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/02/24 06:28	2/3/24 8:23	MEC	H
Wet Chemistry										
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:05	LRF	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 02/12/2024 16:32

Analysis Report

Location:	ACST1B	Location Description:	240201-206-WG
Date/Time Collected:	02/01/2024 19:06		
Lab Number:	AC00327-07	Sample Collector:	K.C
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240390	290.9	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/02/24 06:58	2/3/24 8:23	MEC	H
Wet Chemistry										
Chlorine Screen	B240392	Absent				SM 4500-CL G-2000 mod	02/02/24	2/2/24 7:09	LRF	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 02/12/2024 16:32

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B240390									
Blank (B240390-BLK1)									
E. Coli	Absent						02/03/2024	MEC	
LCS (B240390-BS1)									
E. Coli				Present			02/03/2024	MEC	
Duplicate (B240390-DUP1)	Source ID: AC00327-07								
E. Coli					Pass	128	02/03/2024	MEC	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
H	Hold time Exceeded.
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristin Chisholm
Chad Schwend
Tim Anderson
Michael Buls

Lab# AC00327	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD$_5$ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 -EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-01	2/1/24		1825		240201-03-WG	TA	X	X												X					1
-02	2/1/24		1200		240201-03-101	TA	X	X												X					1
-03	2/1/24		1200		240201-03-001	TA	X	X												X					1
-04	2/1/24		1859		240201-11-~~GW~~ WG	CS	X	X												X					1
-05	2/1/24		1815		240201-12-WG	KC	X	X												X					1
-06	2/1/24		1841		240201-14-WG	MB	X	X												X					1
-07	2/1/24		1906		240201-206-WG	KC	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristin Chisholm	2/1/2024 1957	Chad Schwend 2/1/24 1957	
Chad Schwend	2/1/2024 2032	[illegible] 2-2-24 0601	

AC00327

Report Date: 03/19/2024 10:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00329-01	ACST1C	240201-12-WC	Water		02/02/2024	02/02/2024
AC00329-02	ACST1C	240201-14-WC	Water		02/02/2024	02/02/2024
AC00329-03	ACST1C	240201-206-WC	Water		02/02/2024	02/02/2024
AC00329-04	ACST1C	240201-03-WC	Water		02/02/2024	02/02/2024
AC00329-05	ACST1C	240201-11-WC	Water		02/02/2024	02/02/2024
AC00329-06	ACST1C	240201-11-103	Water		02/02/2024	02/02/2024

Report Date: 03/19/2024 10:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240201-12-WC
Date/Time Collected:	02/01/2024 18:43 - 02/02/2024 07:57		
Lab Number:	AC00329-01	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	351		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:02	ALN	
BOD5	B240404	5.74	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:58	ASE	
Chloride	B240518	12.7	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 17:58	BAK	
COD	B240401	77.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.209	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:13	RKT	
TKN	B240548	1.12	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 9:56	JAL	
Total Dissolved Solids	B240407	64.2	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:51	ASE	
Total Suspended Solids	B240408	59.8	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:48	CLH	
Turbidity	B240400	103	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 13:26	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.0557	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:25	RKT	
Total Metals										
Mercury	B240440	0.0112	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:20	SAS	
Arsenic	B240405	1.4	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:37	DMW	
Cadmium	B240405	0.066	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:37	DMW	
Calcium	B240429	4.17	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 11:51	AMO	
Lead	B240405	4.1	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:37	DMW	
Magnesium	B240429	1930	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 11:51	AMO	
Phosphorus as P	B240429	0.143	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 11:51	AMO	
Hardness	B240429	18.3	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 11:51	AMO	
Dissolved Metals										
Cadmium	B240406	0.012	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:36	DMW	
Copper	B240406	3.6	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:36	DMW	
Lead	B240406	0.084	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:36	DMW	
Zinc	B240406	18.4	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:36	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/19/2024 10:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240201-14-WC
Date/Time Collected:	02/01/2024 18:11 - 02/02/2024 09:36		
Lab Number:	AC00329-02	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	193		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:10	ALN	
BOD5	B240404	6.98	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:52	ASE	
Chloride	B240518	64.1	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 18:24	BAK	
COD	B240401	55.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.905	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:14	RKT	
TKN	B240548	1.05	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:01	JAL	
Total Dissolved Solids	B240407	224	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:52	ASE	
Total Suspended Solids	B240408	50.7	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:04	CLH	
Turbidity	B240400	89.6	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 13:47	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.116	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:26	RKT	
Total Metals										
Mercury	B240440	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:23	SAS	U
Arsenic	B240405	3.4	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:47	DMW	
Cadmium	B240405	0.063	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:47	DMW	
Calcium	B240429	27.3	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 11:54	AMO	
Lead	B240405	4.2	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:47	DMW	
Magnesium	B240429	6070	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 11:54	AMO	
Phosphorus as P	B240429	0.213	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 11:54	AMO	
Hardness	B240429	93.3	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 11:54	AMO	
Dissolved Metals										
Cadmium	B240406	0.016	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:39	DMW	
Copper	B240406	3.4	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:39	DMW	
Lead	B240406	0.090	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:39	DMW	
Zinc	B240406	17.3	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:39	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/19/2024 10:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240201-206-WC
Date/Time Collected:	02/01/2024 19:09 - 02/02/2024 09:36		
Lab Number:	AC00329-03	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	159		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:08	ALN	
BOD5	B240404	11.6	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:47	ASE	
Chloride	B240518	14.5	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 19:17	BAK	
COD	B240401	108	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.191	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:15	RKT	
TKN	B240548	1.83	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:02	JAL	
Total Dissolved Solids	B240407	116	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:53	ASE	
Total Suspended Solids	B240408	70.3	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:49	CLH	
Turbidity	B240400	143	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:01	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.285	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:27	RKT	
Total Metals										
Mercury	B240440	0.0168	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:27	SAS	
Arsenic	B240405	3.0	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:50	DMW	
Cadmium	B240405	0.077	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:50	DMW	
Calcium	B240429	3.33	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 11:57	AMO	
Lead	B240405	6.7	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:50	DMW	
Magnesium	B240429	2060	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 11:57	AMO	
Phosphorus as P	B240429	0.464	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 11:57	AMO	
Hardness	B240429	16.8	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 11:57	AMO	
Dissolved Metals										
Cadmium	B240406	0.013	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:48	DMW	
Copper	B240406	4.5	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:48	DMW	
Lead	B240406	0.29	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:48	DMW	
Zinc	B240406	10.5	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:48	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240201-03-WC
Date/Time Collected:	02/01/2024 19:42 - 02/02/2024 09:26		
Lab Number:	AC00329-04	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	173		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:05	ALN	
BOD5	B240404	7.27	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:43	ASE	
Chloride	B240518	6.25	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 19:43	BAK	
COD	B240401	39.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.204	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:16	RKT	
TKN	B240548	0.894	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:03	JAL	
Total Dissolved Solids	B240407	52.8	mg/L	20.0	20.0	SM 2540 C-2015	02/04/24	2/6/24 11:55	ASE	
Total Suspended Solids	B240408	18.8	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 13:41	CLH	
Turbidity	B240400	60.5	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 13:33	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.100	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:28	RKT	
Total Metals										
Mercury	B240440	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 7:41	SAS	U
Arsenic	B240405	0.85	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:52	DMW	
Cadmium	B240405	0.024	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:52	DMW	
Calcium	B240429	4.01	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 12:00	AMO	
Lead	B240405	0.82	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:52	DMW	
Magnesium	B240429	1460	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 12:00	AMO	
Phosphorus as P	B240429	0.174	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 12:00	AMO	
Hardness	B240429	16.0	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 12:00	AMO	
Dissolved Metals										
Cadmium	B240406	<0.0100	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:51	DMW	U
Copper	B240406	2.0	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:51	DMW	
Lead	B240406	0.056	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:51	DMW	
Zinc	B240406	17.5	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:51	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/19/2024 10:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240201-11-WC
Date/Time Collected:	02/01/2024 04:16 - 02/02/2024 10:16		
Lab Number:	AC00329-05	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	169		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:39	ALN	
BOD5	B240404	9.34	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:37	ASE	
Chloride	B240518	35.6	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 20:10	BAK	
COD	B240401	82.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.375	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:17	RKT	
TKN	B240548	1.33	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:04	JAL	
Total Dissolved Solids	B240407	139	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:56	ASE	
Total Suspended Solids	B240408	58.4	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:51	CLH	
Turbidity	B240400	106	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:08	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.171	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:30	RKT	
Total Metals										
Mercury	B240440	0.0148	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:30	SAS	
Arsenic	B240405	2.4	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:54	DMW	
Cadmium	B240405	0.058	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:54	DMW	
Calcium	B240429	10.0	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 12:03	AMO	
Lead	B240405	4.8	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:54	DMW	
Magnesium	B240429	4370	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 12:03	AMO	
Phosphorus as P	B240429	0.321	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 12:03	AMO	
Hardness	B240429	43.0	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 12:03	AMO	
Dissolved Metals										
Cadmium	B240406	<0.0100	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:53	DMW	U
Copper	B240406	3.9	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:53	DMW	
Lead	B240406	0.18	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:53	DMW	
Zinc	B240406	25.7	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:53	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/19/2024 10:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240201-11-103
Date/Time Collected:	02/02/2024 04:16 - 02/02/2024 10:16		
Lab Number:	AC00329-06	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240477	170		35.0	35.0	SM 4500-NH3 D-2011	02/09/24	2/9/24 9:36	ALN	
BOD5	B240404	8.90	mg/L	2.00	2.00	SM 5210 B-2016	02/03/24	2/8/24 9:34	ASE	
Chloride	B240518	35.6	mg/L	0.0800	0.0800	EPA 300.0, Rev. 2.1 (1993)	02/12/24	2/12/24 20:36	BAK	
COD	B240401	83.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/03/24	2/3/24 10:18	RKT	
Nitrate-Nitrite, as N	B240479	0.378	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/09/24	2/9/24 11:19	RKT	
TKN	B240548	1.35	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	02/15/24	2/16/24 10:06	JAL	
Total Dissolved Solids	B240407	140	mg/L	20.0	20.0	SM 2540 C-2015	02/02/24	2/6/24 11:57	ASE	
Total Suspended Solids	B240408	53.8	mg/L	0.900	0.900	SM 2540 D-2015	02/04/24	2/4/24 12:48	CLH	
Turbidity	B240400	113	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:16	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240398	0.172	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/02/24	2/2/24 14:31	RKT	
Total Metals										
Mercury	B240440	0.0127	ug/L	0.0100	0.0100	EPA 245.1	02/07/24	2/8/24 8:34	SAS	
Arsenic	B240405	2.4	ug/L	0.070	0.070	EPA 200.8	02/04/24	2/8/24 13:57	DMW	
Cadmium	B240405	0.052	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:57	DMW	
Calcium	B240429	9.88	mg/L	0.0400	0.0400	EPA 200.7	02/06/24	2/8/24 12:06	AMO	
Lead	B240405	4.9	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/8/24 13:57	DMW	
Magnesium	B240429	4290	ug/L	80.0	80.0	EPA 200.7	02/06/24	2/8/24 12:06	AMO	
Phosphorus as P	B240429	0.312	mg/L	0.0120	0.0120	EPA 200.7	02/06/24	2/8/24 12:06	AMO	
Hardness	B240429	42.4	mg/L	0.100	0.100	SM 2340 B-2011	02/06/24	2/8/24 12:06	AMO	
Dissolved Metals										
Cadmium	B240406	0.011	ug/L	0.010	0.010	EPA 200.8	02/04/24	2/4/24 14:56	DMW	
Copper	B240406	3.7	ug/L	0.15	0.15	EPA 200.8	02/04/24	2/4/24 14:56	DMW	
Lead	B240406	0.19	ug/L	9.00E-3	9.00E-3	EPA 200.8	02/04/24	2/4/24 14:56	DMW	
Zinc	B240406	26.6	ug/L	0.50	0.50	EPA 200.8	02/04/24	2/4/24 14:56	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/19/2024 10:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B240400									
Blank (B240400-BLK1)									
Turbidity	<0.3	NTU					02/02/2024	LRF	U
LCS (B240400-BS1)									
Turbidity			99.5	90-110			02/02/2024	LRF	
Duplicate (B240400-DUP1)	Source ID: AC00329-02								
Turbidity					9.90	25	02/02/2024	LRF	D
Batch: B240401									
Blank (B240401-BLK1)									
COD	<7	mg/L					02/03/2024	RKT	U
LCS (B240401-BS1)									
COD			95.7	90-110			02/03/2024	RKT	
Duplicate (B240401-DUP1)	Source ID: AC00330-01								
COD					0.00	10	02/03/2024	RKT	
Batch: B240404									
Blank (B240404-BLK1)									
BOD5	<2	mg/L					02/08/2024	ASE	U
LCS (B240404-BS1)									
BOD5			107	84.6-115.4			02/08/2024	ASE	
LCS (B240404-BS2)									
BOD5			100	84.6-115.4			02/08/2024	ASE	
Duplicate (B240404-DUP1)	Source ID: BB03562-02								
BOD5					3.49	30	02/08/2024	ASE	D
Batch: B240407									
Blank (B240407-BLK1)									
Total Dissolved Solids	<20	mg/L					02/06/2024	ASE	U
LCS (B240407-BS1)									
Total Dissolved Solids			92.4	90-110			02/06/2024	ASE	
Duplicate (B240407-DUP1)	Source ID: AC00330-01								
Total Dissolved Solids					1.35	10	02/06/2024	ASE	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240408									
Blank (B240408-BLK1)									
Total Suspended Solids	<0.9	mg/L					02/04/2024	CLH	U
LCS (B240408-BS1)									
Total Suspended Solids			97.1	90-110			02/04/2024	CLH	
Duplicate (B240408-DUP1) Source ID: AC00330-01									
Total Suspended Solids					5.76	20	02/04/2024	CLH	
Duplicate (B240408-DUP2) Source ID: BB03562-01									
Total Suspended Solids					3.48	20	02/04/2024	CLH	
Batch: B240477									
Blank (B240477-BLK1)									
Ammonia, as N	<35	ug/L					02/09/2024	ALN	U
Blank (B240477-BLK2)									
Ammonia, as N	<35	ug/L					02/09/2024	ALN	U
LCS (B240477-BS1)									
Ammonia, as N			101	90-110			02/09/2024	ALN	
LCS (B240477-BS2)									
Ammonia, as N			103	90-110			02/09/2024	ALN	
Duplicate (B240477-DUP1) Source ID: BB03559-02									
Ammonia, as N					1.51	10	02/09/2024	ALN	
Duplicate (B240477-DUP2) Source ID: LS01853-02									
Ammonia, as N					0.108	10	02/09/2024	ALN	
Duplicate (B240477-DUP3) Source ID: BB03578-01									
Ammonia, as N					0.524	10	02/09/2024	ALN	
Duplicate (B240477-DUP4) Source ID: BB03570-04									
Ammonia, as N					0.00	10	02/09/2024	ALN	
Matrix Spike (B240477-MS1) Source ID: BB03559-02									
Ammonia, as N			106	80-120			02/09/2024	ALN	
Matrix Spike (B240477-MS2) Source ID: LS01853-02									
Ammonia, as N			106	80-120			02/09/2024	ALN	
Matrix Spike (B240477-MS3) Source ID: BB03578-01									
Ammonia, as N			103	80-120			02/09/2024	ALN	
Matrix Spike (B240477-MS4) Source ID: BB03570-04									
Ammonia, as N			102	80-120			02/09/2024	ALN	
Matrix Spike Dup (B240477-MSD1) Source ID: BB03559-02									
Ammonia, as N			104	80-120	1.15	10	02/09/2024	ALN	
Matrix Spike Dup (B240477-MSD2) Source ID: LS01853-02									
Ammonia, as N			107	80-120	0.685	10	02/09/2024	ALN	
Matrix Spike Dup (B240477-MSD3) Source ID: BB03578-01									
Ammonia, as N			106	80-120	2.14	10	02/09/2024	ALN	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240477 (Continued)									
Matrix Spike Dup (B240477-MSD4) Source ID: BB03570-04									
Ammonia, as N			103	80-120	0.553	10	02/09/2024	ALN	
Batch: B240479									
Blank (B240479-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/09/2024	RKT	U
Blank (B240479-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/09/2024	RKT	U
Blank (B240479-BLK3)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/09/2024	RKT	U
LCS (B240479-BS1)									
Nitrate-Nitrite, as N			99.7	90-110			02/09/2024	RKT	
LCS (B240479-BS2)									
Nitrate-Nitrite, as N			98.9	90-110			02/09/2024	RKT	
LCS (B240479-BS3)									
Nitrate-Nitrite, as N			97.7	90-110			02/09/2024	RKT	
Duplicate (B240479-DUP1) Source ID: BB03548-02RE1									
Nitrate-Nitrite, as N					NR	10	02/09/2024	RKT	
Duplicate (B240479-DUP2) Source ID: BB03578-04									
Nitrate-Nitrite, as N					2.93	10	02/09/2024	RKT	
Duplicate (B240479-DUP3) Source ID: LS01856-02									
Nitrate-Nitrite, as N					0.191	10	02/09/2024	RKT	
Duplicate (B240479-DUP4) Source ID: WB02951-06									
Nitrate-Nitrite, as N					0.252	10	02/09/2024	RKT	
Duplicate (B240479-DUP5) Source ID: BB03584-01									
Nitrate-Nitrite, as N					0.814	10	02/09/2024	RKT	
Matrix Spike (B240479-MS1) Source ID: BB03548-02RE1									
Nitrate-Nitrite, as N			99.2	90-110			02/09/2024	RKT	
Matrix Spike (B240479-MS2) Source ID: BB03578-04									
Nitrate-Nitrite, as N			95.4	90-110			02/09/2024	RKT	
Matrix Spike (B240479-MS3) Source ID: LS01856-02									
Nitrate-Nitrite, as N			96.4	90-110			02/09/2024	RKT	
Matrix Spike (B240479-MS4) Source ID: WB02951-06									
Nitrate-Nitrite, as N			96.5	90-110			02/09/2024	RKT	
Matrix Spike (B240479-MS5) Source ID: BB03584-01									
Nitrate-Nitrite, as N			98.3	90-110			02/09/2024	RKT	
Matrix Spike Dup (B240479-MSD1) Source ID: BB03548-02RE1									
Nitrate-Nitrite, as N			97.8	90-110	1.46	10	02/09/2024	RKT	
Matrix Spike Dup (B240479-MSD2) Source ID: BB03578-04									
Nitrate-Nitrite, as N			94.6	90-110	0.730	10	02/09/2024	RKT	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240479 (Continued)									
Matrix Spike Dup (B240479-MSD3) Source ID: LS01856-02									
Nitrate-Nitrite, as N			98.1	90-110	0.886	10	02/09/2024	RKT	
Matrix Spike Dup (B240479-MSD4) Source ID: WB02951-06									
Nitrate-Nitrite, as N			96.3	90-110	0.0725	10	02/09/2024	RKT	
Matrix Spike Dup (B240479-MSD5) Source ID: BB03584-01									
Nitrate-Nitrite, as N			98.4	90-110	0.0649	10	02/09/2024	RKT	
Batch: B240518									
Blank (B240518-BLK1)									
Chloride	<0.08	mg/L					02/12/2024	BAK	U
Blank (B240518-BLK2)									
Chloride	<0.08	mg/L					02/13/2024	BAK	U
LCS (B240518-BS1)									
Chloride			97.6	90-110			02/12/2024	BAK	
LCS (B240518-BS2)									
Chloride			98.1	90-110			02/13/2024	BAK	
LCS (B240518-BS3)									
Chloride			97.6	90-110			02/12/2024	BAK	
Duplicate (B240518-DUP1) Source ID: LS01859-01									
Chloride					0.0260	10	02/12/2024	BAK	
Duplicate (B240518-DUP2) Source ID: ES00298-02									
Chloride					0.0302	10	02/13/2024	BAK	
Duplicate (B240518-DUP3) Source ID: LS01859-01RE1									
Chloride					0.0989	10	02/13/2024	BAK	D
Matrix Spike (B240518-MS1) Source ID: LS01859-01									
Chloride			93.6	90-110			02/12/2024	BAK	
Matrix Spike (B240518-MS2) Source ID: ES00298-02									
Chloride			96.1	90-110			02/13/2024	BAK	
Matrix Spike (B240518-MS3) Source ID: LS01859-01RE1									
Chloride			97.1	90-110			02/13/2024	BAK	D
Matrix Spike (B240518-MS4) Source ID: AC00329-02									
Chloride			94.4	90-110			02/12/2024	BAK	
Matrix Spike (B240518-MS5) Source ID: AC00329-02									
Chloride			94.8	90-110			02/13/2024	BAK	
Matrix Spike (B240518-MS6) Source ID: WQ00200-05									
Chloride			95.5	90-110			02/13/2024	BAK	
Matrix Spike Dup (B240518-MSD1) Source ID: LS01859-01									
Chloride			94.0	90-110	0.127	10	02/12/2024	BAK	
Matrix Spike Dup (B240518-MSD2) Source ID: ES00298-02									
Chloride			95.7	90-110	0.192	10	02/13/2024	BAK	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240518 (Continued)									
Matrix Spike Dup (B240518-MSD3) Source ID: LS01859-01RE1									
Chloride			98.0	90-110	0.388	10	02/13/2024	BAK	D
Batch: B240548									
Blank (B240548-BLK1)									
TKN	<0.1	mg/L					02/16/2024	JAL	U
Blank (B240548-BLK2)									
TKN	<0.1	mg/L					02/16/2024	JAL	U
Blank (B240548-BLK3)									
TKN	<0.1	mg/L					02/16/2024	JAL	U
LCS (B240548-BS1)									
TKN			100	80-120			02/16/2024	JAL	
LCS (B240548-BS2)									
TKN			106	80-120			02/16/2024	JAL	
LCS (B240548-BS3)									
TKN			94.4	80-120			02/16/2024	JAL	
Duplicate (B240548-DUP1) Source ID: AC00329-01									
TKN					0.415	20	02/16/2024	JAL	
Duplicate (B240548-DUP2) Source ID: BB03570-01									
TKN					2.83	20	02/16/2024	JAL	D
Duplicate (B240548-DUP3) Source ID: BB03578-03									
TKN					1.87	20	02/16/2024	JAL	D
Duplicate (B240548-DUP4) Source ID: LS01856-05									
TKN					5.74	20	02/16/2024	JAL	D
Matrix Spike (B240548-MS1) Source ID: AC00329-01									
TKN			99.7	80-120			02/16/2024	JAL	
Matrix Spike (B240548-MS2) Source ID: BB03570-01									
TKN			99.2	80-120			02/16/2024	JAL	D
Matrix Spike (B240548-MS3) Source ID: BB03578-03									
TKN			102	80-120			02/16/2024	JAL	D
Matrix Spike (B240548-MS4) Source ID: LS01856-05									
TKN			86.1	80-120			02/16/2024	JAL	D
Matrix Spike (B240548-MS5) Source ID: WQ00200-03									
TKN			97.5	80-120			02/16/2024	JAL	
Matrix Spike (B240548-MS6) Source ID: WQ00200-04									
TKN			94.9	80-120			02/16/2024	JAL	
Matrix Spike Dup (B240548-MSD1) Source ID: AC00329-01									
TKN			101	80-120	1.39	20	02/16/2024	JAL	
Matrix Spike Dup (B240548-MSD2) Source ID: BB03570-01									
TKN			99.6	80-120	0.237	20	02/16/2024	JAL	D

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240548 (Continued)									
Matrix Spike Dup (B240548-MSD3) Source ID: BB03578-03									
TKN			104	80-120	0.657	20	02/16/2024	JAL	D
Matrix Spike Dup (B240548-MSD4) Source ID: LS01856-05									
TKN			92.5	80-120	2.57	20	02/16/2024	JAL	D
Dissolved Wet Chemistry									
Batch: B240398									
Blank (B240398-BLK1)									
Orthophosphate, as P	<0.003	mg/L					02/02/2024	RKT	U
LCS (B240398-BS1)									
Orthophosphate, as P			98.7	90-110			02/02/2024	RKT	
Duplicate (B240398-DUP1) Source ID: WB02944-06									
Orthophosphate, as P					0.461	10	02/02/2024	RKT	D
Duplicate (B240398-DUP2) Source ID: LS01852-02									
Orthophosphate, as P					0.270	10	02/02/2024	RKT	D
Matrix Spike (B240398-MS1) Source ID: WB02944-06									
Orthophosphate, as P			103	90-110			02/02/2024	RKT	D
Matrix Spike (B240398-MS2) Source ID: LS01852-02									
Orthophosphate, as P			102	90-110			02/02/2024	RKT	D
Matrix Spike Dup (B240398-MSD1) Source ID: WB02944-06									
Orthophosphate, as P			102	90-110	0.249	10	02/02/2024	RKT	D
Matrix Spike Dup (B240398-MSD2) Source ID: LS01852-02									
Orthophosphate, as P			102	90-110	0.0492	10	02/02/2024	RKT	D

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B240405									
Blank (B240405-BLK1)									
Arsenic	<0.070	ug/L					02/08/2024	DMW	U
Cadmium	<0.010	ug/L					02/08/2024	DMW	U
Lead	<0.010	ug/L					02/08/2024	DMW	U
LCS (B240405-BS1)									
Arsenic			101	85-115			02/08/2024	DMW	
Cadmium			101	85-115			02/08/2024	DMW	
Lead			102	85-115			02/08/2024	DMW	
Duplicate (B240405-DUP1) Source ID: AC00329-01									
Arsenic					2.22	20	02/08/2024	DMW	
Cadmium					2.34	20	02/08/2024	DMW	
Lead					2.48	20	02/08/2024	DMW	
Matrix Spike (B240405-MS1) Source ID: AC00329-01									
Arsenic			97.6	70-130			02/08/2024	DMW	
Cadmium			100	70-130			02/08/2024	DMW	
Lead			101	70-130			02/08/2024	DMW	
Matrix Spike Dup (B240405-MSD1) Source ID: AC00329-01									
Arsenic			98.3	70-130	0.625	20	02/08/2024	DMW	
Cadmium			101	70-130	0.665	20	02/08/2024	DMW	
Lead			101	70-130	0.234	20	02/08/2024	DMW	
Batch: B240429									
Blank (B240429-BLK1)									
Calcium	<0.04	mg/L					02/08/2024	AMO	U
Magnesium	<80	ug/L					02/08/2024	AMO	U
Phosphorus as P	<0.012	mg/L					02/08/2024	AMO	U
LCS (B240429-BS1)									
Calcium			102	85-115			02/08/2024	AMO	
Magnesium			103	85-115			02/08/2024	AMO	
Phosphorus as P			101	85-115			02/08/2024	AMO	
Duplicate (B240429-DUP1) Source ID: AC00330-01									
Calcium					1.74	20	02/08/2024	AMO	
Magnesium					1.98	20	02/08/2024	AMO	
Phosphorus as P					0.174	20	02/08/2024	AMO	
Matrix Spike (B240429-MS1) Source ID: AC00330-01									
Calcium			102	70-130			02/08/2024	AMO	
Magnesium			102	70-130			02/08/2024	AMO	
Phosphorus as P			101	70-130			02/08/2024	AMO	
Matrix Spike Dup (B240429-MSD1) Source ID: AC00330-01									
Calcium			102	70-130	0.0523	20	02/08/2024	AMO	
Magnesium			102	70-130	0.188	20	02/08/2024	AMO	
Phosphorus as P			102	70-130	0.474	20	02/08/2024	AMO	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B240440									
Blank (B240440-BLK1)									
Mercury	<0.01	ug/L					02/08/2024	SAS	U
LCS (B240440-BS1)									
Mercury			103	85-115			02/08/2024	SAS	
Duplicate (B240440-DUP1) Source ID: AC00329-04									
Mercury					NR	20	02/08/2024	SAS	U
Matrix Spike (B240440-MS1) Source ID: AC00329-04									
Mercury			106	70-130			02/08/2024	SAS	
Matrix Spike Dup (B240440-MSD1) Source ID: AC00329-04									
Mercury			109	70-130	2.55	20	02/08/2024	SAS	
Dissolved Metals									
Batch: B240406									
Blank (B240406-BLK1)									
Cadmium	<0.010	ug/L					02/04/2024	DMW	U
Copper	<0.15	ug/L					02/04/2024	DMW	U
Lead	<0.0090	ug/L					02/04/2024	DMW	U
Zinc	<0.50	ug/L					02/04/2024	DMW	U
LCS (B240406-BS1)									
Cadmium			103	85-115			02/04/2024	DMW	
Copper			97.2	85-115			02/04/2024	DMW	
Lead			102	85-115			02/04/2024	DMW	
Zinc			98.7	85-115			02/04/2024	DMW	
Duplicate (B240406-DUP1) Source ID: AC00329-02									
Cadmium					14.8	10	02/04/2024	DMW	QC-02
Copper					0.197	10	02/04/2024	DMW	
Lead					1.65	10	02/04/2024	DMW	
Zinc					1.45	10	02/04/2024	DMW	
Matrix Spike (B240406-MS1) Source ID: AC00329-02									
Cadmium			100	70-130			02/04/2024	DMW	
Copper			92.7	70-130			02/04/2024	DMW	
Lead			97.8	70-130			02/04/2024	DMW	
Zinc			94.2	70-130			02/04/2024	DMW	
Matrix Spike Dup (B240406-MSD1) Source ID: AC00329-02									
Cadmium			99.4	70-130	0.723	10	02/04/2024	DMW	
Copper			93.3	70-130	0.456	10	02/04/2024	DMW	
Lead			99.7	70-130	1.89	10	02/04/2024	DMW	
Zinc			96.0	70-130	1.20	10	02/04/2024	DMW	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
QC-02	The RPD is greater than the method acceptance criteria. At least one of the values used to calculate the RPD, is less than or equal to the PQL.
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Steven Turner

Lab# AC00329	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	~~E. Coli - IDEXX Colilert~~ Chlorides	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-01	2/1/24	2/2/24	1843	0757	240201-12-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1
-02	2/1/24	2/2/24	1811	0936	240201-14-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	2/2/24 1019	[signature]	
[signature]	2/2/24 1101	[signature] 2-2-24 1102	

AC00329

AC00329

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Steven Turner
Kristin Chisholm

Lab# AC00329	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	~~E. Coli - IDEXX Colilert~~ Chlorides	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-03	2/2/24	2/2/24	0335	0936	240201-206-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristin Chisholm	2/2/24 1019	[signature]	
[signature]	2/2/24 1102	[signature] 2-2-24 1102	

AC00329

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristin Chisholm
Steven Turner

Lab# AC00329	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	~~E. Coli - IDEXX Colilert~~ Chlorides	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-04	2/1/24	2/2/24	1942	0926	240201-03-WC	~~KC~~ ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1
-05	2/2/24	2/2/24	0416	1016	240201-11-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
-06					240201-~~03~~ 11-103 (DUP)																				

Relinquished by (sign)	Date & Time Transferred	Received by (sign)
Kristen Chisholm	2/2/2024 1134	[signature]
[signature]	2/2/2024 1159	[signature] 2-2-24 1159

Comments/Special Instructions:

If sufficient volume, please split 240201-11-WC for a duplicate analysis under the name 240201-11-103.
If low volume for 240201-03-WC, prioritize dissolved parameters, then any other parameters you can, please.

Modified

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Steven Turner
Kristin Chisholm

Lab# AC00329	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	~~E. Coli - IDEXX Colilert~~ Chlorides	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-03	~~2/1/24~~ 2/1/24	2/2/24	~~0335~~ 1909	~~0936~~ 0936	240201-206-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2

Relinquished by (sign)	Date & Time Transferred	Received by (sign)
Kristin Chisholm	2/2/24 1019	[signature]
[signature]	2/2/24 1102	[signature] 2-2-24 1102

Comments/Special Instructions:

Modified

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristin Chisholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD$_5$ - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	~~E. Coli - IDEXX Colilert~~ Colicrit	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
AC00529																									
-04	2/1/24	2/2/24	1342	0926	240201-03-WC	ST	X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	4
-05	~~2/2/24~~ 2/1/24	2/2/24	0416	1016	240201-11-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
-06					240201-11-103 (Dup)																				

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristin Chisholm	2/2/2024 1134	[signature]	If sufficient volume, please split 240201-11-WC for a duplicate analysis under the name 240201-11-103. If low volume for 240201-03-WC, prioritize dissolved parameters, then any other parameters you can, please.
[signature]	2/2/2024 1159	[signature] 2-2-24 1159	

Azubike Emenari

To: Steven Turner; Stephen Quintero
Cc: Monica Lowe
Subject: RE: [External] RE: 2/2/24 Lab Report Issue

From: Steven Turner <sturner@achdidaho.org>
Sent: Wednesday, March 13, 2024 1:50 PM
To: Azubike Emenari <AEmenari@cityofboise.org>; Stephen Quintero <SQuintero@cityofboise.org>
Cc: Monica Lowe <mlowe@achdidaho.org>
Subject: [External] RE: 2/2/24 Lab Report Issue

Hey lab folks,

Apologies asking for more changes to the 2/1/24 storm, but we noticed a few additional times that needed to be changed to the analysis report. Here is also a rewritten chain of custody.

The following samples need their times adjusted:

- AC00329-03 begin time is 19:09 on 2/1/24 (previously written as 2/2/2024 3:35)
- AC00329-05 begin time is 4:16 on 2/1/24 (previously written as 2/2/2024 04:16)

It's not a big deal if these changes can't be made but let me know when we can expect this document to be sent over.

Again, sorry for the changes. We really appreciate all you do.

Best,
Steven Turner
Environmental Specialist | Environmental Department

Ada County Highway District (ACHD)
3775 Adams Street, Garden City, Idaho 83714
Phone: (208)407-4284
www.achdidaho.org
Connect with us on social! ***@achdidaho***
ACHD
connecting you to more

From: Steven Turner
Sent: Tuesday, March 12, 2024 2:17 PM

ACHD Sample Filtration, Splitting, and Compositing for Metals

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: AC00329-01 Location: ACSTIC Sample Date: 2-2-24 Sample ID: 240201-12-WC 1	Split Date: 2-2-24 Start Split: 1111 Start Filter: 1111 Comp Time: N/A Analyst: AMO/DKT	Filter: ☒Voss ☒0.45µm high-capacity ☒5.0µm ☒10.0µm	Coll Jug: Not Avail. Comp Jug: N/A SS Tubing/Helper: CC00047-43 (SSA1) Stir Bar: CC00048-85 Connector: CC00035-68 and CC00041-31	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐____ ☒COD ☐____	only 1 jug
Lims#: AC00329-02 Location: ACSTIC Sample Date: 2-2-24 Sample ID: 240201-14-WC 2	Split Date: 2-2-24 Start Split: 1125 Start Filter: 1125 Comp Time: 1121 Analyst: Amo/DKT	Filter: ☒Voss ☒0.45 high-capaacity ☒5.0µm ☒10.0µm	Coll Jug: CC00048-77 Comp Jug: CC00048-77 SS Tubing/Helper: CC00047-85 (SSA4) Stir Bar: CC00048-85 Connector: CC00040-06 and CC00039-71	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐____ ☒COD ☐____	composited into (1) of the 16L
Lims#: AC00329-03 Location: ACSTIC Sample Date: 2-2-24 Sample ID: 240201-206-WC 3	Split Date: 2-2-24 Start Split: 1142 Start Filter: 1142 Comp Time: 1138 Analyst: Amo/DKT	Filter: ☒Voss ☒0.45µm high-capacity (x3) ☒5.0µm (x2) ☒10.0µm (x2)	Coll Jug: CC00047-32 Comp Jug: CC00048-86 SS Tubing/Helper: CC00048-70 (SSA5) Stir Bar: CC00048-85 Connector: CC00041-46 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐____ ☒COD ☐____	Initially used (3) voss filters, but plugged after 500mL waste. used another (4) voss filters; was able to get needed volume then.
Lims#: AC00329-05 Location: ACSTIC Sample Date: 2-2-24 Sample ID: 240201-11-WC 4	Split Date: 2-2-24 Start Split: 1220 Start Filter: 1220 Comp Time: 1215 Analyst: Amo/DKT	Filter: ☒Voss ☒0.45µm high-capacity ☒5.0µm ☒10.0µm	CC00048-69 Coll Jug: CC00048-78 (x2) Comp Jug: CC002378 SS Tubing/Helper: CC00047-42 (SSA6) Stir Bar: CC00050-10 Connector: CC00041-46 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐____ ☒COD ☐____	composited into 40L Round
Lims#: AC00329-06 Location: ACSTIC Sample Date: 2-2-24 Sample ID: 240201-11-~~WC~~ 103 DT 5 DUP	Split Date: 2-2-24 Start Split: 1135 Start Filter: 1135 Comp Time: 1215 Analyst: Amo/DKT	Filter: ☒Voss ☒0.45µm high-capacity ☒5.0µm ☒10.0µm	Coll Jug: CC00048-78 (x2) Comp Jug: CC002378 SS Tubing/Helper: CC00047-18 (SSA7) Stir Bar: ~~CC00034-BB~~ DT Connector: CC00044-99 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐____ ☒COD ☐____	Duplicate

ACHD Sample Filtration, Splitting, and Compositing for metals

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: AC00329-04 Location: ACST1C Sample Date: 2-2-24 Sample ID: ~~AMO/OKT~~ (DH) 240201-03-WC 6	Split Date: 2-2-24 Start Split: 1252 Start Filter: 1252 Comp Time: N/A Analyst: AMO/OKT	Filter: ☒Voss ☒0.45µm high-capacity ☒5.0µm ☒10.0µm	Coll Jug: CC00048-77 Comp Jug: N/A SS Tubing/Helper: CC00048-70 (SSA8) Stir Bar: CC00040-97 Connector: CC00044-99 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	Only 1 jug.
Lims#: AC00330-01 ~~AC00329-DH~~ Location: ACST2C Sample Date: 2-2-24 Sample ID: 240201-18-WC 7	Split Date: 2-2-24 Start Split: 1315 Start Filter: 1315 Comp Time: 1312 Analyst: AMO/OKT	Filter: ☒Voss ☒0.45µm high-capacity ~~☐1.0µm~~ ☒5.0µm ☒Other: 10.0µm	Coll Jug: CC00048-78 (x2) Comp Jug: CC00048-78 SS Tubing: SS17 SS Helper: CC00050-08 Stir Bar: CC00034-B3 Connector: CC00044-99 CC00048-69	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	2nd jug had low volume and was noticeably lighter in color.
Lims#: Location: Sample Date: Sample ID:	Split Date: Start Split: Start Filter: Comp Time: Analyst:	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☐Other:	Coll Jug: Comp Jug: SS Tubing: SS Helper: Stir Bar: Connector:	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	
Lims#: Location: Sample Date: Sample ID:	Split Date: Start Split: Start Filter: Comp Time: Analyst:	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☐Other:	Coll Jug: Comp Jug: SS Tubing: SS Helper: Stir Bar: Connector:	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	
Lims#: Location: Sample Date: Sample ID:	Split Date: Start Split: Start Filter: Comp Time: Analyst:	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☐Other:	Coll Jug: Comp Jug: SS Tubing: SS Helper: Stir Bar: Connector:	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐ ☒COD ☐	

Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2024

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for February 26, 2024

Date: May 24, 2024

To: Monica Lowe

Cc: Steven Turner

Kristen Chisholm

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Limitations:

This document was prepared solely for ACHD in accordance with professional standards at the time the services were performed and in accordance with the contract between ACHD and Brown and Caldwell dated October 10, 2023. This document is governed by the specific scope of work authorized by ACHD; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by ACHD and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES Permit), effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the February 26, 2024, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C[1,2]	G	--	G, C[3]	--
November 19, 2023	G, C	G, C	G, C	G[4], C	G, C
February 1, 2024	G[5], C	G[5], C[6]	G[5], C	G[5], C	G[5], C
February 26, 2024	G, C	G, C	G, C[7]	G, C	G, C
Unqualified Samples:	3G, 3C	3G, 2C	2G, 2C	2G, 3C	2G, 3C
Samples Remaining:	0G, 0C	0G, 1C	1G, 1C	1G, 0C	1G, 0C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

[1] Composite samples qualified due to lack of representativeness (50% – 75%).

[2] Incomplete water quality analysis due to low composite sample volume.

[3] Composite samples qualified due to lack of representativeness (50% – 75%) of the calculated flow volume.

[4] Incomplete field parameter collection on the grab sample data form due to field error.

[5] E. coli sample qualified due to exceeded hold time.

[6] Composite sample rejected due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented more than 10% of the composite volume.

[7] Composite sample qualified due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented less than 10% of the composite volume.

Section 3: Storm Event Summary

The February 26, 2024, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from February 26, 2024, is included in Attachment A for reference.

Saturday, February 24, 2024 (Sampling Event Communication)

- On the afternoon of February 24, the National Weather Service issued a forecast for widespread rain in the Boise area, starting February 26 at 0400 and ending at 1500, with the heaviest precipitation from 1000 to 1300. The chance of precipitation was 90%, with 0.30 inches of precipitation forecasted.

Sunday, February 25, 2024 (Set Up)

- Setup was accomplished in the morning of February 25. An expected precipitation depth of 0.11 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.

Monday, February 26, 2024 (Storm Event)

- Moderate rain first started at approximately February 26 at 0821 and ended at 1241. A stronger second wave of rain started soon after around 1230 and ended at 2032.
- Precipitation totals ranged between 0.13 and 0.21 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrographs for the Lucky, Whitewater, Main, Americana and AS_6 site showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Lucky, Whitewater, Main, Americana and AS_6 monitoring stations were set up on February 25, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programmed into the Whitewater and Americana flowmeters. A site-specific velocity cutoff value was programmed into Lucky, Main, and AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

Two, two-member teams mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on February 26 around 0910. Grab samples for Lucky, Whitewater, Main, Americana, and AS_6 were submitted to the West Boise Water Quality Lab (WQL) at 1201 on February 26.

Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Lucky, Whitewater, Main, and Americana monitoring station and submitted to the WQL at 2057 on February 26. The composite sample at AS_6 monitoring station was submitted at 2058 on February 26 to the WQL.

Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the February 26, 2024, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Main monitoring station. The analytical results for these samples are included in Table 4.

Table 4-1. Quality Control Samples

Sample ID	Sample Type	Parent Sample	Conclusions
240226-12-001	Field blank	Main grab	No *E. coli* detection was reported in the field blank.
240226-12-101	Field duplicate	Main grab	Relative percent difference was within the acceptable range.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A.

An acceptable composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. All composite samples, except for Main, met the criteria.

Prior to the start of the storm precipitation or runoff, three subsamples were successfully collected by the automatic sampler at the Main monitoring site. These subsamples are considered non-stormwater, as there was no evidence of flow or precipitation during the evening of February 25th through the morning of February 26th. Following the SWOMP guidelines, calculations were conducted to determine if the non-stormwater composite subsamples volume accounted for 10% of the total composite sample volume. The non-stormwater composite subsamples accounted for 8% of the total composite sample volume (see Table 4-2), qualifying the Main composite sample.

Table 4-2. Non-Stormwater Subsample Evaluation

Composite Sample Volume (ft^3)	Non-Stormwater Subsample Volume (ft^3)	Non-stormwater Subsample Ratio
11,165	913	8 %

Section 5: Notes and Recommendations

Main

The Main site collected non-stormwater samples at three instances prior to the sampling event. The samples had levels greater than the enabling condition of 1.87-inches. The sampler was programmed correctly at the time of set-up. Additional investigation is required to determine the cause of collecting samples when there was no evidence of flow or precipitation. ACHD will reach out to HACH for support.

Americana

Two “Skipped” sample messages were recorded during the composite sample collection at Americana. These sample messages appear when the sampling team pause the sampler program, stopping it from collecting the next subsample. The “Skipped’ sample messages do not affect the sampling data nor is shown on the hydrograph.

Data Tables

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	YES	YES	YES
Composite samples collected and submitted?	YES	YES	YES	YES	YES
Trigger volume (gal or ft^3)	2895 gal	800 ft^3	3411 gal	2960 ft^3	137 ft^3
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	Level > 2.72"	Level > 3.05"	Level > 1.87"	Level > 7.59"	--
Runoff start time	0839	0848	0834	0821	0915
Grab sample collection time	1017	0928	0919	0948	1012
Composite sample stop time	1534	1908	1601	1606	1620
Runoff stop time	1752	2032	1733	1752	1759
Volume of Discharge Sampled (ft^3)	3,573	30,558	11,165 [1]	115,368	4,873
Volume of non-stormwater subsamples (ft^3)	--	--	913	--	--
Total runoff volume (ft^3)	3,965	35,198	10,885	140,004	5,447
Percent of storm flow sampled (%)	90%	87%	103% [1]	83%	89%
Percent of non-stormwater volume to total discharge sampled volume (%)	--	--	8%	--	--
Composite sample duration (hrs)	6.5	9.5	17 [1]	7	6
Storm Precipitation (in)	0.13	0.21	0.18	0.18/0.18	0.18/0.18
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	10	40	26	35	24
Number of composite bottles filled	1	2	2	2	2
Composite sample volume (Approx.; ml)	5,000 ml	23,500 ml	14,050 ml	20,500 ml	13,000 ml

Notes:

– = No data.

[1] Non stormwater samples were collected prior to the start of the storm precipitation or runoff

Table 2. Field and Analytical Data Summary

Monitoring Station	Sample Date	Sample ID Grab	Field Parameters				Analytical Parameters																						
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli	Sample ID Composite	BOD_5	COD	Hardness as $CaCO_3$	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			mg/L	S.U.	uS/cm	C	mpn/100 mL		mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Lucky	2/26/2024	240226-03-WG	9.89	8.27	125.9	4.75	37.9	240226-03-WC	13.5	60.0	53.2	18.9	18.1	114	0.262	0.124	0.476	0.969	1.71	2.6	0.011	0.031	4.5	0.028	0.72	0.0150	13.5
Whitewater	2/26/2024	240226-11-WG	10.88	7.74	749.2	5.97	38.3	240226-11-WC	12.6	84.0	77.8	52.3	47.3	182	0.347	0.174	0.596	0.921	2.43	2.6	0.014	0.062	4.4	0.093	3.8	0.0151	24.5
Main	2/26/2024	240226-12-WG	9.79	7.94	165.88	9.53	24.3	240226-12-WC	13.9 [5J]	119 [5J]	29.8 [5J]	94.7 [5J]	104 [5J]	85.2 [5J]	0.231 [5J]	0.0631 [5J]	0.829 [5J]	0.424 [5J]	1.96 [5J]	1.5 [5J]	0.032 [5J]	0.13 [5J]	5.6 [5J]	0.12 [5J]	6.1 [5J]	0.0191 [5J]	51.7 [5J]
Americana	2/26/2024	240226-14-WG	10.54	7.53	470.55	8.74	125.9	240226-14-WC	12.6	85.0	102	51.1	54.3	214	0.276	0.106	0.496	0.940	1.47	3.3	0.021	0.097	4.0	0.063	3.9	0.0148	24.3
AS_6	2/26/2024	240226-206-WG	9.39	7.44	124.28	6.49	53.7	240226-206-WC	17.7	122	22.2	75.5	75.8	85.8	0.570	0.289	0.522	0.278	2.43	2.2	0.016	0.087	5.0	0.26	6.3	0.0183	20.2

Notes:

– = No data.

[5J] Composite sample qualified due to non stormwater sample volume comprising less than 10% of the total composite sample volume

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	2/26/2024	4.48	0.0648	0.118	0.240	0.423
Whitewater	2/26/2024	104	0.762	1.31	2.02	5.34
Main	2/26/2024	70.6 [5J]	0.157 [5J]	0.563 [5J]	0.288 [5J]	1.33 [5J]
Americana	2/26/2024	474	2.41	4.33	8.21	12.8
AS_6	2/26/2024	25.8	0.194	0.177	0.0945	0.826

Notes:

[5J] Composite sample qualified due to non stormwater sample volume comprising less than 10% of the total composite sample volume

Table 4. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli
				mpn/100 mL
2/26/2024	240226-12-WG	240226-12-001	Field Blank	<1.0
2/26/2024	240226-12-WG	240226-12-101	Field Duplicate	26.9
Calculated parent/duplicate RPD				2%
Allowable RPD				40%

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 02/24/2024	Time: 8:24 AM	Initials: ST
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)	Yes	

Past 72 hr Precip	
Date and time of expected event	Monday, 2/26/24 @4:00 AM
Expected amount of precipitation	0.30”
Percent chance of precipitation	90%
Percent chance of >0.10” over 12 hours	75%

NWS Update

Spoke with Les from NWS and he thinks Boise will still get 0.3” of rain starting at 4:00 AM – 3:00 PM on Monday. It will be a heaviest around 10:00 AM – 1:00 PM.

Targeted Station & Samples

Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab
☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite

Type of Forecasted Precipitation

- ☐ Light Rain
- ☐ Scattered Showers
- ☐ Other:
- ☒ Rain
- ☐ Thunder Showers
- ☐ Rain on Snow
- ☐ Snowmelt

Reasons for Not Targeting a Forecasted Storm and/or Stations

- ☐ Holiday
- ☐ Waiting on Antecedent Dry Period – Expires:
- ☐ Equipment Concerns:
- ☐ Other:

Text Forecast

NWS Forecast for: 2 Miles NNW Garden City ID
Issued by: National Weather Service Boise, ID
Last Update: 4:08 am MST Feb 24, 2024

Today: Sunny, with a high near 60. South southeast wind 5 to 7 mph.
Tonight: Clear, with a low around 35. Southeast wind around 6 mph.
Sunday: Sunny, with a high near 62. Southeast wind 6 to 10 mph.
Sunday Night: A 20 percent chance of rain after 11pm. Increasing clouds, with a low around 41. South wind 6 to 10 mph.
Monday: Rain. High near 48. Breezy, with a south southwest wind 11 to 16 mph becoming west 18 to 23 mph in the morning. Winds could gust as high as 36 mph. Chance of precipitation is 90%. New precipitation amounts between a tenth and quarter of an inch possible.
Monday Night: A 20 percent chance of snow before 11pm. Mostly cloudy, with a low around 27. Blustery.
Tuesday: Partly sunny, with a high near 43.
Tuesday Night: A 20 percent chance of snow after 11pm. Mostly cloudy, with a low around 30.
Wednesday: A slight chance of rain and snow before 11am, then a chance of rain. Mostly cloudy, with a high near 50. Chance of precipitation is 30%.
Wednesday Night: A 30 percent chance of rain. Mostly cloudy, with a low around 40.

Thursday: A 40 percent chance of rain. Mostly cloudy, with a high near 57.
Thursday Night: Rain likely. Mostly cloudy, with a low around 38. Chance of precipitation is 60%.
Friday: Rain likely. Mostly cloudy, with a high near 54. Chance of precipitation is 70%.

Forecast Discussion

Area Forecast Discussion
National Weather Service Boise ID
354 AM MST **Sat** Feb 24 2024

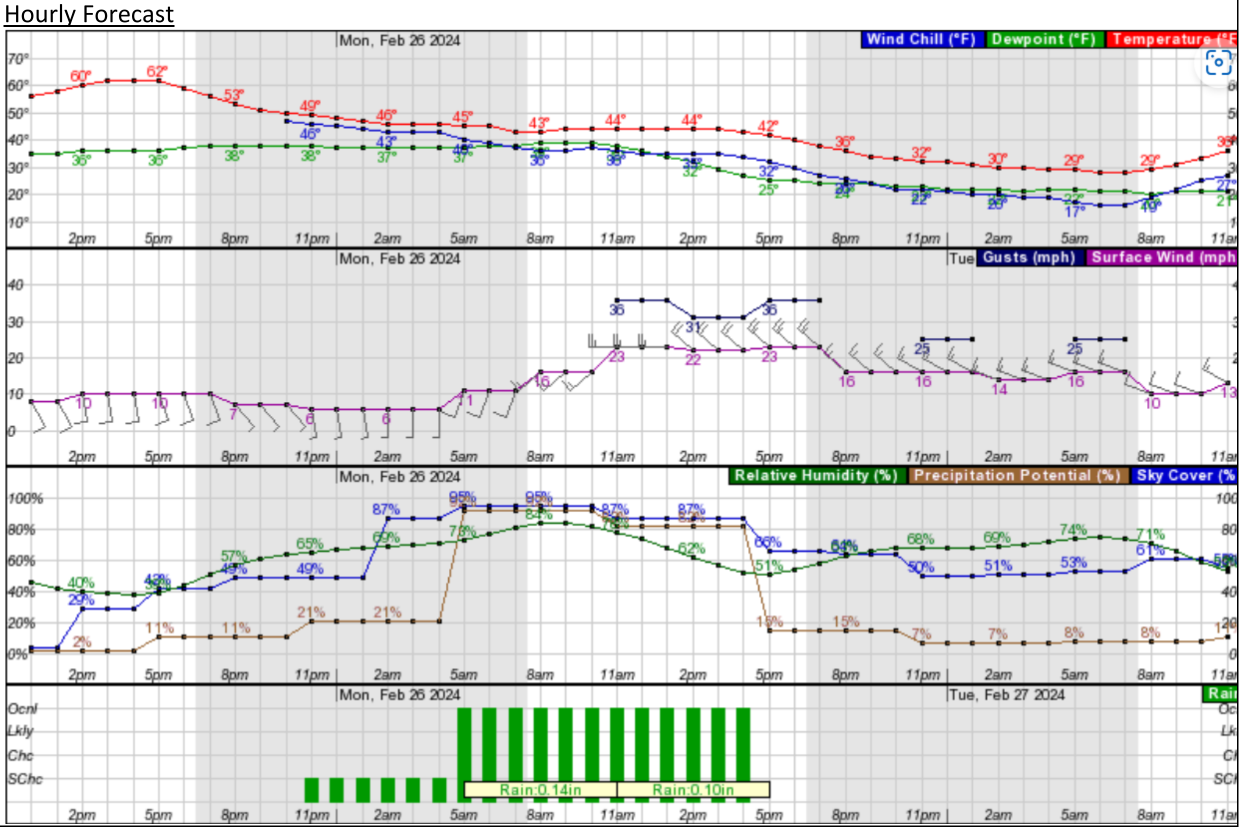
.SHORT TERM...Today through Monday night...Sunny, mild and dry conditions today will give way to increasing clouds on Sunday. Most areas will see high temperatures around 10 degrees above **normal** both days, but below records. Snow covered mountain valleys won`t quite achieve the anomalous warmth, but will still warm above **normal**. Light precipitation will develop over the w-central Idaho mountains Sunday afternoon as a storm drops out of Canada. Given the mild **air mass** snow levels will start between 5-6kft, meaning rain in mountain valleys. The precipitation expands across the higher terrain in e-central Oregon and Boise mountains Sunday night. By sunrise Monday morning snow levels will range between 4500-5500 feet bringing a change from rain to snow in mountain valleys. It`s during the day Monday that we`ll see the heaviest snowfall rates in the mountains and rain fill in across the valleys as the upper **trough** and accompanying cold **front** drop through the region. At elevations above 5500-6000 feet, where its all snow, accumulations of 6-12 inches are possible with locally higher amounts. Have less confidence on accumulation in mountain valleys as snow will have to overcome recent mild temperatures and daytime **insolation** along with temperatures above freezing. For now will keep the WS **Watch** headline.

Strong **flow** aloft, 25-40 mph at ~5kft **MSL** and 45-60 mph at ~10kft **MSL**, and a tightening surface pressure **gradient** will translate to gusty winds across the region. Elevated and open terrain will see the strongest winds as **flow** aloft mixes to the surface. This includes Harney and Malheur counties in Oregon and areas outside of the lower Snake Plain in SW Idaho. A high Wind **Watch** remains in place across southern and western zones as forecast speeds are solid Advisory and possible **Warning** magnitude. This is especially the case for areas closer to the NV border. The lower Snake Plain will see winds ramp up with the frontal passage Monday afternoon and Advisory winds are still in play.

Precipitation will shut off quickly behind the **front** Monday afternoon/evening as snow levels drop to valley floors. Sites below 4000 feet will **likely** see precipitation end as rain. In the Snake Plain the best chance to see a change to snow will be east of Mountain Home, and more so in the western Magic Valley where minor accumulations are forecast. Snow showers will continue in the mountains Monday night with light additional accumulation.

.LONG TERM...Tuesday through Saturday...As quickly as the **trough** entered the region, it`s on the way out on Tuesday. Lower elevations dry out while **instability** supports continuation of showers across the mountains. Any accumulation will be light. By Wednesday, westerly **flow** off the Pacific will begin to moderate the **air mass**, raising snow levels to 4500-5500 feet. Mountains will continue to see precipitation through the end of the week as a **deepening** **trough** along the **Pac** NW coast maintains a steady and moist **flow** aloft. Lower elevations will see precipitation chances increase again toward the end of the week as the **trough** shifts inland. After Thursday, snow levels will gradually lower in response to the advancing **trough**.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE 2/26/24

A. Event and Data Completeness	Yes	No	N/A	Notes
1. Field data sheets filled out completely and clearly	X			
2. Field parameters reviewed, and any problems/issues addressed	X			
3. All samples collected as specified	X			
4. All samples delivered to lab promptly (review chain of custody rpts)	X			See ST ~~analyt~~ analytical reports for noted sample container temps.
5. Inconsistencies/clarifications discussed with sampling team member			X	
6. All analytical reports from lab received	X			Reissued to report ammonia in mg/L

B. Validation and Verification Methods	Yes	No	N/A	Notes
1. Outliers and unexpected values discussed with lab			X	
2. Appropriate analytical methods used	X			Verified correct ammonia method + units
3. All lab QA samples were within method acceptance criteria	X			
4. All samples reviewed and data qualifiers assigned if needed	X			
5. Data quality objective achieved	X			

C. Specific Storm and Sample QA/QC Criteria	Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)	0.00	0.00	0.00	0.00	0.00	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.13	0.21	0.18	0.18/0.18	0.18/0.18	> 0.10"	X		
3. Sampled amount (% of total run-off)	90%	87%	95%	83%	89%	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		
4. Composite sample duration (hours)	6.5	9.5	17.0	7.0	6.0				
4. Ecoli sample holding time (hours)	3.0	4.0	4.0	3.5	3.0	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	16.0	12.5	16.5	16.0	16.0	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

Reviewed by Steven Turner **Date** 4/11/24

Approved by Monica Lowe **Date** 4/11/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.

Step 2. Enter expected precipitation depth (in) in blue cell.

Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth =	0.11
Aliquots per Sample =	17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft^3)	Trigger Vol (ft^3)
Lucky	105	0.157	6582.5	**387**
Whitewater	498	0.069	13621.3	**801**
Main	79	0.246	7760.0	**456**
Main Alt	60	0.200	4791.6	**282**
Americana	875	0.144	50311.8	**2960**
AS_6	204	0.046	3747.0	**220**
State	34	0.160	2172.2	**128**

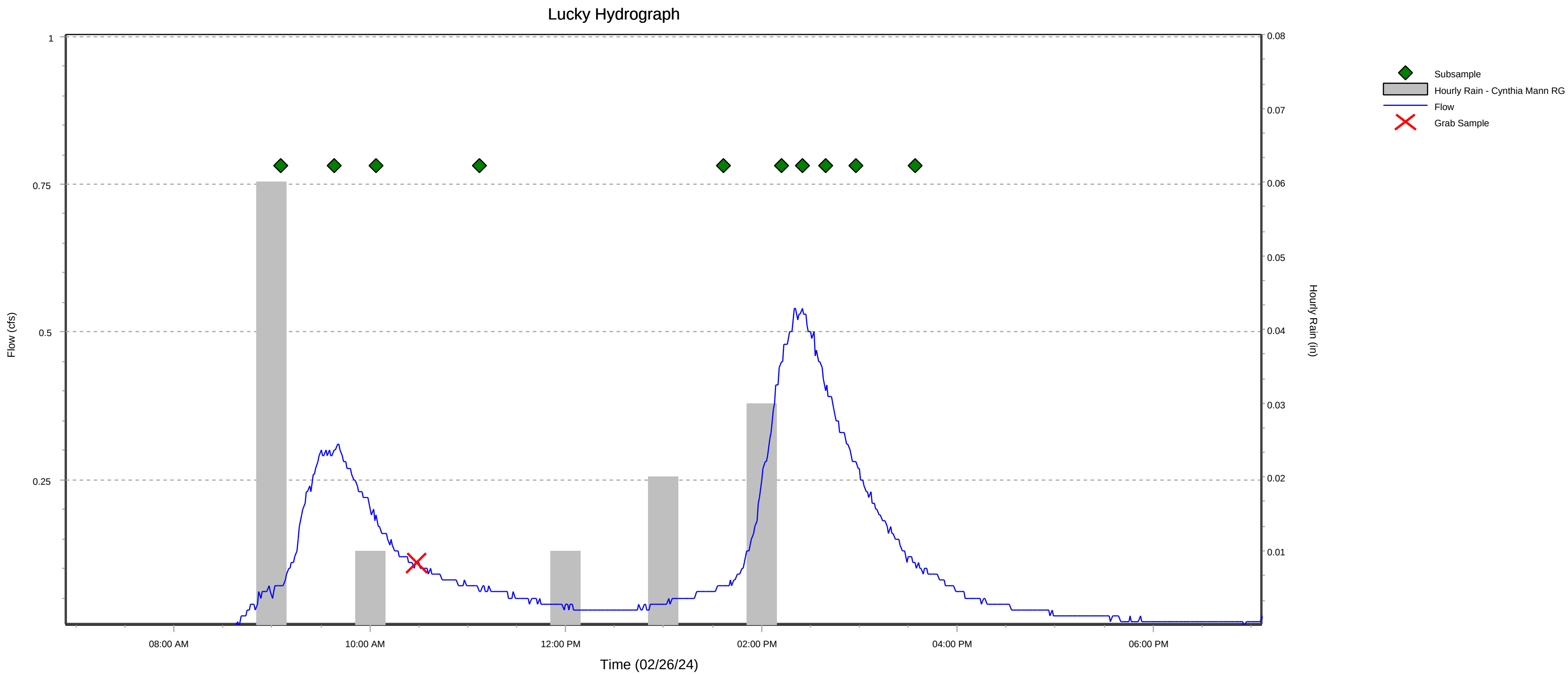
Notes:

Calculated RC = Average (precip (ft) / [volume (ft^3) x area (ft^2)])

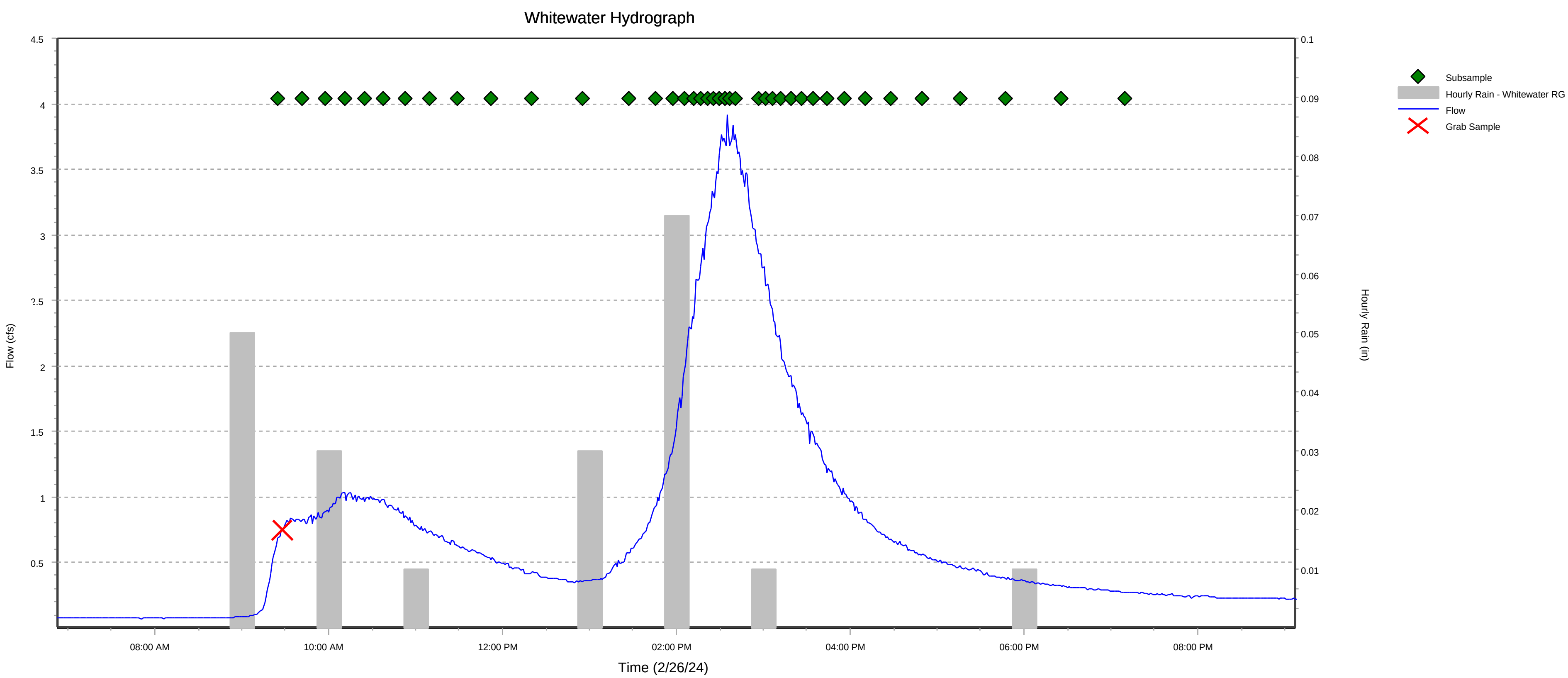
Where precip (ft) is the measured amount from local rain guage, and volume (ft^3) is the measured discharge, and area (ft^2) is the watershed area

Expected volume (ft^3) = RC x expected precip (ft) x area (ft^2)

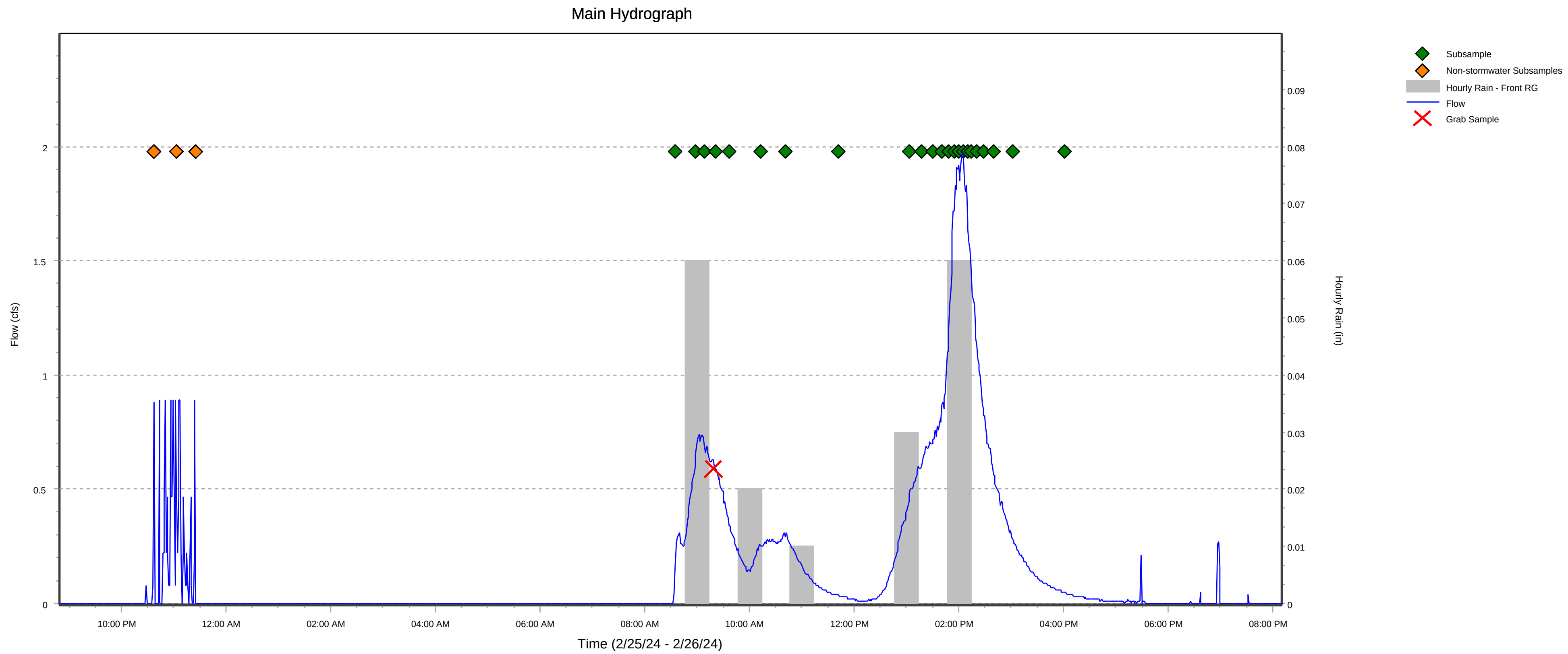
Attachment B: Storm Event Hydrographs



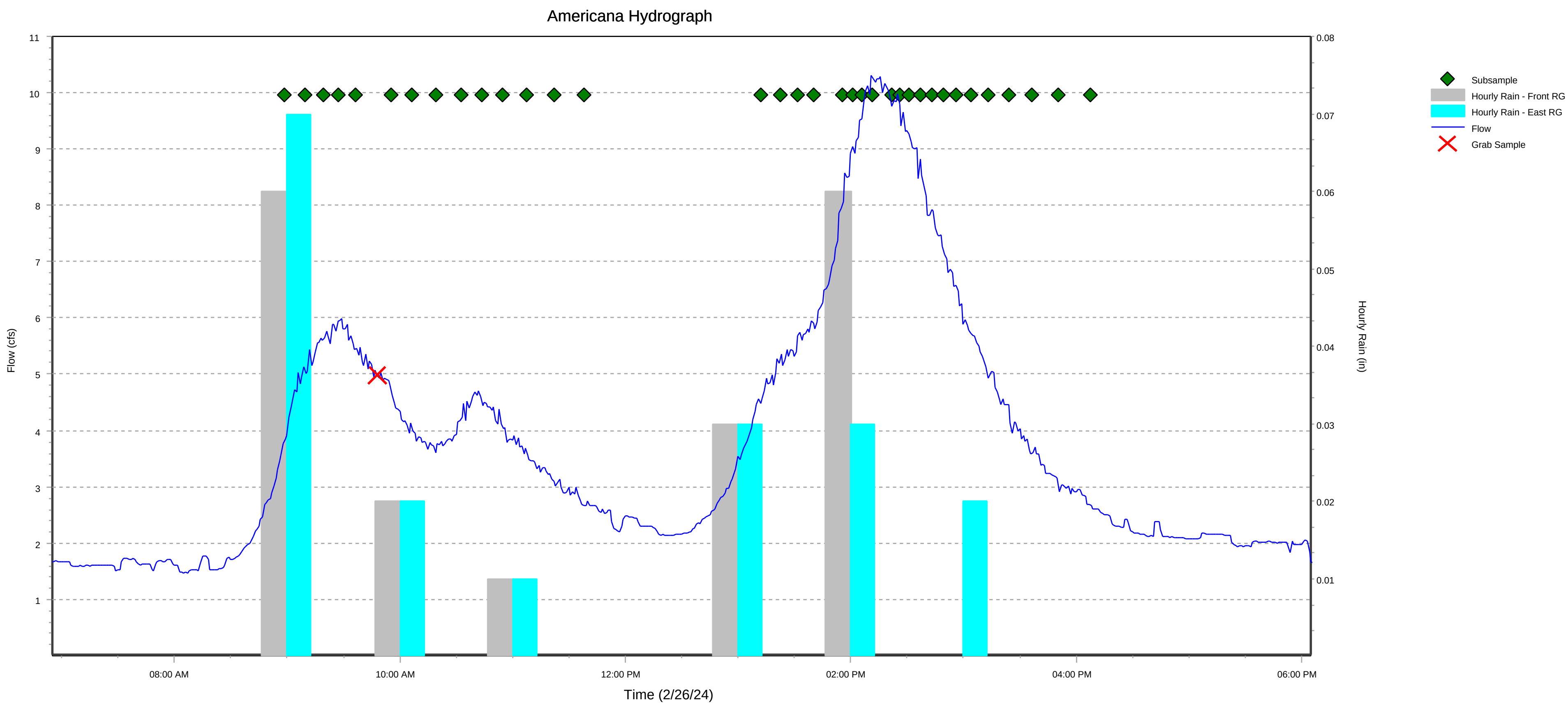
Lucky Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (02/26/24)
1
0.75
0.5
0.25
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
Subsample
Hourly Rain - Cynthia Mann RG
Flow
Grab Sample

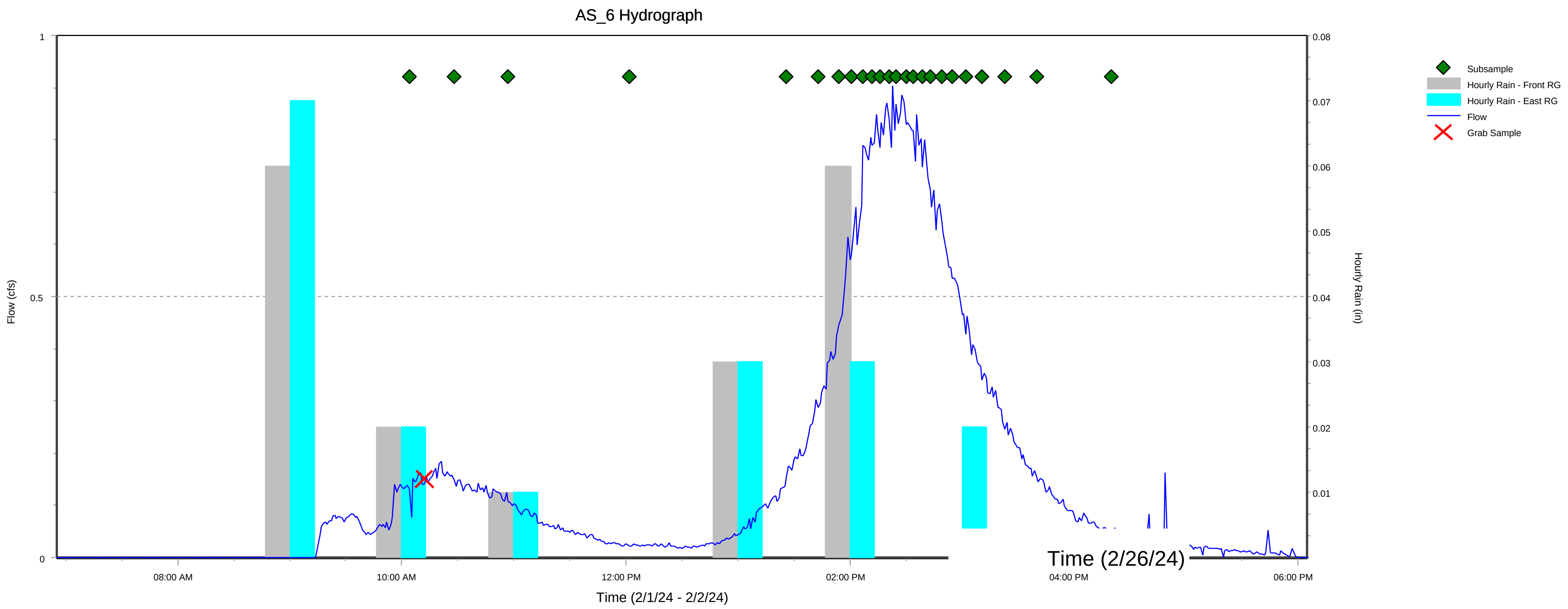


Whitewater Hydrograph
4.5
4
3.5
3
2.5
2
1.5
1
0.5
Flow (cfs)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
Hourly Rain (in)
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
Time (2/26/24)
Subsample
Hourly Rain - Whitewater RG
Flow
Grab Sample



Main Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (2/25/24 - 2/26/24)
0
0.5
1
1.5
2
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
Subsample
Non-stormwater Subsamples
Hourly Rain - Front RG
Flow
Grab Sample


Americana Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (2/26/24)
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample


AS_6 Hydrograph
Flow (cfs)
Hourly Rain (in)
1
0.5
0
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
Time (2/1/24 - 2/2/24)
Time (2/26/24)
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample

Attachment C: Field Forms

Grab Sample Data Form

STATION: Lucky

Personnel: ST, PB **Date/Time On-Site:** 2/26/24 9:57

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
10:02	3.72	89.21 GPM	0.55	12.9		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240226-03 -WG	2/26/24	10:17	☒ ✓
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	10:12	4.75	9.79	8.27	125.9

Sampler Current Status	
First Subsample Date/Time	2/26/24 9:05
Last Subsample Date/Time	2/26/24 10:04
# of Subsamples taken	3

Comments: Flow reading in GPM instead of CFS.

Revised 210924 TL

Grab Sample Data Form

STATION: Whitewater

Personnel: ST, PB **Date/Time On-Site:** 9:~~10~~ 10 ST 2/26/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
9:15	251	0.16	0.50	—		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240226-11 -WG	2/26/24	9:28	☑
Field Duplicate *E.Coli*	240226-11 -101	2/26/24	~~9:37~~ 12:00	☑
Field Blank *E.Coli*	240226-11 -001	2/26/24	~~9:35~~ 12:00	☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP07	9:42	5.97	10.88	7.74	749.2

Sampler Current Status	
First Subsample Date/Time	9:23
Last Subsample Date/Time	9:40
# of Subsamples taken	2

Comments:

~~Field duplicate + blank dumped. Mains grab QC was successful.~~ ST

Whitewater - alternate QC site. Main grab QC was successful, so whitewater's QC discarded and not submitted to the lab. -ST

Grab Sample Data Form

STATION: MAIN

Personnel: KC, LS, MV **Date/Time On-Site:** 9:12 AM 2/26/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
9:12	5.10	311.35	1.75	12.9	—	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240226-12 -WG	240226	0919	☑
Field Duplicate *E.Coli*	240226-12 -101	240226	0922	☑
Field Blank *E.Coli*	240226-12 -001	240226	0925	☑

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	9:31	9.53	9.79	7.94	165.88

Sampler Current Status	
First Subsample Date/Time	22:38 2/25
Last Subsample Date/Time	9:09 2/26
# of Subsamples taken	6

Comments:

Revised 210924 TL

Grab Sample Data Form

STATION: AMERICANA

Personnel: LE, LS, MV **Date/Time On-Site:** 9:42 2/26/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
9:42	9.19	5.24	3.130	12.09	—	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	24022614 -WG	240226	0948	☐
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	0951	8.74	10.54	7.53	470.55

Sampler Current Status	
First Subsample Date/Time	8:57 on 2/26
Last Subsample Date/Time	9:35 - 2/26
# of Subsamples taken	5

Comments:

Revised 210924 TL

Grab Sample Data Form

STATION: AS-6

Personnel: KE, LS, MV **Date/Time On-Site:** 10:05 2/26/24

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
10:05	2.962	0.15	0.71	12.2	—	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240226-206 -WG	~~2/28/~~ 2/26/24	1012	☒
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP11	1015	10.49	~~8~~ 9.39	7.44	124.28

Sampler Current Status	
First Subsample Date/Time	10:04 - 2/26/24
Last Subsample Date/Time	10:04 - 2/26/24
# of Subsamples taken	1

Comments:

Revised 210924 TL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

TATION: Lucky

SET UP

Personnel: KC, ST

Date/Time On-Site: 2/25/24 10:15

offsite at 10:40

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
10:22	1.72	0.00	0.00	12.9

Enable Condition or Velocity Cutoff:	2.72
Deadband:	1.00
Trigger Volume:	2895

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☑ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/27/24 1253

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
12:57	1.72	1.72	0.02		12.6
Downloaded to:	ST Flashdrive				

If flow monitoring is complete:
- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:
- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Composite Sample Collection

STATION: Lucky **Bottle** 1 **of** 1

Personnel: ST, PD **Date/Time On-Site:** 10:20 2/26/24

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240226 - 03 -WC
Approx Sample Volume (mL):	5000 ml
Clarity (ex. Clear, Cloudy, Silty):	Clear
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26 9:05	Success	13		
2	2/26 9:38		14		
3	2/26 10:04		15		
4	1107		16		
5	1337		17		
6	1412		18		
7	1425		19		
8	1439		20		
9	1458		21		
10	1534		22		
11			23		
12			24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☒ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☒ Keep flowmeter running	☐ Install new 15L bottle, add ice
☒ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ______
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

STATION: Whitewater

SET UP

Personnel: ST, KC

Date/Time On-Site: 2/25/24 10:52

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
10:55	1.86	0.04	0.17	—
Enable Condition:	3.05			
Hysteresis:	1.00			
Flow Pulse Interval:	800 cf			

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☐ Direct or Remote; Date/time Did not download.
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments: Flowmeter time was 7 minutes off. Time corrected. Did not download data. Reviewed data on flowmeter screen.

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/27/24 1336

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1336	2.39	0.13	0.41	—
Downloaded to:	Flowlink			

On-Site

- ☐ ~~Replace flowmeter battery~~
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 2/27 @ 10:25
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Whitewater
Bottle 1 **of** 2
Personnel: KC, ST
Date/Time On-Site: 2/26/24 1454

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240226 - 11 -WC
Approx Sample Volume (mL):	14000mL
Clarity (ex. Clear, Cloudy, Silty):	Silty
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26/24 0923	Success	13	2/26 1325	Success
2	0940		14	1344	
3	0956		15	1356	
4	1010		16	1404	
5	1023		17	1411	
6	1037		18	1416	
7	1051		19	1420	
8	1108		20	1425	
9	1128		21	1428	
10	1150		22	1432	
11	1219		23	1436	
12	1254		24	1439	

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning

Date/Time Restarted: 2/26 1456
- ☒ Verify running

Liquid Vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 2 **of** 2

Personnel: VC, ST **Date/Time On-Site:** ____

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240226 - 11 -WC
Approx Sample Volume (mL):	9500 mL
Clarity (ex. Clear, Cloudy, Silty):	Silty
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26/24 1455	Success	13	2/26/24 1715	Success
2	1500		14	1746	
3	1505		15	1824	
4	1511		16	1908	
5	1517		17		
6	1525		18		
7	1533		19		
8	1543		20		
9	1555		21		
10	1609		22		
11	1627		23		
12	1648		24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☒ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☒ Keep flowmeter running	☐ Install new 15L bottle; add ice
☒ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ____
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: Main

SET UP

Personnel: KC, ST

Date/Time On-Site: 2/25/24 1133

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1136	0.87	0.00	0.00	12.8

Enable Condition or Velocity Cutoff:	1.87
Deadband:	1.00
Trigger Volume:	3411

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/27/24 1547

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1547	0.85	0.00	0.00		12.4
Downloaded to:	- Steven's USB				

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	☐ Reset logging interval to 15 minutes
☒ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Composite Sample Collection

STATION: Main **Bottle** 1 **of** 2
Personnel: KC, ST **Date/Time On-Site:** 2/26/24 1440

☒ Halt sampler program			
☐ Put lid on sample bottle; label sample bottle			
Sample ID:	240226-~~20~~12	-WC	
Approx Sample Volume (mL):	13250 ml		
Clarity (ex. Clear, Cloudy, Silty):	Silty		
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown		
QA/QC Sample ID:		-103	(Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/25/24 2238	Success	13	2/26/24 1318	Success
2	2304		14	1330	
3	2326		15	1341	
4	2/26/24 0835		16	1349	
5	0858		17	1355	
6	0909		18	1400	
7	0921		19	1405	
8	0937		20	1410	
9	1013		21	1415	
10	1042		22	1421	
11	1142		23	1429	
12	1304		24	1440	

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle, add ice
- ☒ Restart program from beginning

Date/Time Restarted: 2/26/24 1443
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Main **Bottle** 2 **of** 2

Personnel: KC, ST **Date/Time On-Site:** ______________

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240226 - 12 -WC
Approx Sample Volume (mL):	800 mL
Clarity (ex. Clear, Cloudy, Silty):	Clear
Color (ex. Clear, Gray, Tan, Brown, Black):	tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26/24 1502	Success	13		
2	↓ 1601	↓	14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☒ Power off sampler, if separate from flowmeter	☐ Keep flowmeter running
☒ Keep flowmeter running	☐ Install new 15L bottle; add ice
☒ Add ice to sample transport cooler	☐ Restart program from beginning
	Date/Time Restarted: ______________
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
~~0.5"~~	~~400 mL~~	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
~~1.5"~~	~~1400 mL~~	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

STATION: Americana

SET UP

Personnel: KC, ST

Date/Time On-Site: 2/25/24 1212

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1212	5.53	~~2.~~ 1.68	2.061	12.41

Enable Condition:	~~6.53~~ 7.59
Hysteresis:	1.00
Flow Pulse Interval:	2960 cf

On-Site
- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)
- ☒ Direct or Remote; Date/time Did not need to download
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments: Data not downloaded. Recent flow history was viewed on the flowmeter screen.

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/27/24 1502

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
15:03	5.56	1.80	2.217	11.90

Downloaded to:	Flowlink

On-Site
- ☒ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)
- ☒ Direct or Remote; Date/time 2/27 10:21
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Americana
Bottle 1 **of** 2
Personnel: ST, KC
Date/Time On-Site: 2/26/24 1415

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240226-14 -WC
Approx Sample Volume (mL):	12,500 mL
Clarity (ex. Clear, Cloudy, Silty):	Silty
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/24 0857	Success	13	2/26/24 1106	Success
2	'24 0908		14	1121	
3	0918		15	1137	
4	0926		16	1311 ~~1150~~	
5	0935		17	1321	
6	0944	Sample skipped	18	1330	
7	0954	Success	19	1339	
8	1005		20	1347	Skipped
9	1018		21	1354	Success
10	1031		22	1400	
11	1042		23	1405	
12	1053		24	1410	

Comments:

If sampling is complete:	If continuing sampling (sample bottle change-out):
☐ Power off sampler, if separate from flowmeter	☒ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
	Date/Time Restarted: 2/26 1418
	☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Americana
Personnel: VCIST

Bottle 2 **of** 2
Date/Time On-Site: 2/26/24 1805

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	240226 - 14 -WC
Approx Sample Volume (mL):	8,000 ml
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26/24 1420	Success	13	2/26/24 1606	Successful
2	1425		14		
3	1430		15		
4	1436		16		
5	1442		17		
6	1448		18		
7	1455		19		
8	1503		20		
9	1512		21		
10	1523		22		
11	1535		23		
12	1549		24		

Comments:

If sampling is complete:
- ☑ Power off sampler, if separate from flowmeter
- ☑ Keep flowmeter running
- ☑ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning
- **Date/Time Restarted:** ______
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS-6

SET UP

Personnel: KC, ST

Date/Time On-Site: 2/25/24 1253

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1255	0.00	0.00	0.00	~~11.9~~ 12.4

Enable Condition or Velocity Cutoff:	0.02
Deadband:	
Trigger Volume:	221

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:

SHUT DOWN

Personnel: ST

Date/Time On-Site: 2/27/24 1352

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1353	0.000	0.00	0.00	5448.5	12.4
Downloaded to:		Rugged – S drive Raw data			

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	☐ Reset logging interval to 15 minutes
☒ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Revised 231009 ML

Composite Sample Collection

STATION: AS-6 **Bottle** 1 **of** 2

Personnel: KC, ST **Date/Time On-Site:** 2/26/24 1553

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240226-206 -WC
Approx Sample Volume (mL):	12,500mL
Clarity (ex. Clear, Cloudy, Silty):	Silty
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26/24 1004	Success	13	2/26/24 1425	Success
2	1028		14	1430	
3	1057		15	1434	
4	1202		16	1439	
5	1326		17	1443	
6	1343		18	1449	
7	1354		19	1455	
8	1401		20	1502 ~~1510~~	
9	1407		21	1511	
10	1412		22	1523	
11	1416		23	1540	
12	1421		24		

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle, add ice
- ☒ Restart program from beginning

Date/Time Restarted: 2/26 4:07
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: AS-6 **Bottle** 2 **of** 2
Personnel: VC, ST **Date/Time On-Site:** 2/26/24 1853

☑ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240226 - 206 -WC
Approx Sample Volume (mL):	400 ml
Clarity (ex. Clear, Cloudy, Silty):	Clear
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	2/26/24 1620	Success	13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete:
- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning
- **Date/Time Restarted:** ________________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Attachment D: Storm Event Analytical Reports

Brown AND Caldwell

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00332-01	ACST1B	240226-03-WG	Water		02/26/2024	02/26/2024
AC00332-02	ACST1B	240226-11-WG	Water		02/26/2024	02/26/2024
AC00332-03	ACST1B	240226-12-WG	Water		02/26/2024	02/26/2024
AC00332-04	ACST1B	240226-12-101	Water		02/26/2024	02/26/2024
AC00332-05	ACST1B	240226-12-001	Water		02/26/2024	02/26/2024
AC00332-06	ACST1B	240226-14-WG	Water		02/26/2024	02/26/2024

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240226-03-WG
Date/Time Collected:	02/26/2024 10:17		
Lab Number:	AC00332-01	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240669	37.9	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:38	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 03/08/2024 13:51

Analysis Report

Location:	ACST1B	Location Description:	240226-11-WG
Date/Time Collected:	02/26/2024 09:28		
Lab Number:	AC00332-02	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240669	38.3	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:38	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240226-12-WG
Date/Time Collected:	02/26/2024 09:19		
Lab Number:	AC00332-03	Sample Collector:	L.S
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240669	24.3	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:38	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240226-12-101
Date/Time Collected:	02/26/2024 12:00		
Lab Number:	AC00332-04	Sample Collector:	L.S
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240669	26.9	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:38	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240226-12-001
Date/Time Collected:	02/26/2024 12:00		
Lab Number:	AC00332-05	Sample Collector:	L.S
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240669	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	U
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:42	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240226-14-WG
Date/Time Collected:	02/26/2024 09:48		
Lab Number:	AC00332-06	Sample Collector:	M.V
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240669	125.9	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:42	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B240669									
Blank (B240669-BLK1)									
E. Coli	Absent						02/27/2024	KMR	
LCS (B240669-BS1)									
E. Coli				Present			02/27/2024	KMR	
Duplicate (B240669-DUP1) Source ID: WB02977-06									
E. Coli					Pass	128	02/27/2024	KMR	
Duplicate (B240669-DUP2) Source ID: AC00332-01									
E. Coli					Pass	128	02/27/2024	KMR	

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK
Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Steven Turner, Paul Bomber, Kristen Chisholm, Lindsey Smoot, Mike Van Lydegraf

Lab# AC00332	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Collilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-01	2/26/24		1017		240226-03-WG	ST	X	X												X					1
-02	↓		0928		240226-11-WG	ST	X	X												X					1
-03	↓		0919		240226-12-WG	LS	X	X												X					1
-04	↓		1200		240226-12-101	LS	X	X												X					1
-05	↓		1200		240226-12-001	LS	X	X												X					1
-06	↓		0948		240226-14-WG	MV	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	2/26/24 1201	[illegible] 2-26-24 1204	

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00333-01	ACST1B	240226-206-WG	Water		02/26/2024	02/26/2024

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 03/08/2024 13:51

Analysis Report

Location:	ACST1B	Location Description:	240226-206-WG
Date/Time Collected:	02/26/2024 10:12		
Lab Number:	AC00333-01	Sample Collector:	M.V
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B240669	53.7	MPN/100 mL	1.0	1.0	IDEXX - Colilert	02/26/24 13:24	2/27/24 13:41	KMR	
Wet Chemistry										
Chlorine Screen	B240674	Absent				SM 4500-CL G-2000 mod	02/26/24	2/26/24 12:42	ALN	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B240669									
Blank (B240669-BLK1)									
E. Coli	Absent						02/27/2024	KMR	
LCS (B240669-BS1)									
E. Coli				Present			02/27/2024	KMR	
Duplicate (B240669-DUP1)	Source ID: WB02977-06								
E. Coli					Pass	128	02/27/2024	KMR	
Duplicate (B240669-DUP2)	Source ID: AC00332-01								
E. Coli					Pass	128	02/27/2024	KMR	

Report Date: 03/08/2024 13:51

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
No notes entered.	

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Lindsey Smoot
Mike Van Lydegraf

Lab# ACO0333	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Collilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
-01	2/26/24		1012		240226-206-WG	MV	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	2/26/24 1201	April L. [illegible] 2-26-24 1204	

AC00333-2

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 04/11/2024 08:29

Revised Report

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00337-01	ACST1C	240226-03-WC	Water		02/26/2024	02/27/2024
Comments:	Container temp #1 - 4.8 C					
AC00337-02	ACST1C	240226-11-WC	Water		02/26/2024	02/27/2024
Comments:	Container temps: #1 - 6.4 C, #2 - 5.7 C					
AC00337-03	ACST1C	240226-12-WC	Water		02/26/2024	02/27/2024
Comments:	Container temps: #1 - 8.4 C, #2 - 7.2 C					
AC00337-04	ACST1C	240226-14-WC	Water		02/26/2024	02/27/2024
Comments:	Container temps: #1 - 7.4 C, #2 - 5.6 C					

Report Date: 04/11/2024 08:29

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240226-03-WC
Date/Time Collected:	02/26/2024 09:05 - 02/26/2024 15:34		
Lab Number:	AC00337-01	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.476	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:29	MEC	
BOD5	B240684	13.5	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:21	BAK	
Chloride	B240796	8.92	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/06/24	3/6/24 22:25	ALN	
COD	B240680	60.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 10:52	MCB	
Nitrate-Nitrite, as N	B240718	0.969	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:18	LRF	
TKN	B240816	1.71	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:46	JAL	
Total Dissolved Solids	B240696	114	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 13:59	MEC	
Total Suspended Solids	B240708	18.1	mg/L	0.900	0.900	SM 2540 D-2015	02/28/24	2/28/24 10:21	RKT	
Turbidity	B240698	18.9	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 8:26	ASE	
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.124	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:06	RKT	
Total Metals										
Mercury	B240817	0.0150	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 8:12	SAS	
Arsenic	B240750	2.6	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:49	DMW	
Cadmium	B240750	0.031	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:49	DMW	
Calcium	B240695	17.6	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:18	AMO	
Lead	B240750	0.72	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:49	DMW	
Magnesium	B240695	2250	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:18	AMO	
Phosphorus as P	B240695	0.262	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:18	AMO	
Hardness	B240695	53.2	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:18	AMO	
Dissolved Metals										
Cadmium	B241178	0.011	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:04	DMW	
Copper	B240802	4.5	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:28	DMW	
Lead	B241178	0.028	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:04	DMW	
Zinc	B240802	13.5	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:28	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 04/11/2024 08:29

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240226-11-WC
Date/Time Collected:	02/26/2024 09:23 - 02/26/2024 19:08		
Lab Number:	AC00337-02	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.596	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:45	MEC	
BOD5	B240684	12.6	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:12	BAK	
Chloride	B240796	44.4	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/07/24	3/7/24 0:10	ALN	
COD	B240680	84.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 10:58	MCB	
Nitrate-Nitrite, as N	B240718	0.921	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:19	LRF	
TKN	B240816	2.43	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:47	JAL	
Total Dissolved Solids	B240696	182	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 14:00	MEC	
Total Suspended Solids	B240683	47.3	mg/L	0.900	0.900	SM 2540 D-2015	02/27/24	2/27/24 10:25	MEC	
Turbidity	B240698	52.3	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 9:53	ASE	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.174	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:07	RKT	
Total Metals										
Mercury	B240817	0.0151	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 8:16	SAS	
Arsenic	B240750	2.6	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:52	DMW	
Cadmium	B240750	0.062	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:52	DMW	
Calcium	B240695	22.5	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:24	AMO	
Lead	B240750	3.8	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:52	DMW	
Magnesium	B240695	5260	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:24	AMO	
Phosphorus as P	B240695	0.347	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:24	AMO	
Hardness	B240695	77.8	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:24	AMO	
Dissolved Metals										
Cadmium	B241178	0.014	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:07	DMW	
Copper	B240802	4.4	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:30	DMW	
Lead	B241178	0.093	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:07	DMW	
Zinc	B240802	24.5	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:30	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 04/11/2024 08:29

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240226-12-WC
Date/Time Collected:	02/25/2024 22:38 - 02/26/2024 16:01		
Lab Number:	AC00337-03	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.829	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:37	MEC	
BOD5	B240684	13.9	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:07	BAK	
Chloride	B240796	17.0	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/07/24	3/7/24 0:37	ALN	
COD	B240680	119	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 10:58	MCB	
Nitrate-Nitrite, as N	B240718	0.424	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:21	LRF	
TKN	B240816	1.96	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:48	JAL	
Total Dissolved Solids	B240696	85.2	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 14:01	MEC	
Total Suspended Solids	B240683	104	mg/L	0.900	0.900	SM 2540 D-2015	02/27/24	2/27/24 10:28	MEC	
Turbidity	B240698	94.7	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 9:08	ASE	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.0631	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:09	RKT	
Total Metals										
Mercury	B240817	0.0191	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 8:51	SAS	
Arsenic	B240750	1.5	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:54	DMW	
Cadmium	B240750	0.13	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:54	DMW	
Calcium	B240695	7.84	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:51	AMO	
Lead	B240750	6.1	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:54	DMW	
Magnesium	B240695	2470	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:51	AMO	
Phosphorus as P	B240695	0.231	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:51	AMO	
Hardness	B240695	29.8	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:51	AMO	
Dissolved Metals										
Cadmium	B241178	0.032	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:09	DMW	
Copper	B240802	5.6	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:33	DMW	
Lead	B241178	0.12	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:09	DMW	
Zinc	B240802	51.7	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:33	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 04/11/2024 08:29

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240226-14-WC
Date/Time Collected:	02/26/2024 08:57 - 02/26/2024 16:06		
Lab Number:	AC00337-04	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.496	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:39	MEC	
BOD5	B240684	12.6	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:01	BAK	
Chloride	B240796	56.1	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/07/24	3/7/24 1:03	ALN	
COD	B240680	85.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 10:58	MCB	
Nitrate-Nitrite, as N	B240718	0.940	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:22	LRF	
TKN	B240816	1.47	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:49	JAL	
Total Dissolved Solids	B240696	214	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 14:03	MEC	
Total Suspended Solids	B240683	54.3	mg/L	0.900	0.900	SM 2540 D-2015	02/27/24	2/27/24 11:21	MEC	
Turbidity	B240698	51.1	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 10:00	ASE	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.106	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:10	RKT	
Total Metals										
Mercury	B240817	0.0148	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 8:54	SAS	
Arsenic	B240750	3.3	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:57	DMW	
Cadmium	B240750	0.097	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:57	DMW	
Calcium	B240695	31.4	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:57	AMO	
Lead	B240750	3.9	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:57	DMW	
Magnesium	B240695	5710	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:57	AMO	
Phosphorus as P	B240695	0.276	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:57	AMO	
Hardness	B240695	102	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:57	AMO	
Dissolved Metals										
Cadmium	B241178	0.021	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:12	DMW	
Copper	B240802	4.0	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:43	DMW	
Lead	B241178	0.063	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:12	DMW	
Zinc	B240802	24.3	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:43	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B240680									
Blank (B240680-BLK1)									
COD	<7	mg/L					02/27/2024	MCB	U
LCS (B240680-BS1)									
COD			100	90-110			02/27/2024	MCB	
Duplicate (B240680-DUP1) Source ID: AC00335-01									
COD					3.92	10	02/27/2024	MCB	
Batch: B240683									
Blank (B240683-BLK1)									
Total Suspended Solids	<0.9	mg/L					02/27/2024	MEC	U
LCS (B240683-BS1)									
Total Suspended Solids			101	90-110			02/27/2024	MEC	
Duplicate (B240683-DUP1) Source ID: BB03630-02									
Total Suspended Solids					8.03	20	02/27/2024	MEC	
Batch: B240684									
Blank (B240684-BLK1)									
BOD5	<2	mg/L					03/03/2024	BAK	U
LCS (B240684-BS1)									
BOD5			102	84.6-115.4			03/03/2024	BAK	
LCS (B240684-BS2)									
BOD5			109	84.6-115.4			03/03/2024	BAK	
Duplicate (B240684-DUP1) Source ID: BB03630-03									
BOD5					3.10	30	03/03/2024	BAK	
Batch: B240696									
Blank (B240696-BLK1)									
Total Dissolved Solids	<20	mg/L					02/29/2024	MEC	U
LCS (B240696-BS1)									
Total Dissolved Solids			99.4	90-110			02/29/2024	MEC	
Duplicate (B240696-DUP1) Source ID: LS01873-01									
Total Dissolved Solids					0.700	10	02/29/2024	MEC	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240698									
Blank (B240698-BLK1)									
Turbidity	<0.3	NTU					02/28/2024	ASE	U
LCS (B240698-BS1)									
Turbidity			98.2	90-110			02/28/2024	ASE	
Duplicate (B240698-DUP1) Source ID: AC00337-04									
Turbidity					3.45	25	02/28/2024	ASE	D
Batch: B240708									
Blank (B240708-BLK1)									
Total Suspended Solids	<0.9	mg/L					02/28/2024	RKT	U
LCS (B240708-BS1)									
Total Suspended Solids			96.2	90-110			02/28/2024	RKT	
Duplicate (B240708-DUP1) Source ID: BB03631-02									
Total Suspended Solids					3.63	20	02/28/2024	RKT	
Duplicate (B240708-DUP2) Source ID: BB03632-01									
Total Suspended Solids					6.00	20	02/28/2024	RKT	
Batch: B240718									
Blank (B240718-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/29/2024	LRF	U
Blank (B240718-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/29/2024	LRF	U
LCS (B240718-BS1)									
Nitrate-Nitrite, as N			104	90-110			02/29/2024	LRF	
LCS (B240718-BS2)									
Nitrate-Nitrite, as N			99.7	90-110			02/29/2024	LRF	
Duplicate (B240718-DUP1) Source ID: BB03631-02									
Nitrate-Nitrite, as N					NR	10	02/29/2024	LRF	
Duplicate (B240718-DUP2) Source ID: AC00336-01									
Nitrate-Nitrite, as N					0.514	10	02/29/2024	LRF	
Duplicate (B240718-DUP3) Source ID: LS01875-02									
Nitrate-Nitrite, as N					0.470	10	02/29/2024	LRF	
Matrix Spike (B240718-MS1) Source ID: BB03631-02									
Nitrate-Nitrite, as N			101	90-110			02/29/2024	LRF	
Matrix Spike (B240718-MS2) Source ID: AC00336-01									
Nitrate-Nitrite, as N			99.9	90-110			02/29/2024	LRF	
Matrix Spike (B240718-MS3) Source ID: LS01875-02									
Nitrate-Nitrite, as N			98.2	90-110			02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD1) Source ID: BB03631-02									
Nitrate-Nitrite, as N			106	90-110	4.55	10	02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD2) Source ID: AC00336-01									
Nitrate-Nitrite, as N			99.9	90-110	0.0278	10	02/29/2024	LRF	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240718 (Continued)									
Matrix Spike Dup (B240718-MSD3) Source ID: LS01875-02									
Nitrate-Nitrite, as N			97.3	90-110	0.479	10	02/29/2024	LRF	
Batch: B240744									
Blank (B240744-BLK1)									
Ammonia, as N	<50	ug/L					03/01/2024	MEC	U
LCS (B240744-BS1)									
Ammonia, as N			97.7	90-110			03/01/2024	MEC	
Duplicate (B240744-DUP1) Source ID: LS01873-02									
Ammonia, as N					1.34	10	03/01/2024	MEC	
Duplicate (B240744-DUP2) Source ID: BB03629-03									
Ammonia, as N					1.56	10	03/01/2024	MEC	
Matrix Spike (B240744-MS1) Source ID: LS01873-02									
Ammonia, as N			98.3	80-120			03/01/2024	MEC	
Matrix Spike (B240744-MS2) Source ID: BB03629-03									
Ammonia, as N			104	80-120			03/01/2024	MEC	
Matrix Spike Dup (B240744-MSD1) Source ID: LS01873-02									
Ammonia, as N			100	80-120	1.38	10	03/01/2024	MEC	
Matrix Spike Dup (B240744-MSD2) Source ID: BB03629-03									
Ammonia, as N			106	80-120	1.01	10	03/01/2024	MEC	
Batch: B240796									
Blank (B240796-BLK1)									
Chloride	<0.015	mg/L					03/06/2024	ALN	U
Blank (B240796-BLK2)									
Chloride	<0.015	mg/L					03/07/2024	ALN	U
LCS (B240796-BS1)									
Chloride			95.7	90-110			03/06/2024	ALN	
LCS (B240796-BS2)									
Chloride			96.0	90-110			03/06/2024	ALN	
LCS (B240796-BS3)									
Chloride			95.4	90-110			03/07/2024	ALN	
Duplicate (B240796-DUP1) Source ID: RW00054-10									
Chloride					3.94	10	03/07/2024	ALN	D
Duplicate (B240796-DUP2) Source ID: RW00056-07									
Chloride					0.398	10	03/07/2024	ALN	D
Duplicate (B240796-DUP3) Source ID: AC00337-01									
Chloride					0.672	10	03/06/2024	ALN	
Duplicate (B240796-DUP4) Source ID: LS01873-01									
Chloride					0.319	10	03/07/2024	ALN	D
Matrix Spike (B240796-MS1) Source ID: RW00054-10									
Chloride			96.6	90-110			03/07/2024	ALN	D

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240796 (Continued)									
Matrix Spike (B240796-MS2) Source ID: RW00056-07									
Chloride			94.1	90-110			03/07/2024	ALN	D
Matrix Spike (B240796-MS3) Source ID: AC00337-01									
Chloride			93.9	90-110			03/06/2024	ALN	
Matrix Spike (B240796-MS4) Source ID: LS01873-01									
Chloride			94.6	90-110			03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD1) Source ID: RW00054-10									
Chloride			97.2	90-110	0.377	10	03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD2) Source ID: RW00056-07									
Chloride			94.2	90-110	0.0228	10	03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD3) Source ID: AC00337-01									
Chloride			97.5	90-110	2.75	10	03/07/2024	ALN	
Matrix Spike Dup (B240796-MSD4) Source ID: LS01873-01									
Chloride			95.4	90-110	0.336	10	03/07/2024	ALN	D
Batch: B240816									
Blank (B240816-BLK1)									
TKN	<0.1	mg/L					03/08/2024	JAL	U
Blank (B240816-BLK2)									
TKN	<0.1	mg/L					03/08/2024	JAL	U
Blank (B240816-BLK3)									
TKN	<0.1	mg/L					03/08/2024	JAL	U
LCS (B240816-BS1)									
TKN			96.1	80-120			03/08/2024	JAL	
LCS (B240816-BS2)									
TKN			105	80-120			03/08/2024	JAL	
LCS (B240816-BS3)									
TKN			104	80-120			03/08/2024	JAL	
Duplicate (B240816-DUP1) Source ID: BB03631-02									
TKN					1.33	20	03/08/2024	JAL	D
Duplicate (B240816-DUP2) Source ID: BB03638-01									
TKN					1.21	20	03/08/2024	JAL	D
Duplicate (B240816-DUP3) Source ID: LS01875-05									
TKN					1.25	20	03/08/2024	JAL	D
Matrix Spike (B240816-MS1) Source ID: BB03631-02									
TKN			106	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS2) Source ID: BB03638-01									
TKN			107	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS3) Source ID: LS01875-05									
TKN			108	80-120			03/08/2024	JAL	D

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240816 (Continued)									
Matrix Spike (B240816-MS4) Source ID: RW00055-01									
TKN			107	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS5) Source ID: RW00055-03									
TKN			105	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS6) Source ID: RW00055-04									
TKN			103	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS7) Source ID: RW00055-06									
TKN			102	80-120			03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD1) Source ID: BB03631-02									
TKN			114	80-120	2.56	20	03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD2) Source ID: BB03638-01									
TKN			115	80-120	2.66	20	03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD3) Source ID: LS01875-05									
TKN			114	80-120	2.43	20	03/08/2024	JAL	D
Dissolved Wet Chemistry									
Batch: B240685									
Blank (B240685-BLK1)									
Orthophosphate, as P	<0.003	mg/L					02/27/2024	RKT	U
LCS (B240685-BS1)									
Orthophosphate, as P			96.3	90-110			02/27/2024	RKT	
Duplicate (B240685-DUP1) Source ID: LS01873-02									
Orthophosphate, as P					0.0687	10	02/27/2024	RKT	D
Duplicate (B240685-DUP3) Source ID: RW00054-07RE1									
Orthophosphate, as P					0.433	10	02/27/2024	RKT	D
Matrix Spike (B240685-MS1) Source ID: LS01873-02									
Orthophosphate, as P			98.4	90-110			02/27/2024	RKT	D
Matrix Spike (B240685-MS3) Source ID: RW00054-07RE1									
Orthophosphate, as P			101	90-110			02/27/2024	RKT	D
Matrix Spike Dup (B240685-MSD1) Source ID: LS01873-02									
Orthophosphate, as P			98.5	90-110	0.0349	10	02/27/2024	RKT	D
Matrix Spike Dup (B240685-MSD3) Source ID: RW00054-07RE1									
Orthophosphate, as P			101	90-110	0.0489	10	02/27/2024	RKT	D

Report Date: 04/11/2024 08:29

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B240695									
Blank (B240695-BLK1)									
Calcium	<0.04	mg/L					03/01/2024	AMO	U
Magnesium	<80	ug/L					03/01/2024	AMO	U
Phosphorus as P	<0.012	mg/L					03/01/2024	AMO	U
LCS (B240695-BS1)									
Calcium			102	85-115			03/01/2024	AMO	
Magnesium			101	85-115			03/01/2024	AMO	
Phosphorus as P			108	85-115			03/01/2024	AMO	
Duplicate (B240695-DUP1) Source ID: AC00337-02									
Calcium					0.727	20	03/01/2024	AMO	
Magnesium					0.793	20	03/01/2024	AMO	
Phosphorus as P					0.100	20	03/01/2024	AMO	
Matrix Spike (B240695-MS1) Source ID: AC00337-02									
Calcium			102	70-130			03/01/2024	AMO	
Magnesium			99.6	70-130			03/01/2024	AMO	
Phosphorus as P			112	70-130			03/01/2024	AMO	
Matrix Spike Dup (B240695-MSD1) Source ID: AC00337-02									
Calcium			101	70-130	0.172	20	03/01/2024	AMO	
Magnesium			99.4	70-130	0.180	20	03/01/2024	AMO	
Phosphorus as P			113	70-130	0.221	20	03/01/2024	AMO	
Batch: B240750									
Blank (B240750-BLK1)									
Arsenic	<0.070	ug/L					03/03/2024	DMW	U
Cadmium	<0.010	ug/L					03/03/2024	DMW	U
Lead	<0.010	ug/L					03/03/2024	DMW	U
LCS (B240750-BS1)									
Arsenic			102	85-115			03/03/2024	DMW	
Cadmium			105	85-115			03/03/2024	DMW	
Lead			107	85-115			03/03/2024	DMW	
Duplicate (B240750-DUP1) Source ID: AC00336-01									
Arsenic					1.36	20	03/03/2024	DMW	
Cadmium					9.29	20	03/03/2024	DMW	
Lead					0.499	20	03/03/2024	DMW	
Matrix Spike (B240750-MS1) Source ID: AC00336-01									
Arsenic			98.2	70-130			03/03/2024	DMW	
Cadmium			100	70-130			03/03/2024	DMW	
Lead			96.4	70-130			03/03/2024	DMW	
Matrix Spike Dup (B240750-MSD1) Source ID: AC00336-01									
Arsenic			98.3	70-130	0.110	20	03/03/2024	DMW	
Cadmium			103	70-130	3.09	20	03/03/2024	DMW	
Lead			97.5	70-130	0.693	20	03/03/2024	DMW	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B240817									
Blank (B240817-BLK1)									
Mercury	<0.01	ug/L					03/08/2024	SAS	U
LCS (B240817-BS1)									
Mercury			102	85-115			03/08/2024	SAS	
Duplicate (B240817-DUP1) Source ID: AC00336-01									
Mercury					1.32	20	03/08/2024	SAS	
Duplicate (B240817-DUP2) Source ID: BB03624-03									
Mercury					NR	20	03/08/2024	SAS	
Matrix Spike (B240817-MS1) Source ID: AC00336-01									
Mercury			99.4	70-130			03/08/2024	SAS	
Matrix Spike (B240817-MS2) Source ID: BB03624-03									
Mercury			106	70-130			03/08/2024	SAS	
Matrix Spike Dup (B240817-MSD1) Source ID: AC00336-01									
Mercury			98.6	70-130	0.699	20	03/08/2024	SAS	
Matrix Spike Dup (B240817-MSD2) Source ID: BB03624-03									
Mercury			107	70-130	0.600	20	03/08/2024	SAS	

Report Date: 04/11/2024 08:29

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B240802									
Blank (B240802-BLK1)									
Copper	<0.15	ug/L					03/08/2024	DMW	U
Zinc	<0.50	ug/L					03/08/2024	DMW	U
LCS (B240802-BS1)									
Copper			91.8	85-115			03/08/2024	DMW	
Zinc			93.3	85-115			03/08/2024	DMW	
Duplicate (B240802-DUP1) Source ID: AC00337-03									
Copper					1.42	10	03/08/2024	DMW	
Zinc					1.17	10	03/08/2024	DMW	
Matrix Spike (B240802-MS1) Source ID: AC00337-03									
Copper			90.6	70-130			03/08/2024	DMW	
Zinc			89.1	70-130			03/08/2024	DMW	
Matrix Spike Dup (B240802-MSD1) Source ID: AC00337-03									
Copper			89.4	70-130	0.854	10	03/08/2024	DMW	
Zinc			86.0	70-130	1.20	10	03/08/2024	DMW	
Batch: B241178									
Blank (B241178-BLK1)									
Cadmium	<0.010	ug/L					04/04/2024	DMW	U
Lead	<0.0090	ug/L					04/04/2024	DMW	U
LCS (B241178-BS1)									
Cadmium			99.9	85-115			04/04/2024	DMW	
Lead			99.4	85-115			04/04/2024	DMW	
Duplicate (B241178-DUP1) Source ID: AC00340-01									
Cadmium					NR	10	04/04/2024	DMW	U
Lead					2.01	10	04/04/2024	DMW	
Matrix Spike (B241178-MS1) Source ID: AC00340-01									
Cadmium			102	70-130			04/04/2024	DMW	
Lead			98.4	70-130			04/04/2024	DMW	
Matrix Spike Dup (B241178-MSD1) Source ID: AC00340-01									
Cadmium			102	70-130	0.490	10	04/04/2024	DMW	
Lead			98.3	70-130	0.146	10	04/04/2024	DMW	

Report Date: 04/11/2024 08:29

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA ~~245.2~~ & 245.1	~~E. Coli - IDEXX Colilert~~ Chlorides - EPA 300.0	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
AC00337-01	2/26/24	2/26/24	0905	1534	240226-03-WC 4.8°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1
-02	2/26/24	2/26/24	0923	1908	240226-11-WC 6.4°C & 5.7°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
-03	2/25/24	2/26/24	2238	1601	240226-12-WC 8.4°C & 7.2°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
-04	2/26/24	2/26/24	0857	1606	240226-14-WC 7.4°C & 5.6°C	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	2/26/24 2057	[signature] 2-27-24 0705	If low volume for 240226-03-WC, please prioritize NOx + Diss Cd, Cu, Pb, Zn, + Orthophosphate.

ACHD Sample Filtration, Splitting, and Compositing for Metals

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: AC000337-01 Location: -03 Sample Date: 2-26-24 Sample ID: ACST1C #1	Split Date: 2-2~~6~~7-24 DT Start Split: 0726 Start Filter: 0726 Comp Time: N/A Analyst: AMO/DKT	Filter: ☒Voss ☒0.45µm high-cap. ☒5.0µm ☒10.0µm	Coll Jug: CC00051-25 Comp Jug: N/A SS Tubing: CC00051-28 SS Helper: SSA1 Stir Bar: CC00040-46 Connector: CC00044-99 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☒ IC(F) ☒COD ☐	Prioritize NO_x, Diss. metals + ORP per ACHD.
Lims#: AC000337-02 Location: -11 Sample Date: 2-26-24 Sample ID: ACST1C #2	Split Date: 2-2~~6~~7-24 DT Start Split: 0744 Start Filter: 0744 Comp Time: 0739 Analyst: AMO/DKT	Filter: ☒Voss ☒0.45µm high-cap. ☒5.0µm ☒10.0µm	Coll Jug: NC cert # on jugs CC00048 77 Comp Jug: CC00051-37 SS Tubing: CC00051-28 SS Helper: SSA4 Stir Bar: CC000~~40-AL~~ 31-41 DT Connector: CC00044-99/48-69	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☒ IC(F) ☒COD ☐	2 jugs composited into 40L
Lims#: AC000337-03 Location: -12 Sample Date: 2-26-24 Sample ID: ACST1C #3	Split Date: 2-2~~6~~7-24 DT Start Split: 0823 Start Filter: 0823 Comp Time: 0819 Analyst: AMO/DKT	Filter: ☒Voss ☒0.45µm high-cap. ☒5.0µm ☒10.0µm	Coll Jug: CC00051-25 CC00051-24 Comp Jug: CC00051-25 SS Tubing: CC00051-28 SS Helper: SSA5 Stir Bar: CC00051-26 Connector: CC00044-99/48-69	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☒ IC(F) ☒COD ☐	2 jugs composited into 16L
Lims#: AC000337-04 Location: -14 Sample Date: 2-26-24 Sample ID: ACST1C #4	Split Date: 2-2~~6~~7-24 DT Start Split: 0803 Start Filter: 0803 Comp Time: 0759 Analyst: AMO/DKT	Filter: ☒Voss ☒0.45µm high-cap. ☒5.0µm ☒10.0µm	Coll Jug: CC00048-78 CC00051-25 Comp Jug: CC00051 37 SS Tubing: CC00051-28 SS Helper: SSA7 Stir Bar: CC000~~51-28~~ 23-59 ASE Connector: CC00048-69 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☒ IC(F) ☒COD ☐	2 jugs composited into 40L
Lims#: AC000336-01 Location: -206 Sample Date: 2-26-24 Sample ID: ACST1C #5	Split Date: 2-2~~6~~7-24 DT Start Split: 0833 Start Filter: 0833 Comp Time: 0834 Analyst: AMO/DKT	Filter: ☒Voss ☒0.45µm high-cap. ☒5.0µm ☒10.0µm	Coll Jug: CC00051-38 CC00051-25 Comp Jug: CC00051-38 SS Tubing: CC00051-28 SS Helper: SSA8 Stir Bar: CC00051-36 Connector: CC00048-69 (x2)	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☒ IC(F) ☒COD ☐	2 jugs composited into 16L used 2nd set of Voss filters (+3). Connector cert #'s: CC00051-27 (x2)

* ASE and SMC observed splitting

Report Date: 04/11/2024 08:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00336-01	ACST1C	240226-206-WC	Water		02/26/2024	02/27/2024

Comments:

Container temps: #1 - 7.0 C, #2 - 8.1 C

Report Date: 04/11/2024 08:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240226-206-WC
Date/Time Collected:	02/26/2024 10:04 - 02/26/2024 16:20		
Lab Number:	AC00336-01	Sample Collector:	S.T
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B240744	0.522	mg/L	0.0500	0.0500	SM 4500-NH3 D-2011	03/01/24	3/1/24 11:42	MEC	
BOD5	B240684	17.7	mg/L	2.00	2.00	SM 5210 B-2016	02/27/24	3/3/24 11:26	BAK	
Chloride	B240796	9.39	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	03/06/24	3/6/24 21:58	ALN	
COD	B240680	122	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	02/27/24	2/27/24 11:18	MCB	
Nitrate-Nitrite, as N	B240718	0.278	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	02/29/24	2/29/24 12:13	LRF	
TKN	B240816	2.43	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/07/24	3/8/24 9:44	JAL	
Total Dissolved Solids	B240696	85.8	mg/L	20.0	20.0	SM 2540 C-2015	02/28/24	2/29/24 13:58	MEC	
Total Suspended Solids	B240683	75.8	mg/L	0.900	0.900	SM 2540 D-2015	02/27/24	2/27/24 10:39	MEC	
Turbidity	B240698	75.5	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	02/28/24	2/28/24 9:41	ASE	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B240685	0.289	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	02/27/24	2/27/24 10:05	RKT	
Total Metals										
Mercury	B240817	0.0183	ug/L	0.0100	0.0100	EPA 245.1	03/07/24	3/8/24 7:58	SAS	
Arsenic	B240750	2.2	ug/L	0.070	0.070	EPA 200.8	03/02/24	3/3/24 13:40	DMW	
Cadmium	B240750	0.087	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:40	DMW	
Calcium	B240695	5.43	mg/L	0.0400	0.0400	EPA 200.7	02/28/24	3/1/24 11:13	AMO	
Lead	B240750	6.3	ug/L	0.010	0.010	EPA 200.8	03/02/24	3/3/24 13:40	DMW	
Magnesium	B240695	2110	ug/L	80.0	80.0	EPA 200.7	02/28/24	3/1/24 11:13	AMO	
Phosphorus as P	B240695	0.570	mg/L	0.0120	0.0120	EPA 200.7	02/28/24	3/1/24 11:13	AMO	
Hardness	B240695	22.2	mg/L	0.100	0.100	SM 2340 B-2011	02/28/24	3/1/24 11:13	AMO	
Dissolved Metals										
Cadmium	B241178	0.016	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:02	DMW	
Copper	B240802	5.0	ug/L	0.15	0.15	EPA 200.8	03/08/24	3/8/24 16:25	DMW	
Lead	B241178	0.26	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:02	DMW	
Zinc	B240802	20.2	ug/L	0.50	0.50	EPA 200.8	03/08/24	3/8/24 16:25	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B240680									
Blank (B240680-BLK1)									
COD	<7	mg/L					02/27/2024	MCB	U
LCS (B240680-BS1)									
COD			100	90-110			02/27/2024	MCB	
Duplicate (B240680-DUP1) Source ID: AC00335-01									
COD					3.92	10	02/27/2024	MCB	
Batch: B240683									
Blank (B240683-BLK1)									
Total Suspended Solids	<0.9	mg/L					02/27/2024	MEC	U
LCS (B240683-BS1)									
Total Suspended Solids			101	90-110			02/27/2024	MEC	
Duplicate (B240683-DUP1) Source ID: BB03630-02									
Total Suspended Solids					8.03	20	02/27/2024	MEC	
Batch: B240684									
Blank (B240684-BLK1)									
BOD5	<2	mg/L					03/03/2024	BAK	U
LCS (B240684-BS1)									
BOD5			102	84.6-115.4			03/03/2024	BAK	
LCS (B240684-BS2)									
BOD5			109	84.6-115.4			03/03/2024	BAK	
Duplicate (B240684-DUP1) Source ID: BB03630-03									
BOD5					3.10	30	03/03/2024	BAK	
Batch: B240696									
Blank (B240696-BLK1)									
Total Dissolved Solids	<20	mg/L					02/29/2024	MEC	U
LCS (B240696-BS1)									
Total Dissolved Solids			99.4	90-110			02/29/2024	MEC	
Duplicate (B240696-DUP1) Source ID: LS01873-01									
Total Dissolved Solids					0.700	10	02/29/2024	MEC	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240698									
Blank (B240698-BLK1)									
Turbidity	<0.3	NTU					02/28/2024	ASE	U
LCS (B240698-BS1)									
Turbidity			98.2	90-110			02/28/2024	ASE	
Duplicate (B240698-DUP1) Source ID: AC00337-04									
Turbidity					3.45	25	02/28/2024	ASE	D
Batch: B240718									
Blank (B240718-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/29/2024	LRF	U
Blank (B240718-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					02/29/2024	LRF	U
LCS (B240718-BS1)									
Nitrate-Nitrite, as N			104	90-110			02/29/2024	LRF	
LCS (B240718-BS2)									
Nitrate-Nitrite, as N			99.7	90-110			02/29/2024	LRF	
Duplicate (B240718-DUP1) Source ID: BB03631-02									
Nitrate-Nitrite, as N					NR	10	02/29/2024	LRF	
Duplicate (B240718-DUP2) Source ID: AC00336-01									
Nitrate-Nitrite, as N					0.514	10	02/29/2024	LRF	
Duplicate (B240718-DUP3) Source ID: LS01875-02									
Nitrate-Nitrite, as N					0.470	10	02/29/2024	LRF	
Matrix Spike (B240718-MS1) Source ID: BB03631-02									
Nitrate-Nitrite, as N			101	90-110			02/29/2024	LRF	
Matrix Spike (B240718-MS2) Source ID: AC00336-01									
Nitrate-Nitrite, as N			99.9	90-110			02/29/2024	LRF	
Matrix Spike (B240718-MS3) Source ID: LS01875-02									
Nitrate-Nitrite, as N			98.2	90-110			02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD1) Source ID: BB03631-02									
Nitrate-Nitrite, as N			106	90-110	4.55	10	02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD2) Source ID: AC00336-01									
Nitrate-Nitrite, as N			99.9	90-110	0.0278	10	02/29/2024	LRF	
Matrix Spike Dup (B240718-MSD3) Source ID: LS01875-02									
Nitrate-Nitrite, as N			97.3	90-110	0.479	10	02/29/2024	LRF	

Report Date: 04/11/2024 08:19

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240744									
Blank (B240744-BLK1)									
Ammonia, as N	<50	ug/L					03/01/2024	MEC	U
LCS (B240744-BS1)									
Ammonia, as N			97.7	90-110			03/01/2024	MEC	
Duplicate (B240744-DUP1) Source ID: LS01873-02									
Ammonia, as N					1.34	10	03/01/2024	MEC	
Duplicate (B240744-DUP2) Source ID: BB03629-03									
Ammonia, as N					1.56	10	03/01/2024	MEC	
Matrix Spike (B240744-MS1) Source ID: LS01873-02									
Ammonia, as N			98.3	80-120			03/01/2024	MEC	
Matrix Spike (B240744-MS2) Source ID: BB03629-03									
Ammonia, as N			104	80-120			03/01/2024	MEC	
Matrix Spike Dup (B240744-MSD1) Source ID: LS01873-02									
Ammonia, as N			100	80-120	1.38	10	03/01/2024	MEC	
Matrix Spike Dup (B240744-MSD2) Source ID: BB03629-03									
Ammonia, as N			106	80-120	1.01	10	03/01/2024	MEC	
Batch: B240796									
Blank (B240796-BLK1)									
Chloride	<0.015	mg/L					03/06/2024	ALN	U
Blank (B240796-BLK2)									
Chloride	<0.015	mg/L					03/07/2024	ALN	U
LCS (B240796-BS1)									
Chloride			95.7	90-110			03/06/2024	ALN	
LCS (B240796-BS2)									
Chloride			96.0	90-110			03/06/2024	ALN	
LCS (B240796-BS3)									
Chloride			95.4	90-110			03/07/2024	ALN	
Duplicate (B240796-DUP1) Source ID: RW00054-10									
Chloride					3.94	10	03/07/2024	ALN	D
Duplicate (B240796-DUP2) Source ID: RW00056-07									
Chloride					0.398	10	03/07/2024	ALN	D
Duplicate (B240796-DUP3) Source ID: AC00337-01									
Chloride					0.672	10	03/06/2024	ALN	
Duplicate (B240796-DUP4) Source ID: LS01873-01									
Chloride					0.319	10	03/07/2024	ALN	D
Matrix Spike (B240796-MS1) Source ID: RW00054-10									
Chloride			96.6	90-110			03/07/2024	ALN	D
Matrix Spike (B240796-MS2) Source ID: RW00056-07									
Chloride			94.1	90-110			03/07/2024	ALN	D

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240796 (Continued)									
Matrix Spike (B240796-MS3) Source ID: AC00337-01									
Chloride			93.9	90-110			03/06/2024	ALN	
Matrix Spike (B240796-MS4) Source ID: LS01873-01									
Chloride			94.6	90-110			03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD1) Source ID: RW00054-10									
Chloride			97.2	90-110	0.377	10	03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD2) Source ID: RW00056-07									
Chloride			94.2	90-110	0.0228	10	03/07/2024	ALN	D
Matrix Spike Dup (B240796-MSD3) Source ID: AC00337-01									
Chloride			97.5	90-110	2.75	10	03/07/2024	ALN	
Matrix Spike Dup (B240796-MSD4) Source ID: LS01873-01									
Chloride			95.4	90-110	0.336	10	03/07/2024	ALN	D
Batch: B240816									
Blank (B240816-BLK1)									
TKN	<0.1	mg/L					03/08/2024	JAL	U
Blank (B240816-BLK2)									
TKN	<0.1	mg/L					03/08/2024	JAL	U
Blank (B240816-BLK3)									
TKN	<0.1	mg/L					03/08/2024	JAL	U
LCS (B240816-BS1)									
TKN			96.1	80-120			03/08/2024	JAL	
LCS (B240816-BS2)									
TKN			105	80-120			03/08/2024	JAL	
LCS (B240816-BS3)									
TKN			104	80-120			03/08/2024	JAL	
Duplicate (B240816-DUP1) Source ID: BB03631-02									
TKN					1.33	20	03/08/2024	JAL	D
Duplicate (B240816-DUP2) Source ID: BB03638-01									
TKN					1.21	20	03/08/2024	JAL	D
Duplicate (B240816-DUP3) Source ID: LS01875-05									
TKN					1.25	20	03/08/2024	JAL	D
Matrix Spike (B240816-MS1) Source ID: BB03631-02									
TKN			106	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS2) Source ID: BB03638-01									
TKN			107	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS3) Source ID: LS01875-05									
TKN			108	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS4) Source ID: RW00055-01									
TKN			107	80-120			03/08/2024	JAL	D

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B240816 (Continued)									
Matrix Spike (B240816-MS5) Source ID: RW00055-03									
TKN			105	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS6) Source ID: RW00055-04									
TKN			103	80-120			03/08/2024	JAL	D
Matrix Spike (B240816-MS7) Source ID: RW00055-06									
TKN			102	80-120			03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD1) Source ID: BB03631-02									
TKN			114	80-120	2.56	20	03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD2) Source ID: BB03638-01									
TKN			115	80-120	2.66	20	03/08/2024	JAL	D
Matrix Spike Dup (B240816-MSD3) Source ID: LS01875-05									
TKN			114	80-120	2.43	20	03/08/2024	JAL	D
Dissolved Wet Chemistry									
Batch: B240685									
Blank (B240685-BLK1)									
Orthophosphate, as P	<0.003	mg/L					02/27/2024	RKT	U
LCS (B240685-BS1)									
Orthophosphate, as P			96.3	90-110			02/27/2024	RKT	
Duplicate (B240685-DUP1) Source ID: LS01873-02									
Orthophosphate, as P					0.0687	10	02/27/2024	RKT	D
Duplicate (B240685-DUP3) Source ID: RW00054-07RE1									
Orthophosphate, as P					0.433	10	02/27/2024	RKT	D
Matrix Spike (B240685-MS1) Source ID: LS01873-02									
Orthophosphate, as P			98.4	90-110			02/27/2024	RKT	D
Matrix Spike (B240685-MS3) Source ID: RW00054-07RE1									
Orthophosphate, as P			101	90-110			02/27/2024	RKT	D
Matrix Spike Dup (B240685-MSD1) Source ID: LS01873-02									
Orthophosphate, as P			98.5	90-110	0.0349	10	02/27/2024	RKT	D
Matrix Spike Dup (B240685-MSD3) Source ID: RW00054-07RE1									
Orthophosphate, as P			101	90-110	0.0489	10	02/27/2024	RKT	D

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B240695									
Blank (B240695-BLK1)									
Calcium	<0.04	mg/L					03/01/2024	AMO	U
Magnesium	<80	ug/L					03/01/2024	AMO	U
Phosphorus as P	<0.012	mg/L					03/01/2024	AMO	U
LCS (B240695-BS1)									
Calcium			102	85-115			03/01/2024	AMO	
Magnesium			101	85-115			03/01/2024	AMO	
Phosphorus as P			108	85-115			03/01/2024	AMO	
Duplicate (B240695-DUP1) Source ID: AC00337-02									
Calcium					0.727	20	03/01/2024	AMO	
Magnesium					0.793	20	03/01/2024	AMO	
Phosphorus as P					0.100	20	03/01/2024	AMO	
Matrix Spike (B240695-MS1) Source ID: AC00337-02									
Calcium			102	70-130			03/01/2024	AMO	
Magnesium			99.6	70-130			03/01/2024	AMO	
Phosphorus as P			112	70-130			03/01/2024	AMO	
Matrix Spike Dup (B240695-MSD1) Source ID: AC00337-02									
Calcium			101	70-130	0.172	20	03/01/2024	AMO	
Magnesium			99.4	70-130	0.180	20	03/01/2024	AMO	
Phosphorus as P			113	70-130	0.221	20	03/01/2024	AMO	
Batch: B240750									
Blank (B240750-BLK1)									
Arsenic	<0.070	ug/L					03/03/2024	DMW	U
Cadmium	<0.010	ug/L					03/03/2024	DMW	U
Lead	<0.010	ug/L					03/03/2024	DMW	U
LCS (B240750-BS1)									
Arsenic			102	85-115			03/03/2024	DMW	
Cadmium			105	85-115			03/03/2024	DMW	
Lead			107	85-115			03/03/2024	DMW	
Duplicate (B240750-DUP1) Source ID: AC00336-01									
Arsenic					1.36	20	03/03/2024	DMW	
Cadmium					9.29	20	03/03/2024	DMW	
Lead					0.499	20	03/03/2024	DMW	
Matrix Spike (B240750-MS1) Source ID: AC00336-01									
Arsenic			98.2	70-130			03/03/2024	DMW	
Cadmium			100	70-130			03/03/2024	DMW	
Lead			96.4	70-130			03/03/2024	DMW	
Matrix Spike Dup (B240750-MSD1) Source ID: AC00336-01									
Arsenic			98.3	70-130	0.110	20	03/03/2024	DMW	
Cadmium			103	70-130	3.09	20	03/03/2024	DMW	
Lead			97.5	70-130	0.693	20	03/03/2024	DMW	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B240817									
Blank (B240817-BLK1)									
Mercury	<0.01	ug/L					03/08/2024	SAS	U
LCS (B240817-BS1)									
Mercury			102	85-115			03/08/2024	SAS	
Duplicate (B240817-DUP1) Source ID: AC00336-01									
Mercury					1.32	20	03/08/2024	SAS	
Duplicate (B240817-DUP2) Source ID: BB03624-03									
Mercury					NR	20	03/08/2024	SAS	
Matrix Spike (B240817-MS1) Source ID: AC00336-01									
Mercury			99.4	70-130			03/08/2024	SAS	
Matrix Spike (B240817-MS2) Source ID: BB03624-03									
Mercury			106	70-130			03/08/2024	SAS	
Matrix Spike Dup (B240817-MSD1) Source ID: AC00336-01									
Mercury			98.6	70-130	0.699	20	03/08/2024	SAS	
Matrix Spike Dup (B240817-MSD2) Source ID: BB03624-03									
Mercury			107	70-130	0.600	20	03/08/2024	SAS	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B240802									
Blank (B240802-BLK1)									
Copper	<0.15	ug/L					03/08/2024	DMW	U
Zinc	<0.50	ug/L					03/08/2024	DMW	U
LCS (B240802-BS1)									
Copper			91.8	85-115			03/08/2024	DMW	
Zinc			93.3	85-115			03/08/2024	DMW	
Duplicate (B240802-DUP1) Source ID: AC00337-03									
Copper					1.42	10	03/08/2024	DMW	
Zinc					1.17	10	03/08/2024	DMW	
Matrix Spike (B240802-MS1) Source ID: AC00337-03									
Copper			90.6	70-130			03/08/2024	DMW	
Zinc			89.1	70-130			03/08/2024	DMW	
Matrix Spike Dup (B240802-MSD1) Source ID: AC00337-03									
Copper			89.4	70-130	0.854	10	03/08/2024	DMW	
Zinc			86.0	70-130	1.20	10	03/08/2024	DMW	
Batch: B241178									
Blank (B241178-BLK1)									
Cadmium	<0.010	ug/L					04/04/2024	DMW	U
Lead	<0.0090	ug/L					04/04/2024	DMW	U
LCS (B241178-BS1)									
Cadmium			99.9	85-115			04/04/2024	DMW	
Lead			99.4	85-115			04/04/2024	DMW	
Duplicate (B241178-DUP1) Source ID: AC00340-01									
Cadmium					NR	10	04/04/2024	DMW	U
Lead					2.01	10	04/04/2024	DMW	
Matrix Spike (B241178-MS1) Source ID: AC00340-01									
Cadmium			102	70-130			04/04/2024	DMW	
Lead			98.4	70-130			04/04/2024	DMW	
Matrix Spike Dup (B241178-MSD1) Source ID: AC00340-01									
Cadmium			102	70-130	0.490	10	04/04/2024	DMW	
Lead			98.3	70-130	0.146	10	04/04/2024	DMW	

Revised Report

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

for JFK

Janet Finegan-Kelly
Water Quality Laboratory Manager

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA ~~245.2~~ BC 245.1	~~E. Coli - IDEXX Colilert~~ Chlorides - EPA 300.0	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
✓ AC00336-01	2/26/24	2/26/24	1004	1620	240226-206-WC	ST	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
					7.0°C & 8.1°C																				

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	2/26/24 2058	[signature] 2-27-24 0705	

AC00336

AC00336

Technical Memorandum

1290 W. Myrtle St. Suite 340
Boise, ID 83702

Phone: 801.316.9859

Prepared for: Ada County Highway District
Project Title: NPDES Phase I Stormwater Support WY 2024
Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for March 28, 2024
Date: June 20, 2024
To: Monica Lowe
Cc: Steven Turner
Kristen Chisholm
From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Section 1: Introduction

The Environmental Protection Agency Region 10 reissued a Municipal Separate Storm Sewer System Phase I National Pollutant Discharge Elimination System Permit (NPDES) Permit, effective October 1, 2021, to Ada County Highway District (ACHD), Boise City, Ada County Drainage District No. 3, Idaho Transportation Department District 3, Boise State University, and Garden City. Under the NPDES Permit, Permittees are required to continue to conduct wet weather stormwater outfall monitoring and subwatershed monitoring. Four outfall monitoring sites (Lucky, Whitewater, Main, and Americana) and one subwatershed monitoring site (AS_6) have been established. The AS_6 site represents a subwatershed located within the Americana watershed. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2024 (October 1, 2023, through September 30, 2024). The following storm event report summarizes stormwater sampling results from the March 28, 2024, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2024 Phase I Stormwater Outfall Monitoring. When samples are qualified, additional samples will be attempted from subsequent storms to collect unqualified samples.

Table 2-1. WY 2024 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 10, 2023	G, C[1,2]	G	--	G, C[3]	--
November 19, 2023	G, C	G, C	G, C	G[4], C	G, C
February 1, 2024	G[5], C	G[5], C[6]	G[5], C	G[5], C	G[5], C
February 26, 2024	G, C	G, C	G, C[7]	G, C	G, C
March 28, 2024	--	C	G, C	G	G
Unqualified Samples:	3G, 3C	3G, 3C	3G, 3C	3G, 3C	3G, 3C
Samples Remaining:	0G, 0C	0G, 0C	0G, 0C	0G, 0C	0G, 0C

Notes:
-- = no samples taken
C = composite sample
G = grab sample
[1] Composite samples qualified due to lack of representativeness (50%–75%).
[2] Incomplete water quality analysis due to low composite sample volume.
[3] Composite samples qualified due to lack of representativeness (50%–75%) of the calculated flow volume.
[4] Incomplete field parameter collection on the grab sample data form due to field error.
[5] E. coli sample qualified due to exceeded hold time.
[6] Composite sample rejected due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented more than 10% of the composite volume.
[7] Composite sample qualified due to automatic sampler triggering prior to storm event runoff. The subsamples taken prior to the event represented less than 10% of the composite volume.

Section 3: Storm Event Summary

The March 28, 2024, storm event and the subsequent preparation and sampling efforts are detailed in the following sections.

3.1 Storm Detail

A summary of the forecast on which monitoring decisions were based is detailed below. The sampling event communication form that describes the forecast and summarizes the decision-making process from March 28, 2024, is included in Attachment A for reference.

Wednesday, March 27, 2024 to Thursday, March 28, 2024

- On the morning of March 27, the National Weather Service issued a forecast of rain shadowing and light rain in the Boise area, starting March 27 at 1800 until March 28 at 0300. Rain was predicted to increase until March 28, 2024 at 1000. The chance of precipitation was 90%, with more than 0.1 inches of precipitation forecasted.
- Setup was accomplished in the afternoon of March 27. An expected precipitation depth of 0.11 inches was used to set trigger volumes at monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.
- Moderate rain first started at approximately March 27 at 1901 and ended March 28 at 1249.
- Precipitation totals ranged between 0.53 and 0.59 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrographs for the Whitewater, Main, Americana and AS_6 sites showing flow, rain, and sample collection data are included in Attachment B.

3.2 Sampling Summary

Whitewater and Main monitoring stations were set up on March 27, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programmed into the Whitewater and Americana flowmeters. A site-specific velocity cutoff value was programmed into Main and AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling are included in Attachment C.

Grab Samples

A two-member team mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on March 28 around 0131. Grab samples for Main, Americana, and AS_6 was submitted to the West Boise Water Quality Lab (WQL) at 0816 on March 28.

Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are included in Attachment D.

Composite Samples

Composite samples were collected at the Main monitoring station and submitted to the WQL at 1134 on March 28. The composite sample at Whitewater monitoring station was submitted at 1314 on March 28 to the WQL.

Analytical results are shown in Table 2 and pollutant loading estimates for the event are detailed in Table 3. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the March 28, 2024, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Main monitoring station. A field blank composite sample was collected from the Americana monitoring station. The analytical results for these samples are included in Table 4.

Table 4-1. Quality Control Samples			
Sample ID	Sample Type	Parent Sample	Conclusions
240328-12-001	Field blank	Main grab	No *E. coli* detection was reported in the field blank.
240328-12-101	Field duplicate	Main grab	Relative percent difference was within the acceptable range.
240328-14-002	Field blank composite	None	No composite parameter detection was reported on the field blank composite.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A. Performance criteria for analytical and non-analytical data was met for this storm event.

Section 5: Notes and Recommendations

Whitewater

At Whitewater, composite sample bottle 3 had a power failed error message from 0405 until 0407 on March 28, due to the battery on the sampler running low. The error message was present for the last four subsamples in bottle 3. The battery was replaced prior to installing bottle 4, resolving the error message.

Data Tables

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	NO	NO	YES	YES	YES
Composite samples collected and submitted?	NO	YES	YES	NO	NO
Trigger volume (ft^3)	--	800 cf	3411 gal	--	--
Velocity cutoff (fps)	--	--	--	--	--
Sampler enable condition (in)	--	Level > 3.3"	Level > 1.84"	--	--
Runoff start time	--	1919 [1]	1911 [1]	1901 [1]	1930 [1]
Grab sample collection time	--	--	0137	0159	0219
Composite sample stop time	--	1133	0739	--	--
Runoff stop time		1249 [2]	0817 [2]	0928 [2]	1013 [2]
Volume of discharge sampled (ft^3)	--	127,090	37,197	--	--
Total runoff volume (ft^3)	--	154,801	48,613	372,974	37,320
Percent of storm flow sampled (%)	--	82%	77%	--	--
Composite sample duration (hrs)	--	13	11	--	--
Storm Precipitation (in)	0.53	0.59	0.53	0.53/0.56	0.53/0.56
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	--	159	70	--	--
Number of composite bottles filled	--	8	3	--	--
Composite sample volume (Approx.; ml)	--	88,300 ml	40,500 ml	--	--

Notes:

– = No data.

1 Storm runoff started on 3/27/2024.

2 Storm runoff ended on 3/28/2024.

Table 2. Field and Analytical Data Summary

Monitoring Station	Sample Date	Sample ID Grab	Field Parameters				Analytical Parameters																				
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli	Sample ID Composite	BOD_5	COD	Hardness as $CaCO_3$	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			mg/L	S.U.	uS/cm	C	mpn/100 mL		mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Lucky	3/28/2024	240328-03-WG	--	--	--	--	--	240328-03-WC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Whitewater	3/28/2024	240328-11-WG	--	--	--	--	--	240328-11-WC	8.20	84.0	31.9	26.2	131	76.0	0.318	0.131	0.236	0.277	1.63	2.0	<0.0100	0.074	1.9	0.097	5.8	0.0151	9.80
Main	3/28/2024	240328-12-WG	10.02	7.82	116.08	10.91	21.6	240328-12-WC	5.03	104	12.6	24.6	91.7	44.2	0.145	0.0494	0.293	0.151	1.18	1.1	<0.0100	0.071	2.3	0.068	5.9	0.0171	14.7
Americana	3/28/2024	240328-14-WG	10.57	7.28	255.40	9.79	365.4	240328-14-WC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS_6	3/28/2024	240328-206-WG	9.92	7.60	108.59	7.74	387.3	240328-206-WC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

– = No data.

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	3/28/2024	--	--	--	--	--
Whitewater	3/28/2024	1266	3.07	2.28	2.68	15.7
Main	3/28/2024	278.2	0.440	0.889	0.458	3.58
Americana	3/28/2024	--	--	--	--	--
AS_6	3/28/2024	--	--	--	--	--

Notes:

– = No data.

Table 4. QC Sample Summary

Date	Parent Sample	Sample ID	Type	E. coli	BOD_5	COD	Hardness as CaCO3	Turbidity	TSS	TDS	Total Phosphorus	Dissolved Orthophosphate	Ammonia	Nitrate + Nitrite (N)	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
				mpn/100 mL	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
3/28/2024	240328-12-WG	240328-12-001	Field Blank	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/28/2024	240328-12-WG	240328-12-101	Field Duplicate	17.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Calculated parent/duplicate RPD				5%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
3/28/2024	--	240328-14-002	Field Blank Composite	--	<2.00	<7.00	<0.100	<0.3	<0.900	<20.0	<0.0120	<3.00E-3	<0.0450	<0.0250	<0.100	<0.0700	<0.0100	<0.0100	<0.150	<9.00E-3	<0.0100	<0.0100	<0.500

Notes:

– = No data.

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 03/27/2024	Time: 8:10 AM	Initials: ST
Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)		Maybe

Past 72 hr Precip	0.08" at airport
Date and time of expected event	3/28/24 @ 3:00 am
Expected amount of precipitation	0.16"
Percent chance of precipitation	94%
Percent chance of >0.10" over 12 hours	90%

NWS Update

Spoke with Les from NWS and he said the main band of the rain will start around 3:00 AM with some light sprinkles around 6:00 pm on 3/27/24 resulting from rain shadowing. The total rain from 6:00 PM (3/27) – 3:00 AM (3/28) will be 0.02". There will be constant showers until 10:00 AM and there may be some light sprinkles till 12:00 PM. Theres a 90% chance we will receive over 0.1" of rain.

Targeted Station & Samples

Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☐ Grab	☐ Grab	☒ Grab	☒ Grab	☒ Grab	☒ Grab
☐ Composite	☒ Composite	☒ Composite	☐ Composite	☐ Composite	☒ Composite

Type of Forecasted Precipitation

☐ Light Rain ☒ Rain ☐ Rain on Snow
☐ Scattered Showers ☐ Thunder Showers ☐ Snowmelt
☐ Other:

Reasons for Not Targeting a Forecasted Storm and/or Stations

☐ Holiday
☐ Waiting on Antecedent Dry Period – Expires:
☐ Equipment Concerns:
☐ Other:

Text Forecast

NWS Forecast for: 2 Miles NNW Garden City ID
Issued by: National Weather Service Boise, ID
Last Update: 3:29 am MST Mar 27, 2024

Today: Scattered showers after noon. Mostly cloudy, with a high near 58. Southeast wind 7 to 14 mph. Chance of precipitation is 30%.
Tonight: Showers. Low around 39. East southeast wind 6 to 13 mph. Chance of precipitation is 90%. New precipitation amounts between a tenth and quarter of an inch possible.
Thursday: Showers likely, with thunderstorms also possible after noon. Mostly cloudy, with a high near 54. Calm wind becoming west 5 to 8 mph in the afternoon. Chance of precipitation is 70%.
Thursday Night: A 20 percent chance of showers before midnight. Mostly cloudy, with a low around 35. West southwest wind around 6 mph becoming east southeast after midnight.
Friday: A 20 percent chance of showers after noon. Partly sunny, with a high near 55. East southeast wind 3 to 7 mph.
Friday Night: Mostly cloudy, with a low around 34.
Saturday: Partly sunny, with a high near 59.

Saturday Night: A 20 percent chance of showers after midnight. Partly cloudy, with a low around 35.
Sunday: A 30 percent chance of showers, mainly before noon. Mostly sunny, with a high near 60.
Sunday Night: Mostly clear, with a low around 34.
Monday: Sunny, with a high near 63.
Monday Night: Mostly clear, with a low around 38.
Tuesday: Sunny, with a high near 71.

Forecast Discussion

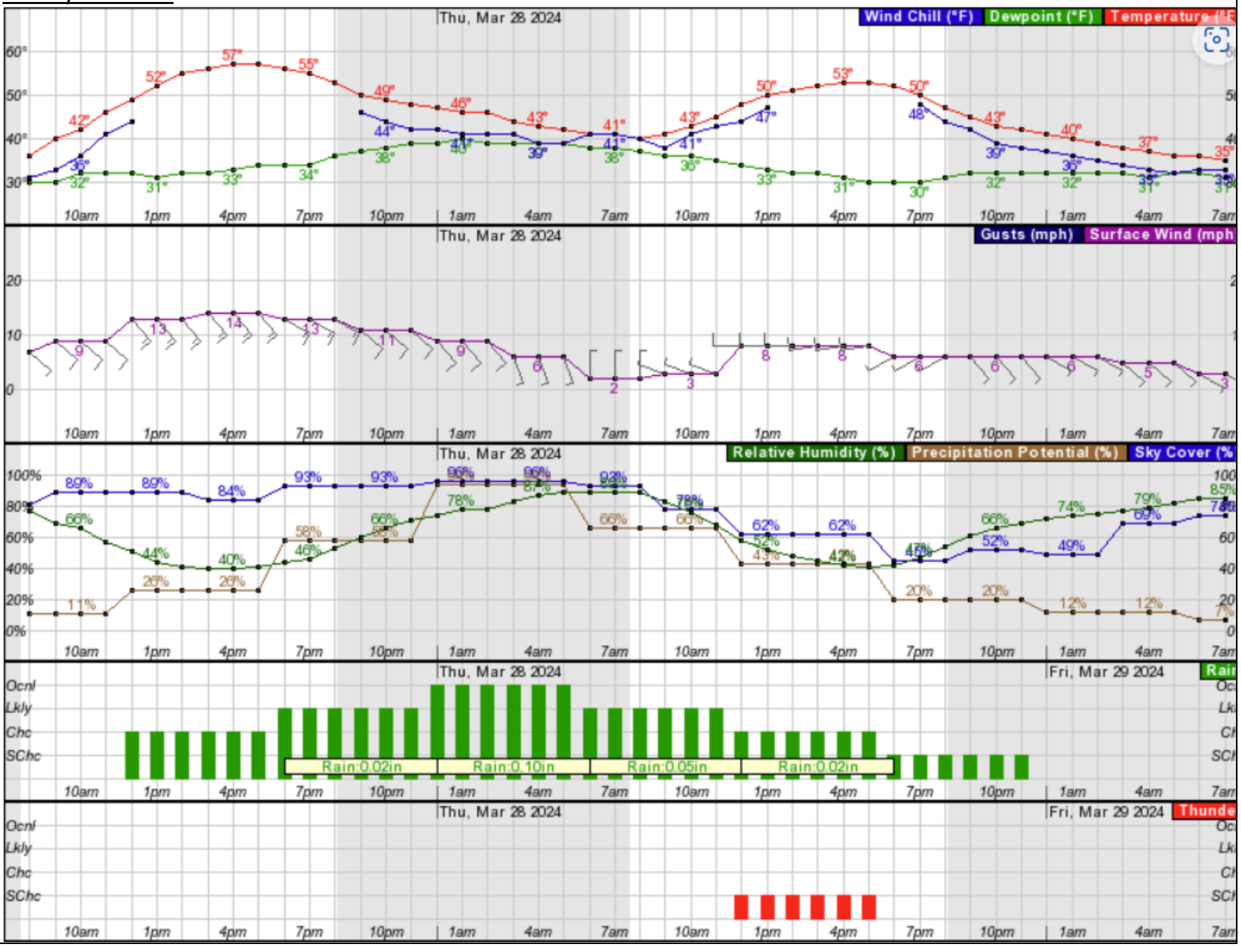
Area Forecast Discussion
National Weather Service Boise ID
356 AM MDT Wed Mar 27 2024

.SHORT TERM...Today through Friday night...A warm frontal passage this morning will open up into moist southwest aloft this afternoon. Precipitation will initiate over southeast Oregon early in the afternoon, spreading into southwest Idaho by early evening. While the thunderstorm threat today is less than 15% an overlap in daytime heating and increasing instability aloft could support a strike/flash over portions of SE Oregon, mainly Harney/Malheur counties. The increased flow aloft and deep Pacific low will bring breezy conditions today, the strongest winds across southeast Oregon. **Wednesday night is wet across the region as a broad upper low approaches the Pac NW coast.** The mountains of e-central Oregon and w-central Idaho see the focus of heaviest precipitation through Thursday morning where liquid totals of 0.50 to 1.00 inch are expected. Snow levels through Wednesday night will run 5000 to 6000 kft dropping to 3500 to 5000 ft Thursday. Total accumulation of 5 to 10 inches is expected above 6000 ft with up to 2 inches in mountain valleys above 4500 feet. **Lower elevations that stay dry into Wednesday evening will see precipitation fill in overnight with the passage of a cold front. Lower valleys are likely to see 0.10 to 0.20 inch of rain.** The main low will reach the WA coast on Thursday, the accompanying colder air aloft and daytime heating supporting a continued chance of showers and slight chance of thunderstorms. The shower threat retreats to the mountains Thursday night, expanding again on Friday with a 20% chance in the valleys and 40 to 70 percent chance in the mountains.

.LONG TERM...Saturday through Wednesday...The closed upper level low will move to our southwest on Saturday, becoming a positively tilted upper level trough that will keep temperatures cool through the weekend. Lingering moisture with this trough will also allow for a slight chance of precipitation (20-30% chance) over high terrain and near the Nevada border on Saturday and Sunday. Temperatures will be slightly below normal, with snow levels right around 4000-5000 feet. Any snow accumulations will be minimal, with higher elevations in the mountains seeing anywhere from 1-3 inches by Sunday night. This low will begin to move out on Monday, with a deep ridge building in over the region late Monday into Tuesday, bringing above normal temperatures and dry conditions through Wednesday. Tuesday looks to be the warmest day, with temperatures in the valleys reaching the upper 60s and low 70s.

Good model agreement exists with this pattern through next week, with only slight variation in the deterministic model`s evolution of the closed low. This accounts for the forecast uncertainty in precipitation this weekend, although all ensembles and deterministic solutions show light precipitation in the region.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE	3/28/24			
A. Event and Data Completeness	**Yes**	**No**	**N/A**	**Notes**
1. Field data sheets filled out completely and clearly	X			
2. Field parameters reviewed, and any problems/issues addressed	X			
3. All samples collected as specified	X			
4. All samples delivered to lab promptly (review chain of custody rpts)	X			
5. Inconsistencies/clarifications discussed with sampling team member			X	
6. All analytical reports from lab received	X			
B. Validation and Verification Methods	**Yes**	**No**	**N/A**	**Notes**
1. Outliers and unexpected values discussed with lab			X	
2. Appropriate analytical methods used	X			
3. All lab QA samples were within method acceptance criteria	X			
4. All samples reviewed and data qualifiers assigned if needed	X			
5. Data quality objective achieved	X			

C. Specific Storm and Sample QA/QC Criteria	Lucky	Whitewater	Main	Americana	AS_6	Program Criteria	Met	Qualify	Reject
1. Antecedent dry period (inches in previous 72-hours)	0.01	0.01	0.00	0.00/0.02	0.00/0.02	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.53	0.59	0.53	0.53/0.56	0.53/0.56	> 0.10"	X		
3. Sampled amount (% of total run-off)	–	82%	77%	–	–	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		
4. Composite sample duration (hours)	–	13	11	–	–				
4. Ecoli sample holding time (hours)	–	–	7.0	7.0	6.5	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	–	2.5	5.0	–	–	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

Reviewed by Steven Turner Date 5/16/24

Approved by Monica Lowe Date 5/17/24

Storm Runoff Estimates and Trigger Volumes

Step 1. Enter runoff coefficients in yellow cells.
Step 2. Enter expected precipitation depth (in) in blue cell.
Step 3. Read trigger volumes (**bold**) in green cells.

Expected Precipitation Depth =	0.11
Aliquots per Sample =	17

Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft^3)	Trigger Vol (ft^3)
Lucky	105	0.157	6582.5	**387**
Whitewater	498	0.069	13621.3	**801**
Main	79	0.246	7760.0	**456**
Main Alt	60	0.200	4791.6	**282**
Americana	875	0.144	50311.8	**2960**
AS_6	204	0.046	3747.0	**220**
State	34	0.160	2172.2	**128**

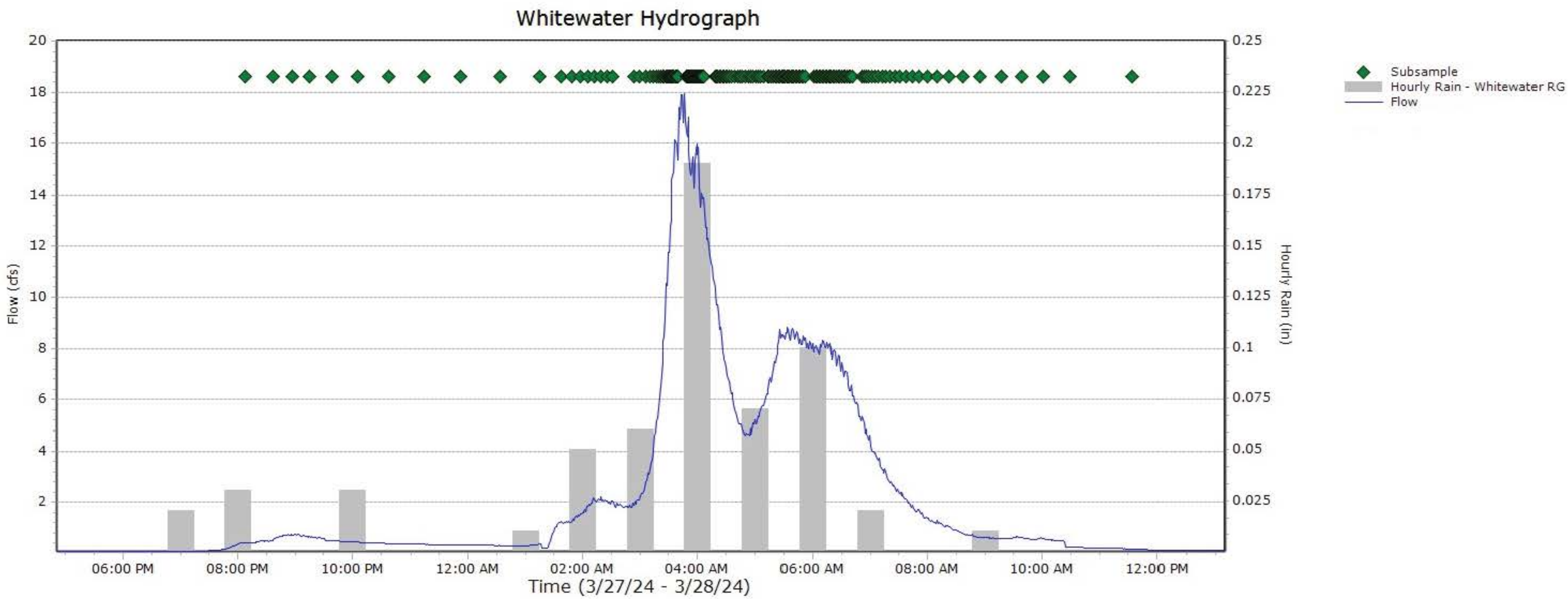
Notes:

Calculated RC = Average (precip (ft) / [volume (ft^3) x area (ft^2)])

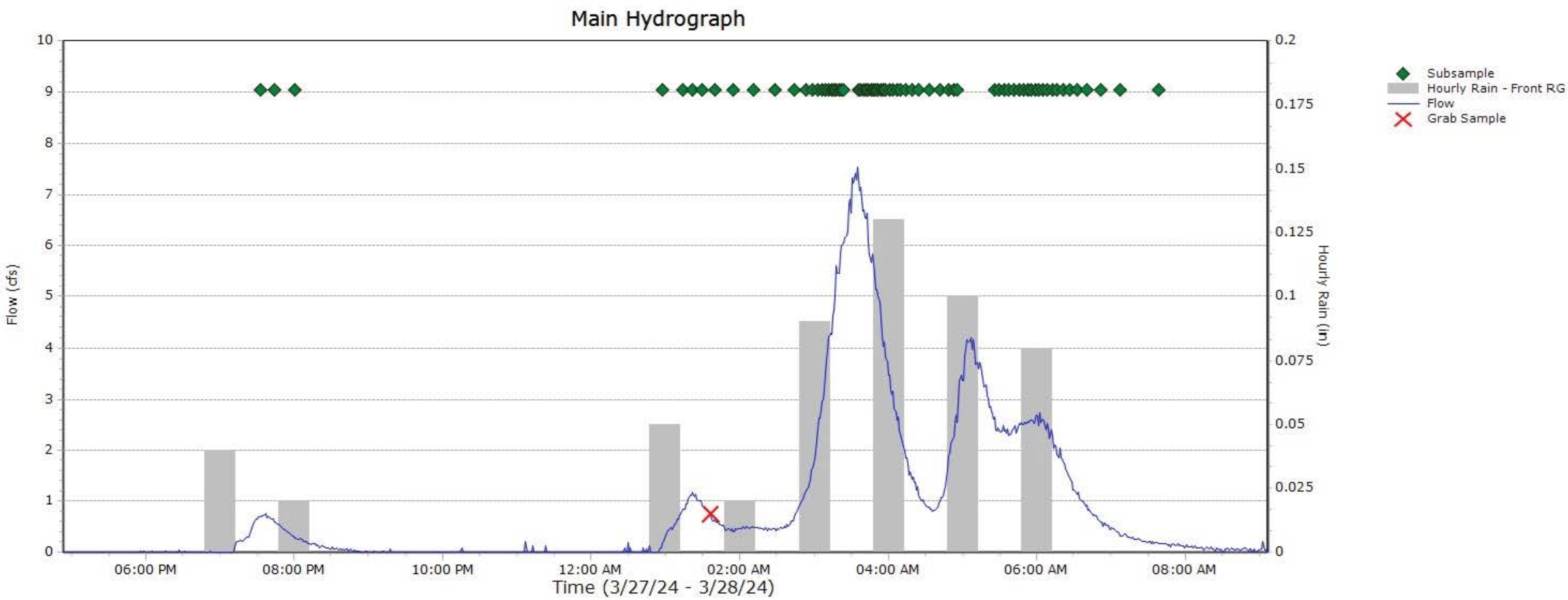
Where precip (ft) is the measured amount from local rain guage, and volume (ft^3) is the measured discharge, and area (ft^2) is the watershed area

Expected volume (ft^3) = RC x expected precip (ft) x area (ft^2)

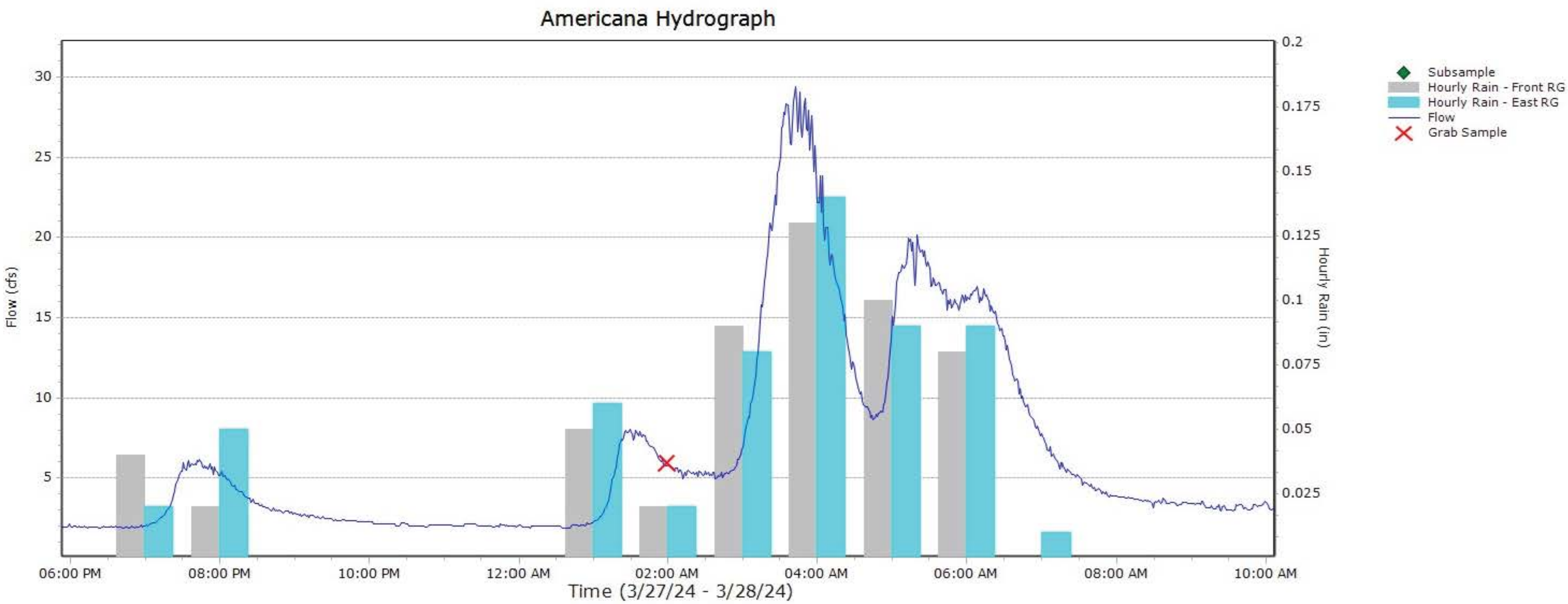
Attachment B: Storm Event Hydrographs



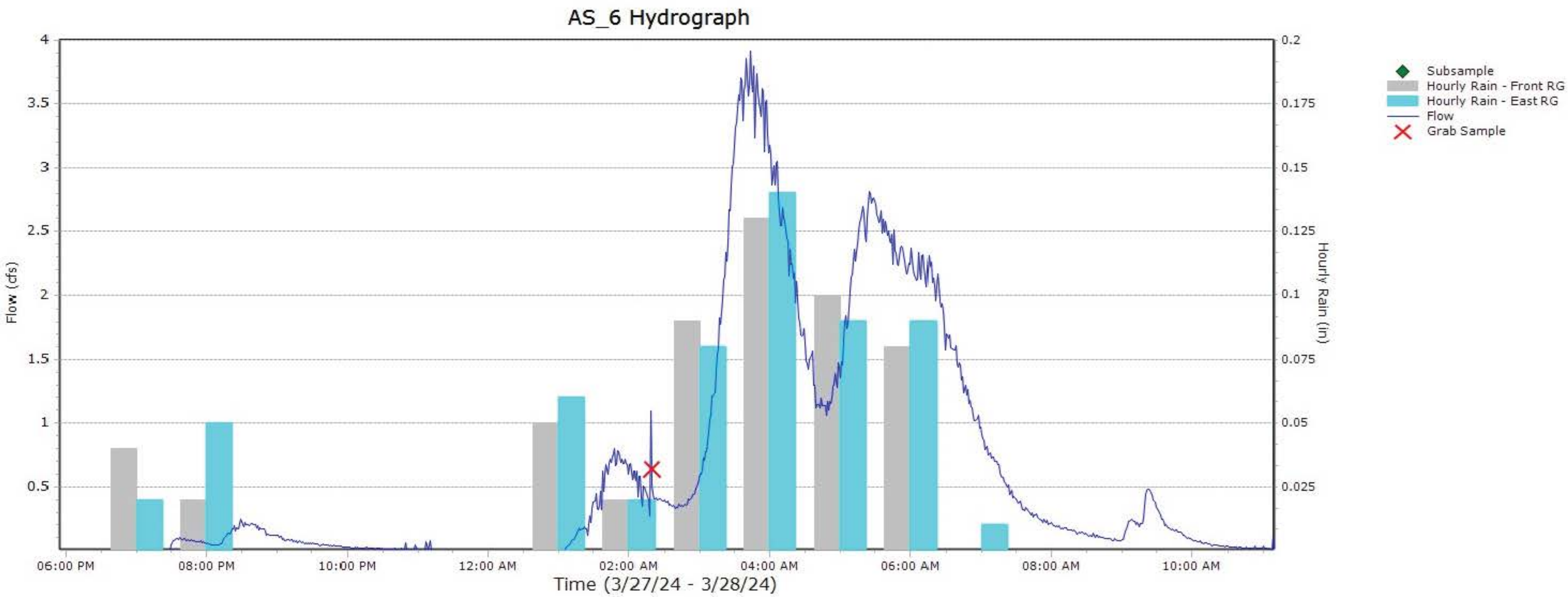
Whitewater Hydrograph
Subsample
Hourly Rain - Whitewater RG
Flow
Flow (cfs)
Hourly Rain (in)
20
18
16
14
12
10
8
6
4
2
0.25
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
Time (3/27/24 - 3/28/24)



Main Hydrograph
Flow (cfs)
Hourly Rain (in)
10
9
8
7
6
5
4
3
2
1
0
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
Time (3/27/24 - 3/28/24)
Subsample
Hourly Rain - Front RG
Flow
Grab Sample



Americana Hydrograph
Flow (cfs)
30
25
20
15
10
5
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
Hourly Rain (in)
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
Time (3/27/24 - 3/28/24)
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample



AS_6 Hydrograph
Flow (cfs)
4
3.5
3
2.5
2
1.5
1
0.5
Hourly Rain (in)
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
06:00 PM
08:00 PM
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
Time (3/27/24 - 3/28/24)
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample

Attachment C: Field Forms

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: Whitewater

SET UP

Personnel: KC, ST

Date/Time On-Site: 3/27/24 1315

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1315	2.21	0.07	0.25	—

Enable Condition:	3.3
Hysteresis:	1
Flow Pulse Interval:	800cf

On-Site

- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Set sampler program parameters
- ☒ Check date/time on sampler
- ☒ Verify all cable and tubing connections
- ☒ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)

- ☒ Direct or Remote; Date/time 3/27/24 1327
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: On Trigger, and set Sampler Enable equation
- ☒ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

Offsite: 3/27/24 1338

SHUT DOWN

Personnel: ST

Date/Time On-Site: 3/29/24 1209

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
12:09	2.13	0.09	0.33	—
Downloaded to:	Stevens USB			

On-Site

- ☐ ~~Replace flowmeter battery~~
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 3/29 1210
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Whitewater
Bottle 1 **of** 8
Personnel: ST, KC
Date/Time On-Site: 3/28 2:35

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240328 - M - -WC
Approx Sample Volume (mL):	9500 mL
Clarity (ex. Clear, Cloudy, Silty):	Tan, Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	↓
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/27/24 2007	success	13	0148	success
2	2036		14	0157	
3	2056		15	0205	
4	2115		16	0213	
5	2138		17	0219	
6	2206		18	0225	
7	2238		19	0231	
8	2313		20	0238	Skipped
9	2352		21		
10	3/28/24 0033		22		
11	0115		23		
12	0137		24		

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☒ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
	Date/Time Restarted: 2:45 ~~3/28~~ 3/28
	☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 2 **of** 8
Personnel: KC, ST **Date/Time On-Site:** 3/28/24 0345

☑ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-11 -WC
Approx Sample Volume (mL):	14000 mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Grey
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 0253	Success	13	3/28/24 0329	Success
2	0259		14	0330	
3	0305		15	0332	
4	0310		16	0333	
5	0313		17	0333	
6	0317		18	0334	
7	0319		19	0335	
8	0321		20	0336	
9	0323		21	0337	
10	0325		22	0338	
11	0326		23	0339	
12	0328		24	0340	

Comments:

Date/Time Off-Site: 3/28/24 0350

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning

Date/Time Restarted: 0347 3/28
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater
Personnel: KC, SS

Bottle 3 **of** 8
Date/Time On-Site: 3/28/24 415

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	3 240328 - 11 -WC
Approx Sample Volume (mL):	11,000 ml
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Gray
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 0347	Success	13	3/28/24 357	Success
2	0348		14	358	
3	0349		15	359	
4	350		16	400	
5	351		17	401	
6	352		18	402	
7	352		19	403	
8	353		20	404	
9	354		21	405	Power failed
10	355		22	406	
11	356		23	406	
12	356		24	407	

Comments:

Date/Time Off-Site: 3/28/24 0420

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☒ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
	Date/Time Restarted: 3/28/24 418
	☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 4 **of** 8
Personnel: LC, ST **Date/Time On-Site:** 3/28/24 434

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-11 -WC
Approx Sample Volume (mL):	13250 mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Grey
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 419	Success	13	439	Success
2	420		14	442	
3	421		15	445	
4	423		16	447	
5	424		17	450	
6	426		18	453	
7	428		19	456	
8	429		20	458	
9	431		21	501	
10	433		22	504	
11	435		23	506	
12	437	Skipped	24	509	

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning

Date/Time Restarted: 3/28 512
- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Composite Sample Collection

STATION: Whitewater | **Bottle** 5 **of** 8
Personnel: KC, SJ | **Date/Time On-Site:** 3/28/24 0555

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-11 -WC
Approx Sample Volume (mL):	13250
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Gray
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 513	Success	13	3/28/24 534	Success
2	515		14	535	
3	517		15	537	
4	519		16	538	
5	521		17	540	
6	522		18	541	
7	524		19	543	
8	526		20	545	
9	527		21	546	
10	529		22	548	
11	531		23	549	
12	532		24	551	

Comments:

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☑ Keep flowmeter running
- ☑ Install new 15L bottle; add ice
- ☑ Restart program from beginning
- Date/Time Restarted: 3/28/24 0602
- ☑ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 6 **of** 8
Personnel: VC, ST **Date/Time On-Site:** 3/28/24

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-11 -WC
Approx Sample Volume (mL):	13250
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	gray
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 1001	Success	13	3/28/24 1021	Success
2	1002		14	1022	
3	1004		15	1024	
4	1006		16	1026	
5	1008		17	1027	
6	1009		18	1029	
7	1011		19	1031	
8	1012		20	1033	
9	1014		21	1035	
10	1016		22	1037	
11	1017		23	1039	
12	1019		24	1041	

Comments:

If sampling is complete:

- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):

- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning

Date/Time Restarted: 3/28/24 1049

- ☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 7 **of** 8
Personnel: KC, ST **Date/Time On-Site:** 3/28/24 1025

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	240328 - 11 -WC
Approx Sample Volume (mL):	13250
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 650	Success	13	3/28/24 737	Success
2	653		14	743	
3	656		15	751	
4	658		16	759	
5	701		17	810	
6	705		18	821	
7	708		19	836	
8	712		20	855	
9	716		21	916	
10	721		22	938	
11	725		23	1001	
12	731		24	1029	

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☑ Keep flowmeter running
☐ Keep flowmeter running	☑ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☑ Restart program from beginning
	Date/Time Restarted: 3/28/24 1033
	☑ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Whitewater **Bottle** 8 **of** 8
Personnel: KC, ST **Date/Time On-Site:** ___

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-11 -WC
Approx Sample Volume (mL):	800 mL
Clarity (ex. Clear, Cloudy, Silty):	Clear
Color (ex. Clear, Gray, Tan, Brown, Black):	Tan
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 1133	Success	13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete:
- ☒ Power off sampler, if separate from flowmeter
- ☒ Keep flowmeter running
- ☒ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: ___
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	3.0"	3500 mL	5.5"	7250 mL	8.0"	11000 mL	10.5"	14750 mL
1.0"	800 mL	3.5"	4250 mL	6.0"	8000 mL	8.5"	11750 mL	11.0"	15500 mL
1.5"	1400 mL	4.0"	5000 mL	6.5"	8750 mL	9.0"	12500 mL	11.5"	16250 mL
2.0"	2000 mL	4.5"	5750 mL	7.0"	9500 mL	9.5"	13250 mL	After 12"	1" = 1500 mL
2.5"	2750 mL	5.0"	6500 mL	7.5"	10250 mL	10.0"	14000 mL	Lab min	8,000 mL

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

TATION: Main

SET UP

Personnel: KC, ST

Date/Time On-Site: 3/27/24 12:37

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1237	6.84	0.00	0.00	12.8
			Enable Condition or Velocity Cutoff:	1.84
			Deadband:	1
			Trigger Volume:	3411

- ☒ Install batteries on flowmeter and sampler
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☒ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:
Replaced desiccant on flowmeter -

Offsite 3/27/24 1300

SHUT DOWN

Personnel: ST

Date/Time On-Site: 3/29/24 12:22

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
12:22	7.45	0.00	0.00	–	12.6
Downloaded to:	Stevens USB				

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	☐ Reset logging interval to 15 minutes
☒ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Composite Sample Collection

STATION: Main **Bottle** 1 **of** 3
Personnel: ST, KC **Date/Time On-Site:** 3/28/24 1:30

☒ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-12 -WC
Approx Sample Volume (mL):	14000 mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Gray
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/27/24 19:33	Success	13	3/28 pm 0253	Success
2	1944		14	0259	
3	20:01		15	0303	
4	3/28 00:58		16	0306	
5	01:14		17	0309	
6	01:22		18	0312	
7	01:30		19	0314	
8	0140		20	0316	
9	0155		21	0318	
10	0212		22	0320	
11	0229		23	0322	
12	0244		24	0324	

Comments:

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☑ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle, add ice
☐ Add ice to sample transport cooler	☑ Restart program from beginning
	Date/Time Restarted: 3/28/24 0335
	☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Main
Personnel: KC, ST

Bottle 2nd **of** 3
Date/Time On-Site: 3/28/24 0426

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-12 -WC
Approx Sample Volume (mL):	14000 mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	grey
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 0336	Success	13	401	Success
2	338		14	404 ~~404~~ 407	
3	340		15	407 410	
4	342		16	410 414	
5	344		17	414 419	
6	346		18	419 425	
7	348		19	425	
8	350		20	433	
9	352		21	442	
10	354		22	449	
11	356		23	453	
12	358		24	456	

Comments:

Date/Time Off-Site: 3/28 5:26

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter	☒ Keep flowmeter running
☐ Keep flowmeter running	☒ Install new 15L bottle; add ice
☐ Add ice to sample transport cooler	☒ Restart program from beginning
	Date/Time Restarted: 3/28 523
	☒ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Composite Sample Collection

STATION: Main

Bottle 3 **of** 3

Personnel: ST, KC

Date/Time On-Site: 3/28/24 750

☑ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	240328-12 -WC
Approx Sample Volume (mL):	12500 ml
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Gray
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/28/24 526	Success ~~609~~ KC	13	3/28/24 609	Success
2	530		14	613	
3	534		15	617	
4	538		16	622	
5	542		17	627	
6	546		18	633	
7	550		19	641	
8	553		20	652	
9	556		21	708	
10	559		22	739	
11	602		23		
12	605		24		

Comments:

Date/Time Off-Site: 3/28/24 755

If sampling is complete:
- ☐ Power off sampler, if separate from flowmeter
- ☐ Keep flowmeter running
- ☐ Add ice to sample transport cooler

If continuing sampling (sample bottle change-out):
- ☒ Keep flowmeter running
- ☒ Install new 15L bottle; add ice
- ☒ Restart program from beginning

Date/Time Restarted: 3/28/24 755
- ☐ Verify running

Liquid Vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: Main

Personnel: KC, ST **Date/Time On-Site:** 3/28/24 1:31

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
131	6.16	394.17 GPM	1.21	12.9	—	—

Grab Information					
	Sample ID		Date	Time	Labeled?
Site *E.Coli*	240328-12	-WG	3/28/24	0137	☒
Field Duplicate *E.Coli*	240328-12	-101	3/28/24	0138	☒
Field Blank *E.Coli*	240328-12	-001	3/28/24	0141	☒

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MF09	0141	10.91	10.02	7.82	116.08

Sampler Current Status	
First Subsample Date/Time	3/27/24 1933
Last Subsample Date/Time	3/28/24 0130
# of Subsamples taken	7

Comments:

Set Up/ Shut Down Form – ISCO (Whitewater, Americana, State)

TATION: Americana

SET UP

Personnel: ST, KC

Date/Time On-Site: 3/27/24 ~~3:10Pm~~ ST ~~16:10~~ 15

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
16.12	5.99	1.99	2.200	12.29

Enable Condition:	
Hysteresis:	
Flow Pulse Interval:	

On-Site
- ☒ Replace flowmeter battery, install sampler battery
- ☒ Perform decon. cycle
- ☒ Install 15L sample bottle, with ice
- ☒ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Set sampler program parameters
- ☐ Check date/time on sampler
- ☐ Verify all cable and tubing connections
- ☐ Verify sampler program is running

Flowlink (Refer to PG 411 or PG 412, if needed)
- ☒ Direct or Remote; Date/time 16:14 3/27/24
- ☒ Retrieve data and review recent flow history
- ☒ Change Wireless Power Control to Storm Event
- ☒ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate
- ~~☐ Enable Sampler: On Trigger, and set Sampler Enable equation~~
- ~~☐ Set Sampler Pacing to Flow Paced, and set trigger volume~~

Comments: Installed QC Blank composite. Set up flowmeter only. No composite needed.

offsite: 3/27/24 1523

SHUT DOWN

Personnel: ST

Date/Time On-Site: 3/29/24 12:35

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
12:36	6.52	2.35	2.299	12.07
Downloaded to:	Stevens USB			

On-Site
- ☒ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)
- ☒ Direct or Remote; Date/time 3/29 12:36
- ☒ Retrieve data
- ☒ Change Wireless Power Control to Dry Weather
- ☒ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate
- ☒ Enable Sampler: Never

Comments:

Composite Sample Collection

STATION: Americana **Bottle** 1 **of** 1

Personnel: ____ **Date/Time On-Site:** ____

☐ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	- -WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	240328-14-002 ~~103~~ ~~[illegible]~~ (Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1			13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments: QC Blank filled at 3/27/24 1510-1514. Removed at 10:08

If sampling is complete:	**If continuing sampling (sample bottle change-out):**
☐ Power off sampler, if separate from flowmeter ☐ Keep flowmeter running ☐ Add ice to sample transport cooler	☐ Keep flowmeter running ☐ Install new 15L bottle; add ice ☐ Restart program from beginning **Date/Time Restarted:** ____ ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart

Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5"	400 mL	**3.0"**	3500 mL	**5.5"**	7250 mL	**8.0"**	11000 mL	**10.5"**	14750 mL
1.0"	800 mL	**3.5"**	4250 mL	**6.0"**	8000 mL	**8.5"**	11750 mL	**11.0"**	15500 mL
1.5"	1400 mL	**4.0"**	5000 mL	**6.5"**	8750 mL	**9.0"**	12500 mL	**11.5"**	16250 mL
2.0"	2000 mL	**4.5"**	5750 mL	**7.0"**	9500 mL	**9.5"**	13250 mL	**After 12"**	1" = 1500 mL
2.5"	2750 mL	**5.0"**	6500 mL	**7.5"**	10250 mL	**10.0"**	14000 mL	**Lab min**	8,000 mL

Grab Sample Data Form

STATION: Americana

Personnel: KC, ST **Date/Time On-Site:** 3/28/24 0153

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0156	9.94	6.33	3.368	12.06	—	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240328-14 -WG	3/28/24	0159	☒
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP ~~08~~ 09	0202	9.79	10.57	7.28	255.40

Sampler Current Status	
First Subsample Date/Time	—
Last Subsample Date/Time	—
# of Subsamples taken	—

Comments: Not collecting composite sample for this site.

Set Up/ Shut Down Form – HACH (Lucky, Main, AS_6)

STATION: AS-6

SET UP

Personnel: KC, ST

Date/Time On-Site: 3/27/24 1444

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1449	0.00	0.00	0.00	12.4

Enable Condition or Velocity Cutoff:	—
Deadband:	—
Trigger Volume:	—

- ☒ Install batteries on flowmeter and sampler
- ☐ Perform decon. cycle
- ☐ Install 15L sample bottle, with ice
- ☐ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Verify all cable and tubing connections
- ☒ Check date and time on flowmeter and sampler
- ☒ Set flowmeter program and sampler program parameters
- ☒ Set logging interval to 1 minute
- ☒ Start flowmeter program and sampler program
- ☒ Verify running

Comments:
Set up flowmeter only. No composite for this site.

offsite: 1451

SHUT DOWN

Personnel: ST

Date/Time On-Site: 3/29/24 13:29

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
13:29	0.000	0.000	0.000	39,608	12.4
Downloaded to:	Rugged				

If flow monitoring is complete:
- ☒ Halt program on flowmeter
- ☒ Download flowmeter data
- ☒ Remove flowmeter battery

If continuing to monitor flow:
- ☐ Replace flowmeter battery
- ☐ Reset logging interval to 15 minutes
- ☐ Change velocity cutoff to 0.02 fps
- ☐ Start program
- ☐ Verify running

Comments:

Grab Sample Data Form

STATION: AS-6

Personnel: KC, ST **Date/Time On-Site:** 3/28/24 0210

Flow Meter Current Status					
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Rainfall (in) (Whitewater Only)
0214	6.710	0.46	0.69	12.3	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	240328-206-WG	3/28/24	2:19	☑
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)
MP09	2:25	7.74	9.92	7.60	108.59

Sampler Current Status	
First Subsample Date/Time	—
Last Subsample Date/Time	—
# of Subsamples taken	—

Comments: No composite taken at this site.

Date/Time Off-Site: 3/28/24 2:26

Revised 240123 KC

Attachment D: Storm Event Analytical Reports

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 05/02/2024 14:28

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00338-01	ACST1B	240328-12-WG	Water		03/28/2024	03/28/2024
AC00338-02	ACST1B	240328-12-101	Water		03/28/2024	03/28/2024
AC00338-03	ACST1B	240328-12-001	Water		03/28/2024	03/28/2024
AC00338-04	ACST1B	240328-14-WG	Water		03/28/2024	03/28/2024

ʀeport Date: 05/02/2024 14:28

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240328-12-WG
Date/Time Collected:	03/28/2024 01:37		
Lab Number:	AC00338-01	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B241140	21.6	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	
Wet Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:28

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240328-12-101
Date/Time Collected:	03/28/2024 12:00		
Lab Number:	AC00338-02	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B241140	17.3	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	
Wet Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

ꝛeport Date: 05/02/2024 14:28

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240328-12-001
Date/Time Collected:	03/28/2024 12:00		
Lab Number:	AC00338-03	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B241140	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	U
Wet Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:28

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240328-14-WG
Date/Time Collected:	03/28/2024 01:59		
Lab Number:	AC00338-04	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B241140	365.4	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	
Wet Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B241140									
Blank (B241140-BLK1)									
E. Coli	Absent						03/29/2024	KMR	
LCS (B241140-BS1)									
E. Coli				Present			03/29/2024	KMR	
Duplicate (B241140-DUP1)	Source ID: LS01907-10								
E. Coli					Pass	128	03/29/2024	KMR	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Kate Harris
Interim Water Quality Laboratory Manager

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Colilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
00338-01	3/28/24		0137		240328-12-WG	ST	X	X												X					1
-02	3/28/24		1200		240328-12-101	ST	X	X												X					1
-03	3/28/24		1200		240328-12-001	ST	X	X												X					1
-04	3/28/24		0159		240328-14-WG	ST	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	3/28/24 0814	[signature] 3/28/24 0816	

Ar 00338 Ar 00338

coc_wql-pi

Report Date: 05/02/2024 14:28

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00339-01	ACST1B	240328-206-WG	Water		03/28/2024	03/28/2024

Report Date: 05/02/2024 14:28

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	240328-206-WG
Date/Time Collected:	03/28/2024 02:19		
Lab Number:	AC00339-01	Sample Collector:	S.T
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Microbiology										
E. Coli	B241140	387.3	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/28/24 08:46	3/29/24 10:00	KMR	
Wet Chemistry										
Chlorine Screen	B241146	Absent				SM 4500-CL G-2000 mod	03/28/24	3/28/24 8:26	ALM	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:28

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B241140									
Blank (B241140-BLK1)									
E. Coli	Absent						03/29/2024	KMR	
LCS (B241140-BS1)									
E. Coli				Present			03/29/2024	KMR	
Duplicate (B241140-DUP1)	Source ID: LS01907-10								
E. Coli					Pass	128	03/29/2024	KMR	

The contents of this report apply to the sample(s) analyzed in accordance with the Chain of Custody document.
No duplication of this report is allowed, except in its entirety

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

tem	Definition
'o notes entered.	

lethod Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Kate Harris
Interim Water Quality Laboratory Manager

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714-6418
Tel. (208) 387-6269
Fax (208) 387-6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Collilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
00339-01	3/28/24		0219		240328-206-WG	ST	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
[illegible signature]	3/28/24 0814	[illegible signature] 3/28/24 0816	

AC00339 AC00339

Report Date: 05/02/2024 14:36

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00341-01	ACST1C	240328-11-WC	Water		03/28/2024	03/28/2024

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Report Date: 05/02/2024 14:36

Analysis Report

Location:	ACST1C	Location Description:	240328-11-WC
Date/Time Collected:	03/27/2024 20:07 - 03/28/2024 11:33		
Lab Number:	AC00341-01	Sample Collector:	K.C
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B241161	0.236	mg/L	0.0450	0.0450	Timberline Ammonia-001	03/29/24	3/29/24 11:19	ALN	
BOD5	B241168	8.20	mg/L	2.00	2.00	SM 5210 B-2016	03/29/24	4/3/24 9:59	ALM	
Chloride	B241409	14.9	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	04/18/24	4/18/24 15:37	SMC	
COD	B241167	84.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/29/24	3/29/24 9:37	RKT	
Nitrate-Nitrite, as N	B241189	0.277	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	04/01/24	4/1/24 14:29	JAL	
TKN	B241263	1.63	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	04/04/24	4/5/24 12:53	EDM	
Total Dissolved Solids	B241163	76.0	mg/L	20.0	20.0	SM 2540 C-2015	03/28/24	3/30/24 15:18	BAK	
Total Suspended Solids	B241172	131	mg/L	0.900	0.900	SM 2540 D-2015	03/29/24	3/29/24 10:10	SMC	
Turbidity	B241159	26.2	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	03/28/24	3/28/24 14:35	LRF	
Dissolved Wet Chemistry										
Orthophosphate, as P	B241173	0.131	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/29/24	3/29/24 13:02	JAL	
Total Metals										
Mercury	B241233	0.0151	ug/L	0.0100	0.0100	EPA 245.1	04/04/24	4/5/24 7:58	SAS	
Arsenic	B241177	2.0	ug/L	0.070	0.070	EPA 200.8	04/13/24	4/14/24 17:54	DMW	
Cadmium	B241177	0.074	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:54	DMW	
Calcium	B241226	7.94	mg/L	0.0400	0.0400	EPA 200.7	04/03/24	4/11/24 17:34	EDM	
Lead	B241177	5.8	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:54	DMW	
Magnesium	B241226	2930	ug/L	80.0	80.0	EPA 200.7	04/03/24	4/11/24 17:34	EDM	
Phosphorus as P	B241226	0.318	mg/L	0.0120	0.0120	EPA 200.7	04/03/24	4/11/24 17:34	EDM	
Hardness	B241226	31.9	mg/L	0.100	0.100	SM 2340 B-2011	04/03/24	4/11/24 17:34	EDM	
Dissolved Metals										
Cadmium	B241178	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 16:00	DMW	U
Copper	B241178	1.9	ug/L	0.15	0.15	EPA 200.8	04/04/24	4/4/24 16:00	DMW	
Lead	B241178	0.097	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 16:00	DMW	
Zinc	B241178	9.8	ug/L	0.50	0.50	EPA 200.8	04/04/24	4/4/24 16:00	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:36

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B241159									
Blank (B241159-BLK1)									
Turbidity	<0.3	NTU					03/28/2024	LRF	U
LCS (B241159-BS1)									
Turbidity			102	90-110			03/28/2024	LRF	
Duplicate (B241159-DUP1) Source ID: AC00340-01									
Turbidity					0.809	25	03/28/2024	LRF	
Batch: B241161									
Blank (B241161-BLK1)									
Ammonia, as N	<0.045	mg/L					03/29/2024	ALN	U
Blank (B241161-BLK2)									
Ammonia, as N	<0.045	mg/L					03/29/2024	ALN	U
LCS (B241161-BS1)									
Ammonia, as N			99.1	87-104			03/29/2024	ALN	
Duplicate (B241161-DUP1) Source ID: WB03028-08									
Ammonia, as N					0.615	20	03/29/2024	ALN	D
Matrix Spike (B241161-MS1) Source ID: WB03028-08									
Ammonia, as N			101	84-115			03/29/2024	ALN	D
Matrix Spike (B241161-MS2) Source ID: EP00320-01									
Ammonia, as N			101	84-115			03/29/2024	ALN	
Matrix Spike (B241161-MS3) Source ID: AC00341-01									
Ammonia, as N			102	84-115			03/29/2024	ALN	
Matrix Spike Dup (B241161-MSD1) Source ID: WB03028-08									
Ammonia, as N			99.6	84-115	0.840	20	03/29/2024	ALN	D
Batch: B241163									
Blank (B241163-BLK1)									
Total Dissolved Solids	<20	mg/L					03/30/2024	BAK	U
LCS (B241163-BS1)									
Total Dissolved Solids			99.3	90-110			03/30/2024	BAK	
Duplicate (B241163-DUP1) Source ID: RW00064-08									
Total Dissolved Solids					7.62	10	03/30/2024	BAK	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B241167									
Blank (B241167-BLK1)									
COD	<7	mg/L					03/29/2024	RKT	U
LCS (B241167-BS1)									
COD			98.3	90-110			03/29/2024	RKT	
Duplicate (B241167-DUP1) Source ID: AC00341-01									
COD					3.64	10	03/29/2024	RKT	
Batch: B241168									
Blank (B241168-BLK1)									
BOD5	<2	mg/L					04/03/2024	ALM	U
LCS (B241168-BS1)									
BOD5			103	84.6-115.4			04/03/2024	ALM	
LCS (B241168-BS2)									
BOD5			106	84.6-115.4			04/03/2024	ALM	
Duplicate (B241168-DUP1) Source ID: LS01908-02									
BOD5					3.16	30	04/03/2024	ALM	
Batch: B241172									
Blank (B241172-BLK1)									
Total Suspended Solids	<0.9	mg/L					03/29/2024	SMC	U
LCS (B241172-BS1)									
Total Suspended Solids			91.2	90-110			03/29/2024	SMC	
Duplicate (B241172-DUP1) Source ID: LS01908-02									
Total Suspended Solids					0.951	20	03/29/2024	SMC	
Batch: B241189									
Blank (B241189-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					04/01/2024	JAL	U
LCS (B241189-BS1)									
Nitrate-Nitrite, as N			96.2	90-110			04/01/2024	JAL	
Duplicate (B241189-DUP1) Source ID: AC00340-01									
Nitrate-Nitrite, as N					2.37	10	04/01/2024	JAL	
Matrix Spike (B241189-MS1) Source ID: AC00340-01									
Nitrate-Nitrite, as N			97.6	90-110			04/01/2024	JAL	
Matrix Spike Dup (B241189-MSD1) Source ID: AC00340-01									
Nitrate-Nitrite, as N			96.8	90-110	0.678	10	04/01/2024	JAL	

Report Date: 05/02/2024 14:36

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B241263									
Blank (B241263-BLK1)									
TKN	<0.1	mg/L					04/05/2024	EDM	U
Blank (B241263-BLK2)									
TKN	<0.1	mg/L					04/05/2024	EDM	U
LCS (B241263-BS1)									
TKN			98.7	80-120			04/05/2024	EDM	
LCS (B241263-BS2)									
TKN			95.9	80-120			04/05/2024	EDM	
Duplicate (B241263-DUP1) Source ID: AC00341-01									
TKN					4.82	20	04/05/2024	EDM	
Duplicate (B241263-DUP2) Source ID: RW00065-02									
TKN					0.416	20	04/05/2024	EDM	D
Duplicate (B241263-DUP3) Source ID: RW00065-07									
TKN					3.97	20	04/05/2024	EDM	D
Matrix Spike (B241263-MS1) Source ID: AC00341-01									
TKN			102	80-120			04/05/2024	EDM	
Matrix Spike (B241263-MS2) Source ID: RW00065-02									
TKN			101	80-120			04/05/2024	EDM	D
Matrix Spike (B241263-MS3) Source ID: RW00065-07									
TKN			88.7	80-120			04/05/2024	EDM	D
Matrix Spike Dup (B241263-MSD1) Source ID: AC00341-01									
TKN			97.7	80-120	3.03	20	04/05/2024	EDM	
Matrix Spike Dup (B241263-MSD2) Source ID: RW00065-02									
TKN			98.7	80-120	1.20	20	04/05/2024	EDM	D
Matrix Spike Dup (B241263-MSD3) Source ID: RW00065-07									
TKN			95.8	80-120	3.01	20	04/05/2024	EDM	D
Batch: B241409									
Blank (B241409-BLK1)									
Chloride	<0.015	mg/L					04/18/2024	SMC	U
Blank (B241409-BLK2)									
Chloride	<0.015	mg/L					04/19/2024	SMC	U
Blank (B241409-BLK3)									
Chloride	<0.015	mg/L					04/19/2024	SMC	U
LCS (B241409-BS1)									
Chloride			96.8	90-110			04/18/2024	SMC	
LCS (B241409-BS2)									
Chloride			96.2	90-110			04/18/2024	SMC	
LCS (B241409-BS3)									
Chloride			96.3	90-110			04/19/2024	SMC	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B241409 (Continued)									
Duplicate (B241409-DUP1) Source ID: AC00340-01									
Chloride					0.0752	10	04/18/2024	SMC	
Duplicate (B241409-DUP2) Source ID: RW00065-13									
Chloride					0.328	10	04/18/2024	SMC	D
Duplicate (B241409-DUP4) Source ID: RW00069-11									
Chloride					0.239	10	04/19/2024	SMC	
Duplicate (B241409-DUP5) Source ID: RW00070-08									
Chloride					0.923	10	04/19/2024	SMC	D
Duplicate (B241409-DUP6) Source ID: RW00067-10RE1									
Chloride					0.341	10	04/20/2024	SMC	D
Matrix Spike (B241409-MS1) Source ID: AC00340-01									
Chloride			97.9	90-110			04/18/2024	SMC	
Matrix Spike (B241409-MS2) Source ID: RW00065-13									
Chloride			96.8	90-110			04/18/2024	SMC	D
Matrix Spike (B241409-MS4) Source ID: RW00069-11									
Chloride			98.8	90-110			04/19/2024	SMC	
Matrix Spike (B241409-MS5) Source ID: RW00070-08									
Chloride			98.2	90-110			04/19/2024	SMC	D
Matrix Spike (B241409-MS6) Source ID: RW00067-10RE1									
Chloride			95.5	90-110			04/20/2024	SMC	D
Matrix Spike Dup (B241409-MSD1) Source ID: AC00340-01									
Chloride			97.9	90-110	0.0119	10	04/18/2024	SMC	
Matrix Spike Dup (B241409-MSD2) Source ID: RW00065-13									
Chloride			97.0	90-110	0.105	10	04/19/2024	SMC	D
Matrix Spike Dup (B241409-MSD4) Source ID: RW00069-11									
Chloride			99.6	90-110	0.708	10	04/19/2024	SMC	
Matrix Spike Dup (B241409-MSD5) Source ID: RW00070-08									
Chloride			98.8	90-110	0.380	10	04/19/2024	SMC	D
Matrix Spike Dup (B241409-MSD6) Source ID: RW00067-10RE1									
Chloride			96.6	90-110	0.595	10	04/20/2024	SMC	D

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Wet Chemistry									
Batch: B241173									
Blank (B241173-BLK1)									
Orthophosphate, as P	<0.003	mg/L					03/29/2024	JAL	U
Blank (B241173-BLK2)									
Orthophosphate, as P	<0.003	mg/L					03/29/2024	JAL	U
LCS (B241173-BS1)									
Orthophosphate, as P			97.4	90-110			03/29/2024	JAL	
LCS (B241173-BS2)									
Orthophosphate, as P			98.8	90-110			03/29/2024	JAL	
Duplicate (B241173-DUP1) Source ID: AC00340-01									
Orthophosphate, as P					0.151	10	03/29/2024	JAL	
Duplicate (B241173-DUP2) Source ID: RW00064-08									
Orthophosphate, as P					0.870	10	03/29/2024	JAL	D
Duplicate (B241173-DUP3) Source ID: WB03032-06									
Orthophosphate, as P					0.481	10	03/29/2024	JAL	D
Matrix Spike (B241173-MS1) Source ID: AC00340-01									
Orthophosphate, as P			99.1	90-110			03/29/2024	JAL	
Matrix Spike (B241173-MS2) Source ID: RW00064-08									
Orthophosphate, as P			99.9	90-110			03/29/2024	JAL	D
Matrix Spike (B241173-MS3) Source ID: WB03032-06									
Orthophosphate, as P			99.8	90-110			03/29/2024	JAL	D
Matrix Spike Dup (B241173-MSD1) Source ID: AC00340-01									
Orthophosphate, as P			98.4	90-110	0.459	10	03/29/2024	JAL	
Matrix Spike Dup (B241173-MSD2) Source ID: RW00064-08									
Orthophosphate, as P			101	90-110	0.438	10	03/29/2024	JAL	D
Matrix Spike Dup (B241173-MSD3) Source ID: WB03032-06									
Orthophosphate, as P			101	90-110	0.301	10	03/29/2024	JAL	D

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B241177									
Blank (B241177-BLK1)									
Arsenic	<0.070	ug/L					04/14/2024	DMW	U
Cadmium	<0.010	ug/L					04/14/2024	DMW	U
Lead	<0.010	ug/L					04/14/2024	DMW	U
LCS (B241177-BS1)									
Arsenic			101	85-115			04/14/2024	DMW	
Cadmium			102	85-115			04/14/2024	DMW	
Lead			103	85-115			04/14/2024	DMW	
Duplicate (B241177-DUP1) Source ID: ES00308-04									
Arsenic					1.20	20	04/14/2024	DMW	
Cadmium					NR	20	04/14/2024	DMW	U
Lead					0.466	20	04/14/2024	DMW	
Matrix Spike (B241177-MS1) Source ID: ES00308-04									
Arsenic			100	70-130			04/14/2024	DMW	
Cadmium			101	70-130			04/14/2024	DMW	
Lead			101	70-130			04/14/2024	DMW	
Matrix Spike Dup (B241177-MSD1) Source ID: ES00308-04									
Arsenic			101	70-130	0.462	20	04/14/2024	DMW	
Cadmium			102	70-130	1.01	20	04/14/2024	DMW	
Lead			101	70-130	0.120	20	04/14/2024	DMW	
Batch: B241226									
Blank (B241226-BLK1)									
Calcium	<0.04	mg/L					04/11/2024	EDM	U
Magnesium	<80	ug/L					04/11/2024	EDM	U
Phosphorus as P	<0.012	mg/L					04/11/2024	EDM	U
LCS (B241226-BS1)									
Calcium			98.9	85-115			04/11/2024	EDM	
Magnesium			101	85-115			04/11/2024	EDM	
Phosphorus as P			102	85-115			04/11/2024	EDM	
Duplicate (B241226-DUP1) Source ID: AC00341-01									
Calcium					1.81	20	04/11/2024	EDM	
Magnesium					1.16	20	04/11/2024	EDM	
Phosphorus as P					2.27	20	04/11/2024	EDM	
Matrix Spike (B241226-MS1) Source ID: AC00341-01									
Calcium			100	70-130			04/11/2024	EDM	
Magnesium			102	70-130			04/11/2024	EDM	
Phosphorus as P			101	70-130			04/11/2024	EDM	
Matrix Spike Dup (B241226-MSD1) Source ID: AC00341-01									
Calcium			102	70-130	1.34	20	04/11/2024	EDM	
Magnesium			103	70-130	0.658	20	04/11/2024	EDM	
Phosphorus as P			103	70-130	1.62	20	04/11/2024	EDM	

Report Date: 05/02/2024 14:36

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B241233									
Blank (B241233-BLK1)									
Mercury	<0.01	ug/L					04/05/2024	SAS	U
LCS (B241233-BS1)									
Mercury			104	85-115			04/05/2024	SAS	
Duplicate (B241233-DUP1) Source ID: AC00340-01									
Mercury					47.0	20	04/05/2024	SAS	QC-02
Duplicate (B241233-DUP2) Source ID: BB03721-01									
Mercury					NR	20	04/05/2024	SAS	U
Matrix Spike (B241233-MS1) Source ID: AC00340-01									
Mercury			97.8	70-130			04/05/2024	SAS	
Matrix Spike (B241233-MS2) Source ID: BB03721-01									
Mercury			101	70-130			04/05/2024	SAS	
Matrix Spike (B241233-MS3) Source ID: EP00317-02RE1									
Mercury			75.9	70-130			04/05/2024	SAS	D
Matrix Spike Dup (B241233-MSD1) Source ID: AC00340-01									
Mercury			91.3	70-130	5.80	20	04/05/2024	SAS	
Matrix Spike Dup (B241233-MSD2) Source ID: BB03721-01									
Mercury			102	70-130	1.06	20	04/05/2024	SAS	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B241178									
Blank (B241178-BLK1)									
Cadmium	<0.010	ug/L					04/04/2024	DMW	U
Copper	<0.15	ug/L					04/04/2024	DMW	U
Lead	<0.0090	ug/L					04/04/2024	DMW	U
Zinc	<0.50	ug/L					04/04/2024	DMW	U
LCS (B241178-BS1)									
Cadmium			99.9	85-115			04/04/2024	DMW	
Copper			93.2	85-115			04/04/2024	DMW	
Lead			99.4	85-115			04/04/2024	DMW	
Zinc			94.5	85-115			04/04/2024	DMW	
Duplicate (B241178-DUP1) Source ID: AC00340-01									
Cadmium					NR	10	04/04/2024	DMW	U
Copper					0.527	10	04/04/2024	DMW	
Lead					2.01	10	04/04/2024	DMW	
Zinc					1.59	10	04/04/2024	DMW	
Matrix Spike (B241178-MS1) Source ID: AC00340-01									
Cadmium			102	70-130			04/04/2024	DMW	
Copper			91.6	70-130			04/04/2024	DMW	
Lead			98.4	70-130			04/04/2024	DMW	
Zinc			91.2	70-130			04/04/2024	DMW	
Matrix Spike Dup (B241178-MSD1) Source ID: AC00340-01									
Cadmium			102	70-130	0.490	10	04/04/2024	DMW	
Copper			91.9	70-130	0.188	10	04/04/2024	DMW	
Lead			98.3	70-130	0.146	10	04/04/2024	DMW	
Zinc			89.8	70-130	0.970	10	04/04/2024	DMW	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
QC-02	The RPD is greater than the method acceptance criteria. At least one of the values used to calculate the RPD, is less than or equal to the PQL.
U	Analyte included in the analysis, but not detected

Method Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Kate Harris
Interim Water Quality Laboratory Manager

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm, Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	~~E. Coli - IDEXX Colilert~~ Chlorides EPA 300.0	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
AC00341-01	3/27/24	3/28/24	2007	1133	240328-11-WC	KC	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	3/28/24 1314	[signature] 3/28/24 1314	

coc_wql_pi

AC00341

Report Date: 05/02/2024 14:37

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00340-01	ACST1C	240328-12-WC	Water		03/28/2024	03/28/2024
AC00340-02	ACST1C	240328-14-002	Water		03/28/2024	03/28/2024

Report Date: 05/02/2024 14:37

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240328-12-WC
Date/Time Collected:	03/27/2024 19:33 - 03/28/2024 07:39		
Lab Number:	AC00340-01	Sample Collector:	K.C
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B241161	0.293	mg/L	0.0450	0.0450	Timberline Ammonia-001	03/29/24	3/29/24 11:29	ALN	
BOD5	B241168	5.03	mg/L	2.00	2.00	SM 5210 B-2016	03/29/24	4/3/24 10:05	ALM	
Chloride	B241409	5.19	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	04/18/24	4/18/24 13:51	SMC	
COD	B241167	104	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/29/24	3/29/24 9:37	RKT	
Nitrate-Nitrite, as N	B241189	0.151	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	04/01/24	4/1/24 14:23	JAL	
TKN	B241263	1.18	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	04/04/24	4/5/24 12:51	EDM	
Total Dissolved Solids	B241163	44.2	mg/L	20.0	20.0	SM 2540 C-2015	03/28/24	3/30/24 15:17	BAK	
Total Suspended Solids	B241172	91.7	mg/L	0.900	0.900	SM 2540 D-2015	03/29/24	3/29/24 10:11	SMC	
Turbidity	B241159	24.6	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	03/28/24	3/28/24 14:17	LRF	
Dissolved Wet Chemistry										
Orthophosphate, as P	B241173	0.0494	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/29/24	3/29/24 12:56	JAL	
Total Metals										
Mercury	B241233	0.0171	ug/L	0.0100	0.0100	EPA 245.1	04/04/24	4/5/24 7:41	SAS	
Arsenic	B241177	1.1	ug/L	0.070	0.070	EPA 200.8	04/13/24	4/14/24 17:49	DMW	
Cadmium	B241177	0.071	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:49	DMW	
Calcium	B241226	2.99	mg/L	0.0400	0.0400	EPA 200.7	04/03/24	4/11/24 17:24	EDM	
Lead	B241177	5.9	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:49	DMW	
Magnesium	B241226	1260	ug/L	80.0	80.0	EPA 200.7	04/03/24	4/11/24 17:24	EDM	
Phosphorus as P	B241226	0.145	mg/L	0.0120	0.0120	EPA 200.7	04/03/24	4/11/24 17:24	EDM	
Hardness	B241226	12.6	mg/L	0.100	0.100	SM 2340 B-2011	04/03/24	4/11/24 17:24	EDM	
Dissolved Metals										
Cadmium	B241178	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 15:50	DMW	U
Copper	B241178	2.3	ug/L	0.15	0.15	EPA 200.8	04/04/24	4/4/24 15:50	DMW	
Lead	B241178	0.068	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 15:50	DMW	
Zinc	B241178	14.7	ug/L	0.50	0.50	EPA 200.8	04/04/24	4/4/24 15:50	DMW	

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:37

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	240328-14-002
Date/Time Collected:	03/28/2024 12:00		
Lab Number:	AC00340-02	Sample Collector:	K.C
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared	Analyzed	Analyst Initials	Qualifier
Wet Chemistry										
Ammonia, as N	B241161	<0.0450	mg/L	0.0450	0.0450	Timberline Ammonia-001	03/29/24	3/29/24 11:26	ALN	U
BOD5	B241168	<2.00	mg/L	2.00	2.00	SM 5210 B-2016	03/29/24	4/3/24 10:05	ALM	U
Chloride	B241409	<0.0150	mg/L	0.0150	0.0150	EPA 300.0, Rev. 2.1 (1993)	04/18/24	4/18/24 17:23	SMC	U
COD	B241167	<7.00	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/29/24	3/29/24 9:37	RKT	U
Nitrate-Nitrite, as N	B241189	<0.0250	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	04/01/24	4/1/24 14:28	JAL	U
TKN	B241263	<0.100	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	04/04/24	4/5/24 12:52	EDM	U
Total Dissolved Solids	B241163	<20.0	mg/L	20.0	20.0	SM 2540 C-2015	03/28/24	3/30/24 15:18	BAK	U
Total Suspended Solids	B241172	<0.900	mg/L	0.900	0.900	SM 2540 D-2015	03/29/24	3/29/24 9:42	SMC	U
Turbidity	B241159	<0.3	NTU	0.3	0.3	EPA 180.1, Rev. 2.0 (1993)	03/28/24	3/28/24 14:43	LRF	U
Dissolved Wet Chemistry										
Orthophosphate, as P	B241173	<3.00E-3	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/29/24	3/29/24 13:01	JAL	U
Total Metals										
Mercury	B241233	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	04/04/24	4/5/24 7:54	SAS	U
Arsenic	B241177	<0.0700	ug/L	0.070	0.070	EPA 200.8	04/13/24	4/14/24 17:51	DMW	U
Cadmium	B241177	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:51	DMW	U
Calcium	B241226	<0.0400	mg/L	0.0400	0.0400	EPA 200.7	04/03/24	4/11/24 17:31	EDM	U
Lead	B241177	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/13/24	4/14/24 17:51	DMW	U
Magnesium	B241226	<80.0	ug/L	80.0	80.0	EPA 200.7	04/03/24	4/11/24 17:31	EDM	U
Phosphorus as P	B241226	<0.0120	mg/L	0.0120	0.0120	EPA 200.7	04/03/24	4/11/24 17:31	EDM	U
Hardness	B241226	<0.100	mg/L	0.100	0.100	SM 2340 B-2011	04/03/24	4/11/24 17:31	EDM	U
Dissolved Metals										
Cadmium	B241178	<0.0100	ug/L	0.010	0.010	EPA 200.8	04/04/24	4/4/24 15:47	DMW	U
Copper	B241178	<0.150	ug/L	0.15	0.15	EPA 200.8	04/04/24	4/4/24 15:47	DMW	U
Lead	B241178	<9.00E-3	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/04/24	4/4/24 15:47	DMW	U
Zinc	B241178	<0.500	ug/L	0.50	0.50	EPA 200.8	04/04/24	4/4/24 15:47	DMW	U

* The reported adjusted "MDL" is sample-specific. The analysis MDL as defined by 40 CFR pt 136 App.B. was corrected for dilution, dry weight, or method-defined ML.

Report Date: 05/02/2024 14:37

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B241159									
Blank (B241159-BLK1)									
Turbidity	<0.3	NTU					03/28/2024	LRF	U
LCS (B241159-BS1)									
Turbidity			102	90-110			03/28/2024	LRF	
Duplicate (B241159-DUP1) Source ID: AC00340-01									
Turbidity					0.809	25	03/28/2024	LRF	
Batch: B241161									
Blank (B241161-BLK1)									
Ammonia, as N	<0.045	mg/L					03/29/2024	ALN	U
Blank (B241161-BLK2)									
Ammonia, as N	<0.045	mg/L					03/29/2024	ALN	U
LCS (B241161-BS1)									
Ammonia, as N			99.1	87-104			03/29/2024	ALN	
Duplicate (B241161-DUP1) Source ID: WB03028-08									
Ammonia, as N					0.615	20	03/29/2024	ALN	D
Matrix Spike (B241161-MS1) Source ID: WB03028-08									
Ammonia, as N			101	84-115			03/29/2024	ALN	D
Matrix Spike (B241161-MS2) Source ID: EP00320-01									
Ammonia, as N			101	84-115			03/29/2024	ALN	
Matrix Spike (B241161-MS3) Source ID: AC00341-01									
Ammonia, as N			102	84-115			03/29/2024	ALN	
Matrix Spike Dup (B241161-MSD1) Source ID: WB03028-08									
Ammonia, as N			99.6	84-115	0.840	20	03/29/2024	ALN	D
Batch: B241163									
Blank (B241163-BLK1)									
Total Dissolved Solids	<20	mg/L					03/30/2024	BAK	U
LCS (B241163-BS1)									
Total Dissolved Solids			99.3	90-110			03/30/2024	BAK	
Duplicate (B241163-DUP1) Source ID: RW00064-08									
Total Dissolved Solids					7.62	10	03/30/2024	BAK	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B241167									
Blank (B241167-BLK1)									
COD	<7	mg/L					03/29/2024	RKT	U
LCS (B241167-BS1)									
COD			98.3	90-110			03/29/2024	RKT	
Duplicate (B241167-DUP1) Source ID: AC00341-01									
COD					3.64	10	03/29/2024	RKT	
Batch: B241168									
Blank (B241168-BLK1)									
BOD5	<2	mg/L					04/03/2024	ALM	U
LCS (B241168-BS1)									
BOD5			103	84.6-115.4			04/03/2024	ALM	
LCS (B241168-BS2)									
BOD5			106	84.6-115.4			04/03/2024	ALM	
Duplicate (B241168-DUP1) Source ID: LS01908-02									
BOD5					3.16	30	04/03/2024	ALM	
Batch: B241172									
Blank (B241172-BLK1)									
Total Suspended Solids	<0.9	mg/L					03/29/2024	SMC	U
LCS (B241172-BS1)									
Total Suspended Solids			91.2	90-110			03/29/2024	SMC	
Duplicate (B241172-DUP1) Source ID: LS01908-02									
Total Suspended Solids					0.951	20	03/29/2024	SMC	
Batch: B241189									
Blank (B241189-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					04/01/2024	JAL	U
LCS (B241189-BS1)									
Nitrate-Nitrite, as N			96.2	90-110			04/01/2024	JAL	
Duplicate (B241189-DUP1) Source ID: AC00340-01									
Nitrate-Nitrite, as N					2.37	10	04/01/2024	JAL	
Matrix Spike (B241189-MS1) Source ID: AC00340-01									
Nitrate-Nitrite, as N			97.6	90-110			04/01/2024	JAL	
Matrix Spike Dup (B241189-MSD1) Source ID: AC00340-01									
Nitrate-Nitrite, as N			96.8	90-110	0.678	10	04/01/2024	JAL	

Report Date: 05/02/2024 14:37

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report

(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B241263									
Blank (B241263-BLK1)									
TKN	<0.1	mg/L					04/05/2024	EDM	U
Blank (B241263-BLK2)									
TKN	<0.1	mg/L					04/05/2024	EDM	U
LCS (B241263-BS1)									
TKN			98.7	80-120			04/05/2024	EDM	
LCS (B241263-BS2)									
TKN			95.9	80-120			04/05/2024	EDM	
Duplicate (B241263-DUP1) Source ID: AC00341-01									
TKN					4.82	20	04/05/2024	EDM	
Duplicate (B241263-DUP2) Source ID: RW00065-02									
TKN					0.416	20	04/05/2024	EDM	D
Duplicate (B241263-DUP3) Source ID: RW00065-07									
TKN					3.97	20	04/05/2024	EDM	D
Matrix Spike (B241263-MS1) Source ID: AC00341-01									
TKN			102	80-120			04/05/2024	EDM	
Matrix Spike (B241263-MS2) Source ID: RW00065-02									
TKN			101	80-120			04/05/2024	EDM	D
Matrix Spike (B241263-MS3) Source ID: RW00065-07									
TKN			88.7	80-120			04/05/2024	EDM	D
Matrix Spike Dup (B241263-MSD1) Source ID: AC00341-01									
TKN			97.7	80-120	3.03	20	04/05/2024	EDM	
Matrix Spike Dup (B241263-MSD2) Source ID: RW00065-02									
TKN			98.7	80-120	1.20	20	04/05/2024	EDM	D
Matrix Spike Dup (B241263-MSD3) Source ID: RW00065-07									
TKN			95.8	80-120	3.01	20	04/05/2024	EDM	D
Batch: B241409									
Blank (B241409-BLK1)									
Chloride	<0.015	mg/L					04/18/2024	SMC	U
Blank (B241409-BLK2)									
Chloride	<0.015	mg/L					04/19/2024	SMC	U
Blank (B241409-BLK3)									
Chloride	<0.015	mg/L					04/19/2024	SMC	U
LCS (B241409-BS1)									
Chloride			96.8	90-110			04/18/2024	SMC	
LCS (B241409-BS2)									
Chloride			96.2	90-110			04/18/2024	SMC	
LCS (B241409-BS3)									
Chloride			96.3	90-110			04/19/2024	SMC	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B241409 (Continued)									
Duplicate (B241409-DUP1) Source ID: AC00340-01									
Chloride					0.0752	10	04/18/2024	SMC	
Duplicate (B241409-DUP2) Source ID: RW00065-13									
Chloride					0.328	10	04/18/2024	SMC	D
Duplicate (B241409-DUP4) Source ID: RW00069-11									
Chloride					0.239	10	04/19/2024	SMC	
Duplicate (B241409-DUP5) Source ID: RW00070-08									
Chloride					0.923	10	04/19/2024	SMC	D
Duplicate (B241409-DUP6) Source ID: RW00067-10RE1									
Chloride					0.341	10	04/20/2024	SMC	D
Matrix Spike (B241409-MS1) Source ID: AC00340-01									
Chloride			97.9	90-110			04/18/2024	SMC	
Matrix Spike (B241409-MS2) Source ID: RW00065-13									
Chloride			96.8	90-110			04/18/2024	SMC	D
Matrix Spike (B241409-MS4) Source ID: RW00069-11									
Chloride			98.8	90-110			04/19/2024	SMC	
Matrix Spike (B241409-MS5) Source ID: RW00070-08									
Chloride			98.2	90-110			04/19/2024	SMC	D
Matrix Spike (B241409-MS6) Source ID: RW00067-10RE1									
Chloride			95.5	90-110			04/20/2024	SMC	D
Matrix Spike Dup (B241409-MSD1) Source ID: AC00340-01									
Chloride			97.9	90-110	0.0119	10	04/18/2024	SMC	
Matrix Spike Dup (B241409-MSD2) Source ID: RW00065-13									
Chloride			97.0	90-110	0.105	10	04/19/2024	SMC	D
Matrix Spike Dup (B241409-MSD4) Source ID: RW00069-11									
Chloride			99.6	90-110	0.708	10	04/19/2024	SMC	
Matrix Spike Dup (B241409-MSD5) Source ID: RW00070-08									
Chloride			98.8	90-110	0.380	10	04/19/2024	SMC	D
Matrix Spike Dup (B241409-MSD6) Source ID: RW00067-10RE1									
Chloride			96.6	90-110	0.595	10	04/20/2024	SMC	D

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Wet Chemistry									
Batch: B241173									
Blank (B241173-BLK1)									
Orthophosphate, as P	<0.003	mg/L					03/29/2024	JAL	U
Blank (B241173-BLK2)									
Orthophosphate, as P	<0.003	mg/L					03/29/2024	JAL	U
LCS (B241173-BS1)									
Orthophosphate, as P			97.4	90-110			03/29/2024	JAL	
LCS (B241173-BS2)									
Orthophosphate, as P			98.8	90-110			03/29/2024	JAL	
Duplicate (B241173-DUP1) Source ID: AC00340-01									
Orthophosphate, as P					0.151	10	03/29/2024	JAL	
Duplicate (B241173-DUP2) Source ID: RW00064-08									
Orthophosphate, as P					0.870	10	03/29/2024	JAL	D
Duplicate (B241173-DUP3) Source ID: WB03032-06									
Orthophosphate, as P					0.481	10	03/29/2024	JAL	D
Matrix Spike (B241173-MS1) Source ID: AC00340-01									
Orthophosphate, as P			99.1	90-110			03/29/2024	JAL	
Matrix Spike (B241173-MS2) Source ID: RW00064-08									
Orthophosphate, as P			99.9	90-110			03/29/2024	JAL	D
Matrix Spike (B241173-MS3) Source ID: WB03032-06									
Orthophosphate, as P			99.8	90-110			03/29/2024	JAL	D
Matrix Spike Dup (B241173-MSD1) Source ID: AC00340-01									
Orthophosphate, as P			98.4	90-110	0.459	10	03/29/2024	JAL	
Matrix Spike Dup (B241173-MSD2) Source ID: RW00064-08									
Orthophosphate, as P			101	90-110	0.438	10	03/29/2024	JAL	D
Matrix Spike Dup (B241173-MSD3) Source ID: WB03032-06									
Orthophosphate, as P			101	90-110	0.301	10	03/29/2024	JAL	D

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B241177									
Blank (B241177-BLK1)									
Arsenic	<0.070	ug/L					04/14/2024	DMW	U
Cadmium	<0.010	ug/L					04/14/2024	DMW	U
Lead	<0.010	ug/L					04/14/2024	DMW	U
LCS (B241177-BS1)									
Arsenic			101	85-115			04/14/2024	DMW	
Cadmium			102	85-115			04/14/2024	DMW	
Lead			103	85-115			04/14/2024	DMW	
Duplicate (B241177-DUP1) Source ID: ES00308-04									
Arsenic					1.20	20	04/14/2024	DMW	
Cadmium					NR	20	04/14/2024	DMW	U
Lead					0.466	20	04/14/2024	DMW	
Matrix Spike (B241177-MS1) Source ID: ES00308-04									
Arsenic			100	70-130			04/14/2024	DMW	
Cadmium			101	70-130			04/14/2024	DMW	
Lead			101	70-130			04/14/2024	DMW	
Matrix Spike Dup (B241177-MSD1) Source ID: ES00308-04									
Arsenic			101	70-130	0.462	20	04/14/2024	DMW	
Cadmium			102	70-130	1.01	20	04/14/2024	DMW	
Lead			101	70-130	0.120	20	04/14/2024	DMW	
Batch: B241226									
Blank (B241226-BLK1)									
Calcium	<0.04	mg/L					04/11/2024	EDM	U
Magnesium	<80	ug/L					04/11/2024	EDM	U
Phosphorus as P	<0.012	mg/L					04/11/2024	EDM	U
LCS (B241226-BS1)									
Calcium			98.9	85-115			04/11/2024	EDM	
Magnesium			101	85-115			04/11/2024	EDM	
Phosphorus as P			102	85-115			04/11/2024	EDM	
Duplicate (B241226-DUP1) Source ID: AC00341-01									
Calcium					1.81	20	04/11/2024	EDM	
Magnesium					1.16	20	04/11/2024	EDM	
Phosphorus as P					2.27	20	04/11/2024	EDM	
Matrix Spike (B241226-MS1) Source ID: AC00341-01									
Calcium			100	70-130			04/11/2024	EDM	
Magnesium			102	70-130			04/11/2024	EDM	
Phosphorus as P			101	70-130			04/11/2024	EDM	
Matrix Spike Dup (B241226-MSD1) Source ID: AC00341-01									
Calcium			102	70-130	1.34	20	04/11/2024	EDM	
Magnesium			103	70-130	0.658	20	04/11/2024	EDM	
Phosphorus as P			103	70-130	1.62	20	04/11/2024	EDM	

Report Date: 05/02/2024 14:37

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B241233									
Blank (B241233-BLK1)									
Mercury	<0.01	ug/L					04/05/2024	SAS	U
LCS (B241233-BS1)									
Mercury			104	85-115			04/05/2024	SAS	
Duplicate (B241233-DUP1) Source ID: AC00340-01									
Mercury					47.0	20	04/05/2024	SAS	QC-02
Duplicate (B241233-DUP2) Source ID: BB03721-01									
Mercury					NR	20	04/05/2024	SAS	U
Matrix Spike (B241233-MS1) Source ID: AC00340-01									
Mercury			97.8	70-130			04/05/2024	SAS	
Matrix Spike (B241233-MS2) Source ID: BB03721-01									
Mercury			101	70-130			04/05/2024	SAS	
Matrix Spike (B241233-MS3) Source ID: EP00317-02RE1									
Mercury			75.9	70-130			04/05/2024	SAS	D
Matrix Spike Dup (B241233-MSD1) Source ID: AC00340-01									
Mercury			91.3	70-130	5.80	20	04/05/2024	SAS	
Matrix Spike Dup (B241233-MSD2) Source ID: BB03721-01									
Mercury			102	70-130	1.06	20	04/05/2024	SAS	

Report Date: 05/02/2024 14:37

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B241178									
Blank (B241178-BLK1)									
Cadmium	<0.010	ug/L					04/04/2024	DMW	U
Copper	<0.15	ug/L					04/04/2024	DMW	U
Lead	<0.0090	ug/L					04/04/2024	DMW	U
Zinc	<0.50	ug/L					04/04/2024	DMW	U
LCS (B241178-BS1)									
Cadmium			99.9	85-115			04/04/2024	DMW	
Copper			93.2	85-115			04/04/2024	DMW	
Lead			99.4	85-115			04/04/2024	DMW	
Zinc			94.5	85-115			04/04/2024	DMW	
Duplicate (B241178-DUP1) Source ID: AC00340-01									
Cadmium					NR	10	04/04/2024	DMW	U
Copper					0.527	10	04/04/2024	DMW	
Lead					2.01	10	04/04/2024	DMW	
Zinc					1.59	10	04/04/2024	DMW	
Matrix Spike (B241178-MS1) Source ID: AC00340-01									
Cadmium			102	70-130			04/04/2024	DMW	
Copper			91.6	70-130			04/04/2024	DMW	
Lead			98.4	70-130			04/04/2024	DMW	
Zinc			91.2	70-130			04/04/2024	DMW	
Matrix Spike Dup (B241178-MSD1) Source ID: AC00340-01									
Cadmium			102	70-130	0.490	10	04/04/2024	DMW	
Copper			91.9	70-130	0.188	10	04/04/2024	DMW	
Lead			98.3	70-130	0.146	10	04/04/2024	DMW	
Zinc			89.8	70-130	0.970	10	04/04/2024	DMW	

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Notes and Definitions

tem	Definition
	Data reported from a dilution
₹C-02	The RPD is greater than the method acceptance criteria. At least one of the values used to calculate the RPD, is less than or equal to the PQL.
	Analyte included in the analysis, but not detected

Iethod Reference Acronyms

Colilert	Colilert, IDEXX Laboratories, Inc.
EPA	Manual of Methods for Chemical Analysis of Water and Wastes, USEPA
GS	USGS Techniques of Water-Resources Investigations
HH	Hach Spectrophotometer Procedures Manual
SM	Standard Methods for the Examination of Water and Wastewater
SW	Test methods for Evaluating Solid Waste, SW-846

Stephen Quintero or Azubike Emenari
QA/QC Coordinator

Kate Harris
Interim Water Quality Laboratory Manager

Ada County Highway District

Attn: Steven Turner
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6269
Fax (208) 387–6391

Purchase Order: 63065628
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
~~#~~ Steven Turner

Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Water	Grab	Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	~~E. Coli - IDEXX Colilert~~ Chlorides EPA 300.0	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers
.00340-01	3/27/24	3/28/24	1933	0739	~~23~~ 240328-12-WC	KC	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3
-02		3/28/24		1200	240328-14-~~WC~~002	KC	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1

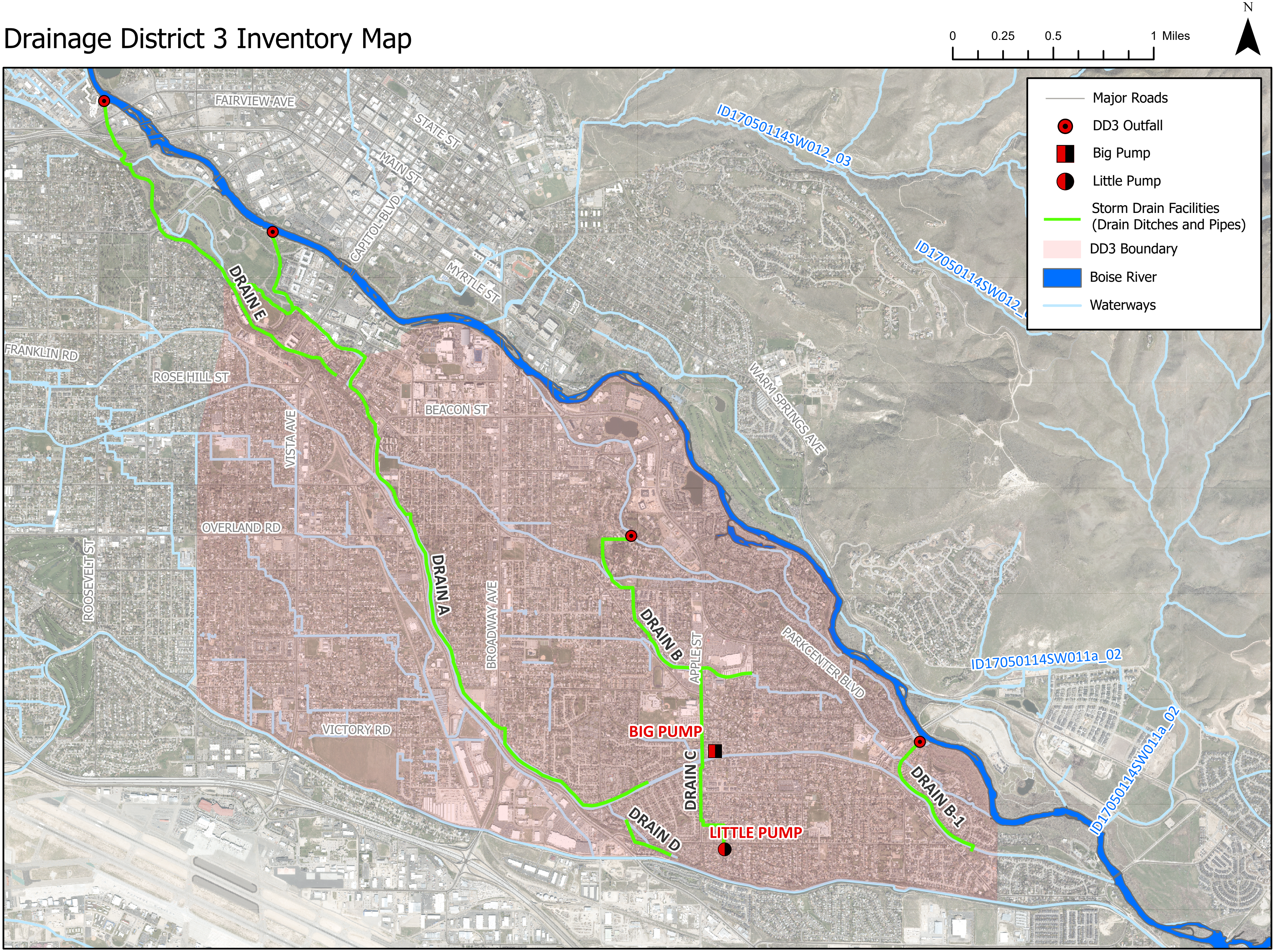
Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	3/28/24 1130	[signature] 3/28/24 1134	

coc-wql-pi

AC00340

2024 Attachment D - MS4 Map and Outfall Inventory

Drainage District 3 Inventory Map



2024 Attachment E - 2024 DD3 Dry Weather Testing

Outfall Inspection Summary

Outfall Name: Drain B

Receiving Waters: Logger Creek	**Pipe Type:** CMP **Pipe Size:** 36”	**Lat:** 43.58975 **Long:** -116.18095
Date: 6/24/2024 **Personnel:** KC, EL	**Comments:** Outfall screened on the east side of E Parkway Dr. The presence of detergents exceeds benchmark values.	

Structural Condition	Good				
Sedimentation	None				
Staining	None				
Odor	None				
Vegetation	Typical				
Floatables (Not Trash)	None				
Trash Observed	None	**Trash Rank**	--	**Trash Source**	--
Flow	Yes	**Amount**	Substantial	**Flow Rate(cfs)**	0.7743

Results:

Temp (C)	DO (mg/L)	pH (S.U.)	Cond (uS/cm)	Chlorine	Copper	Phenols	Turbidity (NTU)
13.81	8.4	7.88	149.0	<0.1	<0.1	<0.1	1.85

E.Coli (MPN)	TSS (mg/L)	ORP (mg/L)	Total P (mg/L)	Detergents (mg/L)
193.5	3.20	0.0283	0.0328	0.01

Illicit Discharge?	Unlikely

2024 Attachment F- CSDC Enforcement Response Policy ACHD

CONSTRUCTION SITE DISCHARGE CONTROL ENFORCEMENT RESPONSE POLICY

ADA COUNTY HIGHWAY DISTRICT
3775 ADAMS STREET
GARDEN CITY IDAHO 83714
PHONE: 208-387-6264
FAX: 208-387-6391

(REVISED NOVEMBER 2024)

TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS

ACHD	Ada County Highway District
BMP	Best Management Practice
CGP	Construction General Permit
CSDC	Construction Site Discharge Control
ERP	Enforcement Response Policy
ESC	Erosion Sediment Control
IDDE	Illicit Discharge Detection Elimination
IDEQ	Idaho Department of Environmental Quality
IPDES	Idaho Pollutant Discharge Elimination System Discharge Permit
NOV	Notice of Violation
NPDES	National Pollution Discharge Elimination System
ROW	Right of Way
RP	Responsible Person
SWO	Stop Work Order
SWPPP	Stormwater Pollution Prevention Plan

1. INTRODUCTION

This Construction Site Discharge Control (CSDC) Enforcement Response Policy (ERP) provides guidance to Ada County Highway District (ACHD) staff who respond to non-compliance issues with relation to the CSDC Program and related ACHD Policies. The following document outlines the CSDC Program, ACHD's legal authority, staff roles and duties, factors influencing enforcement actions, and type of enforcement actions and processes. The approach described in this document is based on a tiered system of enforcement.

1.1 PURPOSE

ACHD implements and enforces the CSDC Program throughout Ada County to fulfill National Pollutant Discharge Elimination System Permit (NPDES Permit) requirements. ACHD is regulated through a NPDES Phase I Permit (IDS027561) that covers the Boise and Garden City area and a Phase II NPDES Permit (IDS0281185) that covers the cities of Eagle, Meridian, and urbanized Ada County. To comply with the NPDES Permits, ACHD must develop, implement, and maintain a written escalating ERP or plan appropriate to its organization's CSDC Program (NPDES Permit 3.3.6). The ERP must:

- Address enforcement of construction site runoff controls for all construction projects in ACHD's jurisdictions, to the extent allowable under Idaho state law (NPDES Permit 3.3.6.1).
- Describe ACHD's potential response to violations with appropriate educational or enforcement responses (NPDES Permit 3.3.6.2).
- Address repeat violations through progressively stricter responses, as needed, to achieve compliance (NPDES Permit 3.3.6.2).
- Describe how ACHD will use its available techniques to ensure compliance, such as: verbal warnings; written notices; escalated enforcement measures such as stop work orders, monetary penalties; and/or other escalating measures to the extent allowable under Idaho state law (NPDES Permit 3.3.6.2).

1.2 CONSTRUCTION SITE DISCHARGE CONTROL PROGRAM OVERVIEW

ACHD implements the CSDC Program through ACHD Policy (Policy) 6000, Permits and Inspection, and Policy 8300, Construction Site Discharge Control Program. Any person who desires to perform any work on a highway or public right-of-way (ROW) or encroaches on a highway or public ROW shall first apply for and obtain a Temporary Highway Use Permit or "permit" through ACHD (Policy 6007.1.1). Additionally, any person desiring to develop and construct a new subdivision which will have infrastructure dedicated to ACHD shall, prior to commencing work, be required to enter into a Subdivision Inspection Agreement and a Subdivision Improvement Agreement (Policy 6007.19.1). The contractor performing the work shall be required to obtain a permit pursuant to Policy (Policy 6007.19.2). All permit applicants must provide an approved Erosion and Sediment Control (ESC) Plan for the proposed work before a permit can be obtained by the applicant (Policy 8303.1). An ESC Plan means a plan, either a Small Project ESC Plan or a Site Specific ESC Plan, containing provisions, at a minimum, addressing material containment, pollutant spill prevention and setting forth best management practices (BMPs) to be utilized during construction activity or land disturbing activity. Site Specific ESC Plans must be reviewed by ACHD for completeness before the plan is approved. All permit applicants must also designate a Responsible Person (RP) who serves as the point of contact for all ESC issues. A RP means any person with operational control over site activities and day-to-day operational control of the approved ESC Plan requirements and permit conditions at the site of any construction activity or land disturbing activity who has received certification from the City of Boise.

The permittee must comply with the standards outlined in Policy 8300. Additionally, the permittee must comply with the approved ESC Plan and all conditions of the permit. The following actions constitute a non-compliance issue:

- Failure to meet any requirement of Policy or approved ESC Plan.
- Allowing or causing a condition that threatens to injure public health, the environment, or public or private property.
- Failure to correct ineffective erosion, sediment, and pollutant control measures after being notified via a Notice of Violation to do so.

Typical construction site violations are related to the following situations:

- Poor project phasing and sequencing.
- Inappropriate concrete washout discharges.
- Unstabilized construction entrances and parking areas.
- Failure to stabilize bare areas.
- Lack of slope protection (mulch/straw, vegetation, silt fencing, etc.).
- Unauthorized activities near intermittent and perennial streams and wetlands.
- Sediment trackout onto paved ROW.
- Poorly planned trenching operations.
- Lack of inlet and outlet protection.
- Non-functional sediment basins and traps.
- Airborne dust.
- Inappropriate housekeeping practices.
- Inadequate documentation and recordkeeping.

2. LEGAL AUTHORITY

ACHD is the governing agency responsible for construction and maintenance of all local roads, including the storm drain system, in Ada County, Idaho. ACHD's legal authority is based upon the laws of the State of Idaho. Specific authority is found in Title 40, Idaho Code, Chapters 13 and 14 https://legislature.idaho.gov/statutesrules/idstat/title40/. Because of the limited purpose of ACHD, as defined by the State Code, such legal authorities and provisions are interpreted as intended for facilities and operation and maintenance within the jurisdictional right-of-way of ACHD. ACHD does not provide police or enforcement power and must rely on the powers of municipal government. Specific legal authority granted to ACHD through state code includes the following:

- **Powers and Duties of Highway Commissioners, Idaho Code 40-1406** ACHD Commissioners are empowered to pass ordinances, rules, and regulations as necessary for carrying into effect or discharging all powers and duties conferred to a Countywide highway district by state code. https://legislature.idaho.gov/statutesrules/idstat/title40/t40ch14/

- **Drainage Authority, Idaho Code 40-1415(1)(d)**
  ACHD has authority over drainage where it is necessary for motorist safety or necessary for right-of-way maintenance. This code provision limits the extent and nature of authority in which ACHD is empowered.
  https://legislature.idaho.gov/statutesrules/idstat/title40/t40ch14/
- **Subdivision Plat Review, Acceptance and Approval, Idaho Code 40-1415(6)**
  Subdivision plats are required to be submitted to ACHD for acceptance and approval for highway design, drainage provisions, and traffic conditions.
  https://legislature.idaho.gov/statutesrules/idstat/Title40/T40CH14/SECT40-1415/
- **Common Law Authority**
  ACHD has certain common law authority to control discharges of stormwater into any storm drains which are located within the public right-of-way by means of ACHD's control and owner's interest in the public right-of-way.
- **Authority as a Municipal Corporation**
  ACHD may have certain inherent authority as a municipal corporation by virtue of its ordinance authority to regulate discharges of stormwater into ACHD's stormwater system.

3. DISCOVERY OF NON-COMPLIANCE

ACHD staff conduct regular inspections of all permitted construction activities. Subdivision, Bridge, Project, and Zone Inspectors perform a variety of construction related inspections. These staff members, who spend the most time observing these sites, may identify and follow up on CSDC violations observed at their inspection sites. These inspectors shall discuss the observations with the site operator and specify compliance requirements. They may also issue an Informal Notice (see *Section 5.1*) and document the observed conditions. Documentation is necessary in the event that a higher level of enforcement becomes necessary. Typically, if further CSDC enforcement or guidance is needed, the inspectors will request assistance from an Environmental Specialist.

As a part of the CSDC Program, an Environmental Specialist or an ACHD Erosion Control Contractor performs regular site inspections to ensure construction site operators are following CSDC Program and Policy requirements. The inspection frequency is based upon project prioritization ratings calculated during the initial ESC Plan review process. All sites over 1 acre are inspected at least once every 6 months over the permit period.

ACHD staff may also receive CSDC complaints from external sources. Outside agencies and departments who observe or are notified of an issue on an ACHD permitted project may contact ACHD administrative staff or the Environmental Specialist directly to report an issue. ACHD staff may receive public complaints in person, over the phone, or through reporting tools such as TellUs or the Stormwater Pollution Hotline. All reports should be investigated. If the complaint is in regard to an ACHD Capital Project, depending on the severity, the Project Inspector, the Capital Projects Construction Coordinator, or the Capital Projects Construction Supervisor will be contacted depending on who is lead of the respective project. If a complaint is found to not involve an ACHD permitted construction activity, the complaint is handled through ACHD's Illicit Discharge Detection and Elimination Program or referred to the appropriate entity. For resolution, the initial reporter should be informed once the reported issue has been addressed.

4. FACTORS INFLUENCING ENFORCEMENT ACTIONS

The approach to making a violation determination involves using the language in Policy and/or permit conditions as a guide to determine whether the information collected demonstrates that a violation has occurred. CSDC compliance determinations must be based solely on the factual information collected and professional judgment.

A determination of the appropriate enforcement action is based on the nature and severity of the CSDC violation and other relevant factors. These factors, relating to the impact of the violation and to the responsible party are summarized in Section 4.1 and Section 4.2, respectively. The relevant factors must be considered when a violation has occurred to promote consistent and timely use of enforcement remedies. A summary of CSDC risk categories, compliance areas, and indicators is provided in *Table 1*.

4.1 FACTORS RELATING TO IMPACT OF VIOLATION

- Magnitude of the violation.
- Imminent endangerment to human health/welfare or to the environment.
- Duration of the violation.
- Effect of the violation on the receiving water.
- Whether circumstances beyond the control of the responsible party exist, such as unpredictable accidents or unexpected acts of nature.
- Causes a violation of the NPDES permit.
- Has a toxic effect on the aquatic life uses of the receiving water body?

4.2 FACTORS RELATING TO RESONSIBLE PARTY

- Compliance history of the responsible party.
- Economic benefit realized by the responsible party while operating in non-compliance with the requirements.
- Chronic violations by responsible party.
- Good faith of the responsible party.
- Honest intention to remedy non-compliance coupled with actions that support intention.

Table 1: Summary of CSDC Risk Categories, Compliance Areas, and Indicators

Risk Category	Compliance Area	Lower Risk Indicators	Higher Risk Indicators
Site Conditions	Environment-ally Sensitive Sites	• Site slopes <10% • Waterways not immediately adjacent to or within site	• Site slopes>10% • Waterways within 50’ of site • Project on Brownfield Site • Project discharges to 303d impaired waterway
Site Operator	Compliance History	• Operator is usually in compliance with rules • Operator responds to notes within time frame • Operator is cooperative and not argumentative	• Operator has multiple violations • Operator frequently misses compliance deadlines • Operator is uncooperative, argumentative

Risk Category	Compliance Area	Lower Risk Indicators	Higher Risk Indicators
Administrative Requirements	Permit Coverage	• Operator has obtained Permit coverage through ACHD and has an approved ESC Plan	• Operator has not obtained Permit coverage through ACHD and does not have an approved ESC Plan
BMP Installation	Plan BMP Installation	• All BMPs listed on the approved ESC Plan are in place. • BMPs are installed correctly	• All BMPs listed on the approved ESC Plan are not in place. • BMPs are not installed correctly
	Plan BMP Adequacy	• BMPs are functioning properly • BMPs are adequately controlling stormwater • Erosion and sedimentation issues are minimal • Additional BMPs are not required	• BMPs are functioning poorly • BMPs are not controlling stormwater • Excessive erosion • Additional BMPs are needed to manage the site
BMP Maintenance	BMP Maintenance	• BMPs are maintained • Sediment buildup at BMPs is not excessive • Erosion prevention BMPs fully functional	• BMPs require substantial maintenance • Excessive sediment ate BMPs notes • Poor erosion prevention
Housekeeping	Materials Management	• Materials that may leach pollutants are covered • Materials stored away from drainage system	• Materials leaching pollutant are not covered • Materials stored near storm drain inlets
	Waste Management	• Solid waste collected and stored properly • Concrete, other washwater managed properly	• Poorly managed solid waste, litter present • Washwater on ground or discharged illegally
	Spill Prevention	• Spill prevention practices and material present	• Fuel, oil, or other spills observed
Offsite Discharges	Sediment in Waterway	• No sediment discharges through dewatering or above ground flows to waterways	• Sediment discharges to waterways observed
	Sediment on Ground	• No sediment discharges to offsite areas	• Mud/sediment track-out observed on paved roads
	Airborne Dust	• No observable dust leaving the site	• Airborne dust leaving the site
Project Completion	Site Closeout	• All bare areas stabilized • Vegetation is at least 70% density • All temporary BMPs removed	• Bare areas observed on site • Vegetation is less than 70% density • Temporary BMPs still present

5. TYPE OF ENFORCMENT ACTIONS

In the event of non-compliance, ACHD shall proceed with enforcement action (Policy 8310) described in detail in this section. Enforcement actions are intended to be commensurate with the violation. Minor violations are typically handled through Informal Notices. Major violations are addressed, in order of increasing severity, by issuance of a Notice of Violation, Administrative Fines, Stop Work Order and/or Administrative Cost Recovery. ACHD's enforcement actions are provided in order of escalation in the CSDC ERP flow chart located in *Appendix A*. If the severity of the situation warrants it, ACHD may escalate the enforcement as quickly as needed.

5.1 INFORMAL NOTICE

ACHD shall issue an Informal Notice to the project RP for minor violations. An Informal Notice may be issued verbally or non-verbally (e.g., during sampling and/or inspection visits, over a telephone call, in an informal meeting, or through email). Informal Notices should: 1) identify noncompliant conditions to construction site personnel, 2) provide information on the action(s) needed to bring the situation into compliance, and 3) specify a deadline (1-3 days) for completing compliance activities.

5.2 NOTICE OF VIOLATION

More serious violations, including disregard of an Informal Notice or failing to make corrective actions within the specified compliance period, are subject to a written Notice of Violation (NOV). NOVs are formal written notices to the RP found violating ACHD policy or permit requirements. An NOV is required prior to the issuance of an Administrative Fine.

NOVs include the name and address of the RP, the observed violation, the date and time of the violation, the location, compliance action(s) required, deadline for required compliance (1-2 days), and the signature of an Environmental Specialist or inspector. The standard compliance deadlines for BMP violations are listed in *Table 2*. The NOV, example provided in *Appendix B*, is presented to the RP, through hand delivery, mail, email, or other means. A NOV Fact Sheet (*Appendix C*) should be provided to all first-time offenders.

NOVs are entered into TRAKiT, a workflow management tool, with documentation of site conditions, photographs, plans, maps, and/or other items as appropriate. The procedure to enter this information into TRAKiT is provided in *Appendix D*. Inspection staff can see if an NOV has been attached to the TRAKiT project file. However, all ACHD staff involved in the day-today oversite of the project should be notified of any enforcement action above an informal notice. An inspector may hold off on other non-CSDC inspections of the site until the violation has been resolved.

Table 2: BMP Compliance Deadlines per Violation Type

BMP Issue	Violation	Compliance Deadline
Drop Inlet Protection	BMP Not Present	24 Hours
	BMP Inadequate	24 Hours
	BMP Not Maintained	End of business
Spill Containment	BMP Not Present	48 Hours
	BMP Inadequate	24 Hours
	BMP Not Maintained	48 Hours
Dust Abatement	BMP Not Present	End of business
	BMP Inadequate	End of business
	BMP Not Maintained	End of business
Construction Entrance	BMP Not Present	48 Hours
	BMP Inadequate	48 Hours
	BMP Not Maintained	48 Hours
Slope Stabilization	BMP Not Present	72 Hours
	BMP Inadequate	48 Hours
	BMP Not Maintained	End of business
Erosion Control	BMP Not Present	48 Hours
	BMP Inadequate	48 Hours
	BMP Not Maintained	End of business

BMP Issue	Violation	Compliance Deadline
Sediment Control	BMP Not Present	24 Hours
	BMP Inadequate	24 Hours
	BMP Not Maintained	End of business

5.3 ADMINISTRATIVE FINES

If the RP does not correct all CSDC violations by the deadline provided on an issued NOV, ACHD may issue an administrative fine to the permit holder. Administrative fines provide funds for compliance investigations and subsequent contract management that may be necessary to correct deficient work. The issuance of administrative fines is limited to violation types listed in the most current ACHD Approved Fee Schedule. Violation types applicable to the CSDC Program are listed in *Table 3*. This fee, in total, may be recovered by ACHD by making claim against the Permittee's Surety Bond posted in accordance with the provisions of Policy 6007.7.

Table 3: CSDC Violations and Associated Fees

Violation	Associated Fee
Working without a permit (Policy 6007.4.3)	$500.00
Unacceptable debris or material on the Construction Site Within the ROW (Policy 6007.12.5)	$250.00 per instance not to exceed two instances per day
Failure to cover and properly secure all loads of gravel, sand, dirt, landscape bark or other loose material (Policy 6007.12.6)	$250.00 per instance not to exceed two instances per day
Failure to stop work (Policy 6007.18.3)	$2,000.00 Per day

Note: Associated Fees listed refer to the maximum allowed amount. Reduced amounts shall be determined at the discretion of the Deputy Director.

5.4 STOP WORK ORDER

A Stop Work Order (SWO) may be issued for a violation deemed significant enough to warrant immediate action, failure to correct a problem, or repeated violations. A SWO written on a NOV is effective immediately. A SWO should be presented and documented in the same manner as an NOV. Revoking the Temporary Use Permit is equivalent to a SWO (Policy 8311). ACHD may issue a temporary or permanent injunction in an emergency situation (Policy 6007.21.4).

5.5 ADMINISTRATIVE COST RECOVERY

ACHD can initiate corrective action and assess the actual and administrative costs against the permit holder (Policy 6007.25). The violator may be required to pay all costs of investigation, administrative overhead, out-of-pocket expenses, the cost of administrative hearings, the costs of suit, and reasonable attorney's fees. If the RP makes no reasonable effort to correct the violation, or if the situation is an emergency, the ACHD may initiate the corrective action and assess the actual and administrative costs against the permit holder. Additionally, with coordination of ACHD Permit staff, the permit holder's bond can be sought or revoked to pay for cleanup costs and to prevent the contractor from starting new jobs within ACHD ROW.

6. JOINT AND/OR OUTSIDE ENFORCEMENT AUTHORITY

The municipal governments of Boise and Garden City do have specific stormwater ordinances related to illicit discharge and construction site discharge control to address enforcement authority requirements within their jurisdictions. Additionally, ACHD (and the other Phase I NPDES Permittees) have Interagency Agreements for the Enforcement of Stormwater Management in Boise City and Garden City included in *Appendix E* of this ERP.

- **City of Boise**
  Ordinance (Chapter 9-14-2– Erosion Control Regulations and Requirements
  https://codelibrary.amlegal.com/codes/boiseid/latest/boise_id/0-0-0-11668
- **Garden City**
  Ordinance (Chapter 15, 4-15-2) – Erosion Control Regulations and Requirements
  https://www.codepublishing.com/ID/GardenCity/html/GardenCity04/GardenCity0415.html#4-15

The municipal governments of Meridian, Eagle, and Ada County do not have specific stormwater ordinances related to illicit discharge and construction site discharge control. However, these entities do have the following general nuisance related ordinances that can be used to assist ACHD in addressing stormwater related issues.

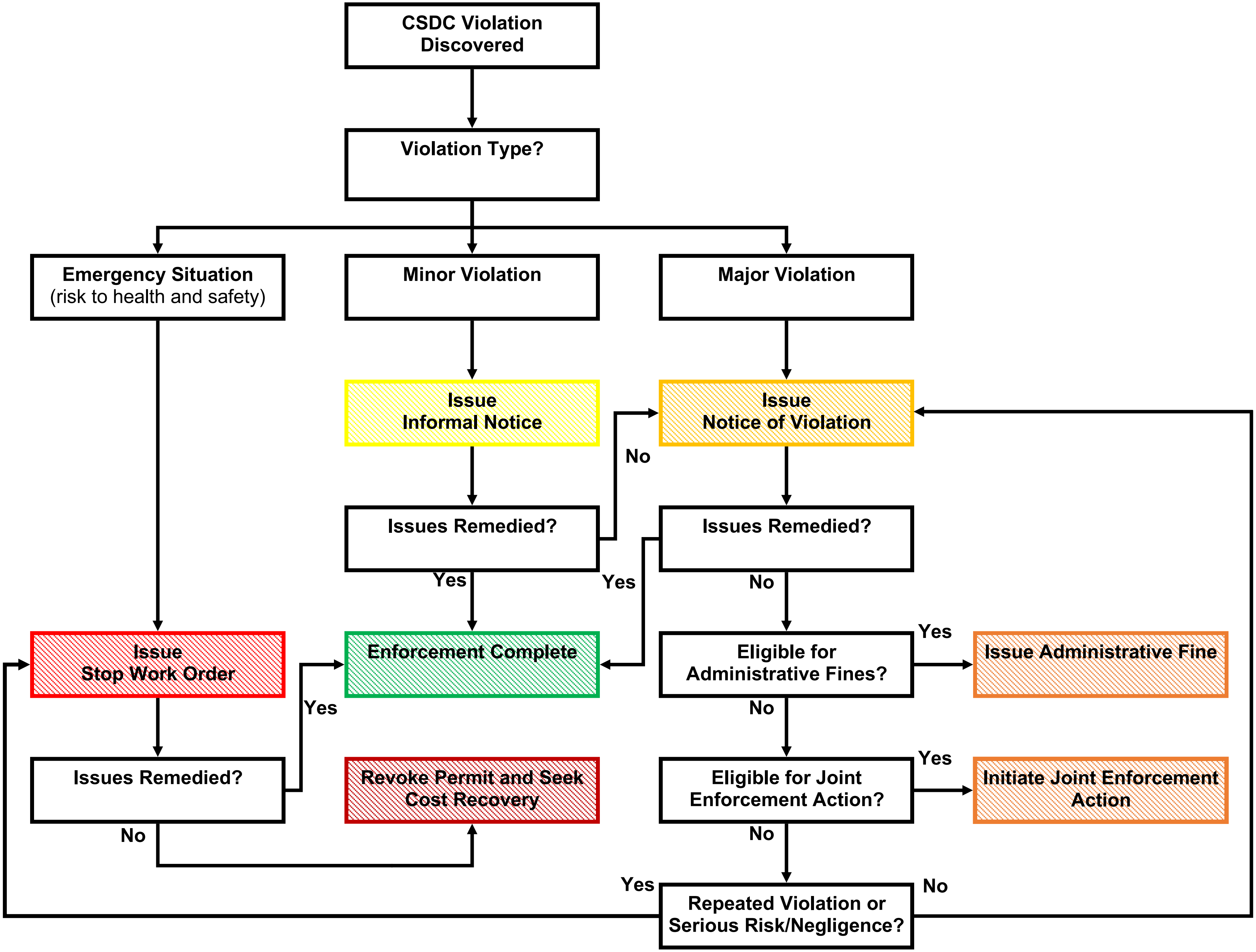
- **City of Eagle**
  Ordinance No. 4-1-4 – General Nuisance; Procedures and Penalties
  https://codelibrary.amlegal.com/codes/eagleid/latest/eagle_id/0-0-0-1193
- **City of Meridian**
  Ordinance (Chapter 2, 4-2-1) - Public Health and Safety, Nuisances
  https://library.municode.com/id/meridian/codes/code_of_ordinances?nodeId=TIT4PUHESA_CH2NU
- **Ada County**
  Ordinance No. 5-2-4-2B – Deposit of Waste or Lighted Material on Public Ways
  https://codelibrary.amlegal.com/codes/adacountyid/latest/adacounty_id/0-0-0-1423

7. CONSTRUCTION GENERAL PERMIT VIOLATION REFERRAL

For construction projects which are subject to the Idaho Pollutant Discharge Elimination System Discharge Permit (IPDES) Construction General Permit (CGP) and do not respond to educational efforts and joint enforcement actions, ACHD may provide to Idaho Department of Environmental Quality (IDEQ) information regarding the construction project. This applies to projects where operators cannot demonstrate that they have appropriate IPDES permit coverage and/or site operators are deemed by ACHD as not complying with CGP requirements. Information may be submitted to an IDEQ CGP Compliance Officer and include, at a minimum, the following information:

- Construction project location and description.
- Name and contact information of project owner/ operator.
- Estimated construction project disturbance size.
- An account of information provided by the Permittee to the project owner/ operator regarding NPDES filing requirements.

APPENDIX A – CSDC ERP FLOW CHART


CSDC Violation Discovered
Violation Type?
Emergency Situation (risk to health and safety)
Minor Violation
Major Violation
Issue Informal Notice
Issue Notice of Violation
No
Issues Remedied?
Issues Remedied?
Yes
Yes
No
Yes
Issue Stop Work Order
Enforcement Complete
Eligible for Administrative Fines?
Issue Administrative Fine
Yes
No
Yes
Issues Remedied?
Revoke Permit and Seek Cost Recovery
Eligible for Joint Enforcement Action?
Initiate Joint Enforcement Action
No
No
Yes
Repeated Violation or Serious Risk/Negligence?
No

APPENDIX B – NOTICE OF VIOLATION

ACHD
connecting you **to more**

NOTICE OF VIOLATION 1955

DATE & TIME ______________________________

PERMIT NUMBER ______________________________

PERMITTEE ______________________________

RESPONSIBLE PERSON ____________________ **PHONE** ____________________

ACHD INSPECTOR (PRINT) ____________________ **PHONE** ____________________

MARK ALL AREAS WHERE BMPS ARE NOT PRESENT, INADEQUATE, OR NOT MAINTAINED. PROVIDE SPECIFIC DETAILS IN THE COMMENT SECTION AS NEEDED. GIVE A COPY OF THIS DOCUMENT TO THE RESPONSIBLE PERSON LISTED ON THE ACHD PERMIT.	BMP not present	BMP inadequate	BMP not maintained
STORM DRAIN INLET			
SPILL PREVENTION/ CONTAINMENT			
DUST ABATEMENT			
CONSTRUCTION ENTRANCE			
SLOPE STABILIZATION			
EROSION CONTROL			
SEDIMENT CONTROL			

COMMENTS:

____

____

____

____

____

____

____

SIGNATURE OF ACHD INSPECTOR ______________________________

COMPLIANCE DEADLINE ______________________________

RE-INSPECTION

DATE & TIME ____________________ **COMPLIANCE** Y☐ N☐

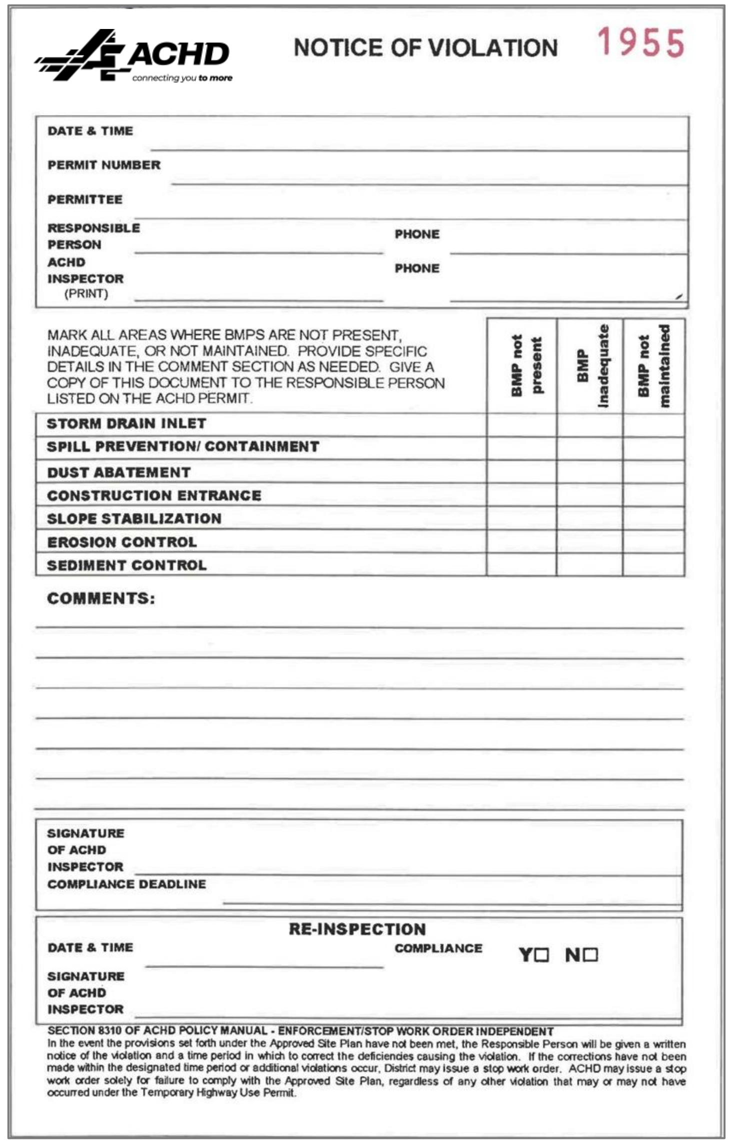
SIGNATURE OF ACHD INSPECTOR ______________________________

SECTION 8310 OF ACHD POLICY MANUAL - ENFORCEMENT/STOP WORK ORDER INDEPENDENT
In the event the provisions set forth under the Approved Site Plan have not been met, the Responsible Person will be given a written notice of the violation and a time period in which to correct the deficiencies causing the violation. If the corrections have not been made within the designated time period or additional violations occur, District may issue a stop work order. ACHD may issue a stop work order solely for failure to comply with the Approved Site Plan, regardless of any other violation that may or may not have occurred under the Temporary Highway Use Permit.

APPENDIX C – NOTICE OF VIOLATION FACT SHEET

Why are NOVs issued?

- Provide consistent notification of deficiencies on ACHD permitted work.
- Provide the contractor with written notice and a time period in which to correct the violation of the approved erosion and sediment control plan.
- Requirement of ACHD's IPDES Permit with Idaho Department of Environmental Quality.



ACHD connecting you to more

NOTICE OF VIOLATION 1955

DATE & TIME

PERMIT NUMBER

PERMITTEE

RESPONSIBLE PERSON | PHONE

ACHD INSPECTOR (PRINT) | PHONE

MARK ALL AREAS WHERE BMPS ARE NOT PRESENT, INADEQUATE, OR NOT MAINTAINED. PROVIDE SPECIFIC DETAILS IN THE COMMENT SECTION AS NEEDED. GIVE A COPY OF THIS DOCUMENT TO THE RESPONSIBLE PERSON LISTED ON THE ACHD PERMIT.	BMP not present	BMP inadequate	BMP not maintained
STORM DRAIN INLET			
SPILL PREVENTION/ CONTAINMENT			
DUST ABATEMENT			
CONSTRUCTION ENTRANCE			
SLOPE STABILIZATION			
EROSION CONTROL			
SEDIMENT CONTROL			

COMMENTS:

SIGNATURE OF ACHD INSPECTOR

COMPLIANCE DEADLINE

RE-INSPECTION

DATE & TIME | COMPLIANCE Y☐ N☐

SIGNATURE OF ACHD INSPECTOR

SECTION 8310 OF ACHD POLICY MANUAL - ENFORCEMENT/STOP WORK ORDER INDEPENDENT

In the event the provisions set forth under the Approved Site Plan have not been met, the Responsible Person will be given a written notice of the violation and a time period in which to correct the deficiencies causing the violation. If the corrections have not been made within the designated time period or additional violations occur, District may issue a stop work order. ACHD may issue a stop work order solely for failure to comply with the Approved Site Plan, regardless of any other violation that may or may not have occurred under the Temporary Highway Use Permit.

Who will receive an NOV?

Any violation of the approved erosion and sediment control plan will result in the receipt of a NOV. All permitted work in the ACHD right-of-way may be inspected. NOVs are issued to the Responsible Person listed on the project's permit.

Does this cost me anything?

- If the violation is corrected by the compliance deadline noted on the NOV, there will be no additional costs.
- If the violation continues, administrative fines may be applicable per the most recent Fee Schedule.
- If ACHD is forced to correct the problem, funds will be recovered from the permittee.

What if I do not correct the problem?

- If the violation continues or additional violations occur, ACHD may issue a stop work order.
- If violations continue to occur, the District may start proceedings to revoke a permit.

What if I have questions?

- If you have questions about a particular NOV, contact the inspector listed on the NOV.
- If you have question about the Construction Site Discharge Control Program, contact an ACHD Stormwater Quality Specialist, at 208-387-6264.
- Copies of ACHD Policies 6000 and 8300 are available at Construction Services permitting desk and online at http://www.achdidaho.org/

APPENDIX D – NOV PROCEDURE GUIDENCE

APPENDIX E – INTERAGENCY AGREEMENTS FOR THE ENFORCEMENT OF STORMWATER MANAGEMENT

2024 Attachment F.1 - Construction Site Runoff Control

CITY of BOISE

Construction Site Runoff Control: Year 3 Summary

BOISE
CITY OF TREES

Construction Site Stormwater Runoff Control Program

The City of Boise has established a Construction Site Erosion and Sediment Control (ESC) program and implements the program in accordance with the approved city ordinance for construction site runoff and erosion and sediment. The program regulates applicable public and private construction activities to reduce discharge of pollutants. The program is primarily implemented by the City's Department of Planning and Development Services Building Division with two full time staff who are supported by other city staff when necessary.

The following sections describe the ESC program pertaining to Permit Year 3. More detailed information regarding the program can be found in the Stormwater Management Program Plan (SWMP).

Ordinance or Regulatory Mechanism

The City of Boise's construction site runoff control program is established in accordance with the requirements of Boise City Code 9-14 (Construction Site Erosion Control Ordinance). The ordinance identifies general requirements and prohibitions on construction site runoff, permitting and fee authorities, plan review and approval process, erosion and sediment control best management practices and standards, training and certification program details, administration, inspection, and enforcement. The ordinance is consistent with the IPDES Construction General Permit and the requirements of the Boise area MS4 permit.

Preconstruction Site Plan Review and Approval

All non-emergency construction activities occurring on City of Boise parcel(s) that involve significant earth disturbance or potential exposure of pollutants to stormwater runoff must obtain an ESC permit concurrently with other applicable building and development permits prior to construction. There are two types of ESC permits, General Permits and Site-Specific Permits. Details about permit types and requirements is provided in Table 1.

TABLE 1. ESC PERMIT TYPES AND REQUIREMENTS

ESC Permit Type	Type of construction, location, and disturbance	Requirements & Site Priority Ranking
General Permit	Projects less than 1 acre area of disturbance including: New residential home or dwelling unit not located in hillside or environmentally sensitive areas; Residential additions > 500 sq ft; Commercial additions/tenant improvements with limited exterior excavation/earth disturbance	Reduce pollutants in stormwater discharges; Operator must list onsite certified ESC Responsible Person prior to issuance Site priority: Low with escalation as needed based on site compliance

Site-Specific Permit	New Residential homes located in Hillside or Environmentally Sensitive location; New residential and commercial subdivision site development greater than 1-acre disturbance; All new commercial building and multifamily apartment complex Commercial additions and tenant improvements with significant excavation/earth disturbance	Reduce pollutants in stormwater discharges; Operator must list onsite certified ESC Responsible Person prior to issuance Submit site specific ESC plan/SWPPP for review during preconstruction application process Site priority: Medium - High

In FY 2024, 831 total ESC permits were issued. The permits consisted of 652 ESC general permits and 179 site-specific permits that required preconstruction site ESC plan review. Table 2 provides the number of permits issued by project rank, acreage disturbed, and average number of inspections on each type of permit.

TABLE 2. ESC PERMIT INFO BY PROJECT RANK

Project Rank	Total Permits	Acres Disturbed	Total Fees Paid
High	8	17.8	$1,365
Medium	142	272.3	$22,155
Low	681	122.8	$55,095
Total	831	412.9	$78,615

Construction Site Inspection and Enforcement

In FY2024 a total of 9,330 construction site inspections were conducted with 88.85% pass rate (no corrective actions required). Table 3 provides FY2024 statistics on inspection types completed categorized by the inspection result.

There were 151 targeted enforcement inspections completed to ensure sites are brought back into compliance after being notified there is a corrective action required or violation occurring. FY2024 included $4,255 in fines spread amongst 25 different ESC permits for violations such as uncontained concrete washout, observed polluted stormwater discharges due to negligence, and special investigation fees for project's issued a Notice of Violation. One site had two civil penalties assessed due to repeat violations. Table 4 summarizes enforcement inspections and fines from 2022 to 2024.

TABLE 3: EROSION AND SEDIMENT CONTROL INSPECTIONS– PERMIT YEAR 3

Inspection Type	Pass/ Completed	Corrections Required	Significant Violation	Not Ready/Partial	Total	Pass Rate
General Inspections	7,082	746	60	1	7,889	89.77%
Site Preparation	116	19	3	12	150	77.33%
Site Final	1,045	4	0	23	1,072	97.48%
Complaint Inspection/ Investigation	8	37	7	0	52	15.38%
BMP Violation	30	30	23	1	84	35.71%
Tracking Control	5	10	0	0	15	33.33%
Conference	49	0	0	0	49	100%
Random	0	0	1	0	1	0%
All Inspections	8,335	846	94	37	**9,312**	89.51%

TABLE 4: ENFORCEMENT INSPECTIONS AND FINES 2022-2024

Fiscal Year	# of targeted inspections	Number of sites fined/cited	Total Fine Amount
2022	175	24	$2,126.25
2023	146	32	$3,153
2024	151	25	$4,255

TABLE 5: ESC PROGRAM DATA 2022-2024

	2024	2023	2022
# ESC Permits Issued	831	947	1,209
# of inspections completed	9,330	10,623	10,990
Inspection Pass rate	88.85%	89.50%	88.63%
# of ESC plans reviewed	179	164	483
# of RP Certifications issued	853	718	938
Permit Revenue	$92,794	$98,254	$133,313
Enforcement Revenue	$4,255	$3,153	$4,255
RP Revenue	$48,405	$31,335	$49,690
Total Revenue	$145,454	$132,742	$183,083

Enforcement Response Policy

The written escalation enforcement response policy (ERP) for Construction Site Runoff Control outlines response guidelines that are followed by City staff when enforcement is required. Violation identification, response procedures, escalation measures, and penalties are all included in this document, which can be found at the City's Stormwater and Drainage Control webpage (https://www.cityofboise.org/departments/public-works/stormwater-and-drainage-control/).

Construction Runoff Control Training for Staff

The Erosion and Sediment Control Program Coordinator and Inspector are primarily responsible for all preconstruction site plan review, site inspections, and enforcement. To be qualified for these duties, the ESC division personnel are required to complete municipal, state, and national training and certifications in stormwater management and be active in obtaining continued education annually. Both positions must complete and pass the City of Boise ESC Responsible Person training (more information in Attachment 2), Certified Inspector of Sediment and Erosion Control (CISEC) training and exam, Certified Erosion Sediment and Stormwater Inspector (CESSWI) and maintain their annual license as a Certified Professional in Erosion and Sediment Control (CPESC), which requires passing an initial exam and completing PDH requirements. To obtain continuing education and be up to date in the ESC/SWPPP regulation and industry, the inspectors are professional members of the International Erosion Control Association (IECA) and able to participate in special topic and comprehensive online courses and attend the annual and regional conferences when possible. Additionally ESC Inspectors are required to read and review the Idaho CGP as well as complete the training and exam for the EPA's NPDES Construction Inspection Training Course.

To support the ESC Division's mission to reduce the discharge of pollutants in stormwater runoff from construction sites, the ESC division conducts a Responsible Person training class quarterly for all City employees who are involved in construction activities or stormwater management. By completing the class every 3 years, staff is able to utilize ESC knowledge in relation to their duties as well as being able to identify construction site stormwater runoff violations so they may notify the ESC division for enforcement. Staff that receive the training include all members of the Building Division team, including inspectors (structural, plumbing, mechanical, electrical, and fire), plan reviewers and permit technicians, Public Works construction site managers, Public Works engineering and environmental division staff, and Parks and Recreation staff associated with construction projects also complete the Responsible Person training. In Permit Year 3, 37 City of Boise employees completed the Responsible Person training.

In addition to completing certification courses, the staff may receive one-on-one training in the field with a certified ESC inspector.

2024 Attachment G - Erosion and Sediment Control

Table 1. ESC Inspections Performed & Notice of Violations Issued
October 1, 2023 – September 30, 2024

ACTIVITY	TOTAL
ESC Inspections[1]	58
Capital Project SWPPP[2] Inspections	54
Notice of Violations Issued	1

[1]ESC Inspections Performed by ACHD Environmental staff and contracted inspection staff.
[2]Stormwater Pollution Prevention Plan

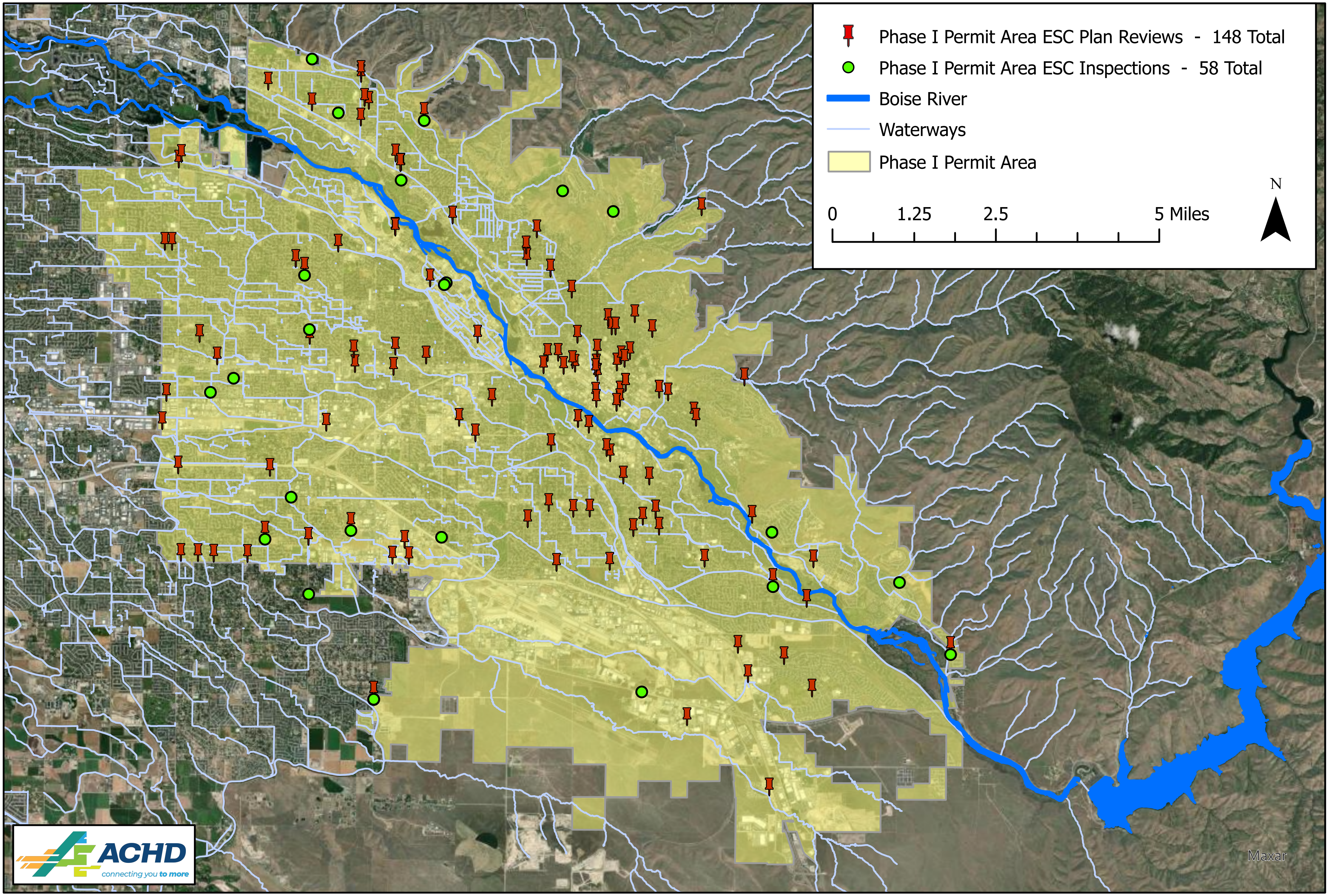
Table 2. ESC Plan Review, Inspection, and Notice of Violation Summary by Month
October 1, 2023 – September 30, 2024

MONTH	SITE SPECIFIC PLANS REVIEWED	SITE SPECIFIC PLANS WITH DEFICIENCIES	ESC INSPECTIONS COMPLETED	NOTICE OF VIOLATIONS ISSUED
October	14	1	4	0
November	3	0	6	0
December	9	2	3	0
January	7	1	8	0
February	14	2	6	0
March	11	1	1	0
April	14	3	9	1
May	17	4	0	0
June	14	1	3	0
July	17	2	13	0
August	13	1	3	0
September	15	2	2	0
Total	**148**	**20**	**58**	**1**

ESC Plan Review and Site Inspections Map

(see below)

Erosion and Sediment Control (ESC) Plan Review and Site Inspections
October 1, 2023 - September 30, 2024



2024 Attachment H - ACHD Vegetated Basins, Bioretention Swales, and GSI Program Activities

Table 1. Phase I ACHD-Owned Vegetated Basins and Bioretention Swales 2023 – 2024

#	STORMWATER FACILITY ID	FACILITY TYPE	NEAREST INTERSECTION	AREA (SQFT)	YEAR BUILT	STRUCTURAL RETROFIT DATE	VEGETATION RETROFIT DATE	NEW GSI VEGETATION INSTALLATION DATE	CITY
1	Basin 63	Detention-Dry	W Albion St & S Garden St	10,924	1997	-	2019	-	Boise
2	Basin 65	Detention-Wet	W Ustick Rd & N Curtis Rd	143,161	1997	-	TBD	-	Boise
3	Basin 294	Detention-Dry	N Alworth St & N Sayer Ave	87,579	1999	-	TBD	-	Boise
4	Basin 322	Detention-Dry	W Airway Ct & S Cole Rd	37,764	2003	-	2018	-	Boise
5	Basin 327	Retention-Wet	E. Boise Ave & S Betsy Ross Wy	15,199	1976	2022	2022	-	Boise
6	Basin 331	Detention-Dry	N Steelhead Way & W Emerald St	21,432	2007	-	2018	-	Boise
7	Basin 332	Detention-Dry	W Irving St & N Maple Grove Rd	23,462	2007	-	2018	-	Boise
8	Basin 333	Detention-Wet	N. Maple Grove & Hyatt Wetlands Park	20,856	2006	-	TBD	-	Boise
9	Basin 334	Retention-Dry	W Ustick Rd & N Chatterton Wy	38,883	2006	-	2019	-	Boise
10	Basin 371	Retention	W Victory Rd & S Fry St	157,482	2004	-	TBD	-	Boise
11	Basin 628	Retention-Dry	N Five Mile Rd & W Milclay St	19,531	2012	-	2016	-	Boise
12	Basin 674	Retention-Dry	858 N Whitewater Park Blvd	18,764	2013	-	2018	-	Boise
13	Basin 677	Detention-Dry	N Pierce Park Ln & W Hammermill Dr	14,680	2013	-	2017	-	Boise
14	Basin 685	Detention-Dry	W Emerald St Dr & N Five Mile Rd	17,508	2014	-	2017	-	Boise
15	Basin 694/695	Retention-Dry	W Hill Rd & Catalpa	8,013	2013	-	2018	-	Boise
16	Basin 696	Retention-Dry	W Hill Rd & N 36th St	5,757	2016	-	2017	-	Boise
17	Basin 697	Retention-Dry	E Gowen Rd & S Eisenman Rd	5,144	2016	-	2018	-	Boise
18	Basin 882	Retention-Dry	E Gowen Rd & S Eisenman Rd	3,586	2016	-	2018	-	Boise
19	Basin 883	Retention-Dry	E Gowen Rd & S Eisenman Rd	3,440	2016	-	2018	-	Boise
20	Basin 1321	Detention-Wet	N VMP & W Glendale Rd	31,652	2019	-	2019	-	Boise
21	Basin 1324	Detention-Dry	N Cloverdale & W Bowmont St	11,992	2019	2022	2019	-	Boise
22	Basin 1338	Retention-Dry	W Glendale St & N Stilson Rd	4,399	2019	-	2018	-	Boise
23	Basin 1339	Retention-Dry	W Alameda St & N VMP	14,951	2019	-	2018	-	Boise
24	Basin 1370	Retention-Dry	N Arthur St & W State St	2,115	2019	-	2018	-	Boise
25	Basin 1372	Retention-Dry	S Cole Rd & W Lake Hazel Rd	45,619	2019	-	2020	-	Boise
26	Basin 1373	Retention-Dry	W Franklin Rd & Cole Rd	32,400	2019	-	2020	-	Boise
27	Basin 1374	Retention-Dry	N Cloverdale Rd & W Edna St	18,370	2019	-	2019	-	Boise
28	Basin 1440	Retention-Dry	N Collister Dr & Collister Access	2,786	2019	-	2019	-	Boise
29	Basin 1441	Retention-Dry	N Collister Dr & Collister Access	3,207	2019	-	2019	-	Boise
30	Collister Swales	Bioretention Swales	N Collister Dr & W State St	4,746	2019	-	2019	-	Boise
31	Heron Park Swales	Bioretention Swales	E Heron Park	3,661	2023	-	-	2023	Boise

Table 2. Phase I ACHD Basin Improvement Projects 2023 - 2024

#	FACILITY NAME AND LOCATION	IMPROVEMENT	DESCRIPTION
1	Basin 327 (E Boise Ave & S Betsy Ross Wy)	Wood mulch along the fence line.	Mulch provides additional weed control along the fence line and improves aesthetics.
2	Basin 334 (W Ustick Rd & N Chatterton Wy)	Wood mulch along the fence line.	Mutch provides additional weed control along the fence line and improves aesthetics.
3	Basin 628 (N Five Mile Rd & W Milclay St)	Replaced damaged fence.	Replaced damaged vinyl coated chain-link fence with 4 ft wrought iron.
4	Basin 1321 (N VMP & W Glendale)	Wood mulch along the fence line. Landscape Boulders along northern fence line.	Mulch provides additional weed control along the fence line and improves aesthetics. Landscape boulders prevent unauthorized parking.
5	Basin 1373 (W Franklin Rd & Cole Rd)	Removal of earthen berm. Wood Mulch along the fence line.	Removal of the earthen berm connects the forebay to the primary basin improving the effectiveness of the basin to clean stormwater. Mulch provides additional weed control along the fence line and improves aesthetics.

Table 3. GSI Projects Designed or Constructed 2023 - 2024

#	PROJECT NAME	GSI TYPE	GSI COUNT	DESIGNED	CONSTRUCTED	AREA TREATED (ACRES)
1	State Street Improvement A	Bioretention Curb Extension	8	2020	2024	0.5
2	Reed Street Realignment	Bioretention Swales	5	2022	2023	0.19
3	12th & Idaho	Stormwater Tree Cell	2	2022	In Progress	0.34
4	28th St. Extension	Stormwater Tree Cell	4	2022	2024	0.66
5	Boise Fire Station NO 5	Stormwater Tree Cell	2	2023	2024	0.09
6	Capital Student Housing	Stormwater Tree Cell	4	2022	2024	1.04
7	Fulton Street Improvement	Stormwater Tree Cell	10	2022	2024	1.26
8	Linen Blocks	Stormwater Tree Cell	24	2022	In Progress	3.17
9	Lusk St. Apts.	Stormwater Tree Cell	1	2022	2024	0.12
10	Old Boise Blocks	Stormwater Tree Cell	7	2022	In Progress	0.63
11	Saratoga Apartments	Stormwater Tree Cell	4	2022	In Progress	1.80
12	St. Luke's	Stormwater Tree Cell	1	2018	2023	0.14
13	Garden St. Pedestrians Improvement and Bikeway Central Bench	Detention Basin	1	2023	In Progress	0.28
14	State Street Improvement B	Bioretention Curb Extension	9	2023	In Progress	1.01
15	State Street Improvement B	Bioretention Planters	7	2023	In Progress	0.34

Table 4. Phase I ACHD GSI Program Updates 2023 - 2024

GSI PROGRAM AREA	GSI PROGRAM ACTIVITY	DESCRIPTION
Facility Maintenance	Permeable Paver Maintenace Training	Developed a presentation to train ACHD Mainteance staff regarding permeable paver maintenance methods, equipment, frequencies, and record keeping.
	Stormwater Tree Cell Maintenance Training	Presentation to train ACHD Mainteance staff regarding stormwater tree cell maintenance methods, equipment, frequencies, and record keeping, currently being developed.
Inventory	Mapping	Update ArcGIS's GSI layers to improve readability, remove outdated and redundant information, add new GSI types, and complete information to enhance record keeping and maintenance efforts.

2024 Attachment I - Industrial and Commercial Facility Inspection Reports

Industrial and Commercial Facility Inspection Summary and Follow-up Action
ACHD Phase I Permit Area, Idaho
October 1, 2023 – September 30, 2024

#	FACILITY	ADDRESS	MS4 CONNECTION (YES/NO)	RECEIVING WATER	SIC CODE	INSPECTION DATE	FOLLOW-UP ACTIONS
1	Western Idaho Cabinet	8043 Woodlark St., Boise, ID 83709	No		2434	6/7/2024	Discontinue truck washing in the entryway. Follow good housekeeping practices and keep lot free of dirt and debris.
2	Five Mile Green House and Farm	2940 S Five Mile Rd., Boise, ID 83709	Yes		0182	8/20/2024	
3	27th Street Automitive	1105 N 27th St., Boise, ID 83702	No		7538	8/7/2024	Eliminate contaminated wash water from entering the strom drain system. Follow good housekeeping practices and keep lot free of dirt and debris.
4	Tates Rents (Idaho St.)	2923 W Idaho St., Boise, ID 83702	Yes		3411	6/18/2024	
5	Rich's Auto Care	3505 W Overland Rd., Boise, ID 83705	Yes		7539	8/22/2024	Follow good housekeeping practices and keep lot free of dirt and debris. Stop storing tires on the storm drains. Follow the Operation and Maintenance Plan.
6	Calfab Inc.	7969 Mossy Cup Way, Boise, ID 83709	No		3446	8/9/2024	
7	Consilidated Supply Co	10621 W Emerald St., Boise, ID 83713	No		5074	6/26/2024	
8	Idaho Storage Connection	11031 W. Joplin Rd., Boise, ID 83709	Yes		4225	7/18/2024	
9	Dale's Service	7755 W. Mossy Cup St., Boise, ID 83709	No		1799	8/9/2024	
10	Done-Rite	755 W. Amity Rd., Boise, ID 83705	Yes		0783	7/9/2024	
11	Rush Truck Center	770 W. Amity Rd., Boise, ID 83705	No		7513	7/9/2024	Prevent contaminated wash water from entering the storm drain system. Follow good housekeeping practices and keep lot free of dirt and debris.
12	Pavement Specialties of Idaho	4850 Henry St., Boise, ID 83709	No		1611	8/20/2024	Secondary containment needed on some of the larger tanks. Maintiane good housekeeping BMPs.
13	Casade Enterprises	8067 W. Mossy Cup St., Boise, ID 83709	Yes		1542	6/26/2024	
14	Absolute Pool Care	7953 W. Mossy Cup St., Boise, ID 83709	No		7389	8/20/2024	
15	Ala'a Auto Sales	2633 Main St., Boise, ID 83709	Yes		5511	8/6/2024	Dispose of excess solid waste from the property. Follow good housekeeping practices and keep surfaces free of oil, grease, dirt, trash, absorbent used for oil spills, etc.
16	Sterling Battery Company	4479 Chinden BLVD Garden City, ID 83714	Yes		3691	8/20/2024	

#	FACILITY	ADDRESS	MS4 CONNECTION (YES/NO)	RECEIVING WATER	SIC CODE	INSPECTION DATE	FOLLOW-UP ACTIONS
17	Curtis Clean Sweep	117 E 37th, Garden City, ID 83714	Yes		4959	9/6/2024	Implement BMPs to exposed engines. Follow good housekeeping practices and keep lot free of dirt and debris.
18	Simply Painting	605 E. 44th St., #2 Garden City, ID 83714	Yes		1721	9/26/2024	
19	Shop No. 7 Marine	111 W. 43rd Street Garden City, Idaho 83714	Yes		3732	9/11/2024	Implement BMPs to exposed engines. Follow good housekeeping practices and keep lot free of dirt and debris.
20	Ultimate Transmissions	220 W 37th St, Garden City, ID 83714	Yes		7537	9/23/2024	Implement BMPs to exposed engines.
21	Auto Trust Auto Sales	3001 Chinden Garden City, Id 83714	Yes		5521	8/22/2024	
22	UPS	116 E 42nd St, Garden City, ID 83714	Yes		4215	9/24/2024	Close the accidential spill ball valve and educate employees on the purpose of secondary containment.

2024 Attachment J - NPDES Phase 1 Stormwater Outfall Monitoring Plan

NPDES Phase I Stormwater Outfall Monitoring Plan

Ada County Highway District
Boise, Idaho
8/11/2022

Stormwater Outfall Monitoring Plan

Ada County Highway District Boise, Idaho
8/11/2022

Table of Contents

List of Figures

List of Tables

List of Abbreviations

ACHD	Ada County Highway District
ac	acres
AV	Area Velocity
BC	Brown and Caldwell
BOD5	Biological Oxygen Demand – 5 day
CaCO3	Calcium Carbonate
CFR	Code of Federal Regulations
COC	Chain of Custody
COD	Chemical Oxygen Demand
DO	Dissolved Oxygen
DQI	Data Quality Indicator
DQO	Data Quality Objective
EPA	Environmental Protection Agency
ft	feet
GI	Green Infrastructure
GSI	Green Stormwater Infrastructure
HDPE	High Density Polyethylene
IDEQ	Idaho Department of Environmental Quality
IPDES	Idaho Pollutant Discharge Elimination System
in	inches
LDPE	Low Density Polyethylene
L	liter
MDL	Method Detection Limit
mL	Milliliter
MS4	Municipal Separate Storm Sewer System
NH3	Ammonia
NO2	Nitrite
NO3	Nitrate
NPDES	National Pollutant Discharge Elimination System
NWS	National Weather Service
PMEP	Project Monitoring and Evaluation Plan
PRDL	Project Required Detection Limit
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Program Plan
RPD	Relative Percent Difference
SWOMP	Stormwater Outfall Monitoring Plan
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TSS	Total Suspended Solids

WQL	Boise City Public Works Water Quality Laboratory

Executive Summary

The Environmental Protection Agency, Region 10 (EPA) issued the third cycle National Pollutant Discharge Elimination System (NPDES) Municipal Storm Separate Sewer System (MS4) Phase I Permit No. IDS-027561 (Permit) effective October 1, 2021, to Ada County Highway District (ACHD), Boise State University, City of Boise, City of Garden City, Drainage District #3, and the Idaho Transportation Department District #3, referred to as the "Permittees." Starting July 1, 2021, the Idaho Department of Environmental Quality (IDEQ) acquired Permit authority through the Idaho Pollutant Discharge Elimination System (IPDES) Program. The Permit authorizes stormwater discharges from MS4 outfalls to waters of the United States in accordance with the conditions and requirements of the Permit. Under this permit, the Permittees are required to update the existing Stormwater Outfall Monitoring Plan to be consistent with the stormwater monitoring and evaluation program objectives as described in Permit Part 6.2.

This Stormwater Outfall Monitoring Plan (SWOMP) has been developed in line with the Quality Assurance Project Plan for NPDES Stormwater Permit Monitoring (QAPP) (ACHD, 2021). The SWOMP describes the overall approach to stormwater outfall monitoring and provides site and drainage area descriptive details for each monitoring station. The SWOMP also provides guidance for data collection efforts, including descriptions of meteorological and hydrological data collection procedures and use, as well as analytical data collection and sample handling procedures.

Certain Quality Assurance/Quality Control (QA/QC) procedures that have been identified using United States Environmental Protection Agency (EPA) guidance for QAPPs are also included in this plan. The QA/QC procedures are designed to ensure data collected meet specific data quality objectives developed specifically for Permit-required monitoring activities. This plan documents QC sampling procedures, storm event acceptance criteria, and data management details specific to the SWOMP.

Section 1

Introduction

1.1 Basis for Monitoring Plan

The Permit requires that the SWOMP be consistent with the stormwater monitoring and evaluation program objectives as described in Permit Part 6.2 and are the following:

- Broadly estimate reductions in annual pollutant loads of sediment, bacteria, phosphorus and temperature discharged to impaired receiving waters from the MS4s, occurring as a result of the implementation of SWMP activities;
- Characterize the quality of stormwater discharges from the MS4; and
- Identify and prioritize those portions of the MS4 where additional controls can be accomplished to reduce the volume of stormwater discharged and/or reduce pollutants in MS4 discharges to waters of the U.S.

1.2 SWOMP Objectives

The SWOMP is designed to address the minimum permit requirements for wet weather stormwater outfall monitoring as listed in Permit Part 6.2.1. The SWOMP serves as guidance for data acquisition, management, and reporting efforts undertaken by the Permittees.

This document outlines the SWOMP approach and includes specific QAPP elements recommended by the EPA. EPA-recommended QAPP elements are addressed as either program elements or monitoring plan elements.

Monitoring plan elements are described in full in this document, while program elements are addressed in the QAPP. Monitoring plan elements are those components that contain details specific to each individual monitoring plan. Program elements consist of the standardized monitoring components that all individual monitoring plans developed under the Permit reference. A list of program and monitoring plan elements is included in Table 1-1.

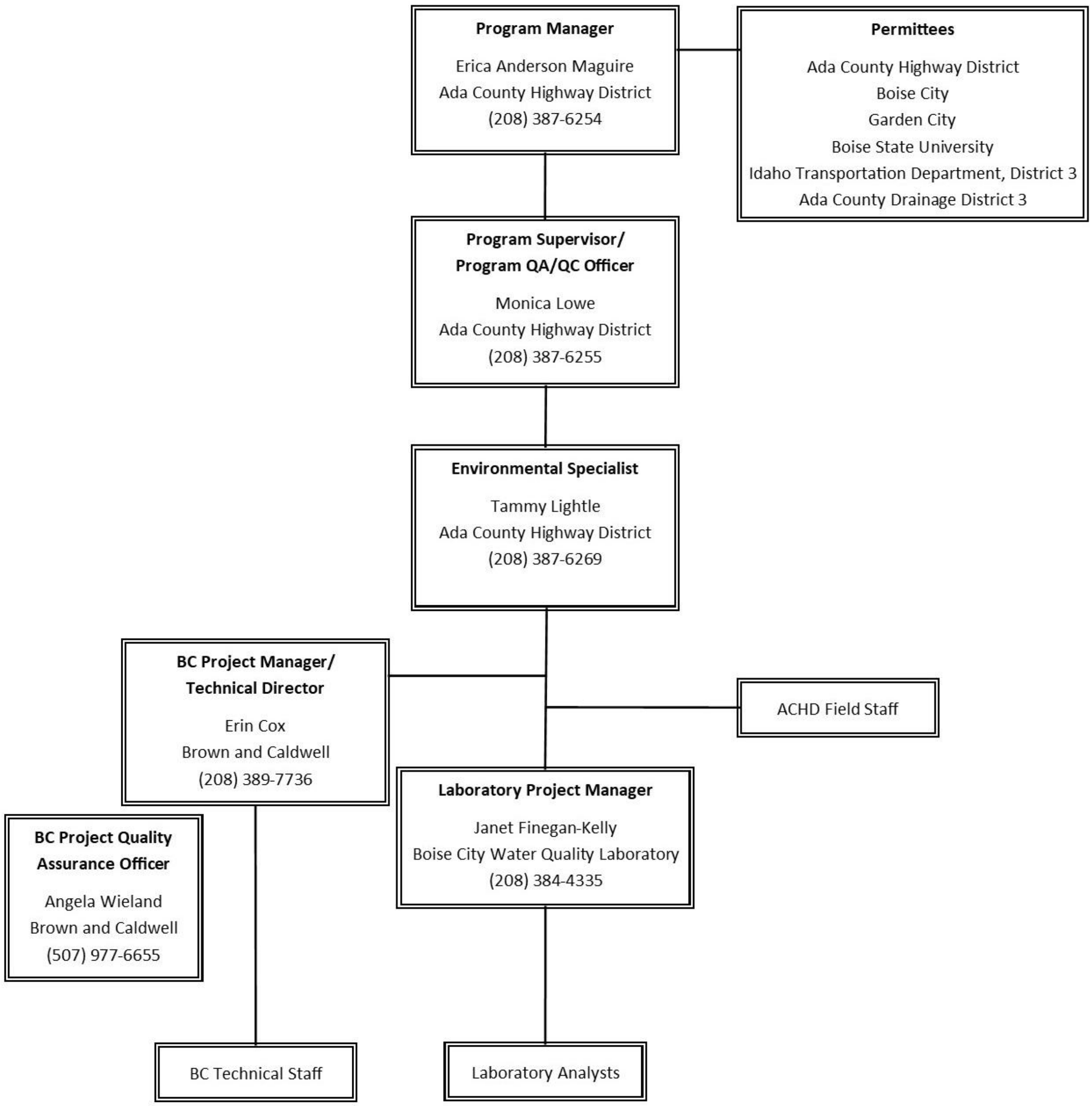
Table 1-1. QAPP Element Document Reference

EPA Recommended QAPP Elements	QAPP Element	SWOMP Element; Section
Group A: Project Management		
A1 – Title and Approval Sheet	X	
A2 – Table of Contents	X	
A3 – Distribution List	X	
A4a – Project Organization	X	
A4b – Task Organization		X; 1.3
A5 – Problem Definition/Background	X	
A6 – Project/Task Description		X; 1.2
A7a – Quality Objectives and Criteria for Measurement Data	X	

Table 1-1. QAPP Element Document Reference		
EPA Recommended QAPP Elements	QAPP Element	SWOMP Element; Section
A7b – Method Dependent Criteria for Measurement Data		X; 5.2
A8 – Special Training Needs/Certification	X	
A9 – Documents and Records	X	
Group B: Data Generation and Acquisition		
B1 – Sampling Process and Design		X; 2
B2 – Sampling Methods		X; 3, 4
B3 – Sample Handling and Custody		X; 4.6, 4.7
B4 – Analytical Methods		X; 4.2
B5a – Quality Control	X	
B5b – QA/QC Sampling Schedule		X; 5.1
B6 – Instrument/Equipment Testing, Inspection, and Maintenance		X; 3
B7 – Instrument/Equipment Calibration and Frequency		X; 3
B8 – Inspection/Acceptance of Supplies and Consumables	X	
B9 – Non-direct Measurements	X	
B10 – Data Management	X	
Group C: Assessment and Oversight		
C1 – Assessments and Response Actions	X	
C2 – Reports to Management	X	
Group D: Data Validation and Usability		
D1 – Data Review, Verification, and Validation	X	
D2 – Verification and Validation Methods	X	
D3 – Reconciliation and User Requirements	X	

1.3 Task Organization

ACHD is the lead agency for stormwater outfall monitoring under the Permit, and a consultant team assists with the monitoring program. Key roles and job functions are described in the QAPP. The stormwater outfall monitoring program organization chart is presented in Figure 1-1.



*Staff list subject to change. If changes occur, contact current staff member in corresponding role.

Figure 1-1. Stormwater Outfall Monitoring Organization Chart

Section 2

Sampling Process Design

The sampling process design consists of the collection of data at monitoring stations set up on representative drainages throughout the MS4 to present a picture of the impact of pollutant prevention efforts and the potential for pollutant loading reduction in the permit area. Data to be collected includes a combination of site-specific continuous rainfall data, continuous flow data from background sources, and stormwater discharges and water quality data. Section 2.1 provides an overview of the methods used to obtain this data and more detail is provided in sections 3 and 4. Drainage area characteristics integral to the sampling process design include land use, impervious ground cover percentage, canopy cover, vegetated area, stormwater controls, and stormwater infrastructure.

The process the permittees used for selecting monitoring sites is outlined below in Section 2.2. Detailed site description information is included in Section 2.3.

2.1 Data Collection Overview

Data collection at each monitoring station will be facilitated by a combination of automated sampling and measurement equipment and manual sampling, observation, and characterization activities. Automated sampling equipment includes a flowmeter with an area velocity (AV) sensor installed in the storm drain pipe. The flowmeter will record stormwater discharge, instantaneous and cumulative flow volumes, as well as background flows as applicable. Flow will be monitored continuously at sites that have consistent background flows.

The flowmeter is connected via a data cable to the automatic sampler. The automatic sampler and flowmeter are programmed to collect site specific, flow-weighted composite samples. Throughout a sampling event, the flowmeter triggers the sampler to initiate pumping at a pre-programmed volume interval to collect a representative composite sample of the stormwater discharge.

Each monitoring station is associated with a rain gauge to collect precipitation data to use in conjunction with sampling and flow data for analysis and quality assurance. Additionally, forecasts, weather, and hourly precipitation data for the weather station located at the Boise Airport are available from the National Weather Service (NWS) website.

Water quality data collection will be accomplished through a variety of sampling and analysis methods. Discrete grab samples will be collected for laboratory analysis and analysis of field parameters. Composite samples will be split at the laboratory for analysis. Discharges from three separate storm events will be sampled during each water year.

Monitoring equipment operation and maintenance descriptions are included in Section 3. Specific descriptions of sampling procedures are described in Section 4.

2.2 Site Selection

The Permit requirement for wet weather stormwater outfall monitoring is to continue the monitoring program that was implemented under the 2012 NPDES Phase I Permit. As such, four monitoring stations (Lucky, Whitewater, Main, Americana) will continue to be the sampling locations for this SWOMP. For more information on how these stations were selected, refer to the *Storm Water Outfall Monitoring Plan* (ACHD, 2014a).

A vicinity map (Figure 1) showing each monitored drainage area within the Phase I Permit area is included in the Figures section at the end of the document. Site maps showing land uses and associated impervious area percentages by land use are also included in the Figures section.

2.3 Site Descriptions

Table 2-1 provides a summary overview of the monitoring station locations and associated subwatersheds. A summary of each monitoring site and a description of the monitoring equipment is included in the sections to follow. Subwatershed area, monitoring station maps, and pictures are included in the Figures section at the end of the document.

Table 2-1. Monitoring Station Information

	Lucky (Site ID: 3)	Whitewater (Site ID: 11)	Main (Site ID: 12)	Americana (Site ID: 14)
Outfall ID	4n2e19_021	3n2e04_016	3n2e04_010	3n2e09_024
Location	5590 West Lucky Drive (northwest Boise)	East side of Whitewater Park Boulevard (west of downtown Boise)	303 West Main Street (west of downtown Boise)	1661 Shoreline Avenue (downtown Boise)
Station GPS Coordinates	43.6634612,-116.2583125	43.631432, -116.230644	43.621493, -116.228274	43.616150, -116.221257
Subwatershed Area	105 ac.	498 ac.	79 ac.	875 ac.
Percent Impervious Groundcover[1,2]	40	43	55	39
Land Uses (percentage)[1,3]	Right of Way (22%) Residential Med (78%)	Right of Way (36%) Commercial (4%) Residential Med (50%) Residential High (7%) Public and Schools (3%)	Right of Way (43%) Commercial (37%) Residential Med (14%) Residential High (5%) Public (1%)	Right of Way (30%) Commercial (13%) Residential (Hi/Med/Low) (39%) Parks and Open Space (14%) Public and Schools (4%)
Receiving Water	Eagle Drain	Crane Creek	Boise River	Boise River
Assessment Unit	N/A	ID17050114SW012-02	ID17050114SW011a_06	ID17050114SW011a_06
Distance from Station to Outfall	350 ft	140 ft	500 ft	108 ft
Rain Gauge Location	Cynthia Mann	Whitewater (at monitoring station)	Front	Front and East
Rain Gauge GPS Coordinates	43.664185, -116.256289	43.631432, -116.230644	43.619429, -116.216409	43.619429, -116.216409 43.626046, -116.187601
Rain Gauge Distance from Station	620 ft	0 ft	3,200 ft	1,730 ft and 9,600 ft

Table 2-1. Monitoring Station Information				
	Lucky (Site ID: 3)	Whitewater (Site ID: 11)	Main (Site ID: 12)	Americana (Site ID: 14)
Pipe Construction	30 in, circular, corrugated metal pipe	38 in, ellipsoid, corrugated metal pipe	30 in, circular, concrete pipe	48 in, circular, concrete pipe
Power Source	40 Ahr battery	Commercial power	40 Ahr battery	40 Ahr battery
Parking	Park next to sidewalk at 5590 West Lucky Drive	Park in pullout south of enclosure	Park in lot southwest of enclosure	Park in space northwest of enclosure in parking lot
Equipment Location	Below ground in manhole in yard	In enclosure	In enclosure	In enclosure
Sampling Considerations	Swing sampler needed for grabs through manhole	Swing sampler needed for grabs through manhole	Swing sampler needed for grabs through manhole	Swing sampler needed for grabs through manhole
Data Considerations	Consistent standing water in manhole and pipe	Background flow usually present	Surcharges when Boise River stage is high	Background flow present year-round, Surcharges when Boise River stage is high
Watershed BMP Summary	Catch basins, sand and grease traps	Catch basins, sand and grease traps, ditches	Catch basins	Catch basins, sand and grease traps, seepage beds, bioretention planters, permeable pavers, stormwater tree cells

[1]Source: ACHD, 2014b.

[2]Impervious cover includes roads and streets, rooftops, and parking lots.

[3]Land uses as delineated are defined as follows (ACHD, 2014c):

- Right of Way – Land reserved for transportation purposes managed by the Ada County Highway District. Not part of a recorded parcel by the Ada County Assessors office.
- High Density Residential – 8 residential units/acre or above. Multifamily units such as duplex, condos, apartments.
- Medium Density Residential – 3 -7 residential units/acre. Typical single family residential on 0.15 to 0.49 acre lots.
- Low Density Residential – Less than 3 residential units/acre. Single family residential on lots 0.50 acres and larger.
- Commercial – Includes commercial retail and office space.
- Industrial – Includes manufacturing, warehousing, distribution other non-retail uses.
- Parks and Open Space – Includes public parks and open/undeveloped spaces.
- Public and Schools – Includes public buildings/facilities and schools including associated grounds.

2.3.1 Lucky

The Lucky monitoring station is located at 5590 West Lucky Drive in northwest Boise (Figure 2). Access to the sampling location is through a manhole located in the front yard near the sidewalk on West Lucky Drive (Figure 3). The manhole is located within a drainage and utility easement and is an access point for the stormwater conveyance system that carries stormwater from the Jordan's Landing Subdivision into Eagle Drain. The Lucky site is influenced by infiltration into the storm drain system from groundwater and the Boise City Canal in the nearby vicinity but does not have consistent background flow. Historically, there are around 2 inches of standing water in the pipe at the AV sensor. Surcharge conditions have not been a factor at the monitoring station.

The Lucky monitoring station is the only site that was previously monitored under both the 2000 NPDES Phase I Permit and the 2012 NPDES Phase I Permit.

Lucky Flow Measurement and Configuration

The AV sensor and sampler intake tubing are installed just downstream (northwest) of the manhole in the stormwater conveyance pipe. Grab samples are collected at the inlet to the stormwater conveyance pipe on the downstream side of the vault just before the sampler intake tubing. The flowmeter and sampler are installed in the manhole vault and sit on a platform suspended by cables that are secured to the inside collar of the vault.

2.3.2 Whitewater

The Whitewater monitoring station is located on the east side of Whitewater Park Boulevard (Figure 4). The sampling location is accessed through a manhole located in the sidewalk (Figure 5). Background flows are frequently present at the monitoring station and may consist of infiltration from Crane Creek, Boise City Canal, groundwater, and possibly other irrigation sources. The Whitewater subwatershed discharges into Crane Creek which begins in the foothills and flows to the northwest and intersects with the Farmer's Union Canal about 2,100 feet downstream from the monitoring station. During winter a temporary dike, which directs flows into a side channel of the Boise River, is installed at the intersection of the creek and the canal. Throughout irrigation season (typically early April through late September) the dike is removed and water flows to both the Farmers Union Canal and the side channel of the Boise River.

Upstream of the monitoring station, irrigation water from the Boise City Canal can overflow into the storm drain system via headgates that can be opened when irrigation flows are high. The Boise City Canal was developed in 1866 and is managed and operated by the Boise City Canal Company.

Whitewater Flow Measurement and Configuration

The flowmeter and sampler are installed in a locked enclosure that is mounted to a concrete pad. The sampler intake tubing and AV sensor are connected to the equipment in the enclosure via a conduit that extends through the concrete pad to the inside top of the pipe. Grab samples are collected in the manhole.

This station has commercial power, and the flowmeter is continuously measuring level and velocity and calculating flow. To calculate flow from velocity and level measurements in an ellipsoid pipe, the pipe dimensions (length and width) are programmed into the flowmeter. The flowmeter also records measurements from the rain gauge installed adjacent to the enclosure.

2.3.3 Main

The Main monitoring station is located at 303 West Main Street, west of the intersection of Main Street and Whitewater Park Boulevard (Figure 6). The sampling location is accessed through a manhole located in the sidewalk on the south side of Main Street (Figure 7). Background flows have not been recorded at this monitoring station to date, however, the pipe does surcharge during seasonal high river flows.

Main Flow Measurement and Configuration

The sampler intake tubing and AV sensor are installed just upstream (northeast) of the manhole vault. The flowmeter and sampler are installed in an enclosure next to the manhole. Grab samples are collected in the storm drain manhole located in the sidewalk.

2.3.4 Americana

The Americana monitoring station is located at the landscaped area on the west side of Americana Boulevard near the southeast corner of the parking lot for the office building located at 1661 Shoreline Avenue (Figure 8). The monitoring station is located on land owned by Riverwalk Partners, LLC with a dedicated storm drain easement. A license agreement was executed prior to the construction of the monitoring station between ACHD and Riverwalk Partners, LLC. The sampling location is accessed through a manhole located just west of the sidewalk that runs along the west side of Americana Boulevard (Figure 9).

Americana Flow Measurement and Configuration

Background flow is typically present at the Americana monitoring station. Background flow sources include groundwater infiltration, irrigation runoff, overflow from Hulls Gulch, return water from geothermal heating, intermittent discharges from the Boise Ice Company, and other sources to be investigated as monitoring progresses. The flowmeter’s AV sensor and sampler intake tubing are installed just upstream (north) of the manhole in the stormwater conveyance pipe. Grab samples are also collected from the manhole.

Section 3

Monitoring Equipment

3.1 Monitoring Equipment Operation and Calibration

3.1.1 Flowmeters

Each monitoring station is equipped with a flowmeter. Depending on site configurations, an ISCO Signature flowmeter or a Hach AV9000 flow module is used. The flowmeters are used to record temperature, level, velocity, and flow. The flowmeter utilizes an AV sensor that is mounted to the invert of the pipe by means of a mounting band. The AV sensor includes both a depth sensor and an acoustic Doppler velocity sensor. The flowmeter calculates flow using the measured depth and velocity along with pre-programmed pipe geometry. During storm events the flowmeters are programmed to send a signal to an automatic sampler after a specified volume of runoff has passed the AV sensor.

3.1.1.1 Calibration and Maintenance

Routine maintenance of flowmeters, including level calibration, will be performed semi-annually according to the procedures listed in Appendix A. More frequent maintenance or calibration will be performed as warranted by equipment performance.

Calibration of the level requires only offsetting the initial depth of water. Typically, no field calibration of the velocity sensor is required. Additional checks on the accuracy of the velocity meter can, however, be conducted using a manual current meter to measure velocity. Depth can be checked by simple measurement and comparison to the recorded value. Readings showing deviations can be corrected using the flowmeter interface while in the field.

3.1.2 Automatic Samplers

Composite sampling is carried out at each of the monitoring stations using either ISCO 6712 samplers or Hach AS950 samplers. Sample aliquots are pumped from the stormwater conveyance to a 15-litercarboy by a peristaltic pump. The discharge tubing of the pump is routed into the sample container which is secured in the insulated base of the sampler with ice to maintain target sample temperature.

For each sampling event, the automatic sampler is programmed to collect samples based upon flow-paced signals received from the flowmeter via a control cable. The sampler collects one sample for each signal from the flowmeter. Sample aliquot volumes are programmed and calibrated to produce a flow-weighted composite sample of the storm event discharge consisting of a targeted 24 subsamples. A record of the sampler's operations (e.g., execution data and sample times) is stored on the hard drive of both the sampler and the flowmeter and may be downloaded to a portable computer at any time.

3.1.2.1 Calibration and Maintenance

Routine maintenance of the automatic samplers, including cleaning and calibration, will be performed semi-annually, or more frequently as warranted by equipment performance, according to the procedures listed in Appendix A.

The sampler is calibrated by comparing the collected sample volume (measured using a graduated cylinder) with the required volume that was programmed into the sampler program. The sampler microprocessor will adjust the pump run time to either increase or decrease the sample volume. This process is repeated until the sampler delivers a volume that is within ±10 percent of the requested sample volume.

3.1.3 Rain Gauges

ACHD currently maintains four rain gauge sites representative of the monitored drainage areas. The rain gauges are deployed to collect continuous precipitation data throughout the water year. The program utilizes tipping-bucket style rain gauges that measure rainfall depths in 0.01-inch increments. Each tipping-bucket is connected to either Hobo event data loggers or an ISCO Signature flowmeter via a cable. At sites equipped with Hobo data loggers, a primary and a back-up data logger are used to record tip measurements.

A vicinity map (Figure 1) showing the location of each rain gauge is included in the Figures section at the end of the document. Figure 10 includes pictures of the rain gauges, which are located in the following areas:

- **Cynthia Mann Rain Gauge:** Cynthia Mann Elementary School in northwest Boise.
- **East Rain Gauge:** At the intersection of West Eastway Drive and Rainier Lane in a Boise foothills neighborhood.
- **Whitewater Rain Gauge:** At the Whitewater monitoring station on Whitewater Boulevard.
- **Front Rain Gauge:** At an ACHD maintenance storage area at the intersection of South 17th Street and Front Street.

The data collected on the rain gauge data loggers will be downloaded to a portable laptop computer on a bi-monthly basis. Additionally, sampling personnel will download rain gauge data during station shutdown following monitored storm events. The data will be compared to the NWS rainfall data to identify geographic variations, revise estimates of runoff coefficients, and analyze and evaluate the stormwater quality data.

In addition to using rainfall totals as acceptance criteria for storm event qualification, other program data derived from rainfall records include storm event antecedent dry periods, total rainfall distribution during sampling events, and rainfall intensity during monitored storm events.

3.1.3.1 Calibration and Maintenance

The rain gauges and data loggers will be inspected and maintained biannually. Troubleshooting and any non-routine maintenance will be performed as necessary. Calibration is not typically required for the tipping bucket rain gauges. If needed, calibration procedures are outlined in the rain gauge equipment manual. Inspection, maintenance, and downloading procedures are listed in Appendix A.

3.1.4 Handheld Field Parameter Instruments

During grab sample collection, specific parameters will be measured directly in the field using a variety of handheld instruments to collect readings including pH, conductivity, dissolved oxygen, and temperature. Each sampling team will have a dedicated set of instruments and will record measurements as soon after sample collection as feasible. Field parameter instruments will be rinsed with distilled water between measurements. After the sampling event has ended, these instruments will be allowed to air-dry and will be kept indoors between sampling events.

Handheld Field Parameter Instruments include the following:

- In-Situ Multiparameter meter
- Horiba D-21 pH/temperature meter and Horiba D-51 pH/temperature meter
- Oakton 300 pH/DO/temperature meter
- YSI-85 DO/salinity/conductivity/temperature meter

Safety Monitoring Instruments:

- Hazardous vapor monitors including BW GasAlert Max XT II and Sperian PhD6

3.1.4.1 Calibration and Maintenance

Maintenance will be conducted per manufacturers' recommendations and the procedures listed in Appendix A, or more frequently as warranted by equipment performance. Instruments will be inspected and calibrated prior to each monitoring event. All calibration records will be kept in the ACHD Stormwater Lab for reference.

Section 4

Sampling Procedures

4.1 Analytical Sample Collection Frequency

The stormwater monitoring, including the collection of stormwater discharge samples for laboratory analysis, is conducted at a minimum frequency of three wet weather events per year at each of the four sites. Attempts will be made to separate sampling events by a minimum of 30 days to represent seasonal variability.

4.2 Stormwater Parameter Analysis

The analytical methods planned for use in stormwater outfall monitoring are presented in Table 4-1 below. The NPDES Permit requires that sample collection, preservation, and analysis be conducted according to sufficiently sensitive methods/test procedures approved under 40 Code of Federal Regulations (CFR) Part 136, 40 CFR subchapters N or O, or an alternative method that has been approved by EPA. As such, the methods identified below are the selected and preferred options. However, sample, laboratory, or instrument conditions may require the substitution of an alternate Part 136 method. Field parameter measurements provide pH, temperature, conductivity, and dissolved oxygen (DO) data. Additional water quality data is provided by laboratory analyses of both grab and composite samples. Table 4-1 identifies the components to be collected by grab sampling and as flow-weighted composite samples, along with the analytical methods to be used.

Table 4-1. Analytical Methods for Stormwater Constituents in Wet Weather Samples

Constituent	Analytical Method	Sample Collection Type
Ammonia (NH_3)	SM 4500-NH3 D	C
5-Day Biological Oxygen Demand (BOD5)	SM 5210 B	C
Chemical Oxygen Demand (COD)	HH 8000	C
Nitrite plus Nitrate (NO_2+NO_3)	EPA 353.2	C
Total Kjeldahl Nitrogen (TKN)	EPA 351.2, 10-107-06-2-M	C
Total Dissolved Solids (TDS)	SM 2540 C	C
Total Suspended Solids (TSS)	SM 2540 D	C
Turbidity	EPA 180.1	C
Dissolved Orthophosphate	EPA 365.1	C
Total Phosphorus	EPA 200.7	C
E. coli	IDEXX Colilert	G
Mercury – Total	EPA 245.2	C
Arsenic – Total	EPA 200.8	C
Cadmium – Total and Dissolved	EPA 200.8	C
Calcium – Total	EPA 200.7	C
Lead – Total and Dissolved	EPA 200.8	C
Magnesium – Total	EPA 200.7	C

Table 4-1. Analytical Methods for Stormwater Constituents in Wet Weather Samples		
Constituent	Analytical Method	Sample Collection Type
Hardness (as Calcium Carbonate [$CaCO_3$])	EPA 200.7	C
Copper – Dissolved	EPA 200.8	C
Zinc – Dissolved	EPA 200.8	C
Conductivity	EPA 120.1	G,f
DO	In-Situ Method 1002-8-2009	G,f
Temperature	EPA 170.1	G,f*
pH	EPA 150.2	G,f
Flow/Discharge Volume	Non Specific	f

C – Constituent analysis will be conducted using a composite sample.

G – Constituent analysis will be conducted using a grab sample.

f – Analysis will be conducted in the field.

f - Temperature is recorded during field parameter measurement and is recorded continuously by the AV sensor.*

4.3 Weather Forecast and Storm Selection

The Environmental Specialist (or designee) will obtain up-to-date information on a storm's anticipated physical characteristics from the NWS. Information obtained for each forecast will include the probability of precipitation, the expected amount of precipitation, and the expected arrival time of the storm. Weather forecasts and information will ordinarily be obtained via the Internet and supplemented as needed by telephone conversations with the NWS meteorologist on duty. The Environmental Specialist will review weather forecasts daily and compare them with the established storm selection criteria to determine the likelihood of initiating stormwater sampling.

The EPA's definition of a representative storm event (EPA, 1983) states that the storm precipitation total must be greater than 0.10 inch and that the storm be preceded by a minimum of 72 hours from the previously measurable (greater than 0.10 inch) event.

With the Permit requirements and EPA guidance considered, ACHD will use the following criteria to assist in decision making for selecting forecasted storms to target under typical conditions:

- 70 percent or greater probability of precipitation forecasted
- Quantitative precipitation forecast predicted precipitation of greater than 0.10 inch in a 12-hour period
- Event separated by a minimum of 72 hours of dry weather from the previous measurable storm event (rainfall greater than 0.10 inch)
- At least 30-day separation from the previous sampling event

Criteria for snow conditions include the following:

- Forecasted precipitation in the form of snowfall will be evaluated in the context of the greater weather forecast to determine the likelihood of runoff occurring at the outfall.
- Though snowmelt is considered stormwater runoff, sampling events will not be initiated for collection of discharge from snowmelt alone when criteria for a representative storm are not forecasted to be met.

These criteria represent the general approach to storm event targeting used for this program. Ultimately, the Environmental Specialist will use these criteria in conjunction with additional forecast information, sampling program and staffing requirements, and other factors to make the decision to target a particular storm.

The Environmental Specialist will communicate the sampling status to the consultant Field Coordinator daily by means of the Sampling Event Communication Form (included in Appendix B). The Sampling Event Communication Form will also be sent to laboratory project personnel and ACHD field sampling staff.

If storm selection criteria appear to be met, the Environmental Specialist will confer with the consultant Field Coordinator. If both parties agree, the consultant Field Coordinator will initiate storm event preparation by advising the sampling team of the upcoming sampling event. At this time, all necessary sample containers will be prepared and organized by site.

4.4 Monitoring Station Set-up

Prior to a sampling event, the Environmental Specialist or the consultant Field Coordinator will be responsible for readying the flowmeters and automatic samplers at the monitoring stations following the procedures listed on the Setup/Shutdown Form (Appendix B). Whenever possible, setup will be conducted by two trained staff. The Environmental Specialist (or designee) will be responsible for calibrating the handheld field parameter equipment, ensuring that adequate sampling supplies are available, and notifying the laboratory of the possible sampling event

Monitoring station set-up activities include the following:

- flushing the polyethylene sampler intake line and silicone discharge tubing with a dilute hydrochloric acid solution
- checking the condition of sampler harness and platform (if applicable), and sampler humidity indicator
- inspecting electrical and tubing connections for tightness
- installing recharged batteries
- freeing sampler tubing of twists, pinches, or cracks and replacing if needed
- loading bottles and ice into automatic samplers
- programming the samplers and flowmeters
- initiating the sampling program
- recording set-up information on field data sheets

4.4.1 Flowmeter Programming

Sampler Enable Condition

The flowmeter will be programmed to enable the sampler based on the water level in the pipe. The level condition will be programmed after a review of the previous 72 hours of level readings. Once runoff begins and water level increases, the sampler will enable and total flow will be computed toward the trigger volume, described below. Using the sampler enable condition allows for the sampler program to be initiated without the flowmeter triggering sample collection until storm runoff begins.

Runoff Coefficients and Trigger Volumes

To collect a flow-weighted composite sample throughout a storm, estimates will be calculated for the runoff volume expected at each station. The expected runoff volume will be divided by the planned number of sample aliquots, and the resulting value is used as the trigger volume for programming the flowmeter. The trigger volume is the amount of flow that will be measured before the automatic sampler is triggered to collect a subsample. Therefore, the number of samples collected over the course of a storm is a result of the runoff volume expected for the total storm as forecasted at the time of station set-up.

Calculating the total estimated runoff is a function of the weighted rainfall amount expected and the site-specific runoff coefficient. Precipitation amounts are weighted by multiplying the predicted rainfall amount by the probability of precipitation as forecasted by the NWS. The site-specific runoff coefficients are derived from the percentage of impervious ground cover in the subwatershed and empirical values from observed storm data.

Historical data suggests that multiple variables factor into the actual volume of runoff measured at each monitoring station. These variables include the size, duration, and intensity of a storm, along with irregularities within the drainage area including soil moisture, temperature, snow cover, and irrigation influences. Recorded runoff volumes from each station will be used to continually refine runoff coefficients over the course of the program.

4.5 Sample Collection

4.5.1 Sampling Teams

Sampling team assignments will be decided once the decision is made to target a storm for a sampling event. At least two teams will be formed, each consisting of two persons, a sample team leader and a sample technician. One sample team leader will serve as the site safety officer during sampling events. Each team will be responsible for collecting samples at their assigned stations.

When storm event runoff begins, the consultant Field Coordinator will confer with the Environmental Specialist and mobilize sampling teams. All sampling personnel will meet at the ACHD Stormwater Lab for a briefing on field conditions, QA/QC samples to be targeted, and safety reminders and concerns. Sampling teams will be responsible for the following:

- Collecting field parameter measurements
- Collecting laboratory analytical grab samples
- Verifying operation of the automated sampling equipment
- Collecting sample duplicates and/or preparing field blanks, as required
- Returning grab sampling equipment to ACHD
- Arranging transportation of samples for submittal to Boise City Public Works Water Quality Laboratory (WQL)

4.5.2 Grab Sample Collection

Grab sample collection at each monitoring station will be accomplished by the sample team leader. The sample team leader will fill grab sample bottles for each analysis from a point near the center of the flow at each monitoring station in accordance with the applicable procedures listed in Appendix A. Immediately following sample collection, the sample technician will record the collection date, time, and sample identification on the sample containers and on a Grab Sample Data Form (Appendix B). Additional sampling information recorded on the Grab Sample Data Form includes field parameter measurements and the corresponding meter used, status of the automated sampler, and other comments and observations.

Field parameters including temperature, pH, conductivity, and DO will be measured in the field using handheld instruments to avoid changes that may occur between the time when the sample is collected and the time of the analysis. Measurements from these field tests will be recorded on the Grab Sample Data Form included in Appendix B.

4.5.3 Composite Sample Collection

Collecting flow-weighted samples throughout a storm event is facilitated using automated sampling equipment. Each monitoring station is equipped with an automatic sampler. During station setup, samplers are programmed for a site- and event-specific trigger volume. At each monitoring station, the automatic sampler is linked to the flowmeter via a data cable. When the flowmeter records the trigger volume amount, the integrated peristaltic pump on the automatic sampler engages and draws a sample through the tubing installed in the invert of the storm drain pipe. The sample aliquot is pumped into the composite sample bottle secured in the base of the automatic sampler.

The sampler program will end automatically after the last programmed subsample has been collected (typical target of 24 subsamples). Immediately following collection of the sample container, the sample team will record the collection date, time, and sample identification on the sample bottle and the Composite Sample Collection Form (Appendix B).

Variability between expected runoff amounts and measured runoff amounts are common. To increase the probability of collecting a representative sample, a conservative approach to programming the sampler is used. The minimum volume required by WQL to run the analyses identified in Table 4.1 is 8 liters. In order to collect a representative composite sample, the sampler is programmed to collect 24 aliquots at 620 mL per aliquot. This approach will provide 13 subsamples to achieve the minimum volume, with a conservative estimate of forecasted rainfall. This will also provide additional capacity to collect up to 11 more aliquots in the event the intensity and duration of the storm is more than expected.

4.6 Sample Handling Procedures

The required types of containers and holding times for the stormwater outfall monitoring component are dependent upon the components to be analyzed. Table 4-2 includes container types and holding times for each parameter group.

Preservation techniques in the field are limited to cooling samples to a target sample temperature of less than 6°C, but above freezing. Five to ten pounds of food-grade ice will be placed in the coolers of the automatic samplers during station setup. Sufficient ice will also be placed in coolers used for grab and composite sample transport to maintain the samples at a maximum temperature of 6°C. Composite samples will be collected for the majority of analytical parameters in stormwater samples. Composite samples will be collected in a 15-liter Nalgene LDPE carboy.

No chemical preservation measures are required in the sample collection process. WQL will add chemical preservatives after the composite samples are split as necessary for analysis, i.e. metals analysis. In the 15-liter carboy, composite samples have a holding time of 48 hours. Analysis of composite samples will include the parameters listed in Table 4-2.

Parameters to be measured in the field include DO, conductivity, pH, and temperature. Parameters will be measured on-site using portable handheld meters immediately following sample collection. Field parameter samples will be collected and measured in a 1-liter (L) glass jar.

Special Handling Considerations

4.6.1 E. coli

Due to the variable nature of storm event timing, *E. coli* grab samples are sometimes analyzed outside of sample holding times required by the standard method (eight hours). WQL has committed to providing *E. coli* analysis within the holding time for samples submitted during normal business hours (Monday–Friday), and within 12–16 hours if samples are submitted after hours. *E. coli* samples analyzed within the 8–16 hour timeframe will be qualified as estimated in the context of the program-established data quality objectives discussed in Section 5.2. If analysis is not initiated within 16 hours of collection, results will be rejected.

4.6.2 Dissolved Metals

Current regulations under the EPA Method Rule Update issued on May 18, 2012, require that samples collected for the analysis of dissolved metals including dissolved orthophosphate be filtered within 15 minutes of collection of a grab sample or the last subsample of a composite sample. Dissolved metals are a constituent of the composite sample for the stormwater outfall monitoring program.

WQL has committed to splitting composites and filtering dissolved metals samples at the time of submission to the laboratory when they are submitted during normal business hours, and within 24 hours when samples are submitted after hours. Samples filtered within the 24-hour timeframe will not be qualified as estimates in the context of the program-established data quality objectives discussed in Section 5.2. If filtration is not accomplished within 24 hours of collection, results will be rejected.

Table 4-2. Sample Handling Requirements		
Constituent	Container	Holding Time
Composite Samples		
Ammonia (NH3) 5-Day Biological Oxygen Demand (BOD5) Chemical Oxygen Demand (COD) Nitrite plus Nitrate (NO_2+NO_3) Total Kjeldahl Nitrogen (TKN) Total Dissolved Solids (TDS) Total Suspended Solids (TSS) Turbidity Total Phosphorus Mercury -Total Arsenic – Total Cadmium – Total Calcium - Total Lead – Total Magnesium - Total Hardness (as $CaCO_3$)	15-liter LDPE carboy	48 hours (in carboy)
Dissolved Orthophosphate Cadmium – Dissolved Copper – Dissolved Lead – Dissolved Zinc - Dissolved		24 hours (in carboy)
Grab Samples		
E. coli	500 mL sterilized HDPE	8 hours
Field Parameters		
Dissolved Oxygen	1 L glass	Field analysis; 15 minutes
Temperature		
pH		
Conductivity		

LDPE – Low Density Polyethylene

4.7 Chain-of-Custody Procedures

Standard chain of custody (COC) forms, shown in Appendix B, will be completed prior to submittal of samples to the laboratory. Information recorded on the COC includes the following:

- Sample collection team member names
- Sample identification
- Sample type (grab or composite)
- Analyses requested
- Sample start and end times
- Sample start and end dates

A sample is “in custody” if it is either in actual physical possession of authorized personnel or in a secured area that is restricted to authorized personnel. Such areas include laboratory refrigerators, the ACHD Stormwater Lab, ACHD vehicles, and consultant vehicles. Automatic samplers at monitoring stations are installed in locked enclosures or in manholes. Where samplers are installed in manholes, the sample container base will be locked to secure access to the sample. All transfers of custody will be recorded by signature, date, and time by both the individual relinquishing custody and the one receiving custody. This information is placed in the designated area on the bottom of the COC form.

The transferal of grab samples collected during a storm event between the sampling team leader who collected the sample and the field coordinator or designee who will deliver the samples to the lab must be recorded on the COC form. The field coordinator will record his/her signature with the date and time the samples were received on the associated COC form.

Samples may be stored overnight (in coolers with ice) at the ACHD Stormwater Lab or vehicles while awaiting submittal to the laboratory. The COC forms must be reviewed and signed by at least one of the persons who collected the samples listed on the COC form. The COC forms will be delivered to the laboratory with the samples.

If samples are submitted to the laboratory during business hours, samples are relinquished to laboratory personnel in person for immediate receipt with signature, date, and time. ACHD has after-hour access to the laboratory to accommodate sample submittal. When sample delivery occurs after hours, grab samples are placed in a locked refrigerator and composite samples are stored in coolers or sample bases and packed with ice. The team delivering the samples will notify a laboratory representative that the samples have been dropped off and the time the earliest samples were collected. A signed COC form is left in the locked laboratory for morning receipt by laboratory personnel.

Analytical samples will be named using the date of the event, followed by the station number, followed by WG or WC for “Wet Grab” or “Wet Composite,” respectively. For example, a composite sample collected at Whitewater on October 15, 2021, would be labeled 211015-11-WC.

Sample collection times for QC samples will be recorded as 12:00 on the COC form to maintain duplicates as laboratory blind samples. The actual collection time will be recorded on the field form. The QAPP includes detail on the approach to data validation as it pertains to holding times and laboratory qualifiers for QC samples.

4.8 Monitoring Station Shut Down

Post-sampling activities include downloading data from flowmeters, samplers, and rain gauges according to the applicable procedures listed in Appendix A; removing/replacing batteries where necessary; and reviewing the overall condition of the equipment. Equipment shutdown will be conducted by ACHD personnel and may occur as late as two weeks after sample collection to accommodate hydrologic data collection.

WQL will analyze the samples for the components of concern identified in Table 4-1. Quality assessment activities, to be performed by the Program QA/QC Officer, will include review of field notes and COC documents, as well as validation of data packages received from the laboratory. QA/QC procedures are discussed in further detail in Section 5.

Section 5

Quality Assurance/Quality Control

5.1 QC Sampling Schedule

The QC sampling schedule developed for the SWOMP consists of a combination of field QC samples and laboratory QC samples. Field QC sample types are described in the QAPP. Field QC sampling intervals will follow the schedule detailed in Table 5-1. Laboratory QC sample results are included in each analytical report.

Table 5-1. Field QC Sample Collection

QC Sample Method[1]	Sampling Frequency	Percent of Total Data Represented[4]
Grab sample duplicate and field blank	1 set per event	20%
Composite sample duplicate[2]	1 composite per year	7%
Composite sample field blank	1 composite per year	7 %
Composite sample equipment blank[3]	1 composite per year	7%
Composite sample rinsate blank[3]	1 composite per year	7%

[1]*Grab QC samples will be analyzed for grab sample constituents. Composite QC samples will be analyzed for composite sample constituents.*

[2]*The composite sample duplicate will be collected at the earliest opportunity, and is contingent upon sample volumes.*

[3]*Blanks will be collected during monitoring station maintenance events and will be analyzed for composite sampling constituents.*

[4]*Percentages are calculated based on 5 sites (4 outfall monitoring sites and 1 subwatershed monitoring site)*

Random number generation was used to develop a QC sample schedule for each water year. The schedule establishes the targeted QC site for each event, as well as an alternate QC site with the goal of collecting one set of QC samples for each event. Each site is assigned a number and a random number generator equation is run for each event. If the selected site cannot be sampled for any given event, the predetermined alternate site will be used. The full QC schedule is included in Appendix C.

ACHD may choose to conduct additional QA/QC to address data discrepancies, potential sample contamination, or other QA/QC issues. These events will be handled on an as-needed basis, depending on the issue(s) involved.

5.2 Data Quality Objectives (DQO)

The DQO for ACHD stormwater monitoring can be summarized by the following statement:

Monitoring efforts will provide data of sufficient quality and quantity in accordance with permit requirements to characterize the quality of stormwater discharges from the MS4 and evaluate overall effectiveness of stormwater management practices.

5.2.1 Data Quality Indicators (DQIs)

DQIs have been established to set measurable qualitative and quantitative goals for data acceptance that meet the program DQO described above. Each DQI is described below. DQIs are the basis for addressing field and laboratory analytical instrument performance, as well as sample collection and handling procedures. QA/QC samples provide input for several of the DQIs. QA/QC sample collection procedures are included in Section 2.1 of the QAPP.

DQIs are described fully in Section 1.8.1 of the QAPP. A brief description of each DQI is included in the list below.

- **Project Required Detection Limits (PRDL):** Achieving appropriate reported constituent concentration results at values that allow for comparison to baseline data and water quality standards.
- **Accuracy:** The accuracy of the data is a measure of the extent to which a measured value represents the true value.
- **Precision:** Precision is a measurement of the reproducibility of the analytical data.
- **Bias:** Bias is minimized by using standard data collection and analytical methods and protocols, as well as standard sample preservation, transport, and storage procedures.
- **Representativeness:** Representativeness is a measure of the degree to which data accurately and precisely indicate environmental conditions.
- **Comparability:** The comparability of a data set is the extent to which data accurately and precisely indicate environmental conditions.
- **Completeness:** Completeness is a comparison between the amount of usable data collected versus the total amount of data collected.
- **Sufficiency:** Data set sufficiency is the amount of data required to perform the level or type of analysis necessary for each monitoring element.

Analysis-specific data quality indicators include PRDLs and precision evaluated as relative percent difference (RPD). The target values for these indicators are listed in Table 5-2 below.

Table 5-2. Data Quality Indicator Targets

Constituent	Analytical Method	PRDL[1,2]	Units	Precision[3,4] (RPD)
Temperature	EPA 170.1	0.01	°C	NA
pH	EPA 150.2	0.01	S.U.	NA
Dissolved Oxygen	In-Situ Method 1002-8-2009	0.01	mg/L	NA
Conductivity	EPA 120.1	0.1	µS/cm	NA
Ammonia (NH_3)	SM 4500 NH3 D	0.0350	mg/L	20%
5-Day Biological Oxygen Demand (BOD5)	SM 5210 B	2.00	mg/L	20%
Chemical Oxygen Demand (COD)	HH 8000	7.00	mg/L	20%
Nitrite plus Nitrate (NO_2+NO_3)	EPA 353.2	0.0500	mg/L	20%
Total Kjeldahl Nitrogen (TKN)	EPA 351.2, 10-107-06-2-M	0.100	mg/L	20%
Total Dissolved Solids (TDS)	SM 2540 C	25.0	mg/L	20%
Total Suspended Solids (TSS)	SM 2540 D	0.900	mg/L	20%
Turbidity	EPA 180.1	0.3	NTU	20%
Orthophosphate, as P	EPA 365.1	2.00E-3	mg/L	20%
Total Phosphorus	EPA 200.7	6.00E-3	mg/L	20%
E. coli	IDEXX Colilert	1.0	MPN/100mL	40%[5]
Mercury – Total	EPA 245.2	0.0100	µg/L	20%
Arsenic – Total	EPA 200.8	0.040	µg/L	20%
Cadmium – Total	EPA 200.8	0.025	µg/L	20%
Calcium – Total	EPA 200.7	0.0460	mg/L	20%
Lead – Total	EPA 200.8	0.050	µg/L	20%
Magnesium – Total	EPA 200.7	39.5	µg/L	20%
Hardness (as $CaCO_3$)	EPA 200.7	0.115	mg/L	20%
Cadmium – Dissolved	EPA 200.8	0.025	µg/L	20%
Copper – Dissolved	EPA 200.8	0.15	µg/L	20%
Lead – Dissolved	EPA 200.8	0.050	µg/L	20%
Zinc – Dissolved	EPA 200.8	0.78	µg/L	20%
Flow/Discharge Volume	Non Specific	0.001	cfs	NA
Precipitation	Non Specific	0.01	in	NA

[1]Field instrument resolution values are listed in lieu of a PRDL for field parameter measurements.

[2]PRDL is defined as the effective method detection limit (MDL) as reported by the analytical laboratory.

[3]Precision calculations based on field duplicate samples.

[4]In cases where one value is reported at the MDL and the other value is less than five times the MDL, the samples will be considered within acceptable precision limits.

[5]E. coli is evaluated using the RPD of logarithmic parent and duplicate values. The acceptable RPD between the two values is also higher than other constituents. These changes are in place to accommodate the inherent variability in E.Coli samples.

Anticipated issues with optimal performance for DQIs include high potential for holding time exceedances with *E. coli* as well as meeting the method-required filtration window for dissolved orthophosphate in composite samples. These issues will be monitored closely from the outset of the stormwater outfall monitoring program to track and understand the impact these deviations may have on DQIs.

5.2.2 Storm Event Acceptance Criteria

Acceptance criteria for a representative storm are derived from Permit requirements for representative sampling as listed in Section 6.2.4 and target volume and duration goals established for this program. Storm data used to evaluate acceptance, including antecedent dry period, precipitation amount, and flow volumes, will be measured based on data records at the site-specific rain gauges and flowmeters.

The acceptance criteria for composite samples are based on the total amount of runoff represented by the composite sample. Ideally, upon completion of the sampler program, a flow-weighted composite sample is collected that represents the entire duration of the storm. However, in some cases, high rainfall amounts result in the automatic sampler program finishing before capturing the entire storm. When this situation occurs, the full composite bottle is removed from the sampler, a second bottle is installed, and the sampler program is restarted. During the bottle change, there can be an unavoidable gap in collection time of the flow-weighted composite sample because of logistical constraints in reaching each monitoring station at the exact time the first sample bottle is full. All sample bottles filled at a particular station will be composited at the WQL. This composite sample is flow-weighted for the portion of the storm event that was sampled.

The percentage of the storm event that is represented by the composite sample can be determined from a review of the storm hydrograph at each location. The sample will be considered valid and unqualified when the composite sample represents at least 75 percent of the total hydrograph with the first hour of runoff included, or the sample represents the first six hours of the discharge. If the composite sample represents between 50 and 75 percent of the measured flow volume associated with the storm, then the sample will be qualified, and data will be considered an estimate based on the DQIs outlined earlier in this section. If the composite sample represents less than 50 percent of the total hydrograph, then it will be rejected. Another storm may be targeted to replace it if possible.

On a limited number of historic occasions, an automatic sampler has triggered before the beginning of storm event runoff. In the event of this occurrence, the extraneous aliquots will be considered not to have compromised the entire composite sample if it represents less than 10 percent of the total composite sample volume (typically one to two subsamples). In the event of this occurrence, the composite sample will be qualified based on the DQIs outlined earlier in this section. If the composite sample is determined to be comprised of 10 percent or more non-stormwater subsamples, the entire composite sample will be rejected.

Section 6

Data Management and Reporting

All data collected as part of the SWOMP will be stored in electronic format for secure storage and timely and accurate retrieval for data interpretation, graphing, and reporting. Data collected as part of the sampling program will include rainfall data, runoff volumes, runoff coefficients, field analytical data, laboratory analytical data, QA/QC results, and some qualitative observations. Specific management and reporting procedures are provided below.

6.1 Data Acquisition Requirements (Non-Direct Measurements)

Weather forecasts and hourly precipitation totals will be typically obtained from the NWS Boise airport station website. Additional forecasts or weather reports may be retrieved from local media, community, or commercial weather services. When obtaining weather forecasts for storm events, the Environmental Specialist will typically call the NWS Boise airport station for additional details if it appears that an approaching storm may meet the sampling criteria. Pertinent details of these conversations will be recorded on the Sampling Event Communication Form (Appendix B).

6.2 Data Management System

Seveno DataSight (DataSight) data management software is used for handling data collected from stormwater monitoring programs. DataSight provides a safe and secure platform for storing, viewing, validating, and analyzing data. Program data will be imported into the database according to established procedures listed in Appendix A. The database will assist with implementation of the QAPP and the individual monitoring plans guiding each monitoring program.

The DataSight database is configured in three tiers or “levels” under which data is stored and related. The database structure and level dependencies for the stormwater outfall monitoring program are illustrated in Figure 6-1 below.

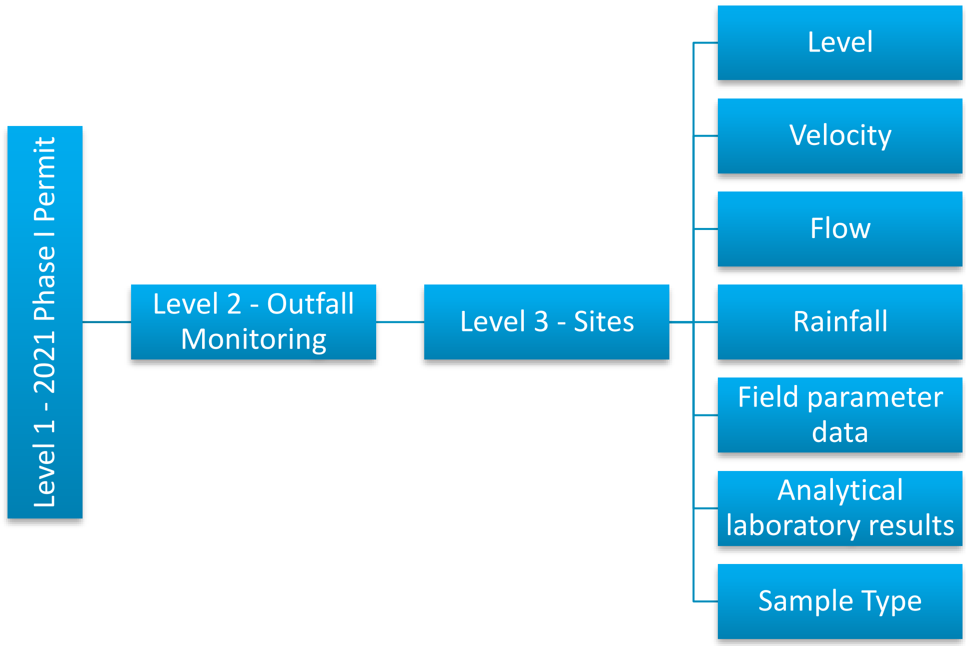


Figure 6-1: Database Levels Setup

6.3 Data Reporting

6.3.1 Storm Event Reporting

Following each sampling event, a storm event report summarizing the results of all sampling conducted will be prepared by the consultant. The report will also provide a specific summary of the storm characteristics and monitoring activities at each of the targeted stations and will include the following level 2 data and control documents:

- Storm Event Information
  - date and time span of the storm
  - antecedent dry period
  - a qualitative description of the forecast and storm
  - composite sample volumes
  - trigger volumes
- Water Quality Data
  - field parameter measurements
  - laboratory analytical data
  - QC sample results
  - storm event pollutant loading estimates from each site (described below)

- Flow Data
  - storm event flow totals
- Rain Data
  - storm event precipitation totals
- Control Documents
  - laboratory analytical report
  - data validation checklist

Additionally, each storm event report will include the following report elements:

- Project status summary table
- Discussion of QA/QC analysis
  - storm acceptance criteria
  - results of the data validation review for the event
- Narrative summary of notes from the current event and recommendations for the next event
- Event hydrograph for each monitoring station

Storm Event Pollutant Loading Estimates

Pollutant loading estimates for each event will be calculated using the following formula when complete runoff volume measurements are available.

$$L = 6.24E^{-5} * F * C$$

Where:

L = Event Load (pounds)

F = Event Runoff (cubic feet)

C = Pollutant Concentration (mg/L)

6.24 E^{-5} = Unit conversion factor

When runoff volume must be estimated due to incomplete flow measurements, the Simple Method approved by the EPA for simple pollutant loading estimations for urban stormwater will be used. The following is the equation that will be used to estimate the event pollutant loads if measured flow volumes are not available or are incomplete.

Simple Method

$$L = 0.226 * R * C * A$$

Where:

L = Event Load

R = Event Runoff (inches)

C = Pollutant Concentration (mg/L)

A = Area (acres)

0.226 = Unit conversion factor

Runoff Calculation

$$R = P * Pj * Rv$$

Where:

R = Event Runoff (inches)

P = Event Rainfall (inches)

Pj = Fraction of annual rainfall events that produce runoff (0.9)

Rv = Runoff Coefficient

The site-specific runoff coefficient (Rv), as presented in the EPA formula, is equal to the percent of impervious surface in the drainage area represented as a decimal. However, this does not account for impervious areas in areas without curb and gutter, canopy cover and interception, or stormwater controls in the drainage area. Therefore, the runoff coefficient variable in the equation will be refined as understanding of the drainage area is expanded.

6.3.2 Stormwater Outfall Monitoring Annual Reporting

A Stormwater Outfall Monitoring summary will be attached to the MS4 Annual Report Form (NPDES Phase I Permit Appendix B) submitted to IDEQ annually. This summary will include the results from each storm event and any monitoring, assessment, or evaluation efforts conducted during the reporting period (October 1 – September 30).

6.3.3 Stormwater Outfall Monitoring Final Report

As required by Permit Part 6.4.3, a final report summarizing all monitoring data collected during the permit term will be submitted as an attachment to the Permit Renewal Application (April 3, 2026). The report will be based upon the storm event reports and will include a comprehensive evaluation of all the data collected. If data have been qualified as part of the QA/QC process, this will be noted in the appropriate table(s). The data evaluation will include the following:

- A statistical summary for analytical parameters with five or more data points
- A yearly comparison of the median concentrations for each monitoring site
- An estimate of event mean concentrations for each parameter sampled for each storm event
- Event Mean Concentration trend analyses demonstrating pollutant loading over time
- A discussion of data quality including qualified data points and deviations from program plans
- A discussion of pollutant reduction efforts and results
- A discussion and analysis of sampling analytical performance against DQOs including discussion of any planned changes to the current plan based on QA/QC issues, site conditions, or program conditions

6.3.4 Evaluation and Assessment

Evaluation and assessment of the stormwater outfall monitoring data will follow the general guidance identified in the QAPP. For the SWOMP, pollutant loads will be estimated based on measured flow and concentrations throughout the system. Data will be compiled with the objective to obtain sufficient data points for statistical and trend analyses to evaluate the effectiveness of stormwater management efforts at reducing pollutant loads from the MS4.

Section 7

References

Ada County Highway District (ACHD), Storm Water Outfall Monitoring Plan, 2014a.

———–, Treasure Valley 2013 Urban Tree Canopy analysis, modified in 2014 based on 2013 aerial photography, 2014b.

———–, E-mail Correspondence with Jason Korn, ACHD Stormwater Quality Specialist, 2014c.

———, Quality Assurance Program Plan for NPDES Storm Water Permit Monitoring Boise and Garden City, Idaho, 2021.

Brown & Caldwell (BC). ACHD Database Guidance Document, 2014

U.S. Environmental Protection Agency (EPA). *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983. Cincinnati, Ohio: U.S. Environmental Protection Agency Environmental Monitoring and Support Laboratory, 1983.

———, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, 48 FR 14153, 40 CFR 122.21(g)(7)(ii), 1983.

———, Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8), EPA 240-R-02-004, Office of Environmental Information, 2002.

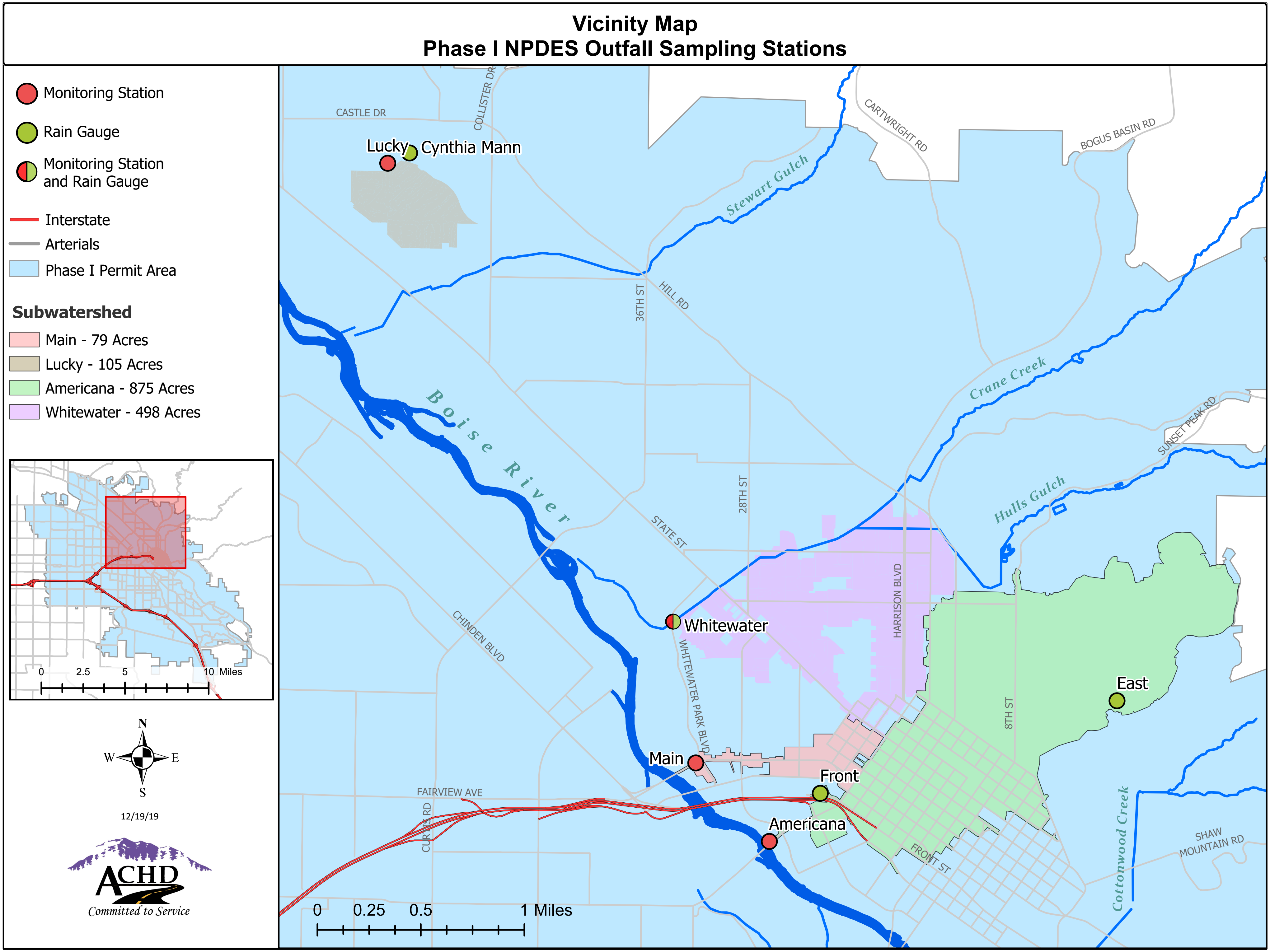
———, Guidance on Systematic Planning Using the Data Quality Objective Process, EPA Bulletin # EPA 240-B-06-001, 2006.

———, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Analysis and Sampling Procedures; Final Rule, Federal Register Vol. 77 No. 97. 40 CFR Parts 136, 260, et al., 2022.

Seveno, DataSight Users Manual, Version 3.10.4, 2022.

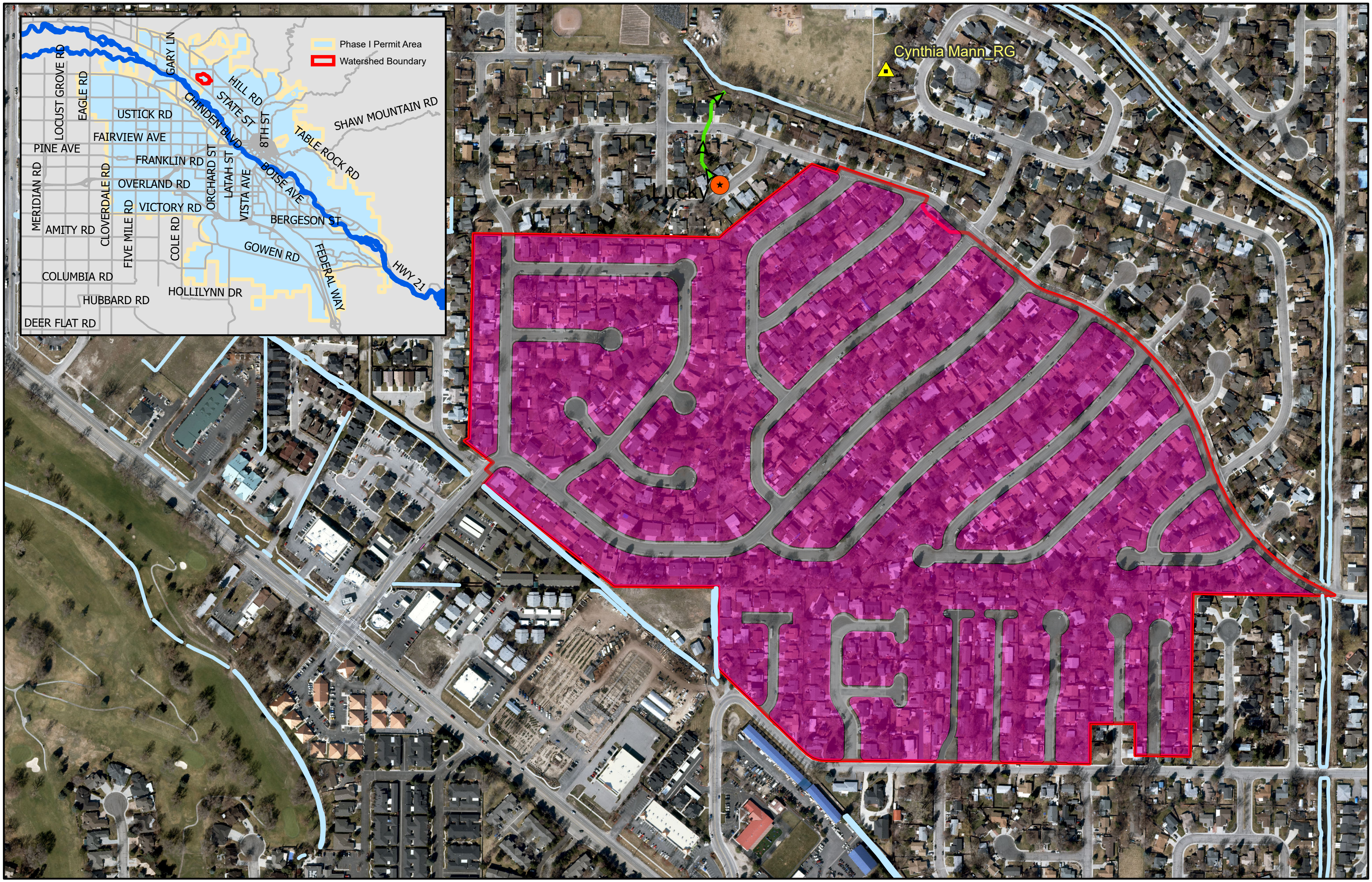
Figures

Figure 1



Vicinity Map
Phase I NPDES Outfall Sampling Stations
Monitoring Station
Rain Gauge
Monitoring Station and Rain Gauge
Interstate
Arterials
Phase I Permit Area
Subwatershed
Main - 79 Acres
Lucky - 105 Acres
Americana - 875 Acres
Whitewater - 498 Acres
0 2.5 5 10 Miles
N
W
E
S
12/19/19
ACHD
Committed to Service
CASTLE DR
COLLISTER DR
Lucky
Cynthia Mann
Stewart Gulch
CARTWRIGHT RD
BOGUS BASIN RD
HILL RD
36TH ST
Boise River
Crane Creek
SUNSET PEAK RD
Hulls Gulch
28TH ST
STATE ST
HARRISON BLVD
Whitewater
CHINDEN BLVD
WHITEWATER PARK BLVD
East
8TH ST
Main
Front
FAIRVIEW AVE
CURTIS RD
Americana
FRONT ST
Cottonwood Creek
SHAW MOUNTAIN RD
0 0.25 0.5 1 Miles

Figure 2



Lucky Monitoring Station
105 Acres
40% Impervious

Land Use Percentages (percent impervious in parentheses)

Right of Way - 22% (83%)

Residential Medium - 78% (23%)

source: 2013 Urban Tree Canopy Analysis, modified in 2014 based on 2013 aerial photography

Outfall Sampling Stations

Rain Gauges

Canals/Waterways

Watershed Boundary

Outfall Conveyance

Date: 7/15/2021

N

ACHD
Committed to Service

0 390 780 Feet

File Location: \\APPWSUS\ACHDFiles\Groups\DVS\STORMWATER\Maps\Phase I Monitoring\Lucky

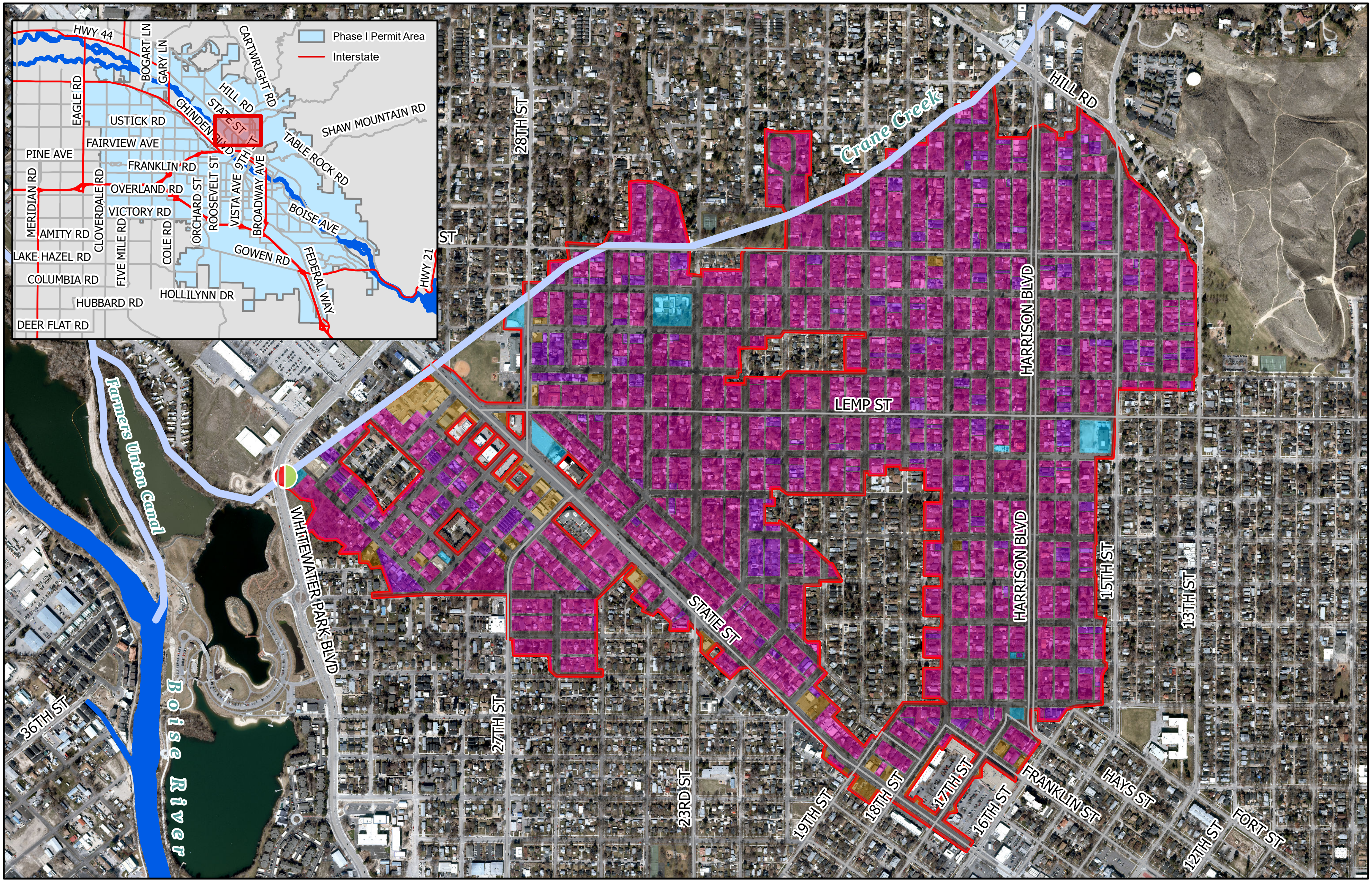
Figure 3

Lucky Monitoring Station

Station setting looking northwest – equipment in manhole

Inside manhole

Figure 4



Whitewater Monitoring Station
498 Acres
43% Impervious

Land Use Percentages (percent impervious in parentheses)

- Right of Way - 36% (70%)
- Commercial - 4% (41%)
- Residential Medium - 50% (25%)
- Residential High - 7% (31%)
- Public and Schools - 3% (51%)

- Monitoring Station and Rain Gauge
- Waterways
- Watershed Boundary

source: 2013 Urban Tree Canopy Analysis, modified in 2014 based on 2013 aerial photography

Date: 7/7/2021

0 750 1,500 Feet

ACHD Committed to Service

File Location: \\APPWSUS\ACHDFiles\Groups\DVS\STORMWATER\Maps\Phase I Monitoring\Whitewater

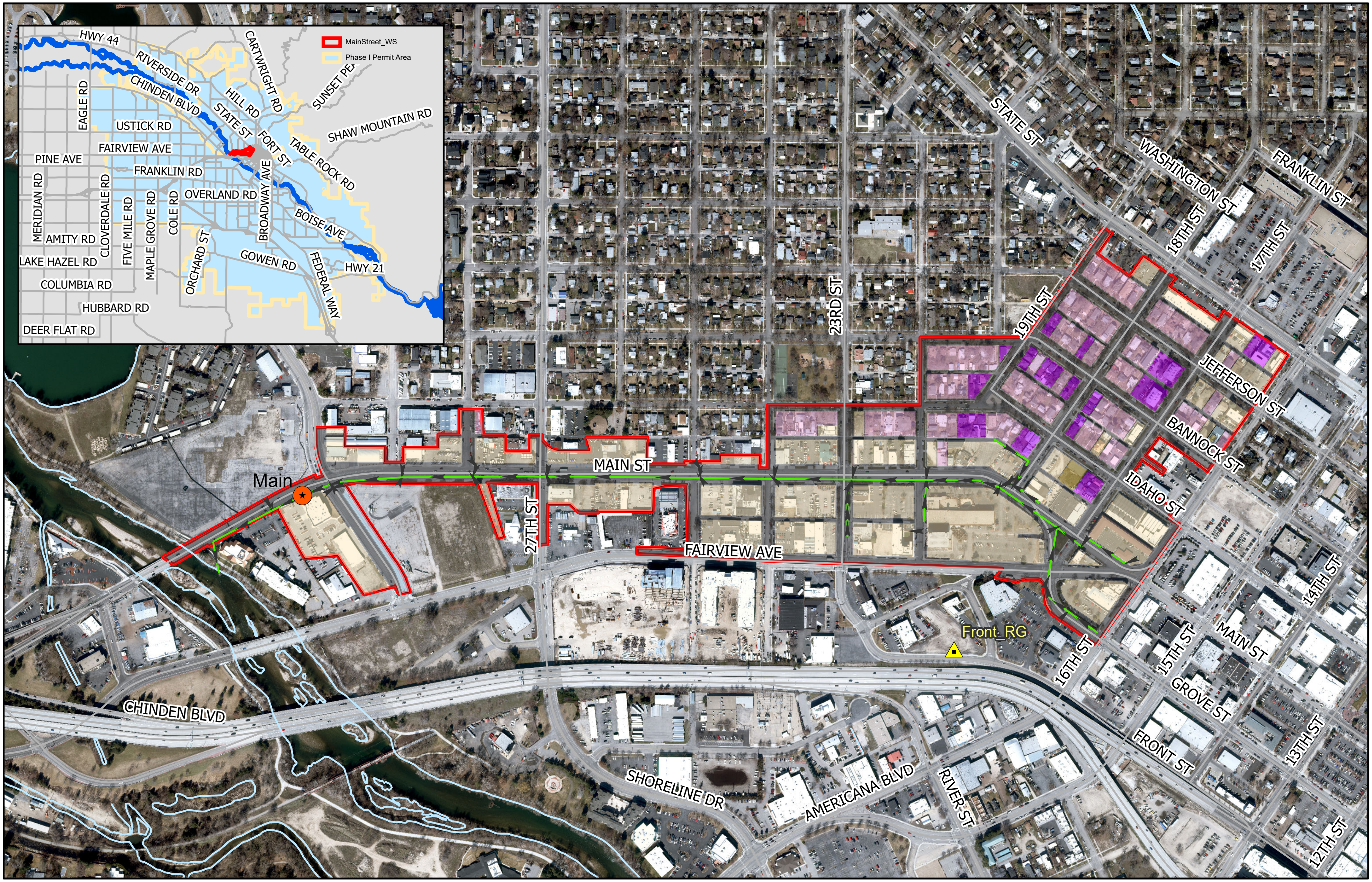
Figure 5

Whitewater Monitoring Station

Station setting looking north

Inside cabinet

Figure 6



Main Monitoring Station
79 Acres
55% Impervious

Land Use Percentages (percent impervious in parentheses)

- Right of Way - 43% (66%)
- Commercial - 37% (55%)
- Residential Medium - 14% (30%)
- Residential High - 5% (39%)
- Public - 1% (0%)

source: 2013 Urban Tree Canopy Analysis, modified in 2014 based on 2013 aerial photography

- Outfall Sampling Stations
- Rain Gauges
- Canals/Waterways
- Watershed Boundary
- Outfall Conveyance

Date: 7/15/2021

N

ACHD
Committed to Service

0 500 1,000 Feet

File Location: \\APPWSUS\ACHDFiles\Groups\DVS\STORMWATER\Maps\Phase I Monitoring\Main

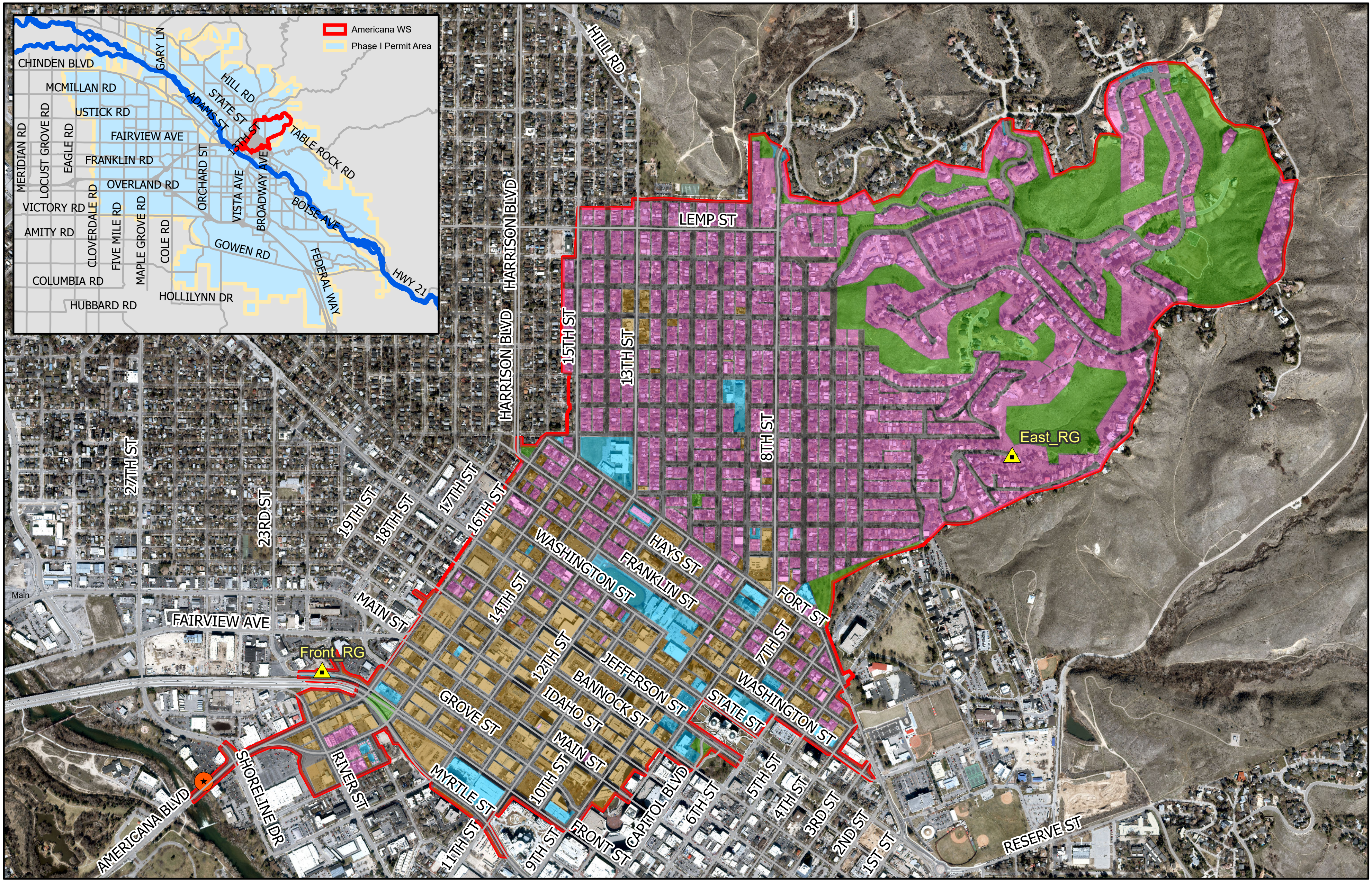
Figure 7

Main Monitoring Station

Station setting looking northwest

Inside cabinet

Figure 8



Americana Monitoring Station
875 Acres
39% Impervious

Land Use Percentages (percent impervious in parentheses)

- Right of Way - 30% (69%)
- Commercial - 13% (56%)
- Residential (Hi/Med/Low) 39% (23%)
- Parks and Open Space - 14% (2%)
- Public and Schools - 4% (45%)

source: 2013 Urban Tree Canopy Analysis, modified in 2014 based on 2013 aerial photography

- Outfall Sampling Stations
- Rain Gauges
- Canals/Waterways
- Watershed Boundary
- Outfall Conveyance

Date: 7/15/2021

N

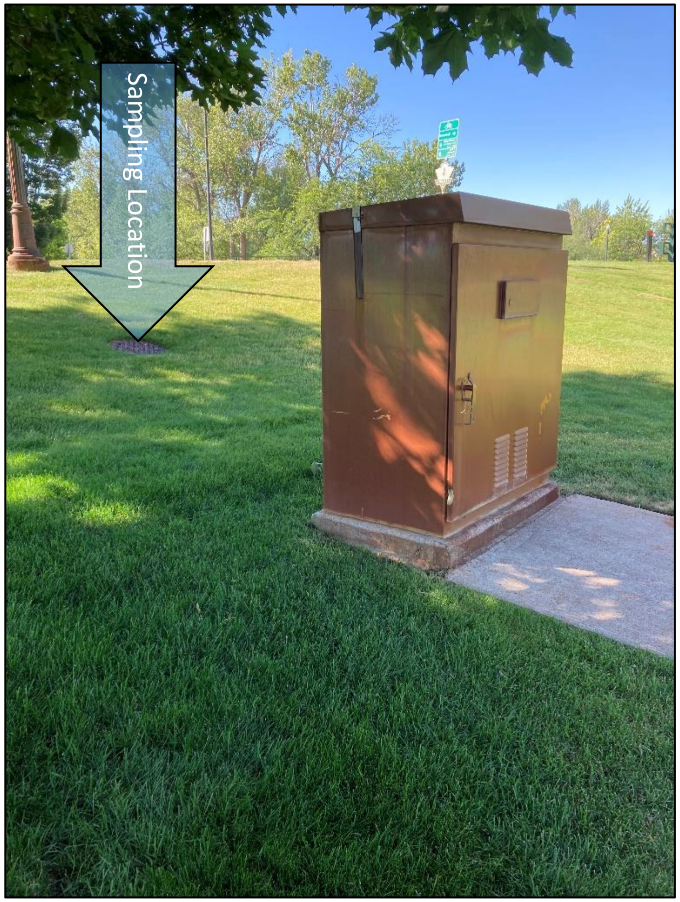
ACHD
Committed to Service

0 1,000 2,000 Feet

File Location:

Figure 9

Americana Monitoring Station



Station setting looking southwest

Inside cabinet

Figure 10

Phase I Rain Gauges

Cynthia Mann Rain Gauge

Front Rain Gauge

East Rain Gauge

Whitewater Rain Gauge

Appendix A: Standard Operating Procedure and Procedure Guidance Documents

The following Standard Operating Procedure (SOP) and Procedure Guidance (PG) documents will be referenced as needed to assist with implementation of the Stormwater Outfall Monitoring Plan. The SOPs and PGs listed below are readily accessible by ACHD and consultant personnel for use in the field or in the office to complete tasks associated with the acquisition and management of data under the ACHD Stormwater Outfall Monitoring Program.

SOP 110: Discrete grab sample collection

SOP 111: Low flow grab sample collection

SOP 112: Large volume grab sample

SOP 312a: YSI Model 85 dissolved oxygen and conductivity meter operation, calibration, and maintenance

SOP 312b: YSI Pro 2030 dissolved oxygen meter operation, calibration, and maintenance

SOP 313: Horiba pH meter operation, calibration, and maintenance

SOP 314: Gas detector operation

SOP 322: In-Situ multiparameter sonde calibration and maintenance

SOP 323: In-Situ multiparameter sonde operation

PG 210: Hach 950 flowmeter download using Insight software

PG 211: HOBO equipment download using HoboWare

PG 212: ISCO equipment data access and download

PG 214: Hach AS950 data download

PG 315: Hach equipment semi-annual maintenance

PG 319: Rain gauge inspection and maintenance

PG 324: ISCO equipment semi-annual maintenance

PG 512: Exporting data from Flowlink Pro

PG 530: Exporting data from HoboWare

PG 531: Importing and exporting from FSData

PG 532: Transferring from Flowlink LE to Flowlink Pro

PG 533: Importing data into DataSight

PG 534: QAQC Procedures in DataSight

PG 537: Exporting data from InSight to CSV file

Appendix B: Communication and Field Forms

Grab Sample Data Form

Composite Sample Collection Form

Set Up/Shut Down Form – ISCO

Set Up/Shut Down Form - HACH

Chain-of-Custody Form

Sampling Event Communication Form

Grab Sample Data Form

STATION: ________________________________

Personnel: ___________________________ **Date/Time On-Site:** __________________________

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	-WG			☐
Field Duplicate *E.Coli*	-101			☐
Field Blank *E.Coli*	-001			☐

*Note: time on bottle for QC samples is 1200

Field Parameters					
Meter number	Time	Temp (C)	D.O. (mg/L)	pH (S.U.)	SpCond (uS/cm)

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	

Comments:

Composite Sample Collection

STATION: ______________________________ **Bottle** _____ **of** ______

Personnel: ______________________________ **Date/Time On-Site:** ____________________________

☐ Halt Sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	-WC
Approx Sample Volume (mL):	
Clarity (ex. Clear, Cloudy, Silty):	
Color (ex. Clear, Gray, Tan, Brown, Black):	
QA/QC Sample ID:	-103 (Time: 1200)

Subsample Information					
Trigger #	Date/Time	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1			13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

If sampling is complete:
- ☐ Power off sampler
- ☐ Verify flowmeter is running
- ☐ Add ice to sample transport cooler
- ☐ Complete COC form; arrange transport to lab

If continuing sampling (sample bottle change-out):
- ☐ Keep flowmeter running
- ☐ Install new 15L bottle; add ice
- ☐ Restart program from beginning

Date/Time Restarted: ________________
- ☐ Verify running

Liquid Height vs. Approximate Sample Volume Conversion Chart									
Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume	Liquid Height	Sample Volume
0.5”	400 mL	**3.0”**	3500 mL	**5.5”**	7250 mL	**8.0”**	11000 mL	**10.5”**	14750 mL
1.0”	800 mL	**3.5”**	4250 mL	**6.0”**	8000 mL	**8.5”**	11750 mL	**11.0”**	15500 mL
1.5”	1400 mL	**4.0”**	5000 mL	**6.5”**	8750 mL	**9.0”**	12500 mL	**11.5”**	16250 mL
2.0”	2000 mL	**4.5”**	5750 mL	**7.0”**	9500 mL	**9.5”**	13250 mL	**After 12”**	1” = 1500 mL
2.5”	2750 mL	**5.0”**	6500 mL	**7.5”**	10250 mL	**10.0”**	14000 mL	**Lab min**	8,000 mL

Set Up/ Shut Down Form – ISCO

STATION: ________________________________

SET UP

Personnel: ______________________________

Date/Time
On-Site: _________________________________

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
	Downloaded to:			
	Enable Condition:			
	Flow Pulse Interval:			

On-Site	**Flowlink** (Refer to Flowlink Instructions, if needed)
☐ Replace flowmeter battery, install sampler battery ☐ Perform decon. cycle ☐ Install 15L sample bottle, with ice ☐ Leave bottle lid at site, in a clean re-sealable plastic bag ☐ Set Sampler program parameters ☐ Check date/time on Sampler ☐ Verify all cable and tubing connections ☐ Verify Sampler Program is running	☐ Direct or Remote; Date/time ____________________ ☐ Retrieve data and review recent flow history ☐ Change Wireless Power Control to Storm Event ☐ Change Data Storage Rates to 1 minute for Level, Velocity, Total Flow, and Flow Rate ☐ Enable Sampler: On Trigger, and set Sampler Enable equation ☐ Set Sampler Pacing to Flow Paced, and set trigger volume

Comments:

SHUT DOWN

Personnel: ______________________________

Date/Time
On-Site: _________________________________

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
	Downloaded to:			

On-Site	**Flowlink** (Refer to Flowlink Instructions, if needed)
☐ Replace flowmeter battery ☐ Remove battery from sampler	☐ Direct or Remote; Date/time ____________________ ☐ Retrieve data ☐ Change Wireless Power Control to Dry Weather ☐ Change Data Storage Rates to 15 minutes for Level, Velocity, Total Flow, and Flow Rate ☐ Enable Sampler: Never

Comments:

Set Up/ Shut Down Form – HACH

STATION: ______________________________

SET UP

Personnel: ___________________________

Date/Time
On-Site: _____________________________

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
	Downloaded to:			
	Velocity Cutoff:			
	Trigger Volume:			

- ☐ Download flowmeter, if program is running
- ☐ Install batteries on flowmeter and sampler
- ☐ Perform decon. cycle
- ☐ Install 15L sample bottle, with ice
- ☐ Leave bottle lid at site, in a clean re-sealable plastic bag
- ☐ Verify all cable and tubing connections
- ☐ Check date and time on flowmeter and sampler
- ☐ Set flowmeter program and sampler program parameters
- ☐ Set logging interval to 1 minute
- ☐ Start flowmeter program and sampler program
- ☐ Verify running

Comments:

SHUT DOWN

Personnel: ______________________

Date/Time
On-Site: ________________________

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
	Downloaded to:				

If flow monitoring is complete:	If continuing to monitor flow:
☐ Halt program on flowmeter	☐ Replace flowmeter battery
☐ Download flowmeter data	☐ Reset logging interval to 15 minutes
☐ Remove flowmeter battery	☐ Change velocity cutoff to 0.02 fps
	☐ Start program
	☐ Verify running

Comments:

Ada County Highway District

Attn: Tammy Lightle
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6255
Fax (208) 387–6391

Purchase Order: 63058181
Project: Stormwater-PI
Sampler(s):

							Matrix	Type																	
Lab#	**Begin Date**	**End Date**	**Begin Time**	**End Time**	**Sample Identification**	**Sampler Initials**	Water	Grab	Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 200.8	Total Hg - EPA 245.2	E. Coli - IDEXX Collilert	Turbidity - EPA 180.1	Hardness - EPA 200.7	NO_3+NO_2 - EPA 353.2	NH_3 - SM 4500 NH_3 - D	Total Containers

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:

SAMPLING EVENT COMMUNICATION FORM

Date: 5/12/2022	Time: 7:51 AM	Initials: TL

Is there a targeted sampling event during the next 36 hours? (Or, if it is Friday, is a targeted event expected before 5:00 PM Monday?)	No

Past 72 hr Precip	0.10”
Date and time of expected event	
Expected amount of precipitation	
Percent chance of precipitation	
Percent chance of >0.10” over 12 hours	

NWS Update

Targeted Station & Samples

Lucky	Whitewater	Main	Americana	AS_6	State (Phase II)
☒ Grab	☐ Grab	☒ Grab	☐ Grab	☒ Grab	☐ Grab
☒ Composite	☒ Composite	☒ Composite	☒ Composite	☒ Composite	☐ Composite

Type of Forecasted Precipitation

☐ Light Rain ☐ Rain ☐ Rain on Snow
☐ Scattered Showers ☐ Thunder Showers ☐ Snowmelt
☐ Other:

Reasons for Not Targeting a Forecasted Storm and/or Stations

☐ Holiday
☒ Waiting on Antecedent Dry Period – Expires: 5/12 10:46 AM
☐ Equipment Concerns:
☐ Other:

Text Forecast

NWS Forecast for: Boise ID
Issued by: National Weather Service Boise, ID
Last Update: 4:55 am MDT May 12, 2022

Today: Partly sunny, with a high near 62. Light and variable wind.
Tonight: Showers likely, mainly after midnight. Mostly cloudy, with a low around 44. Southwest wind around 5 mph becoming calm in the evening. Chance of precipitation is 60%.
Friday: A 20 percent chance of showers before noon. Mostly cloudy, with a high near 63. Calm wind becoming west northwest 5 to 7 mph in the afternoon.
Friday Night: A 50 percent chance of showers after midnight. Mostly cloudy, with a low around 48. North northwest wind around 5 mph becoming calm in the evening.
Saturday: A 50 percent chance of showers, mainly before noon. Cloudy, with a high near 69. Calm wind.
Saturday Night: Partly cloudy, with a low around 49.
Sunday: Mostly sunny, with a high near 82.
Sunday Night: A 20 percent chance of showers and thunderstorms before midnight. Partly cloudy, with a low around 53.
Monday: Mostly sunny, with a high near 78.
Monday Night: Partly cloudy, with a low around 52.
Tuesday: Mostly sunny, with a high near 76.

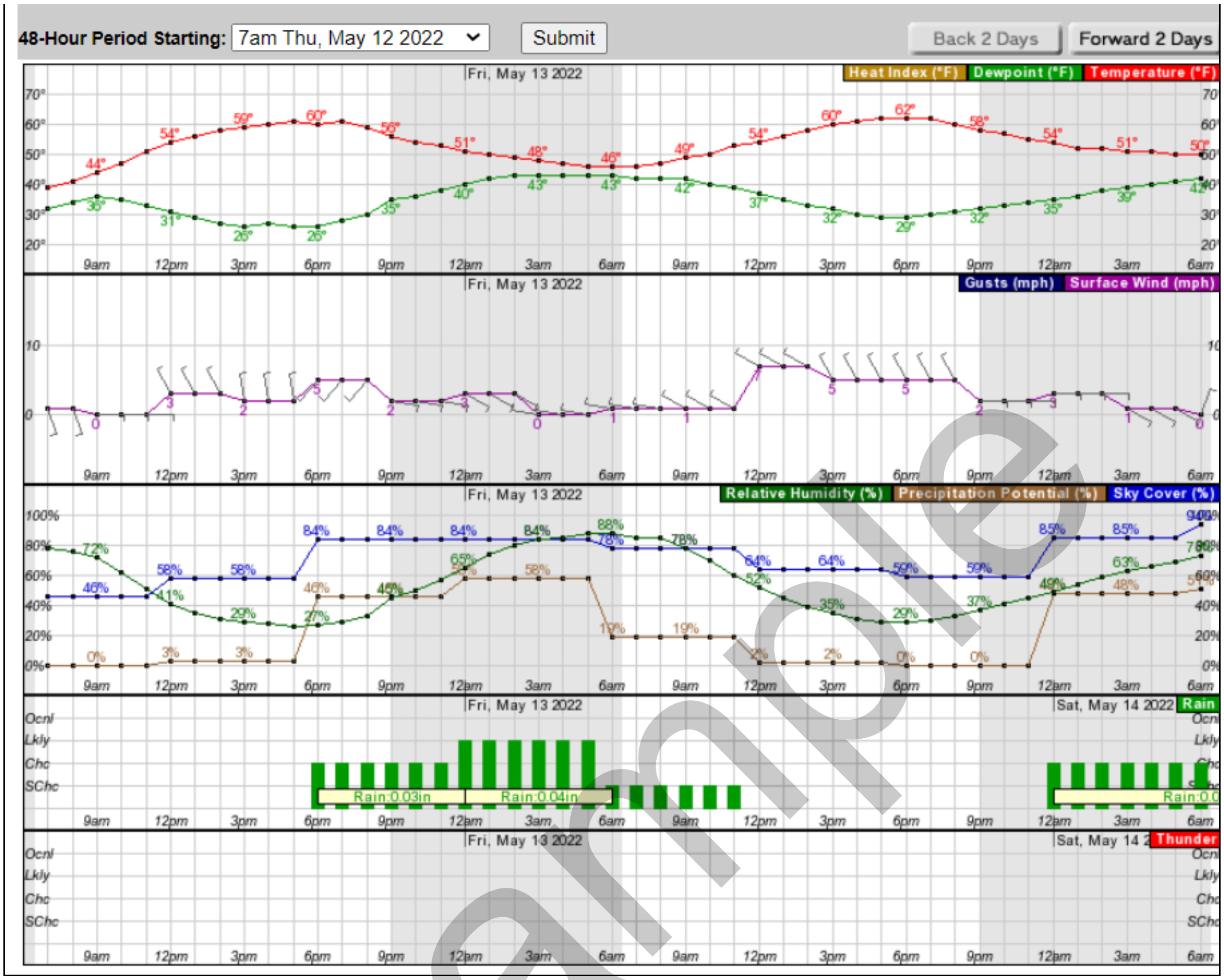
Tuesday Night: Partly cloudy, with a low around 47.
Wednesday: Partly sunny, with a high near 69.

Forecast Discussion
Area Forecast Discussion
National Weather Service Boise ID
342 AM MDT Thu May 12 2022

.SHORT TERM...Today through Saturday night...Zonal flow will continue mostly dry and mild conditions to the region through Thursday morning. **Precipitation ahead of a weaker upper level trough will move into** southeast Oregon on Thursday afternoon, and then into the **southwest Idaho on Thursday evening**. Isolated thunderstorms are expected in northwest Baker and Harney Counties in Oregon as this system pushes in on Thursday afternoon. Snow showers are expected above 5500 feet MSL, with snow amounts totaling 1-3 inches for higher elevations. Showers will linger in southwest Idaho through early Friday morning, but areas south of the Owyhee Mountains are expected to stay dry through this event. **Another push of moisture ahead of a weak shortwave trough will move into** Baker County, OR, the West Central Mountains, and **Upper Treasure Valley on Friday evening, bringing light rain and snow showers to the northern half of our region.** Snow levels will elevate to 6500-7500 feet MSL overnight on Friday, bringing snow mainly to the high peaks. Thunderstorms are also possible on Saturday afternoon in the northern reaches of our CWA with this second system. A ridge will build into the region on Saturday night, bringing dry and mostly clear conditions overnight. Temperatures will remain 5-10 degrees below normal through Friday night, but ridging from our southwest will warm temperatures to near normal on Saturday.

.LONG TERM...Much warmer Sunday after passage of a warm front Saturday night. Pacific cold front late Sunday and Sunday evening will bring showers and (possibly strong) thunderstorms mainly to northern areas, gusty winds, and cooler temps. Clearing and cooler Monday morning but a second, weaker cold front will bring another chance of showers and thunderstorms to Baker County and the mountains in Idaho later Monday and Monday evening. Partly cloudy, windy, and cool Tuesday under strong westerly flow aloft, with a slight chance of rain and high-mountain snow showers in the Idaho central mountains. Next Pacific cold front Wednesday with showers and thunderstorms (mainly north), gusty winds, and further cooling, then showery in all areas Thursday with snow in the mountains and even cooler temps as the upper trough passes through.

Hourly Forecast


48-Hour Period Starting: 7am Thu, May 12 2022
Submit
Back 2 Days
Forward 2 Days
Fri, May 13 2022
Heat Index (°F)
Dewpoint (°F)
Temperature (°F)
Gusts (mph)
Surface Wind (mph)
Relative Humidity (%)
Precipitation Potential (%)
Sky Cover (%)
Sat, May 14 2022
Rain
Rain:0.03in
Rain:0.04in
Thunder
Ocnl
Lkly
Chc
SChc
9am
12pm
3pm
6pm
9pm
12am
3am
6am

Appendix C: Full QA/QC Sampling Schedule

Phase I QC Sample[1,2] Schedule for WY22

Site Name	Assigned #
Lucky	1
Whitewater	2
Main	3
Americana	4
AS_6	5

Wet Grab Sample Schedule						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Plan	Main	Main	Lucky	Main	Lucky	Lucky
Alt 1	AS_6	Americana	AS_6	AS_6	Whitewater	AS_6
Alt 2	Whitewater	Lucky	Whitewater	Whitewater	Main	Americana
Alt 3	Americana	AS_6	Americana	Lucky	Americana	Whitewater

Composite Duplicate Schedule[3]	
Plan	AS_6
Alt 1	Americana
Alt 2	Lucky
Alt 3	Whitewater

Composite Field Blank Schedule	
Plan	Main
Alt 1	Whitewater
Alt 2	Lucky
Alt 3	AS_6

Equipment Blank Schedule[4]	
Collect in Fall 2021, for WY22	
Plan	Main
Alt 1	Whitewater
Alt 2	Lucky
Alt 3	Americana

Rinsate Blank Schedule[4]	
Collect in Fall 2021, for WY22	
Plan	Main
Alt 1	Whitewater
Alt 2	AS_6
Alt 3	Americana

Notes:
[1] Grab QC samples will be analyzed for grab sample constituents. Composite QC samples will be analyzed for composite sample constituents.
[2] The first site listed is the planned QC site. The next three sites are the alternate sites and are prioritized in the order listed.
[3] The composite sample duplicate will be collected at the earliest opportunity and is contingent upon sample volumes.
[4] Blanks will be collected during monitoring station maintenance events and will be analyzed for composite sampling constituents.

Phase I QC Sample[1,2] Schedule for WY23

Site Name	Assigned #
Lucky	1
Whitewater	2
Main	3
Americana	4
AS_6	5

Wet Grab Sample Schedule						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Plan	Lucky	Main	AS_6	Lucky	Lucky	Main
Alt 1	Americana	Lucky	Whitewater	AS_6	Main	AS_6
Alt 2	Whitewater	AS_6	Main	Whitewater	AS_6	Lucky
Alt 3	AS_6	Americana	Lucky	Main	Whitewater	Whitewater

Composite Duplicate Schedule[3]	
Plan	Whitewater
Alt 1	Main
Alt 2	AS_6
Alt 3	Americana

Composite Field Blank Schedule	
Plan	AS_6
Alt 1	Main
Alt 2	Lucky
Alt 3	Americana

Equipment Blank Schedule[4]	
Collect in Fall 2022, for WY23	
Plan	AS_6
Alt 1	Americana
Alt 2	Main
Alt 3	Lucky

Rinsate Blank Schedule[4]	
Collect in Fall 2022, for WY23	
Plan	AS_6
Alt 1	Lucky
Alt 2	Americana
Alt 3	Main

Notes:
[1] Grab QC samples will be analyzed for grab sample constituents. Composite QC samples will be analyzed for composite sample constituents.
[2] The first site listed is the planned QC site. The next three sites are the alternate sites and are prioritized in the order listed.
[3] The composite sample duplicate will be collected at the earliest opportunity and is contingent upon sample volumes.
[4] Blanks will be collected during monitoring station maintenance events and will be analyzed for composite sampling constituents.

Phase I QC Sample[1,2] Schedule for WY24

Site Name	Assigned #
Lucky	1
Whitewater	2
Main	3
Americana	4
AS_6	5

Wet Grab Sample Schedule						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Plan	AS_6	Americana	Lucky	Main	Whitewater	Main
Alt 1	Lucky	AS_6	Main	Whitewater	Main	Americana
Alt 2	Americana	Whitewater	Whitewater	Lucky	AS_6	Lucky
Alt 3	Main	Main	Americana	AS_6	Americana	AS_6

Composite Duplicate Schedule[3]	
Plan	Americana
Alt 1	Main
Alt 2	Whitewater
Alt 3	Lucky

Composite Field Blank Schedule	
Plan	Lucky
Alt 1	AS_6
Alt 2	Americana
Alt 3	Main

Equipment Blank Schedule[4]	
Collect in Fall 2023, for WY24	
Plan	Main
Alt 1	Whitewater
Alt 2	AS_6
Alt 3	Americana

Rinsate Blank Schedule[4]	
Collect in Fall 2023, for WY24	
Plan	Americana
Alt 1	Whitewater
Alt 2	AS_6
Alt 3	Main

Notes:
[1] Grab QC samples will be analyzed for grab sample constituents. Composite QC samples will be analyzed for composite sample constituents.
[2] The first site listed is the planned QC site. The next three sites are the alternate sites and are prioritized in the order listed.
[3] The composite sample duplicate will be collected at the earliest opportunity and is contingent upon sample volumes.
[4] Blanks will be collected during monitoring station maintenance events and will be analyzed for composite sampling constituents.

Phase I QC Sample[1,2] Schedule for WY25

Site Name	Assigned #
Lucky	1
Whitewater	2
Main	3
Americana	4
AS_6	5

Wet Grab Sample Schedule						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Plan	Americana	AS_6	Whitewater	Main	AS_6	AS_6
Alt 1	Main	Main	Main	Lucky	Whitewater	Americana
Alt 2	AS_6	Americana	Lucky	Whitewater	Lucky	Lucky
Alt 3	Whitewater	Whitewater	Americana	Americana	Main	Whitewater

Composite Duplicate Schedule[3]	
Plan	Lucky
Alt 1	Whitewater
Alt 2	Americana
Alt 3	AS_6

Composite Field Blank Schedule	
Plan	AS_6
Alt 1	Main
Alt 2	Americana
Alt 3	Lucky

Equipment Blank Schedule[4]	
Collect in Fall 2024, for WY25	
Plan	AS_6
Alt 1	Lucky
Alt 2	Americana
Alt 3	Whitewater

Rinsate Blank Schedule[4]	
Collect in Fall 2024, for WY25	
Plan	Americana
Alt 1	Lucky
Alt 2	Main
Alt 3	Whitewater

Notes:
[1] Grab QC samples will be analyzed for grab sample constituents. Composite QC samples will be analyzed for composite sample constituents.
[2] The first site listed is the planned QC site. The next three sites are the alternate sites and are prioritized in the order listed.
[3] The composite sample duplicate will be collected at the earliest opportunity and is contingent upon sample volumes.
[4] Blanks will be collected during monitoring station maintenance events and will be analyzed for composite sampling constituents.

Phase I QC Sample[1,2] Schedule for WY26

Site Name	Assigned #
Lucky	1
Whitewater	2
Main	3
Americana	4
AS_6	5

Wet Grab Sample Schedule						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Plan	Whitewater	Main	Lucky	Lucky	Main	AS_6
Alt 1	AS_6	AS_6	Americana	Americana	Lucky	Whitewater
Alt 2	Americana	Lucky	AS_6	Whitewater	Americana	Main
Alt 3	Main	Americana	Main	Main	Whitewater	Lucky

Composite Duplicate Schedule[3]	
Plan	AS_6
Alt 1	Whitewater
Alt 2	Lucky
Alt 3	Main

Composite Field Blank Schedule	
Plan	Whitewater
Alt 1	Main
Alt 2	AS_6
Alt 3	Americana

Equipment Blank Schedule[4]	
Collect in Fall 2025, for WY26	
Plan	AS_6
Alt 1	Lucky
Alt 2	Main
Alt 3	Americana

Rinsate Blank Schedule[4]	
Collect in Fall 2025, for WY26	
Plan	Lucky
Alt 1	Whitewater
Alt 2	Americana
Alt 3	Main

Notes:
[1] Grab QC samples will be analyzed for grab sample constituents. Composite QC samples will be analyzed for composite sample constituents.
[2] The first site listed is the planned QC site. The next three sites are the alternate sites and are prioritized in the order listed.
[3] The composite sample duplicate will be collected at the earliest opportunity and is contingent upon sample volumes.
[4] Blanks will be collected during monitoring station maintenance events and will be analyzed for composite sampling constituents.

2024 Attachment K - Ada County Drainage District No. 3 SWMP

Ada County Drainage District No. 3

Stormwater Management Plan

NPDES Permit #IDS-027561

OCTOBER 2022

TABLE OF CONTENTS

Appendices

A. Intergovernmental Agreements between NPDES Permittees
  1. Amended and Restated Intergovernmental Agreement for Roles and Responsibilities under the National Pollutant Discharge Elimination System Permit (NPDES Permit No. IDS-027561)
  2. Amended and Restated Operating Guidelines

B. Drainage District No. 3 MS4 Maps
  1. Maps 1 – 19

C. Operation and Maintenance System Plan and BMPs

ACRONYMS

The following acronym list is provided as a comprehensive resource for those reading the Drainage District #3 Stormwater Management Plan.

ACHD	Ada County Highway District
BMP	Best Management Practices
CWA	Clean Water Act
DD3	Ada County Drainage District No. 3
DWOS	Dry Weather Outfall Screening
EPA	Environmental Protection Agency
ERP	Enforcement Response Policy
IDEQ	Idaho Department of Environmental Quality
LID	Low Impact Development
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
SWMP	Stormwater Management Plan
SWPP	Stormwater Pollution Prevention Plan

INTRODUCTION

Ada County Drainage District No. 3's (DD3) Stormwater Management Program (SWMP) Document is a comprehensive program plan designed to reduce the discharge of pollutants from DD3's Municipal Separate Storm Sewer System (MS4) to the Maximum Extent Practicable (MEP). The goal of the program is to restore and protect the quality of the Boise River and its tributaries. The SWMP includes control measures, Best Management Practices (BMPs), storm water drainage system design, a current narrative physical description of the DD3's MS4, illustrative maps and graphics, citations to related ordinances, policies, and activities within DD3's jurisdiction, and engineering methods to control and minimize the discharge of pollutants from the MS4 system. DD3 adopted the original SWMP Document in January 2014. Pursuant to the issuance of DD3's October 1, 2021, National Pollutant Discharge Elimination System (NPDES) Permit No. IDS027561, this SWMP was updated and amended in October 2022.

1. APPLICABILITY

DD3 is authorized with other Boise metropolitan area jurisdictions to discharge storm water to the Boise River and its tributaries under the NPDES, in compliance with the Clean Water Act (CWA). In addition to DD3, the NPDES Permit No. IDS-027561 authorizes the following Permittees to discharge from MS4 outfalls: Ada County Highway District (ACHD), the city of Boise City, Garden City, Boise State University, and Idaho Transportation Department District #3 (collectively the Permittees). The latest NPDES permit (Permit) became effective on October 1, 2021, and includes MS4 program requirements to be implemented incrementally.

This program document describes the SWMP as prescribed by the Permit including: the

MS4 facilities and outfalls DD3 owns and operates, the control measures and program activities implemented to reduce the discharge of pollutants to the Boise River, related regulatory controls, and DD3's participation and cooperation with other Permittees to ensure compliance with the conditions of the Permit. DD3's roles and responsibilities under the Permit have been established in an Intergovernmental Agreement between the Permittees (Appendix A).

2. LIMITATIONS AND CONDITIONS

2.1 Compliance with Water Quality Standards

It is presumed that should DD3 and the other Permittees comply with the terms and conditions of this Permit, they are not causing or contributing to an excursion above the appliable Idaho Water Quality Standards.

2.2-2.4 Snow Disposal to Receiving Waters; Stormwater Discharges Associated with Industrial or Construction Activity; Non-Stormwater Discharges

DD3 does not engage in snow plowing or snow removal within its district boundary. ACHD, or private entities, conducts all snow plowing within DD3's boundary. Likewise, DD3 does not control or operate any industrial activity within its boundary. All construction activity within DD3's boundary is under Boise City's jurisdiction and is governed by a drainage agreement with DD3, if applicable. DD3 takes all appropriate measures to prohibit non-stormwater discharge from the MS4, except where such discharges satisfy one of the conditions allowable in Part 2.4

2.5 Permittee Responsibilities

DD3 was established in the early 1920s through the statutory process prescribed in Chapter 29, Title 42, Idaho Code, and by court order. DD3 is governed by three appointed Commissioners, a part-time water supervisor (DD3 Supervisor), third party consulting engineer, and outside legal counsel. DD3 does not own or occupy any physical facilities for its administrative functions. DD3's function is to operate and maintain six drains serving the Southeast Boise area and portions of what is referred to as the First Bench. When most of Ada County was farmland, DD3 drained irrigated lands and helped remove irrigation runoff water. These six drains now provide drainage for the remaining irrigated lands, including discharge from several irrigation canals and storm water (as well as sprinkler drainage) from the commercial and residential developments throughout southeast Boise. These six drains drain into 4 outfalls as defined by the Permit. The six drains inter tie with several ACHD facilities and Boise City facilities. DD3 also maintains two pumps in the Apple Street / Bergeson Street area.

Except for the DD3 facilities, all other MS4 structures, facilities, and outfalls draining public streets and roadways within the DD3 boundary are owned and operated by ACHD. ACHD is responsible for management, maintenance, and monitoring of the MS4 as it relates to streets and roadways; DD3 is responsible for limiting the discharge of pollutants to the portion of the MS4 within DD3's boundaries and involving its six drains. The SWMP control measures are designed to accomplish this goal to the MEP. As noted in the Introduction, an Intergovernmental Agreement and Operating Guidelines (Appendix A) exists with ACHD and other Permittees to establish the roles and responsibilities of each entity under the Permit.

DD3, through its Supervisor, District Engineer (Quadrant Consulting), and through a contract with MSE (Millennium Science and Engineering), prepared a Book of Maps, which among other things identifies the location of the DD3 drains and discharges of those drains to either ACHD facilities, the Boise River, or irrigation facilities (See Appendix B). For those drains which are owned and operated by DD3, DD3 carries out regular inspections concerning their operation and discharges. Steps taken to evaluate discharges and other activities are described in the DD3 Operation and Maintenance System Plan and BMPs (Appendix C).

DD3 also has authority through the Intergovernmental Agreement to control pollutant discharges into and from its MS4. DD3 has the authority to prohibit discharge of pollutants to the MS4 by illicit connections and discharges to any of its drainage facilities primarily through recourse to civil proceedings and as generally authorized by Idaho Code § 42-2939 and any applicable drainage agreement. The function, powers, and authority are exercised by DD3, through its Board of Commissions, in the manner provided in the drainage district laws of the state. DD3 also has the vested power and authority to control the discharge to the MS4 of spills, dumping, or disposal of materials other than stormwater and irrigation runoff water as set forth above. DD3 has the authority to require compliance with conditions as granted by I.C. § 42-2939 as augmented by the intergovernmental agreement or drainage agreements. DD3 has the authority to carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and non-compliance with Permit conditions, including the prohibition of illicit discharges to the MS4.

DD3 has the power and authority to levy and make assessments upon lands within and benefitted by the drainage system constructed, maintained, and operated by DD3. Annually, DD3 makes an estimate of the costs of maintenance and operation of the drainage system and certifies the amount estimated upon the Ada County auditor. DD3 provides the total costs associated with SWMP implementation over the prior 12-month reporting period in each Annual Report.

BMPs are maintained by DD3 to protect and maintain the beneficial uses of the Boise River and to improve water quality to the extent practicable.

Pursuant to Part 2.5.5 of the Permit, the SWMP is available through DD3's publicly accessible website at: https://adacountydrainagedistrict3.org/ In addition this SWMP Document will be submitted with the Permit Renewal Application, pursuant to Part 2.5.5 of the Permit.

3. STORMWATER MANAGEMENT PROGRAM CONTROL MEASURES

This section describes the six minimum control measures that must be accomplished by DD3's SWMP Document according to Part 3 of the Permit. The six minimum control measures are:

1. Public Education and Outreach on Stormwater Impacts;
2. Illicit Discharge Detection and Elimination;
3. Construction Site Stormwater Runoff Control;
4. Post-Construction Stormwater Management for New Development and Redevelopment;
5. Stormwater Infrastructure and Street Management; and
6. Industrial and Commercial Stormwater Discharge Management.

For each required control measure for which DD3 is responsible, a description of existing activities that meet Permit requirements is provided as well as a schedule of implementation to be completed.

3.1 Public Education and Outreach on Stormwater Impacts

DD3 works with fellow Permittees to implement the requirements of the Permit regarding education, outreach, and public involvement. The Intergovernmental Agreement designates Boise City as the lead agency responsible for the Public Education Program. To assist with program support, DD3 commits funding for its share of the annual cost of the program administration and public education, which is determined during the annual budget meeting held every January.

Working together under the name Partners for Clean Water, the Permittees have developed a stormwater website to provide the general public and business members of the community with information regarding stormwater management, educational and volunteer opportunities, and to review the actions and activities completed annually by the Permittees to limit the discharge of pollutants discharged to the Boise River and its tributaries. This website can be found at: http://www.partnersforcleanwater.org/.

DD3 along with the other Permittees use the information gathered from the Partners for Clean Water programing to assess the understanding of the educational materials and messaging to evaluate adoption of appropriate behaviors by the general public and business members. Utilizing the Partners for Clean Water program allows DD3 and the other Permittees to track and maintain records of their education, outreach, and public involvement.

To complement the Partners for Clean Water education and outreach program, DD3 also maintains its publicly assessable website which provides the SWMP, implementation strategies, points of contact, and educational materials. The website also contains phone numbers and other information to report illicit discharges and other information. DD3's website also provides information regarding policies and procedures for construction projects located in or around DD3's facilities. In addition, the website provides applicable, public notice requirements for items which DD3 solicits input from the public. A public review and comment period of DD3's 2022 Stormwater Management Plan document has been provided. The website can be found at: http://www.adacountydrainagedistrict3.org/

3.1.1 Compliance Dates

Permit Requirement	Due Date
Must fully implement all required components described in Parts 3.1.2-3.1.8.	April 3, 2026

3.2 Illicit Discharge Detection and Elimination

An illicit discharge is any discharge that is not composed entirely of stormwater. Illicit discharges are prohibited in DD3's boundary by virtue of Boise City ordinance, and any illicit discharges or activities with the potential for illicit discharges are addressed accordingly and prohibited. In addition to routine stormwater inspections, illicit discharge surveillance is conducted by the DD3 supervisor while traveling along the drainage canals.

3.2.1 Compliance Dates

Permit Requirement	Due Date
Submit an electronic GIS version of the MS4 map and Outfall inventory to IDEQ.	April 3, 2026
Update existing illicit discharge management program to include the required components described in Parts 3.2.2 through 3.2.9	April 3, 2026

3.2.2 MS4 Map and Outfall Inventory.

DD3 maintains a map of its MS4 facility and all associated outfall locations under its operation and control. In addition, DD3 maintains an outfall and interconnection inventory to accompany the MS4 maps. This inventory identifies each outfall and interconnection discharging from DD3's MS4. The location of the outfall is recorded by latitude and longitude and physical condition. The MS4 map and outfall inventory contains the requirements as specified in Part 3.2.2 of the Permit. This inventory allows, DD3 to track its outfall inspections, dry weather screenings, maintenance, and other activities required by the Permit. An electronic GIS version of the MS4 map, and the outfall inventory is currently being developed by DD3 and will be available on DD3's publicly accessible website when developed.

3.2.3 Ordinance and/or Other Regulatory Mechanism

DD3 has the authority to prohibit non-stormwater discharges to the MS4 through inspection activities for those projects under an approved drainage agreement. DD3 relies upon those certain manuals and standards adopted by either ACHD or Boise City as it relates to regulation and enforcement of non-stormwater discharges into the MS4. Unless a development is covered under a drainage agreement with DD3, DD3 lacks legal authority to enforce certain standards and requirements. Under standard drainage agreements, DD3 incorporates the appropriate Boise City and/or ACHD standards. In addition, DD3 has implemented an enforcement procedure and action plan, which includes a written policy of enforcement escalation procedures for recalcitrant or repeat offenders as included in its Operation and Maintenance Plan and BMPs.

3.2.4 Illicit Discharge Complaint Report and Response Program.

In cooperation with the other Permittees, DD3 participates in the Stormwater Pollution Prevention Hotline ("Hotline") program that was established to allow citizens to call in illicit discharges or spills to the MS4 in the greater Boise area. The Hotline number, (208) 395-8888, is provided on stormwater educational handouts, can be reached via an operator or Ada County Dispatch, and is also provided on the websites for Boise, ACHD, Garden City, and the IDEQ. DD3 staff may also receive complaints or reports of illicit discharges. Additionally, during stormwater inspections, the DD3 Supervisor encourages contact with DD3 if any illicit discharges, spills, or other conditions which may represent a pollutant source are observed. DD3 informs ACHD or Boise City of all complaints or reports of illicit discharges. DD3 can be reached directly at (208) 602-1713.

At the end of each year, a report is generated listing all illicit discharge investigations, corrective actions taken, and the location of the incident. Using this data, DD3 may identify priority areas requiring increased surveillance and/or inspections.

3.2.5 Dry Weather Outfall Screening Program.

ACHD has implemented a Dry Weather Outfall Screening (DWOS) Plan. The DWOS Plan provides guidance for field reconnaissance activities, monitoring, and recordkeeping efforts performed by ACHD. The DWOS Plan outlines how chemical and microbiological field screening analysis will be conducted. DD3, through ACHD, conducts visual dry weather screening of at least 20% of their total outfalls per year. Such screening occurs within June 1 and September 30 timeframe. ACHD keeps a detailed record of its dry weather screening program activities, and the summary of these results are provided in the Annual Report each year.

3.2.6 Follow-Up

Within 30 days of detection, ACHD or DD3 investigate reoccurring illicit discharges identified as a result of complaints or by the dry weather screening investigations and sampling. DD3 and ACHD take necessary action to attempt to eliminate the source of an ongoing illicit discharge within sixty (60) days of its detection.

3.2.7 Prevention and Response to Spills to the MS4

DD3 relies on ACHD and Boise City to provide guidance in appropriately and safely responding to hazardous and non-hazardous spills. Illicit discharge and spill training for inspectors, field staff, and code enforcement officers is to be provided annually through ACHD and Boise City. If the spill is a known non-hazardous or non-toxic substance, DD3 takes steps to prevent the spill from entering the MS4 using absorbent spill tubes and mats, floor dry, and any other appropriate means. The agency responsible for spill cleanup will be notified immediately. If the spill is an unknown material or hazardous material, DD3 will immediately contact 911 and other responsible agencies to report the spill. DD3 will use the USDOT Emergency Response Guidebook to effectively identify hazards to adequately report spill conditions to hazardous spill responders. The Ada County Hazardous Materials/Radiological Incident Contingency Plan is the cooperative agreement that identifies the roles and responsibilities for hazardous spill response in Ada County.

3.2.8 Proper Disposal of Used Oil and Toxic Materials

DD3 coordinates with appropriate local entities to educate its employees and members of the public of the proper management, disposal, or recycling of used oil, vehicle fluids, toxic materials, and other household hazardous wastes.

3.2.9 Illicit Discharge Detection and Elimination Training of Staff.

DD3 ensures that any construction inspectors, maintenance field staff, and operators are sufficiently trained to respond to reports of illicit discharges. Within the first six (6) months of employment, DD3 provides orientation and training for new staff working on illicit discharge detection and elimination issues. At least once a year the DD3 supervisor and DD3 engineer attends relevant and appropriate training through in-person or online courses. DD3 staff attends and participates in stormwater management training events provided by Boise City, IDEQ, and EPA when offered locally and as appropriate.

3.3 Construction Site Stormwater Runoff Control

Construction site runoff is primarily the responsibility of either ACHD or Boise City as all construction occurring on or near DD3's MS4 is within the jurisdiction of either authority. When a development is planned near or adjacent to DD3's MS4 drainage facilities, DD3 requires the developer to enter into a drainage agreement with DD3 outlining the requirements for construction as it relates to relocation or disturbance of DD3's drainage facilities. DD3 utilizes these drainage agreements with developers to reduce discharge of pollutants from public and private construction activity occurring in or around its MS4.

3.3.1 Compliance Dates

Permit Requirement	**Due Date**
Must ensure that existing construction site runoff control requirements are updated.	April 3, 2026
Maintain and implement a written escalating enforcement response policy (ERP).	April 3, 2026

3.3.2 Ordinance and/or Regulatory Mechanism

Through Boise City and ACHD code requirements, new development and redevelopment in the DD3 boundaries are required to be designed to manage storm water runoff and include permanent controls to protect water quality and restrict discharges to surface waters of the MS4. In general, the rate of storm water runoff from any proposed land development is not permitted to exceed the runoff rate prior to the development regardless of the storm event evaluated. DD3 through its drainage agreements with developers, requires erosion controls, sediment controls, and waste management controls to be used and maintained at the construction project site. Boise City requires construction site operators to maintain effective controls to reduce pollutants in stormwater discharges to the MS4 from construction sites. DD3 also conducts onsite inspections on development projects in which a drainage agreement has been executed between the developer and DD3. Boise City must require the developer or project site operators to obtain NPDES permit coverage under the current version of the Idaho CGP.

3.3.3 Construction Site Runoff Control Specifications

ACHD and Boise City maintain written specifications that address the proper installation and maintenance of erosion, sediment, and waste material management controls during all phases of construction activity occurring in their jurisdiction. The requirements of these construction site runoff control specifications consist of the requirements in Part 3.3.3.1 through 3.3.3.3.

3.3.4 Preconstruction Site Plan Review

ACHD and Boise City review and approve preconstruction site plans, as applicable within their jurisdiction and the DD3 boundary. These procedures include consideration of the site's potential water quality impacts and must demonstrate compliance with the regulatory mechanisms required by Part 3.1.2 of the Permit. In circumstances where a drainage agreement is required with the developer, DD3 performs preconstruction inspections to ensure that the site plan or Stormwater Pollution Prevention Plan (SWPPP) contains site-specific measures that meet the required specifications.

3.3.5 Construction Site Inspection and Enforcement

ACHD, Boise City, and DD3, when applicable, inspect construction sites in their jurisdiction to ensure compliance with the applicable requirements of Part 3.3.5. ACHD, Boise City and DD3, when applicable, will summarize the nature and number of site inspections, follow-up actions, and any subsequent enforcement actions conducted during the relevant reporting period in its Annual Report. All construction site inspections conducted by the Permittee having jurisdiction, will included all those requirements specified in Part 3.3.5.1 through 3.3.5.6

3.3.6 Enforcement Response Policy for Construction Site Runoff Control

ACHD, Boise City, and DD3, as applicable, within each agency's jurisdiction, maintains a written escalating enforcement response policy (ERP). This ERP for construction site runoff control will be submitted with the Permit Renewal Application. The applicable ERP contains the response to violations with appropriate educational and enforcement, and the requirements of Part 3.3.6.1 and 3.3.6.2. In the event the DD3 Supervisor observes a problem at a construction site, the DD3 Supervisor will advise and notify either ACHD or Boise City.

3.3.7 Construction Runoff Control Training for Staff

DD3 works together with all Permittees as a member of Partners for Clean Water to provide stormwater management education and training opportunities to regional developers, staff, and appropriate audiences. Boise City is the lead agency for public education and outreach. DD3 helps by providing funding and planning support for program activities. Among the various outreach activities are annual training conferences regarding permanent stormwater controls and LID techniques. In addition to Boise City's outreach program, DD3 uses the drainage design reviews, onsite inspections, and distributes educational materials to interact with and educate persons on the proper management of stormwater runoff and maintenance of permanent controls on construction sites.

DD3 staff and counsel attend and participate in stormwater management training events provided by Boise City, IDEQ, and EPA when offered locally. The training curriculum typically covers stormwater design, drainage plan review, and inspection procedures to determine the adequacy of stormwater management practices and treatment controls at new and existing DD3 developments.

3.4 Post-Construction Stormwater Management for New Development and Redevelopment

ACHD and Boise City implement and enforce a program to control stormwater runoff from new development and redevelopment projects within their respective jurisdictions. Any new development and redevelopment within the jurisdiction of DD3 is governed by Boise City Ordinance concerning management of stormwater runoff. DD3 typically participates in the land use review process through providing comment to Boise City.

3.4.1 Compliance Dates

Permit Requirement	**Due Date**
Must update existing controls to impose the required Stormwater Management Plan control measure components in Parts 3.4.2 through 3.4.7.	April 3, 2026
Submit current ordinance/regulatory mechanisms as part of the Permit Renewal Application.	April 3, 2026

3.4.2 Ordinance and/or Regulatory Mechanism

ACHD, Boise City, and DD3, based on jurisdiction, require the installation and long-term maintenance of permanent stormwater controls at new development and redevelopment project sites. Boise City maintains the Boise City Ordinance and regulatory mechanisms required by local and state law. The required stormwater controls are sufficient enough to retain onsite the volume produced from a 24-hour, 95th percentile storm event or to attain a pollutant removal level greater than pollutant removal expected from onsite retention of runoff volume produced from a 24-hour, 95th percentile storm event. In addition, these controls are intended to comply with the requirements of Part 3.4.2.1 through 3.4.2.5.

3.4.3 Permanent Stormwater Controls Specifications.

The applicable agency, ACHD, Boise City, or DD3 have specified the permanent stormwater controls for project sites and defined appropriate controls for different types and/or sizes of site development activity. The applicable Permittee maintains, and updates, written specifications to address proper design, installation, and maintenance of required permanent stormwater controls. DD3 adopts those specifications implemented by Boise City and ACHD. These specifications are intended to comply with the criteria of Part 3.4.3.1. through 3.4.3.3.

3.4.4. Permanent Stormwater Controls Plan Review and Approval.

Boise City, and DD3 if applicable, review and approve preconstruction plans for permanent stormwater controls at new development and redevelopment sties from new development and redevelopment projects that result in land disturbance of 5,000 square feet or more, excluding individual one or two-family dwelling development or redevelopment sites and the infill or redevelopment of public pedestrian infrastructure projects. These plan reviews will be conducted by Boise City staff or DD3's consultant engineer to ensure they meet the necessary controls.

3.4.5. Permanent Stormwater Controls Inspection and Enforcement

Boise City and ACHD provide inspection programs that prioritize new development and redevelopment sites for inspections of permanent stormwater management controls. At the end of each Permit year, Boise City and ACHD will review and evaluate information and data received throughout the year concerning development, construction, and implementation activities to determine compliance with Permit requirements. The information will also assist in the evaluation of the effectiveness of the DD3 programs and allocation of time and resources to assess whether changes to the program should be considered.

3.4.6 Operation and Maintenance of Permanent Stormwater Controls.

DD3 maintains a database of drainage agreements executed with developers, when necessitated by the type and location of the development. The drainage agreement includes the information related to permanent controls installed by the developer onsite as it relates to the DD3's MS4. The drainage agreements specify the developer is responsible for operation and maintenance of the MS4 system for the portion located on the development. Although permanent operation and maintenance responsibilities are the responsibility of the developer, DD3 continues to inspect these locations to ensure there is compliance with operation and maintenance requirements. If a drainage agreement does not exist with the developer due to the fact that DD3's MS4 is not impacted by the development, Boise City shall maintain such a database within DD3's boundaries for applicable projects.

3.4.7 Permanent Stormwater Controls Training for Staff

DD3 staff and counsel attend and participate in stormwater management training events provided by Boise City, IDEQ, and EPA when offered locally. The training curriculum typically covers stormwater design, drainage plan review, and inspection procedures to determine the adequacy of stormwater management practices and treatment controls at new and existing DD3 developments.

3.5 Stormwater Infrastructure and Street Management

The Intergovernmental Agreement identifies ACHD as the lead agency responsible for stormwater infrastructure and street management requirements under the Permit. DD3 manages its MS4 infrastructure and facilities to reduce the discharge of pollutants. Management includes an inspection of permanent stormwater controls and structures performing any maintenance or cleaning tasks and implementing stormwater pollution prevention BMPS.

3.5.1. Compliance Date

Permit Requirement	Due Date
ACHD stormwater infrastructure and street management program must include required SWMP control measure components.	April 3, 2026

3.5.2 Inspection and Cleaning of Catch Basins and Inlets

Major elements of the stormwater inspection of DD3 facilities include the following:

- ❖ Maintenance and condition of permanent stormwater control structures;
- ❖ Observation of drainage system design and cleanliness of impervious surfaces;
- ❖ Check for pollutant sources;
- ❖ Evaluate outdoor activities and stormwater BMPs that are implemented;
- ❖ Observe outdoor storage practices;
- ❖ Look for any non-stormwater discharges;
- ❖ Assess general compliance with stormwater regulations;
- ❖ Provide education and outreach through discussion and educational handouts; and
- ❖ Refer any enforcement actions to Boise City.

DD3 inspects all DD3's facilities at least once every two years, and during those inspections takes all necessary maintenance and cleaning action based on those inspections to ensure the catch basins and inlets continue to function as designed. Material removed from MS4 facilities are managed and disposed of according to Part 7.13. DD3 maintains an inspection and cleaning log which describes the inspection that occurred, the material that was removed/cleaned and the actions taken. All inspection reports and completed inspection forms are stored with the DD3 Supervisor. Each year, the number of stormwater inspections conducted, and any enforcement actions undertaken to ensure compliance are provided in the Annual Stormwater Report.

3.5.3 -3.5.5 Operation and Maintenance Procedures for Streets, Roads, Highways and Parking Lots; Inventory and Management of Street/Road Maintenance Materials, Street Road, Highway and Parking Lot Sweeping.

ACHD is responsible for operation and maintenance for the streets and roadways within DD3's boundary.

3.5.6-3.5.8 Operation & Maintenance Procedures for Other Municipal Areas and Activities, Requirements for Pesticide, Herbicide, and Fertilizer Applications, and Stormwater Pollution Prevention Plans (SWPPPs) for Permittee Storage Facilities.

DD3 does not have jurisdictional control of any municipal operation and maintenance activities within its boundary; this is the responsibility of Boise City. In addition, DD3 does not use or maintain any pesticides, herbicides, and fertilizers. DD3 does not own or maintain a material storage facility for its operations.

3.5.9 Litter Control

The Partners for Clean water work to implement solutions for litter and trash control. In addition, DD3 removes litter and trash from, in, and around its MS4 facilities whenever it sees such material present and during routine inspections.

3.5.10 Stormwater Pollution Prevention/Good Housekeeping Training for Staff.

DD3 staff and counsel attend and participate in stormwater infrastructure management and operation training events provided by Boise City, IDEQ, and EPA when offered locally. Such training is provided to new staff within six (6) months of employment. DD3 staff attend these training related to operation and maintenance of stormwater infrastructure at least every other year.

3.6 Industrial and Commercial Stormwater Discharge Management

Industrial and commercial operations within DD3's jurisdiction are observed for the purpose of reducing the discharge of pollutants. Boise City having jurisdiction of the industrial and commercial operations within DD3's boundaries, provides educational and/or enforcement efforts to reduce the discharge of pollutants from those industrial and commercial locations which highly contribute to the receiving waters.

3.6.1 Compliance Date

Permit Requirement	Due Date
Ensure that industrial and commercial stormwater management programs include required SWMP control measures.	April 3, 2026

3.6.2-3.6.3 Inventory of Industrial and Commercial Facilities/Activities; Inspection of Industrial and Commercial Facilities/Activities.

Boise City having jurisdiction over industrial and commercial facilities/activities within the DD3 boundaries, maintains an inventory of industrial and commercial facility/activity within DD3's boundary.

4. SPECIAL CONDITIONS

4.1 Temperature Monitoring

ACHD monitors the temperature in certain stormwater discharges from the MS4 facilities to the Boise River. DD3's outfalls will be monitored in accordance with ACHD methods and procedures for implementing this temperature monitoring requirement.

5. REQUIRED RESPONSE TO EXCURSIONS ABOVE IDAHO WATER QUALITY STANDARDS.

DD3 is presumed to be in compliance with applicable Idaho Water Quality Standards if it is in compliance with the terms and conditions of the Permit. If DD3 or IDEQ determines that the discharge from the MS4 causes or contributes to an excursion above the Idaho Water Quality Standards, then DD3 remains in compliance with the Permit as long as DD3 implements all applicable SWMP control measures required and complies with the procedure of Parts 5.1-5.6.

6. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

The Intergovernmental Agreement designates ACHD as the lead agency responsible for the implementation of the MS4 monitoring program. To assist with program support, DD3 commits funding for its share of the annual cost of the monitoring program, which is determined during the annual budget meeting held every January.

6.1 Compliance Evaluation

Once per year, ACHD evaluates its annual monitoring with the requirements of the Permit to ensure compliance. DD3 coordinates with ACHD to ensure progress toward implementation of SWMP control measures are occurring and that if any instances of improvement are identified in ACHD's monitoring, DD3 can respond accordingly. This yearly self-evaluation is documented through the Annual Report format.

6.2 Stormwater Monitoring and Evaluation Program.

Pursuant to the Intergovernmental Agreement, ACHD is responsible for conducting the wet weather monitoring and evaluation program. Through this wet weather monitoring and evaluation program, DD3 is able to evaluate the overall effectiveness of selected stormwater management practices. ACHD's program is intended to meet the quality assurance (QA) objectives in Part 6.2.6.

6.2.1 Wet Weather Stormwater Outfall Monitoring.

ACHD conducts wet weather stormwater outfall monitoring according to its updated Storm Water Outfall Monitoring Plan dated 2022. This updated Stormwater Outfall Monitoring Plan will be submitted as part of the Year 1 Annual Report required by Part 6.4.2. ACHD provides a report summarizing all data collected for the Permittees during the permit term as required by Part. 6.4.3.

6.2.2 Subwatershed Monitoring

ACHD continues to conduct monitoring in the Americana Subwatershed to better define wet weather and dry weather flow volumes, sources, and pollutant loads according to the Americana Subwatershed Monitoring Plan as updated December 28, 2020. ACHD provides a report summarizing all data collected during the permit term as required by Part 6.2.2.

6.2.3-6.2.5 Effectiveness Evaluation of Structural, Non-Structural, and/or Green Stormwater Infrastructure Controls; Representative Sampling; and Additional Monitoring.

As specified in the Intergovernmental Agreement, ACHD coordinates with Boise City to conduct effectiveness evaluations of at least two different types of structural, non-structural and/or green infrastructure stormwater management controls at new development or redevelopment sites. The results of this effectiveness evaluation, and any recommendations for improved treatment performance is submitted to IDEQ pursuant to Part 6.4.5. In addition, to the extent ACHD conducts quantitative monitoring in the Permittees MS4 discharges above what is specified in the Permit, such additional monitoring is reported as required by Part 6.4.3.

6.2.6-6.2.7 Quality Assurance Requirements; Analytical Methods

ACHD, as the lead for all monitoring by the Permittees, maintains a Quality Assurance Project Plan (QAPP) for any monitoring or quantitative assessment activities conducted. The QAPP content is based off the requirements of Part 6.2.6. Sampling collection, preservation, and analysis is conducted according to procedures approved under 40 CFR Part 136.

6.3-6.5 Recordkeeping; Reporting Requirements; Addresses

DD3 retains records of all data and information in the development and implementation of the SWMP. All records are stored with DD3 for up to five years, or the term of the Permit, whichever is greater. All records are accessible by IDEQ or EPA upon request to DD3; the public may access records by filing a Public Records Request.

Each year, DD3 compiles its Annual Report for the IPDES required reporting periods of October 1 to September 30 of the preceding year (please note the first Permit year is October 1, 2021–September 30, 2022). The Annual Report is submitted to IDEQ via the E-Permitting Online System, using the Annual Report Format, no later than January 30 each year. DD3 makes each Annual Report available to the public through its publicly accessible website.

DD3's Annual Report follows the guidelines established in the Permit Part 6.4.2. The tracking of plan reviews, inspections, enforcement actions, and stormwater infrastructure maintenance provide data and statistics that are included in the report. The Annual Report is used in assessing DD3's compliance with Permit conditions and implementation schedule.

7. COMPLIANCE RESPONSIBILITIES

DD3 understands that it has an obligation to comply with all conditions of the Permit. DD3 acknowledges that any noncompliance constitutes a violation of the CWA and is grounds for civil and criminal penalties. DD3 shall report occurrences of noncompliance by telephone within 24 hours from the time DD3 becomes aware of the any circumstances outlined in Part 7.9. This notification must be followed by a written report within five (5) business days of the time DD3 became aware of the event. All other instances of noncompliance, not required to be reported within 24 hours shall be reported as part of each Annual Report.

When DD3 collects or removes any materials or pollutants from the MS4, they are disposed of and managed in a manner as to prevent such pollutants from entering into the waters of the U.S.

8. GENERAL REQUIREMENTS

DD3 understands that the Permittees must apply for and obtain a new permit prior to the expiration of this Permit and in no event later than April 3, 2026. DD3 understands that it and the other Permittees will be required to submit the contents of Part 8.2.1 in its renewal application.

DD3 is governed by a Board of Commissioners which consists of three (3) individuals who reside within DD3's boundary. For purposes of signatory authority and application and report submittals, the Board of Commissioners has authorized Ryan P. Armbruster and Abigail R. Germaine as Duly Authorized Representatives under Part 8.5.2.

Appendix A

Intergovernmental Agreements between NPDES Permittees

1. Amended and Restated Intergovernmental Agreement for Roles and Responsibilities under the National Pollutant Discharge Elimination System Permit (NPDES Permit No. IDS-0275612)
2. Amended and Restated Operating Guidelines

AMENDED AND RESTATED INTERGOVERNMENTAL AGREEMENT FOR ROLES AND RESPONSIBILITIES UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES Permit #IDS-027561)

THIS AMENDED AND RESTATED INTERGOVERNMENTAL AGREEMENT ("Amended and Restated Agreement") is entered into this 7th day of December, 2022, by and among the Ada County Highway District ("ACHD"), the city of Boise City ("Boise City"), city of Garden City ("Garden City"), Boise State University ("Boise State"), the Idaho Transportation Department, District #3 ("ITD"), and Ada County Drainage District No. 3 ("DD3"), individually a "Permittee" and collectively the "Permittees."

I. RECITALS

WHEREAS, this Amended and Restated Agreement is made for the purpose of complying with the National Pollutant Discharge Elimination System, the provisions of the Clean Water Act, 33 U.S.C. § 151 et seq, as amended by the Water Quality Act of 1987, Public Law 100-4 ("Clean Water Act"), and the Rules Regulating the Idaho Pollutant Discharge Elimination System Program (IDAPA 58.01.25) ("Rules and Regulations"); and

WHEREAS, the Rules and Regulations are designed to control pollutants associated with stormwater discharges through the use of the National Pollutant Discharge Elimination System ("NPDES") Municipal Separate Storm Sewer System (MS4) permits which allows the lawful discharge of stormwater into the waters of the United States; and

WHEREAS, the Rules and Regulations are designed to require NPDES permits for discharges from MS4s on a system-wide or jurisdiction wide basis; and

WHEREAS, the Permittees received NPDES Permit #IDS027561, effective February 1, 2013, and administratively extended until October 1, 2021; and

WHEREAS, on July 1, 2021, the Idaho Department of Environmental Quality ("IDEQ"), with delegated authority from the U.S. Environmental Protection Agency ("EPA"), took over primacy for the NPDES MS4 permits in Idaho, and became responsible for the issuing of permits and assuring compliance with all permit requirements; and

WHEREAS, the Permittees received National Pollutant Discharge Elimination System ("NPDES") Permit IDS027561 (the "Permit"), effective October 1, 2021; and

WHEREAS, the Permit requires that the Permittees must maintain an intergovernmental agreement describing each organization's respective roles and responsibilities related to this permit; and

WHEREAS, on June 18, 2013, the Permittees entered into an Intergovernmental Agreement for Roles and Responsibilities under the NPDES Municipal Stormwater Permit outlining roles and responsibilities of the Permittees under the Permit; and

WHEREAS, pursuant to the Permit any previously signed intergovernmental agreement may be updated, as necessary, in accordance with the Permit. Any such agreement must be described in the Permittees' Stormwater Management Program ("SWMP") Document and a copy of the agreement between the Permittees must be available to IDEQ upon request; and

WHEREAS, the Permittees have updated the intergovernmental agreement based on the Permit effective October 1, 2021. This Amended and Restated Agreement shall replace and supersede all previous intergovernmental agreements between the Permittees.

NOW, THEREFORE, the foregoing sets forth the agreement by and among the named Permittees.

II. AGREEMENT

1. PURPOSE OF AMENDED AND RESTATED AGREEMENT

The purpose of this Amended and Restated Agreement is to detail the duties, roles, and responsibilities of the Permittees with respect to compliance with the Rules and Regulations and the requirements set forth in Section 2.5.2, Joint Responsibility and Joint Agreements of the Permit. Each Permittee is individually responsible for Permit compliance related to portions of the MS4 owned or operated solely by that Permittee, or where the Permit requires a specific Permittee to take an action. Each Permittee is jointly responsible for Permit compliance as follows:

a. related to portions of the MS4 where operational or stormwater management control measures implementation authority has been transferred to one Permittee or another in accordance with this Amended and Restated Agreement between the Permittees; and

b. related to portions of the MS4 where Permittees jointly own or operate a portion of the MS4; and

c. related to the submission of reports or other documents required by Parts 3, 5, and 6 of the Permit; and

d. where the Permit requires the Permittees to take an action and a specific Permittee is not named; and

e. other areas as deemed necessary by the Permittees.

2. GENERAL PROVISIONS

a. ACHD, Boise City, Garden City, Boise State, ITD and DD3 are Permittees in the Permit as provided in 40 CFR 122.26.

b. Each Permittee will be responsible for complying with any and all Permit conditions relating to discharges from those parts of the MS4 that it operates and maintains.

c. The Permittees will utilize available monitoring and enforcement mechanisms, in full cooperation with other Permittees, to control the contribution of pollutants from one MS4 to another.

d. Each Permittee to this Amended and Restated Agreement shall assign at least one representative to the Permittee group.

3. STORM WATER MANAGEMENT PROGRAM ROLES AND RESPONSIBILITIES

The roles and responsibilities of each Permittee are as established in the Permit and this Amended and Restated Agreement.

4. APPORTIONMENT OF COSTS

A. Program Administration and Management

The Stormwater Management Program Control Measures shall be administered by ACHD as the lead agency. Program administration and management consists primarily of:

1. Preparing the agenda, minutes, and other documents related to the quarterly meetings and special meetings of the Permittees; and

2. Compiling and coordinating material to and from the Permittees for the filing of the annual report and Permit reapplication, as necessary, with IDEQ; and

3. Coordinating the various activities among the Permittees under the Permit.

The Permittees shall reimburse ACHD or the Permittee providing services described in this subsection 4.A. for their share of the program administration costs in the following amounts:

ACHD:	65.3% of the total program administration costs
Boise City:	15.3% of the total program administration costs
Garden City:	7.7% of the total program administration costs
Boise State:	3.9% of the total program administration costs
ITD:	3.9% of the total program administration costs
DD3:	3.9% of the total program administration costs

Program administration shall also include expenses incurred by any Permittee in the drafting, preparation, and completion of certain agreements or other documents specifically related to the collective Permittees' activities required by the Permit, by way of example, but not by way of limitation, this Amended and Restated Agreement. Such expenses shall be shared as stated in this Subsection 4.A. and processed through ACHD as set forth herein. Such expenses shall not include any activity related to any Permittee's own compliance requirements under the Permit.

B. Stormwater Monitoring and Evaluation Program

Monitoring and evaluation required by the Permit shall be conducted by ACHD or its contractor as the lead agency. The monitoring and evaluation program ("Stormwater Monitoring and Evaluation Program") consists primarily of:

1. For the first year of the Permit, preparing an updated Stormwater Outfall Monitoring Plan as part of the first annual report required by Part 6.4.2 of the Permit. The requirements, set forth in Part 6.2.1-6.2.7, for the Stormwater Outfall Monitoring Plan are described in the Permit, and include the monitoring protocol, sampling, testing, reporting, and other activity through a consultant arrangement between ACHD and its selected consultant.

2. Implementing the Stormwater Monitoring and Evaluation Program as approved and adopted by the Permittees.

3. Temperature monitoring in stormwater discharges from the MS4 to the Boise River including assessment units.

4. Wet weather stormwater outfall monitoring according to the Storm Water Outfall Monitoring Plan.

5. Instituting the Americana Subwatershed Monitoring Plan and data reporting requirements.

6. Effectiveness Evaluation of Structural, Non-Structural, and/or Green Stormwater Infrastructure Controls pursuant to Part 6.2.3 of the Permit.

The Permittees shall reimburse ACHD for their share of the Stormwater Monitoring and Evaluation Program costs in the following amounts:

ACHD:	65.3% of the total Stormwater Monitoring and Evaluation Program Cost
Boise City:	15.3% of the total Stormwater Monitoring and Evaluation Program Cost
Garden City:	7.7% of the total Stormwater Monitoring and Evaluation Program Cost
Boise State:	3.9% of the total Stormwater Monitoring and Evaluation Program Cost
ITD:	3.9% of the total Stormwater Monitoring and Evaluation Program Cost
DD3:	3.9% of the total Stormwater Monitoring and Evaluation Program Cost

C. Public Education, Outreach, and Involvement Program

Boise City shall be the lead agency for the Public Education, Outreach, and Involvement Program pursuant to this Amended and Restated Agreement. The Public Education, Outreach, and Involvement Program includes the development of an education outreach program as required by the Permit. The Public Education, Outreach, and Involvement Program consists primarily of:

1. Conducting public outreach, education, and public involvement as

described in the NPDES permit; and

2. Assessing the understanding of the relevant messages and adoption of appropriate behaviors by target audiences related to the Public Education, Outreach, and Involvement Program; and

3. Tracking and maintaining records of their education, outreach, and public involvement activities, including a descriptive summary of activities in the annual report; and

4. Once per year, training to local audiences on the requirements for construction operators pertaining to the required construction site controls imposed by the Permittees and training to local audiences on the requirements of permanent stormwater management controls imposed by the Permittees; and

5. Maintaining and updating the Permittees' Partners for Clean Water website found at: https://www.partnersforcleanwater.org/.

The Permittees shall reimburse Boise City for their share of the Public Education, Outreach, and Involvement Program costs in the following amounts:

Boise City:	65.3% of the total Program Cost
Garden City:	15.3% of the total Program Cost
ACHD:	7.7% of the total Program Cost
Boise State:	3.9 % of the total Program Cost
ITD:	3.9 % of the total Program Cost
DD3:	3.9 % of the total Program Cost

D. IPDES Stormwater Fee

Boise City is charged IPDES permit fees to support implementation of IPDES program initiatives at the Lander Street Water Renewal Facility and the West Boise Water Renewal Facility. Boise City has estimated the proportionate cost of this IPDES permit fee attributable to stormwater is 1.28% of the total IPDES permit fee. The Permittees have initially agreed to share this cost equally at 17% per Permittee. However, this allocation is subject to change by the Permittees and may be allocated similarly to the other costs discussed in this Section II.4. of the Amended and Restated Agreement. Should the Permittees unanimously agree on a different allocation of these IPDES permit fees, the Permittees shall agree to such amendment in writing.

E. Timely Payments

All amounts due and owing for the costs outlined in this Section II.4. shall be paid within forty-five (45) days of invoice date by each respective Permittee.

F. Annual Review

The allocated percentages of the Permittees' charge shall be reviewed upon an annual basis and if necessary modified.

G. Operating Guidelines and Annual Budget

The Permittees have previously adopted a set of Operating Guidelines ("Guidelines") in July 2014. The Operating Guidelines have since been amended to reflect updates in process and procedure. A copy of the Amended and Restated Operating Guidelines are attached hereto as Addendum No. 1. The Guidelines address the process by which the annual budget is prepared, reviewed, and approved by the Permittees. In addition, the Guidelines also address the manner in which the Permittee meetings are conducted, and action is taken by the Permittees. The Guidelines may be amended as set forth therein and will be included in this Amended and Restated Agreement as a new addendum.

5. TERMINATION

Any Permittee under this Amended and Restated Agreement shall have the right to withdraw and terminate its responsibilities under this Amended and Restated Agreement by serving written notice upon all Permittees in the time and manner described herein. Such written notice shall be served upon all Permittees no later than the January meeting described in the Operating Guidelines, which meeting provides for the consideration of the budget for the following Permit Year. The written notice shall describe whether the withdrawal is in total for all activities set forth in this Amended and Restated Agreement or whether the withdrawal is limited to certain activities described in this Amended and Restated Agreement. The Permittee seeking withdrawal shall provide the specific reasons for withdrawal and provide proof that such withdrawal has been formally approved by the Permittee's governing body. If the withdrawal is not a total withdrawal, the Permittee shall remain responsible for its share of the allocated costs. In addition, the withdrawing Permittee shall provide the results of any activities or programs it acted as the lead agency on, including the preparation of any plans, reports, results, or record keeping, for inclusion in the Permittees' annual report. Such withdrawal shall be deemed effective the year following the service of the written notice upon the other Permittees.

Notwithstanding the right of a Permittee to withdraw from this Amended and Restated Agreement as described above, any responsibilities set out in the Permit with regard to the withdrawing Permittee shall not be affected by Permittee's withdrawal from this Amended and Restated Agreement.

Should any Permittee to this Amended and Restated Agreement seek to obtain a ruling from IDEQ that said Permittee is not an operator of an MS4 or that it is not subject to the Permit, such Permittee shall provide written notice to the other Permittees simultaneously with the filing of such request to IDEQ. The Permittee seeking such ruling shall provide the other Permittees with all documents filed with IDEQ and shall also provide the other Permittees of the decision or determination of IDEQ. Should the Permittee seeking withdrawal appeal the decision or determination of IDEQ or an appeal is filed by any other interested entity, the Permittee seeking such ruling shall provide the other Permittees with the documents related to said appeal and the decision or determination of the appellate body. Upon a final decision or determination of IDEQ or appellate body finding the Permittee is not required to participate in the Permit, the Permittee shall be allowed to withdraw from this Amended and Restated Agreement effective the following year after such final decision or determination of IDEQ or an appellate body. The Permittee seeking such ruling shall be responsible for all costs set forth in this Amended and Restated Agreement prior to final withdrawal. Nothing herein shall prevent any other Permittee from participating in the IDEQ or appellate process concerning the request by the Permittee seeking the determination or decision from IDEQ.

In the event of a withdrawal by a Permittee or a final decision or determination by IDEQ or an appellate body, such Permittee's costs as set forth in this Amended and Restated Agreement shall be reallocated among the other Permittees as may be mutually agreed by those other Permittees.

6. MODIFICATION IN WRITING

This Amended and Restated Agreement may be modified or amended in writing and effective when executed by all Permittees.

7. ATTORNEY FEES

Should any Permittee find it necessary to employ an attorney for representation in any action seeking enforcement of any of the provisions of this Amended and Restated Agreement, or to protect its interest in any matter arising under this Amended and Restated Agreement, or to recover damages for the breach of this Amended and Restated Agreement, or to resolve any disagreement in interpretation of this Amended and Restated Agreement, the unsuccessful Permittee(s), in any final judgment entered therein, agrees to reimburse the prevailing party or parties for all reasonable costs, charges, and expenses, including attorneys' fees expended or incurred by the prevailing party or parties in connection therewith and in connection with any appeal, and the same may be included in such judgment.

8. NOTICES AND CONTACTS

Any and all notices required to be given by any of the Permittees hereto shall be in writing and deemed delivered when either: (i) delivered personally, or (ii) sent by fax to the other parties at the fax telephone number as set forth, or (iii) deposited in the United States Mail, certified, return receipt requested, postage prepaid, addressed to the other Permittees at the address as set forth, or such other fax telephone number or mailing address as may be provided by written notice of such change given to the others in the same manner as above provided.

For the purpose of providing contact information under this Amended and Restated Agreement and to provide notice as required, the following are the contacts and addresses of each representative designated by each Permittee:

Ada County Highway District:
Stormwater Quality Supervisor
Ada County Highway District
318 E. 37th Street
Garden City, ID 83714
Phone: 208-387-6255
Fax: 208-387-6391
Email: mlowe@achdidaho.org

City of Boise:
Water Quality Manager
City of Boise
P.O. Box 500
Boise, ID 83701-0500
Phone: 208-608-7178
Fax: 208-433-5650
Email: kharris@cityofboise.org

City of Garden City:
Environmental Manager
City of Garden City
207 E. 38th Street
Garden City, ID 83714
Phone: 208-472-2900
Fax: 208-3434026
Email: jpavelek@gardencity.idaho.org

Boise State University:
Environmental Health Compliance
Boise State University
1910 University Drive
Boise, ID 83725
Phone: 208-426-3906

Email: ehs@boisestate.edu

Idaho Transportation Department, District #3:
Environmental Planner, Senior
8150 Chinden Boulevard
Boise, ID 83714
Phone: 208-334-8300
Fax: 208-334-8917
Email: greg.vitley@itd.idaho.gov

Ada County Drainage District #3:
Counsel for Drainage District #3
Elam & Burke
P.O. Box 1539
Boise, ID 83701
Phone: 208-343-5454
Fax: 208-384-5844
Email: rpa@elamburke.com

9. ENTIRE AGREEMENT

Except as provided otherwise herein, this instrument and any attachments or addendums hereto constitute the entire agreement among the Permittees concerning the subject matter hereof.

(signatures on following page)

IN WITNESS WHEREOF, the Permittees hereto have caused this Amended and Restated Agreement to be duly executed as of the day and year first above written.

ADA COUNTY HIGHWAY DISTRICT

By: ______________________________

President, ACHD Commission

____

Attest: ACHD Director

CITY OF BOISE CITY

By: ______________________________

Lauren McLean, Mayor

____

Attest: City Clerk

CITY OF GARDEN CITY

By: ______________________________

John Evans, Mayor

____

Attest: City Clerk

CITY OF GARDEN CITY, IDAHO
SEAL

BOISE STATE UNIVERSITY

By: ______________________________

Vice President, University Affairs

IDAHO TRANSPORTATION DEPARTMENT, DISTRICT #3

By: ______________________________

J. CALEB LAKEY, District Administrator

IN WITNESS WHEREOF, the Permittees hereto have caused this Amended and Restated Agreement to be duly executed as of the day and year first above written.

ADA COUNTY HIGHWAY DISTRICT

By: ______________________________

____

President, ACHD Commission

____

Attest: ACHD Director

CITY OF BOISE CITY

By: Lauren McLean

Lauren McLean, Mayor 11/29/2022

Lynda Lowry

____

Attest: City Clerk Lynda Lowry 11/29/2022

CITY OF GARDEN CITY

By: ______________________________

John Evans, Mayor

____

Attest: City Clerk

BOISE STATE UNIVERSITY

By: ______________________________

____

Vice President, University Affairs

IDAHO TRANSPORTATION DEPARTMENT, DISTRICT #3

By: ______________________________

______________, District Administrator

IN WITNESS WHEREOF, the Permittees hereto have caused this Amended and Restated Agreement to be duly executed as of the day and year first above written.

ADA COUNTY HIGHWAY DISTRICT

By: ______________________________

____
President, ACHD Commission

____
Attest: ACHD Director

CITY OF BOISE CITY

By: ______________________________
Lauren McLean, Mayor

____
Attest: City Clerk

CITY OF GARDEN CITY

By: ______________________________
John Evans, Mayor

____
Attest: City Clerk

BOISE STATE UNIVERSITY

By: Alicia Estey

Alicia Estey
Vice President, University Affairs

IDAHO TRANSPORTATION DEPARTMENT,
DISTRICT #3

By: ______________________________

______________, District Administrator

ADA COUNTY DRAINAGE DISTRICT No. 3

By: ______________________
Steve Sweet, Chair

State of Idaho)
)ss
County of Ada)

On this 7th day of December, 2022, before me, Stacey L Spencer, a Notary Public in and for the state of Idaho, personally appeared Mary May and Bruce Wong, known or identified to me to be the President and Director of Ada county Highway District who executed this instrument, and acknowledged to me that Ada County Highway District executed the same.

STACEY L SPENCER
NOTARY
Comm. 62051
PUBLIC
STATE OF IDAHO

____
Notary Public for Idaho
Commission expires: August 13, 2025

State of Idaho)
)ss
County of Ada)

On this ___ day of ___________, 2022, before me, ______________________, a Notary Public in and for the state of Idaho, personally appeared _______________ and _________________, known or identified to me to be the Mayor and City Clerk of City of Boise who executed this instrument, and acknowledged to me that City of Boise executed the same.

____
Notary Public for Idaho
Commission expires: __________

ADA COUNTY DRAINAGE DISTRICT No. 3

By: ______________________
Steve Sweet, Chair

State of Idaho)
)ss
County of Ada)

On this ___ day of ___________, 2022, before me, ___________________________, a Notary Public in and for the state of Idaho, personally appeared ______________________ and ___________________________, known or identified to me to be the President and Director of Ada county Highway District who executed this instrument, and acknowledged to me that Ada County Highway District executed the same.

____
Notary Public for Idaho
Commission expires: __________

State of Idaho)
)ss
County of Ada)

On this 29th day of November, 2022, before me, Kimberly Moore, a Notary Public in and for the state of Idaho, personally appeared Lauren McLean and Lynda Lowry, known or identified to me to be the Mayor and City Clerk of City of Boise who executed this instrument, and acknowledged to me that City of Boise executed the same.

KIMBERLY MOORE
COMMISSION #20221533
NOTARY PUBLIC
STATE OF IDAHO
MY COMMISSION EXPIRES 03/30/2028

____
Notary Public for Idaho
Commission expires: 3-30-2028

State of Idaho)
)ss
County of Ada)

On this 22nd day of November, 2022, before me, Susanna Smith, a Notary Public in and for the state of Idaho, personally appeared John G. Evans and Lisa M. Leiby, known or identified to me to be the Mayor and City Clerk of Garden City who executed this instrument, and acknowledged to me that Garden City executed the same.

SUSANNA SMITH
COMMISSION #20201858
NOTARY PUBLIC
STATE OF IDAHO
MY COMMISSION EXPIRES 05/26/2026

Notary Public for Idaho
Commission expires: 5-26-2026

State of Idaho)
)ss
County of Ada)

On this ___ day of __________, 2022, before me, ____________________, a Notary Public in and for the state of Idaho, personally appeared ___________, known or identified to me to be the Vice President, University Affairs, of Boise State University, who executed this instrument, and acknowledged to me that Boise State University executed the same.

Notary Public for Idaho
Commission expires: __________

State of Idaho)
)ss
County of Ada)

On this 17th day of November, 2022, before me, Roger D. Edwards, a Notary Public in and for the state of Idaho, personally appeared J. Caleb Lakey, known or identified to me to be the District 3 Administrator, of Idaho Department of Transportation, who executed this instrument, and acknowledged to me that Idaho Department of Transportation executed the same.

ROGER D. EDWARDS
Comm. No. 45261
NOTARY
PUBLIC
Expires: 08/31/2023
STATE OF IDAHO

Notary Public for Idaho
Commission expires: 8-31-2023

State of Idaho)
)ss
County of Ada)

On this ___ day of ___________, 2022, before me, ___________________________, a Notary Public in and for the state of Idaho, personally appeared _________________ and _________________ _________________, known or identified to me to be the Mayor and City Clerk of Garden City who executed this instrument, and acknowledged to me that Garden City executed the same.

____
Notary Public for Idaho
Commission expires: ___________

State of Idaho)
)ss
County of Ada)

On this 16th day of November, 2022, before me, Alexander Feyen, a Notary Public in and for the state of Idaho, personally appeared Alicia Estey, known or identified to me to be the Vice President, University Affairs, of Boise State University, who executed this instrument, and acknowledged to me that Boise State University executed the same.

ALEXANDER FEYEN
My Commission Expires 10/05/26
NOTARY PUBLIC
Comm. No. 20203809
STATE OF IDAHO

____
Notary Public for Idaho
Commission expires: 10/05/2026

State of Idaho)
)ss
County of Ada)

On this ___ day of ___________, 2022, before me, ___________________________, a Notary Public in and for the state of Idaho, personally appeared _____________________________, known or identified to me to be the _______________________________________, of Idaho Department of Transportation, who executed this instrument, and acknowledged to me that Idaho Department of Transportation executed the same.

____
Notary Public for Idaho
Commission expires: ___________

State of Idaho)
)ss
County of Ada)

On this 10th day of November, 2022, before me Kimbra S. Kline, a Notary Public in and for the state of Idaho, personally appeared Steve Sweet, known or identified to me to be the Chair of Ada County Drainage District # 3, who executed this instrument, and acknowledged to me that Ada County Drainage District #3 executed the same.

KIMBRA S. KLINE
NOTARY
PUBLIC
Comm. No. 44149
STATE OF IDAHO

Kimbra S. Kline
Notary Public for Idaho
Commission expires: 3/31/2023

4878-3214-6717, v. 5

AMENDED AND RESTATED OPERATING GUIDELINES

THESE AMENDED AND RESTATED OPERATING GUIDELINES ("Amended and Restated Guidelines") are adopted this 30 day of November, 2022, by the CITY OF BOISE CITY, hereinafter called BOISE CITY; ADA COUNTY HIGHWAY DISTRICT, hereinafter called ACHD; ADA COUNTY DRAINAGE DISTRICT NO. 3, hereinafter called DD3; IDAHO TRANSPORTATION DEPARTMENT, DISTRICT 3, hereinafter called ITD; BOISE STATE UNIVERSITY, hereinafter called BSU; and the CITY OF GARDEN CITY, hereinafter called GARDEN CITY; collectively the "Permittees."

WHEREAS, the National Pollutant Discharge Elimination System, the provisions of the Clean Water Act, 33 U.S.C. § 151 et seq, as amended by the Water Quality Act of 1987, Public Law 100-4 ("Clean Water Act"), and the Rules Regulating the Idaho Pollutant Discharge Elimination System Program (IDAPA 58.01.25) ("Rules and Regulations") all govern the regulations for applications and permits for stormwater discharges; and

WHEREAS, these Rules and Regulations are designed to control pollutants associated with stormwater discharges through the use of the National Pollutant Discharge Elimination System ("NPDES"), which allows the lawful discharge of stormwater into the waters of the United States; and

WHEREAS, these Rules and Regulations are designed to require NPDES permits for discharges from Municipal Separate Storm Sewer Systems (MS4s) from a system-wide or jurisdiction-wide basis; and

WHEREAS, the Permittees received a NPDES Permit (Permit #IDS-02756-1) effective February 1, 2013, and administratively extended until October 1, 2021; and

WHEREAS, on July 1, 2021, the Idaho Department of Environmental Quality (IDEQ), with delegated authority from the U.S. Environmental Protection Agency ("EPA"), gained primacy and became responsible for issuing MS4 stormwater permits and assuring compliance with all permit requirements; and

WHEREAS, the Permittees received Idaho Pollutant Discharge Elimination System ("IPDES") Permit IDS027561 (the "Permit"), effective October 1, 2021;

WHEREAS, the Permit requires that the Permittees must maintain an intergovernmental agreement describing each organization's respective roles and responsibilities related to this permit;

WHEREAS, pursuant to the Permit, any previously signed intergovernmental agreement may be updated, as necessary, in accordance with this Permit. Any such agreement must be described in the Permittees' Stormwater Management Program ("SWMP") Document, and a copy of the agreement between the Permittees must be available to IDEQ upon request; and

WHEREAS, the Permittees entered into that certain *Intergovernmental Agreement for Roles and Responsibilities Under the NPDES Permit* ("Agreement"), dated June 26, 2013, which generally outlined the process by which the Permittees shall fund certain activities in compliance with the Permit;

WHEREAS, the Permittees previously entered into those certain Operating Guidelines dated October 17, 2006, which governed the Permittees' activities under a previous intergovernmental agreement dated October 21, 2001, based on the previous NPDES permit originally effective November 29, 2000.

WHEREAS, the Permittees have updated the intergovernmental agreement based on the Permit effective October 1, 2021, and this Amended and Restated Intergovernmental Agreement was executed on December 7, 2022; and

WHEREAS, the Permittees, as public agencies, all have varying procedures concerning the setting of those entities' budgets and the time frame for the approval of those budgets;

WHEREAS, the Permittees desire these Amended and Restated Guidelines (including certain budget procedures) to guide the Permittees through the activities in which all share in the cost and/or administration of the program and to coincide with the new amendments and revisions under the Amended and Restated Intergovernmental Agreement;

NOW, THEREFORE, the Permittees agree as follows:

Section 1. These Amended and Restated Guidelines hereby repeal, replace, and supersede any previous guidelines, including those 2006 guidelines as described herein.

Section 2. The Permittees concur with the following process for:

A. The annual budget of costs to be shared by the Permittees pursuant to the Permit and the Amended and Restated Intergovernmental Agreement; and

B. The approval of activities and expenses.

Section 3. <u>Schedule and Process</u>:

Each January of each year of the Permit, the lead Permittee entity for the activities to be shared by all of the Permittees, shall present at a scheduled Permittee meeting, a proposed budget outlining the costs for the upcoming year as well as providing a comparison for similar activities within the previous year.

The Permittees shall consider such budget, provide comment, and the budget shall be approved at the Permittee meeting held in April of each year, upon motion and approval by a majority of the Permittees present.

Section 4. Program Administration and Management:

These Amended and Restated Guidelines identify four (4) categories for which the Permittees have agreed to apportion costs for those activities, including Program Administration and Management. By adoption of these Amended and Restated Guidelines, the Permittees have determined that the Program Administration and Management category should include those activities for which the Permittees are apportioning costs for certain planning and Permit compliance not related to any individual Permittee compliance activity. Such activities include the Permit reapplication process and required Permit document preparation.

Permittees also agree to consider other subcategories for which apportionment of costs would be appropriate under the Permit and to process budget requests and approvals. Any additional subcategories shall require an amendment to these Amended and Restated Guidelines.

Section 5. Budget Revisions:

Throughout the Permit year, revisions to the approved budget to reallocate funds among categories and classifications or to reduce the approved budget may be considered by the Permittees. Such reduction or reallocation shall be reviewed and approved by the Permittees' representatives at a duly noticed Permittee meeting. No overall increase in the budget or additional funds shall be authorized unless approved by the Permittees, upon motion and approval by a majority of the Permittees present, and each Permittee has budget authority for such revisions.

Section 6. Permittee Budget Approval:

Nothing herein shall affect the process or authority of each Permittee to obtain from its governing body the necessary approval for the budget as required by each Permittee's governing laws, regulations, or policy and each Permittee's own activities for which it is responsible under the Permit.

Section 7. Operating Guidelines:

Generally, the Permittee meetings shall be managed in such a manner to achieve the objectives of the Permit and the NPDES program. For those items previously approved by way of the budget, the lead Permittee shall provide summary reports of such expenditures and activities at a regularly scheduled Permittee meeting. For expenditures not specifically approved by way of the budget, the lead Permittee shall obtain Permittee approval at a regularly scheduled Permittee meeting prior to such expenditure.

Permittee meetings will be conducted on an informal basis facilitated by the ACHD representative. The ACHD representative shall also be responsible for providing meeting notice to Permittees, taking and distributing minutes, providing an agenda, and, to the greatest extent possible, forwarding information to the Permittees for consideration at the meeting. Any action to be taken shall be accomplished by motion and vote. To the greatest extent possible, Roberts Rules of Order shall govern the voting process.

Section 8. Effect:

These Amended and Restated Guidelines have been adopted by the Permittees at the Permittee meeting dated November 30, 2022. Nothing herein shall be deemed to infringe upon any Permittee's legal authority concerning the expenditure of public funds.

Section 9. Amendment:

These Amended and Restated Guidelines may be amended in writing, upon at least ten (10) days written notice of such proposed amendment to each Permittee provided, however, said notice may be deemed waived by Permittee's written consent. Any amendment shall be approved by majority vote of the Permittees present at a meeting noticed for such purpose. Updated versions of these Amended and Restated Guidelines shall be included in the Amended and Restated Intergovernmental Agreement as an updated addendum to that document.

ADA COUNTY HIGHWAY DISTRICT

By: Monica Lowe
Its Permittee NPDES Representative

CITY OF BOISE CITY

By: ____________________
Its Permittee NPDES Representative

CITY OF GARDEN CITY

By: John G. Evans
Its Permittee NPDES Representative

BOISE STATE UNIVERSITY

By: ____________________
Its Permittee NPDES Representative

IDAHO TRANSPORTATION DEPARTMENT,
DISTRICT #3

By: ____________________
Its Permittee NPDES Representative

ADA COUNTY DRAINAGE DISTRICT No. 3

By: ____________________
Its Permittee NPDES Representative

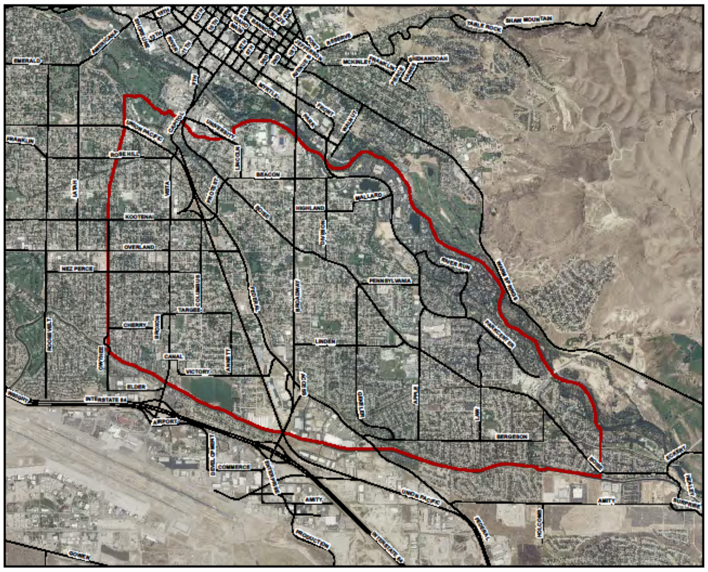
4867-9330-4380, v. 1

Appendix B

Drainage District No. 3 MS4 Maps

DISTRICT MAPS
ADA COUNTY DRAINAGE DISTRICT #3

PO BOX 1539
BOISE, IDAHO 83701



BOARD MEMBERS

JOHN "PAT" TATE, CHAIRMAN

JOE ICENHOWER, SECRETARY TREASURER

STEVE NIELSEN, BOARD MEMBER

RYAN ARMBRUSTER, DISTRICT COUNSEL

DEAN CALLEN, DISTRICT SUPERINTENDENT

MAY 2010

CALL BEFORE YOU DIG!

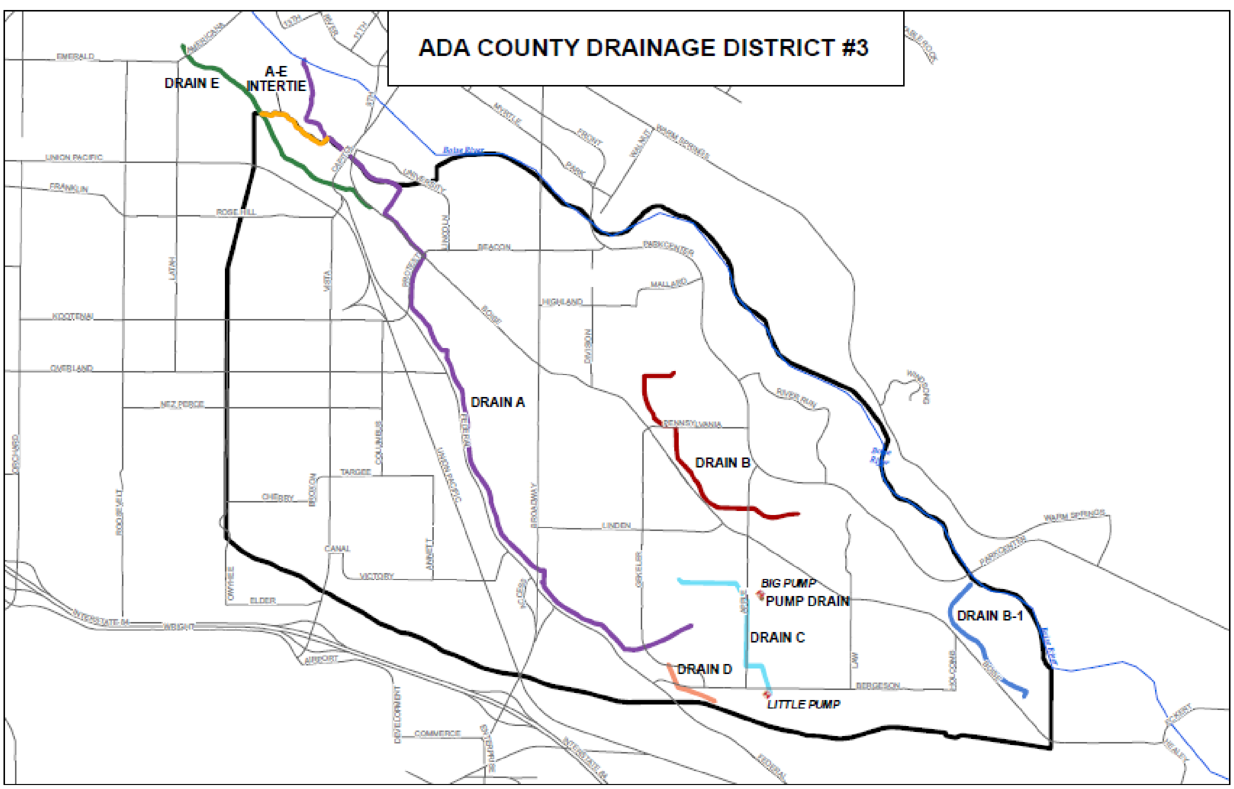
DIGLINE: 342-1585

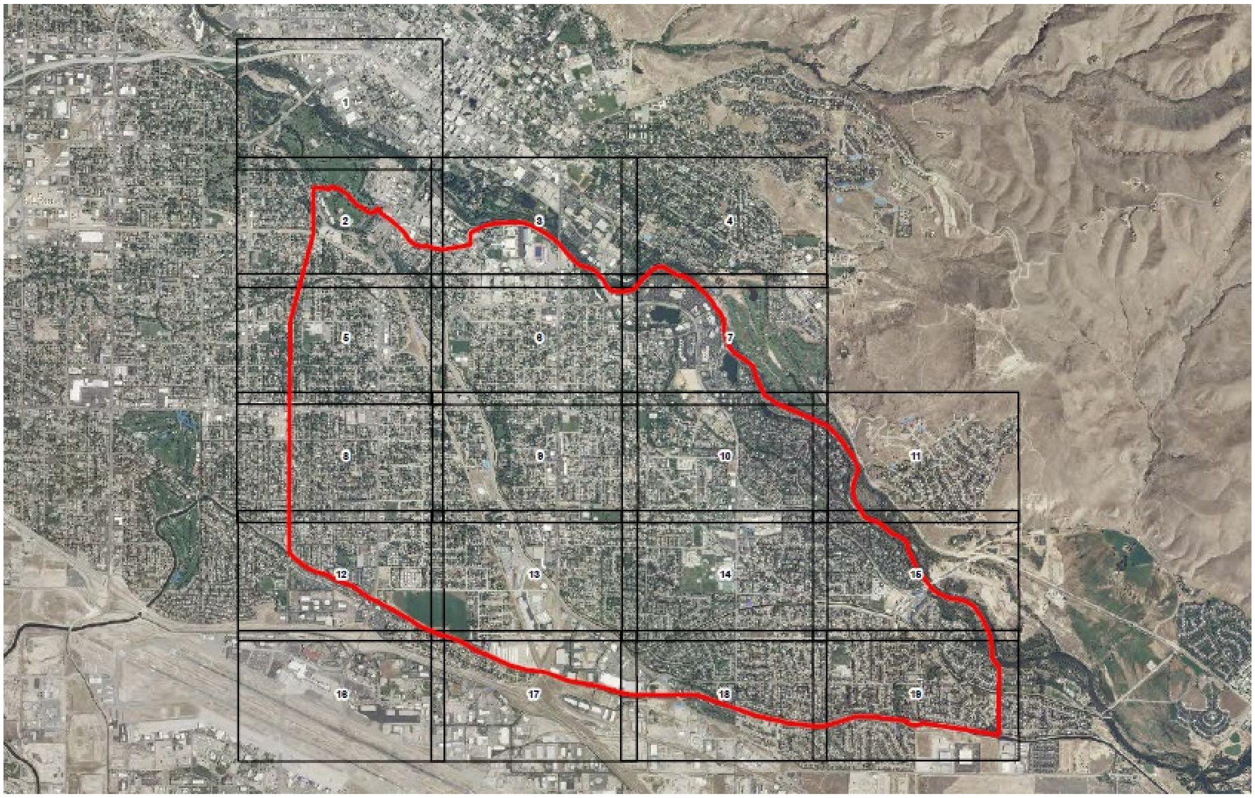
OTHER CONTACT NUMBERS
ACHD DRAINAGE = 387-6320
BOISE CITY PUBLIC WORKS = 384-3900
GARDEN CITY PUBLIC WORKS = 375-3194
NAMPA & MERIDIAN IRRIGATION DIST. = 466-7861
BOISE PROJECT BOARD OF CONTROL = 344-1141
SOUTH BOISE MUTUAL IRRIGATION CO. = 344-3062

DRAINAGE DISTRICT #2 = 342-4591
DRAINAGE DISTRICT #4 = 342-4591
SOUTH BOISE WATER CO. = 761-6450

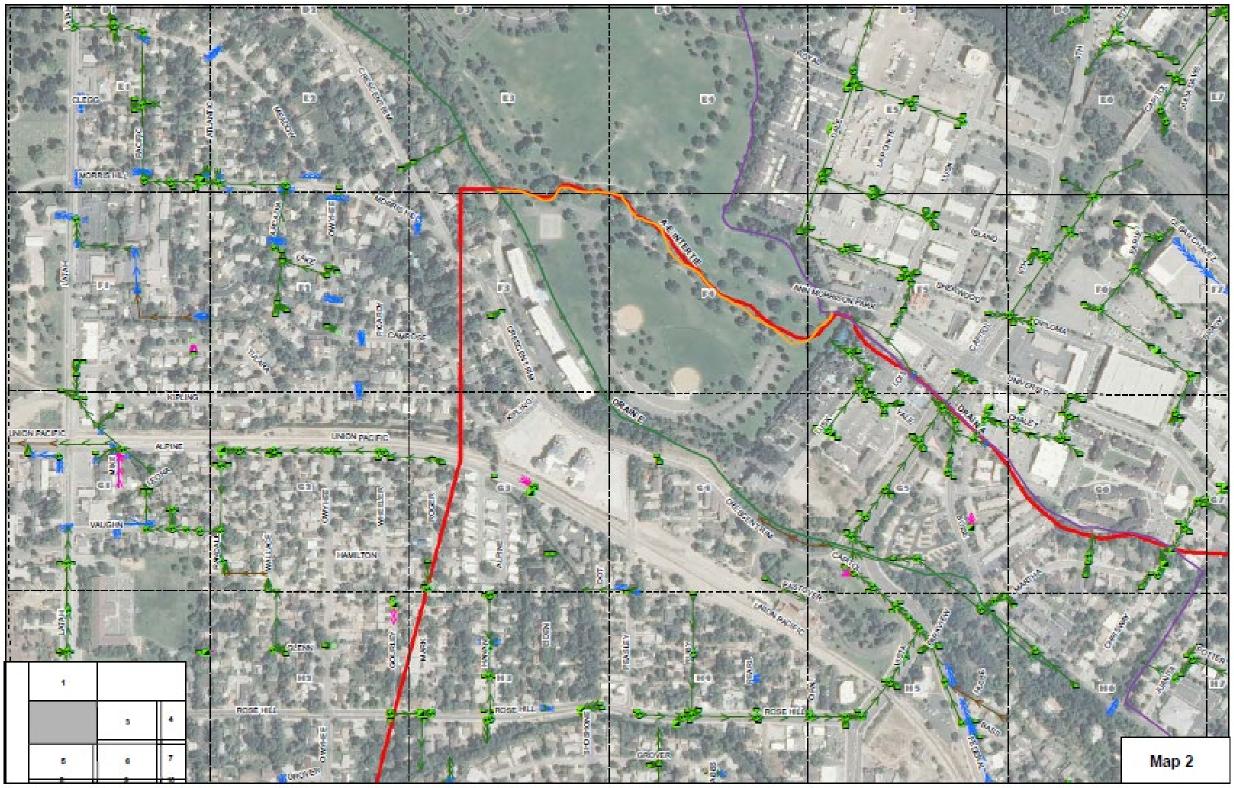
PROJECT COORDINATED FOR ADA COUNTY DRAINAGE DISTRICT #3 BY
Quadrant Consulting, Inc.

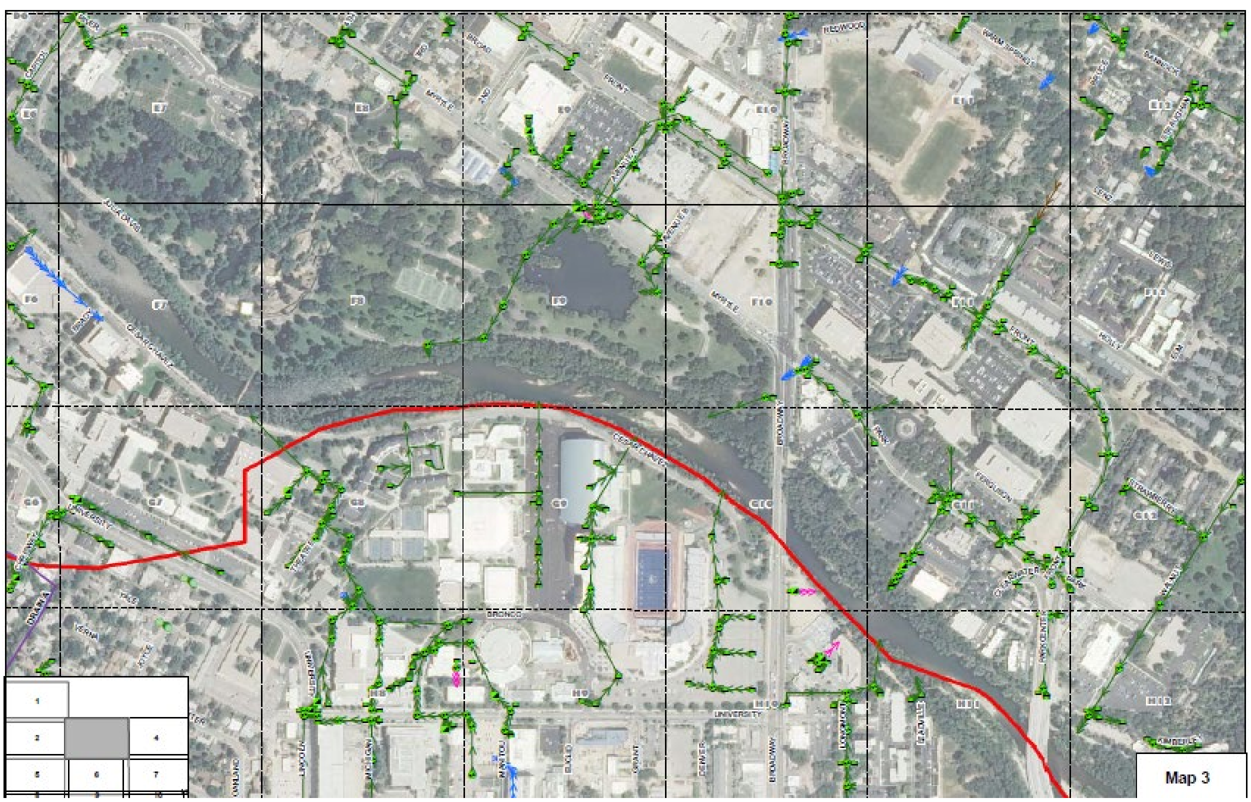
MAPBOOK DEVELOPED BY MILLENNIUM SCIENCE & ENGINEERING GIS & NATURAL RESOURCES DEPT.
MSE Millennium Science & Engineering

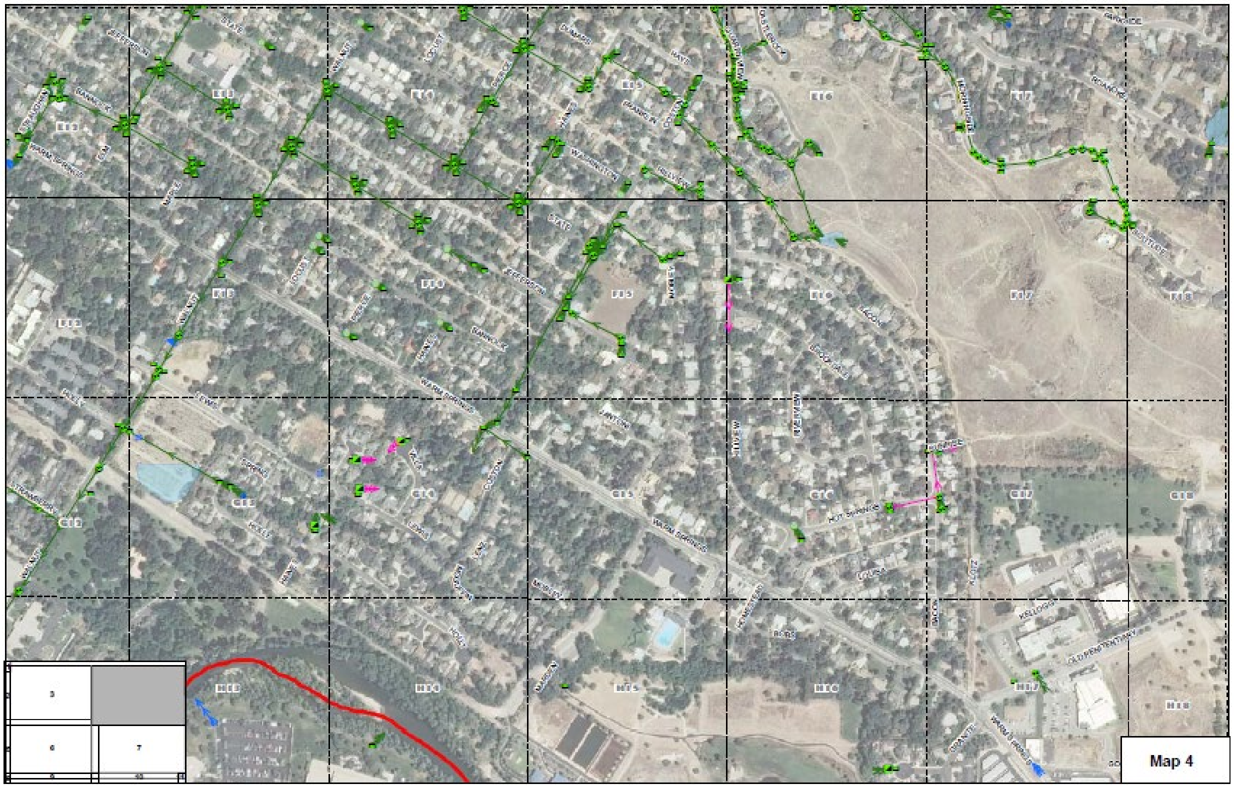


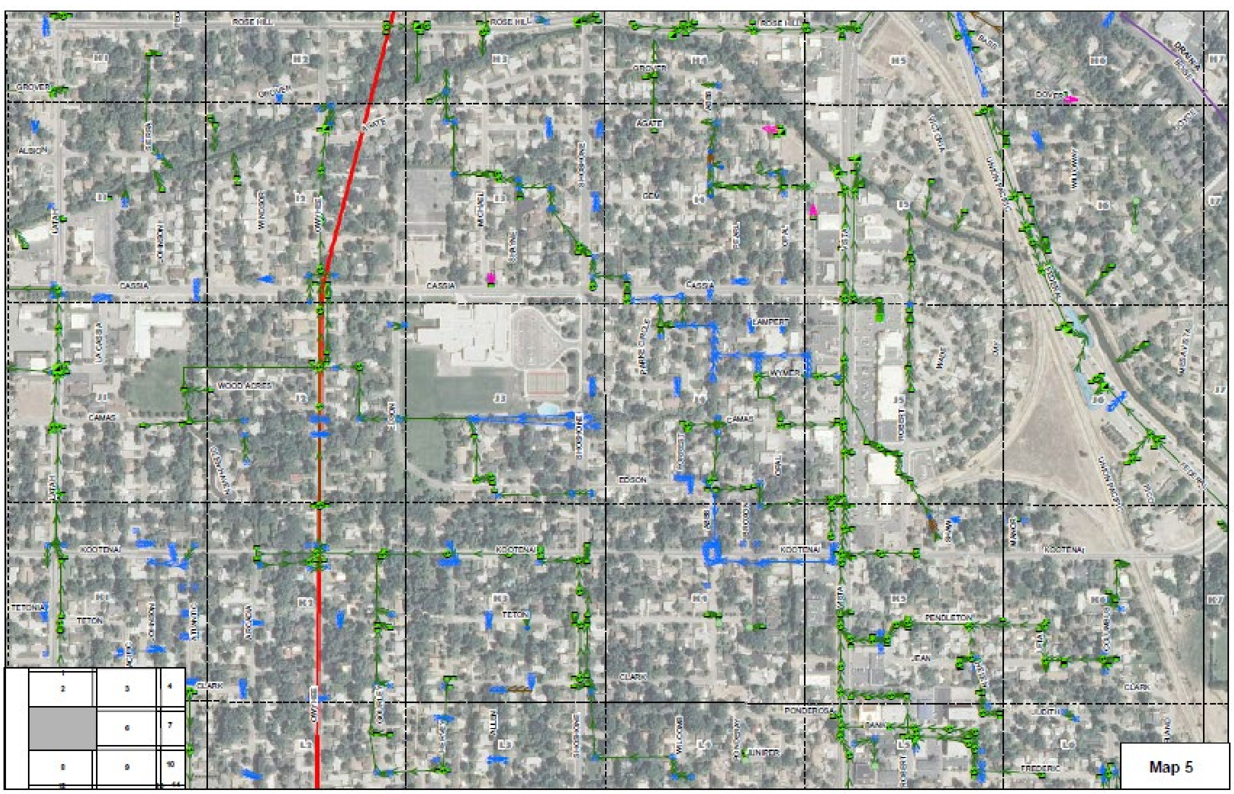

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

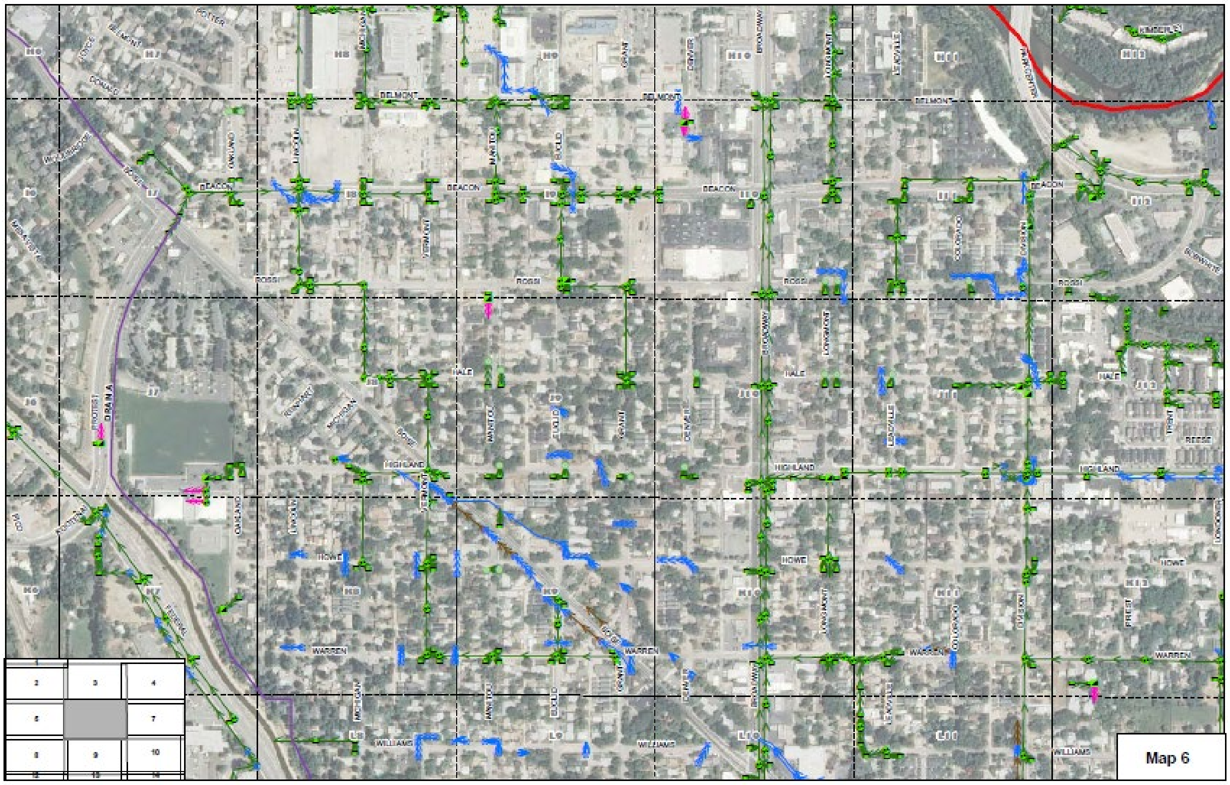

INTERSTATE 184
FRONT
AMERICANA
SHORELINE
FLETCHER
EMERALD
CRESCENT RIM
DRAIN F
RIVER
MYRTLE
Map 1

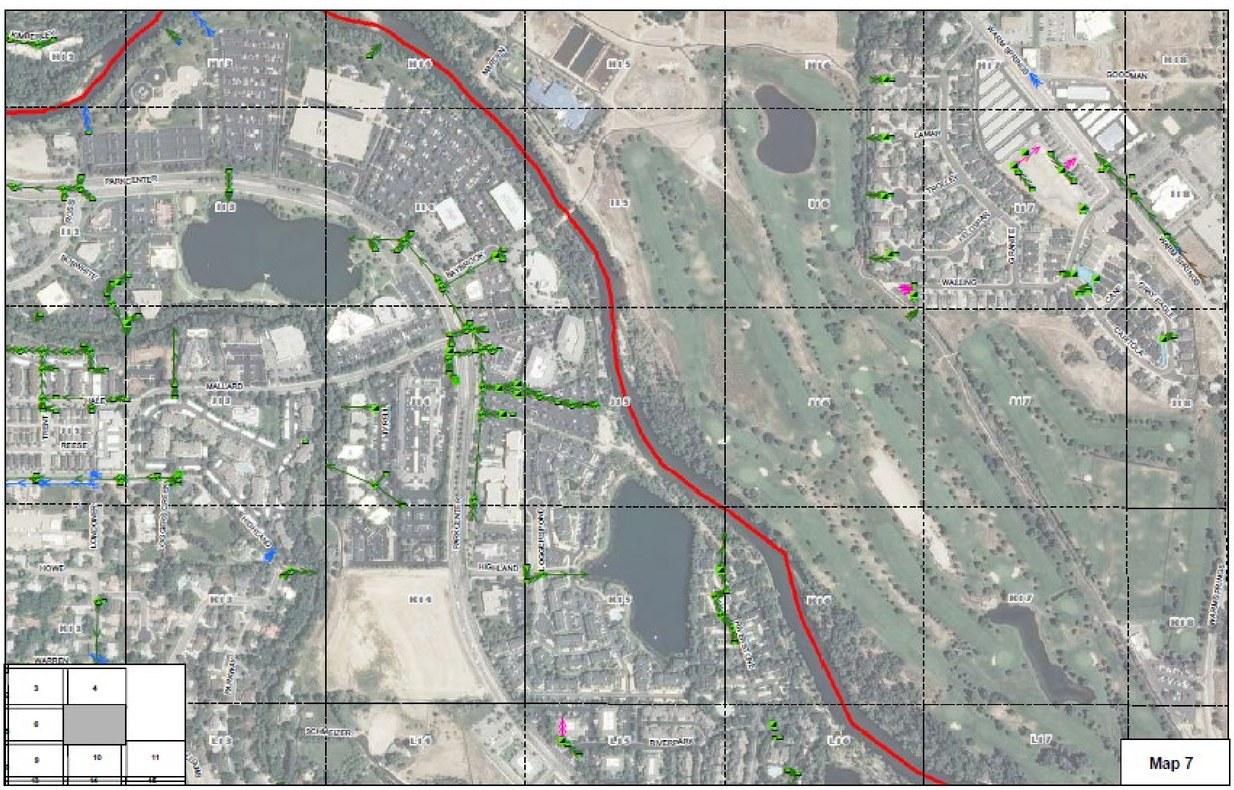

Map 2

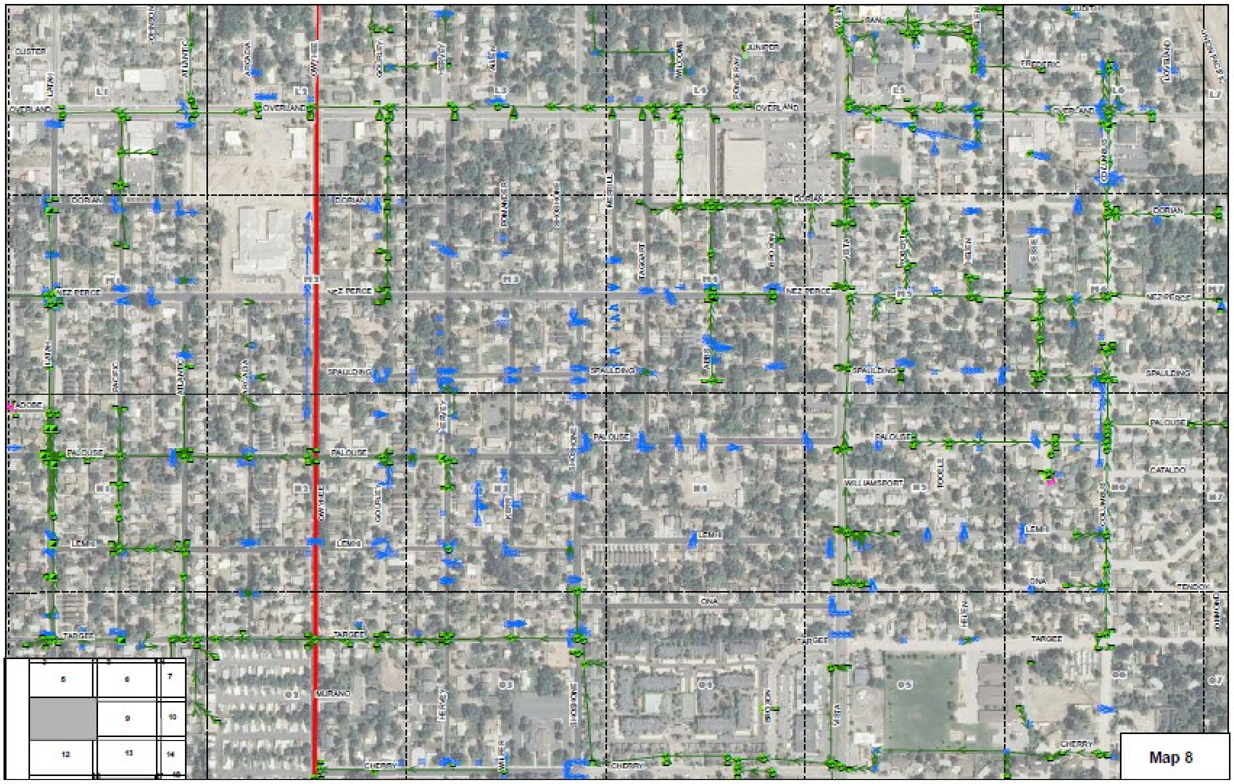

Map 3

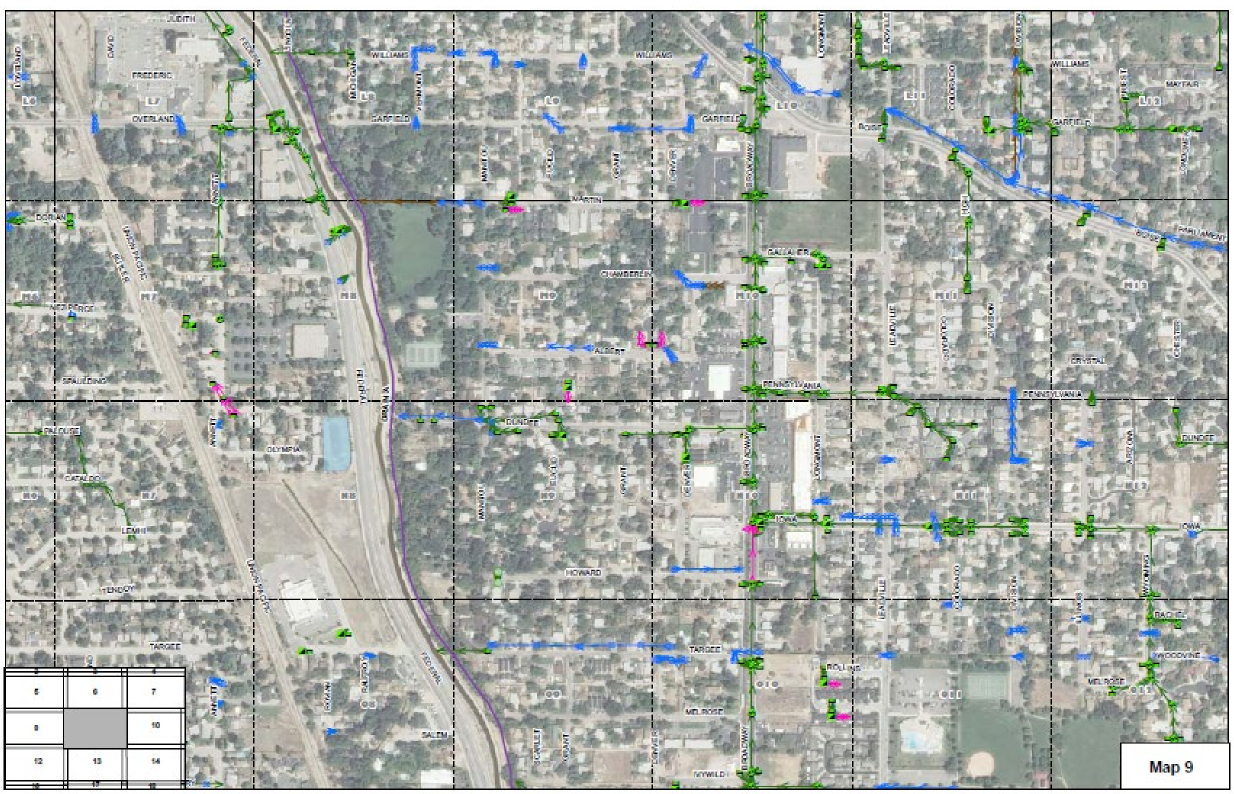

Map 4

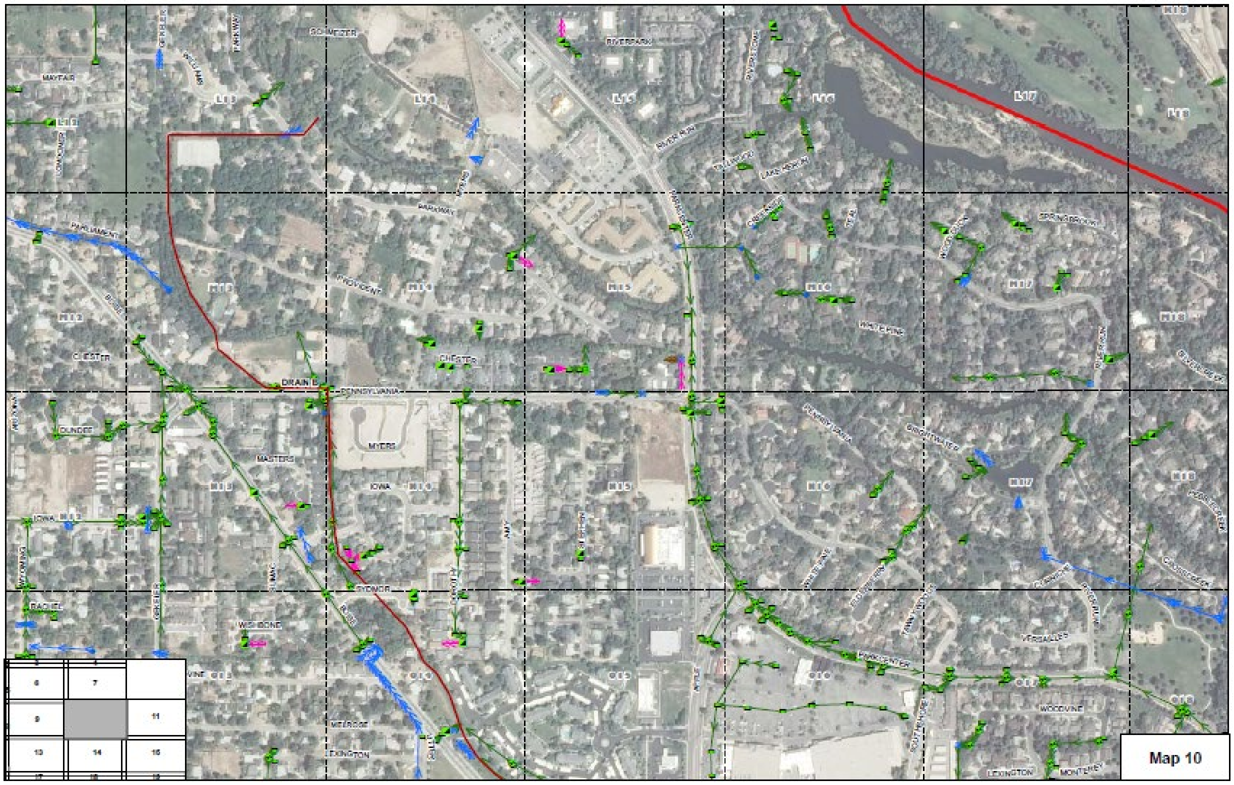

ROSE HILL
GROVER
CASSIA
WOOD ACRES
CAMAS
EDSON
KOOTENAI
TETON
PENDLETON
CLARK
PONDEROSA
Map 5

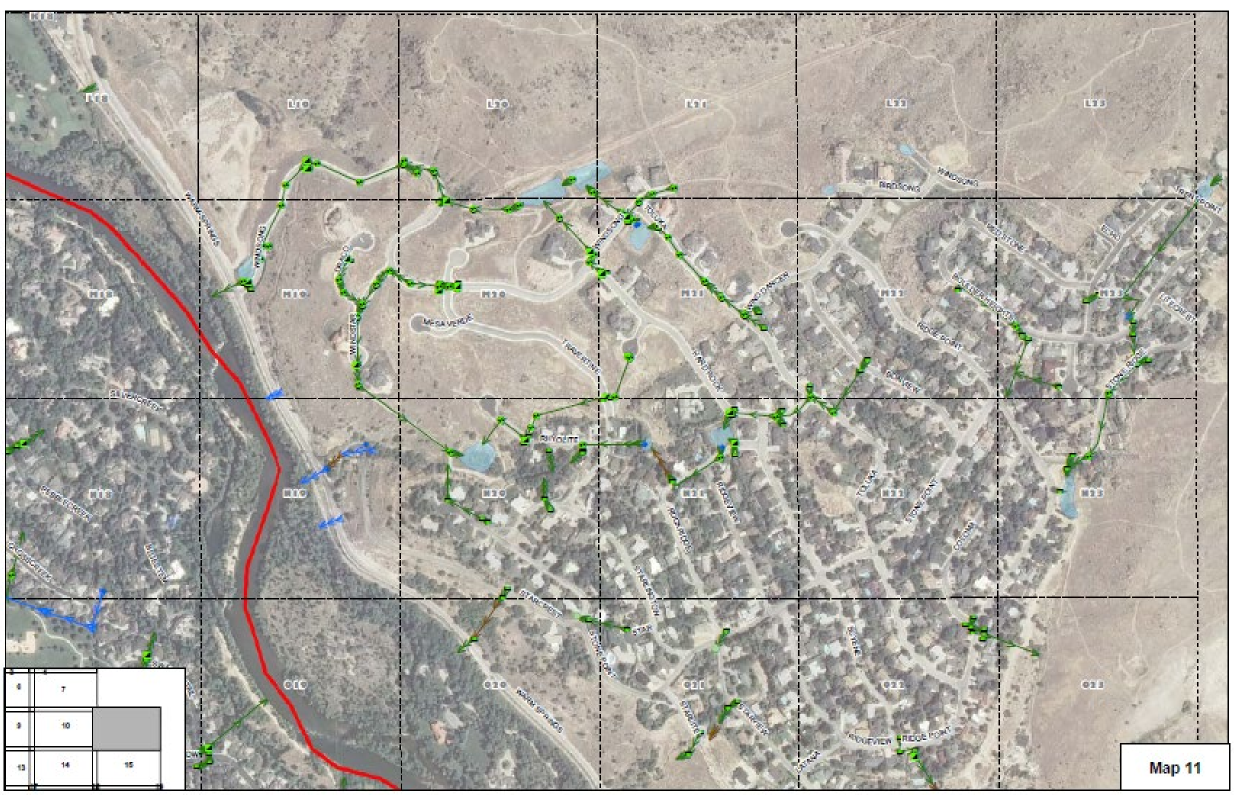

Map 6

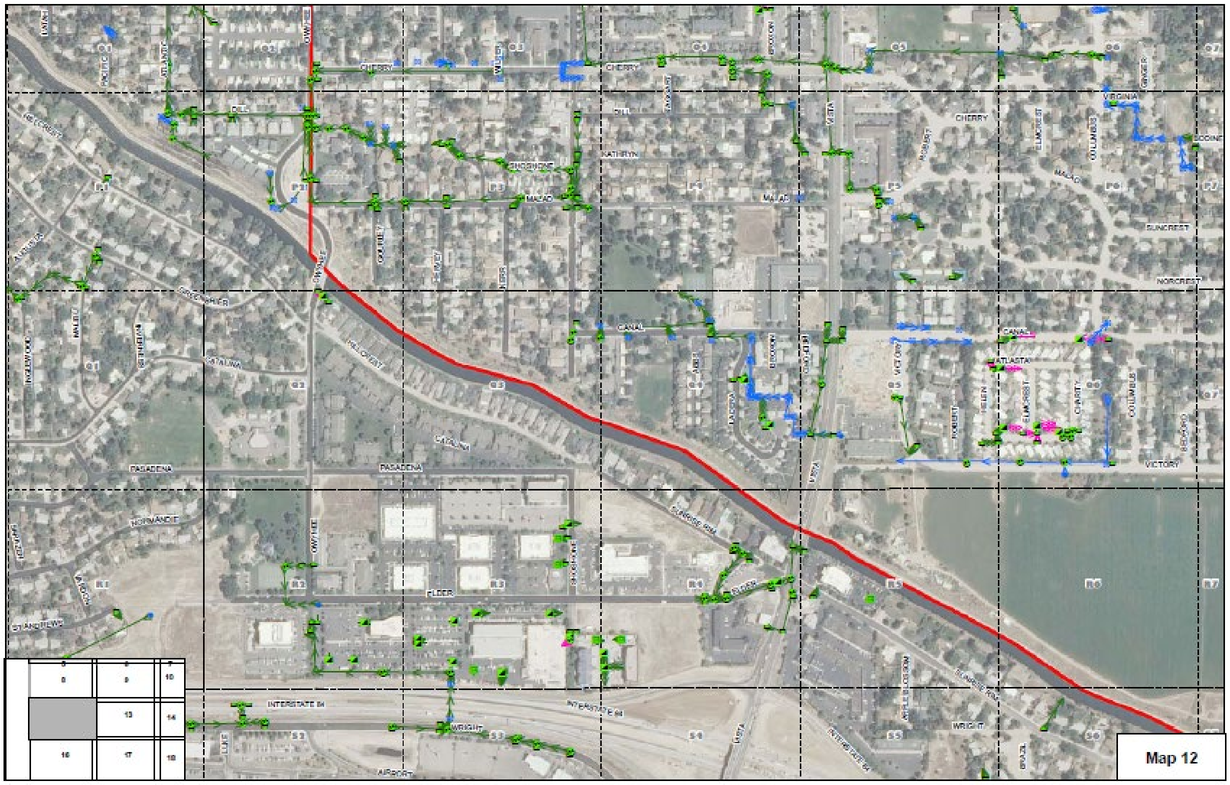

Map 7

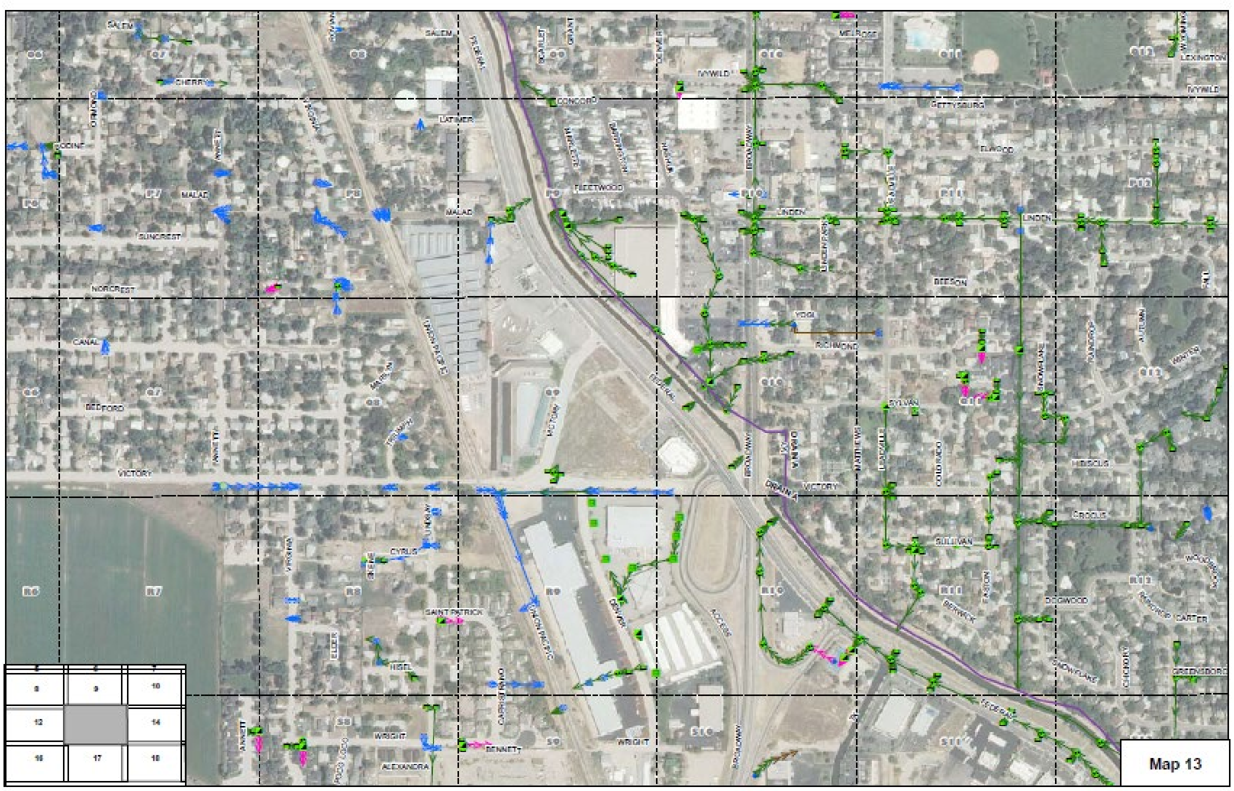

Map 8

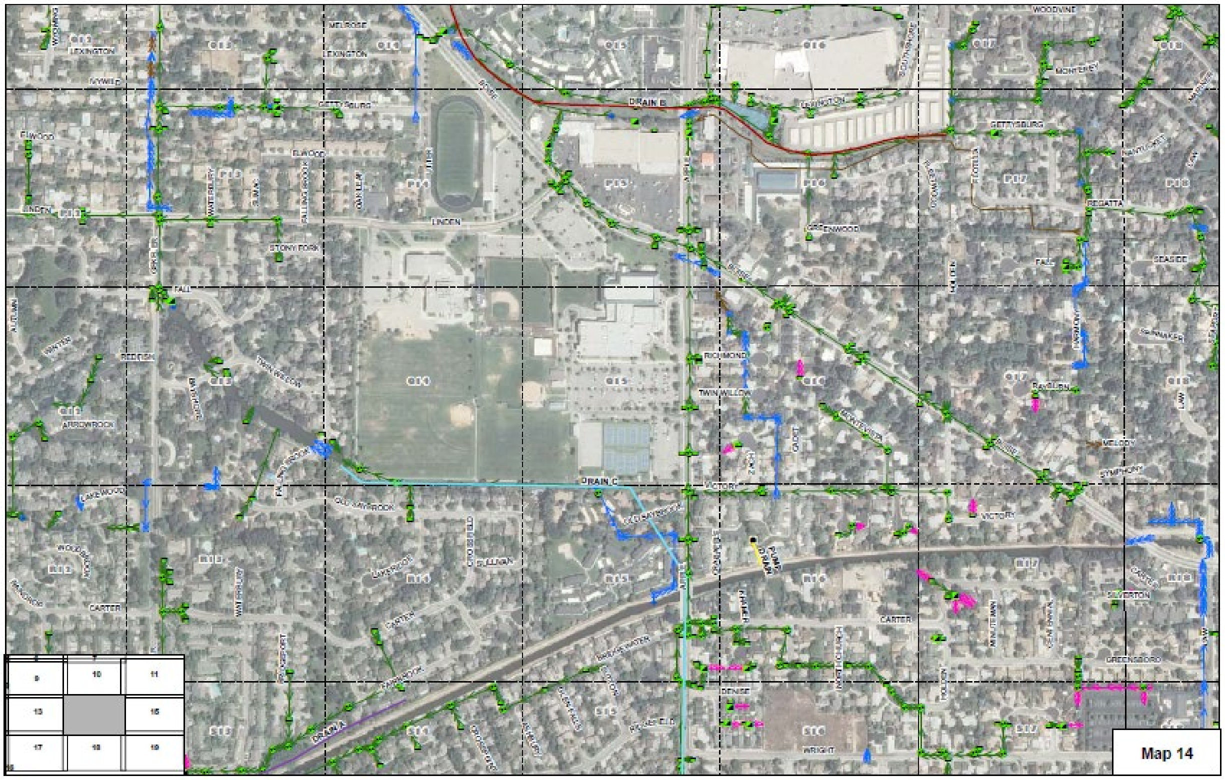

Map 9


Map 10

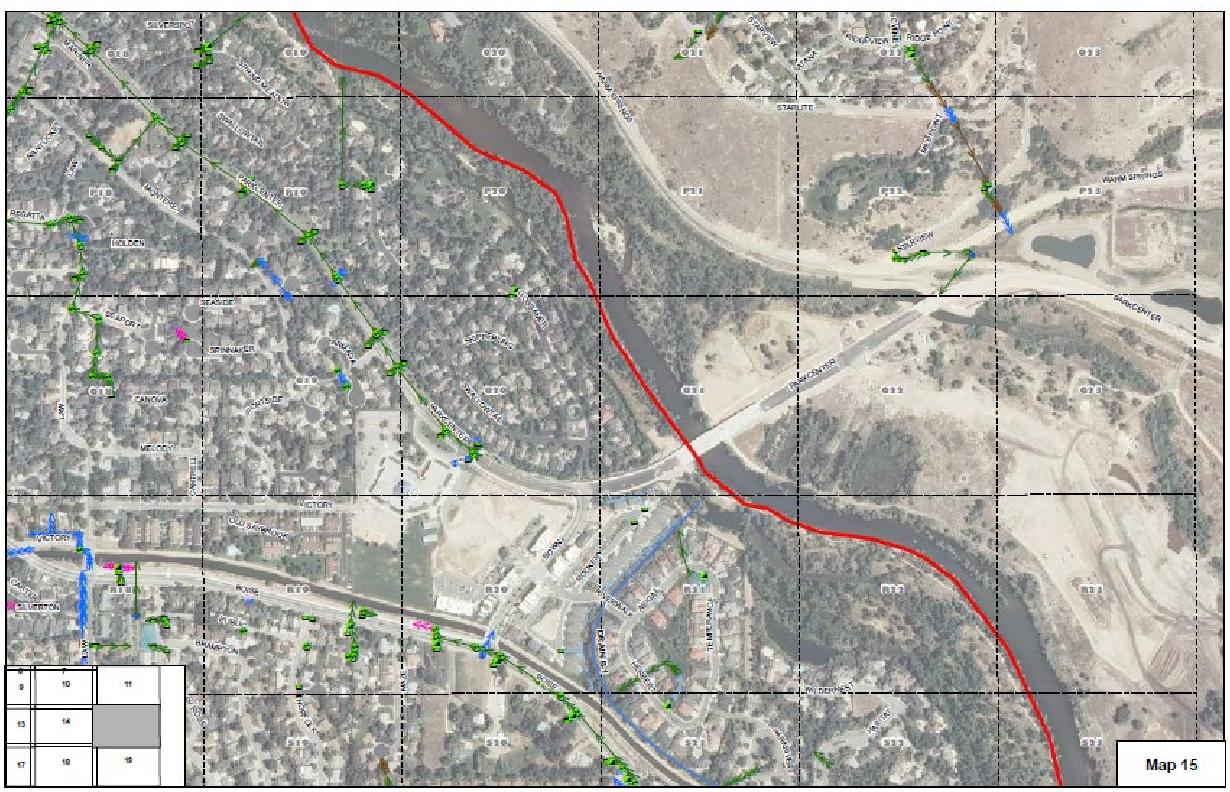

Map 11


Map 12

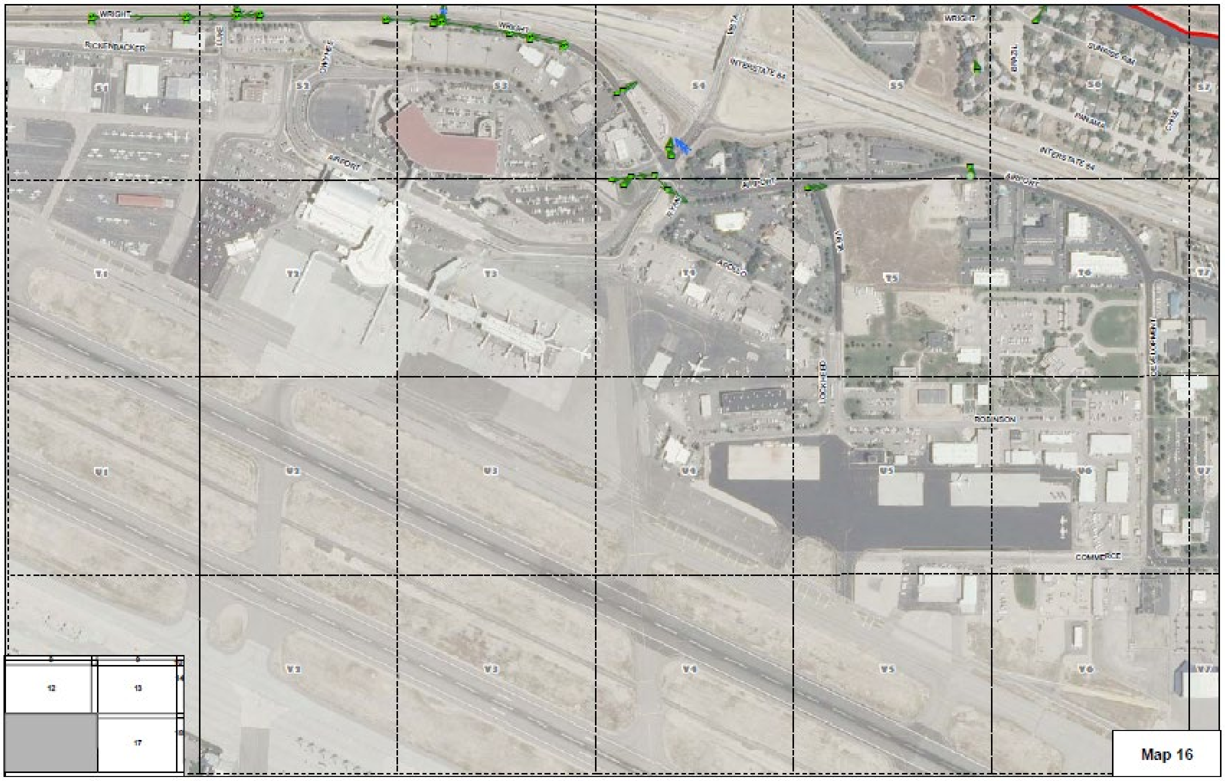

Map 13

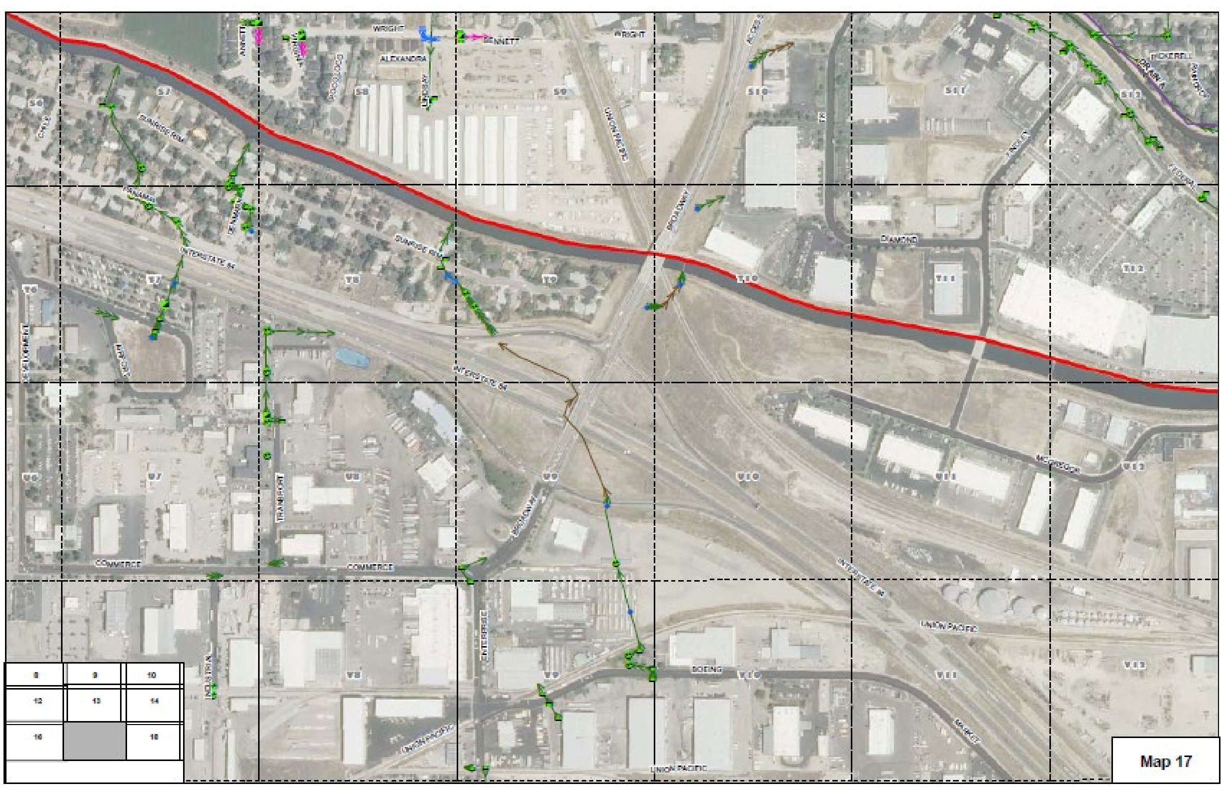

LEXINGTON
MELROSE
WOODVINE
GETTYSBURG
DRAIN B
ELWOOD
LINDEN
STONY FORK
GREENWOOD
REGATTA
SEASIDE
FALL
WINTER
REDFISH
TWIN WILLOW
ARROWROOK
RICHMOND
SPINNAKER
MELODY
SYMPHONY
LAKEWOOD
DRAIN C
VICTORY
OLD SAYBROOK
SULLIVAN
CARTER
SILVERTON
GREENSBORO
DENISE
WRIGHT
DRAIN A
PUMP DRAIN

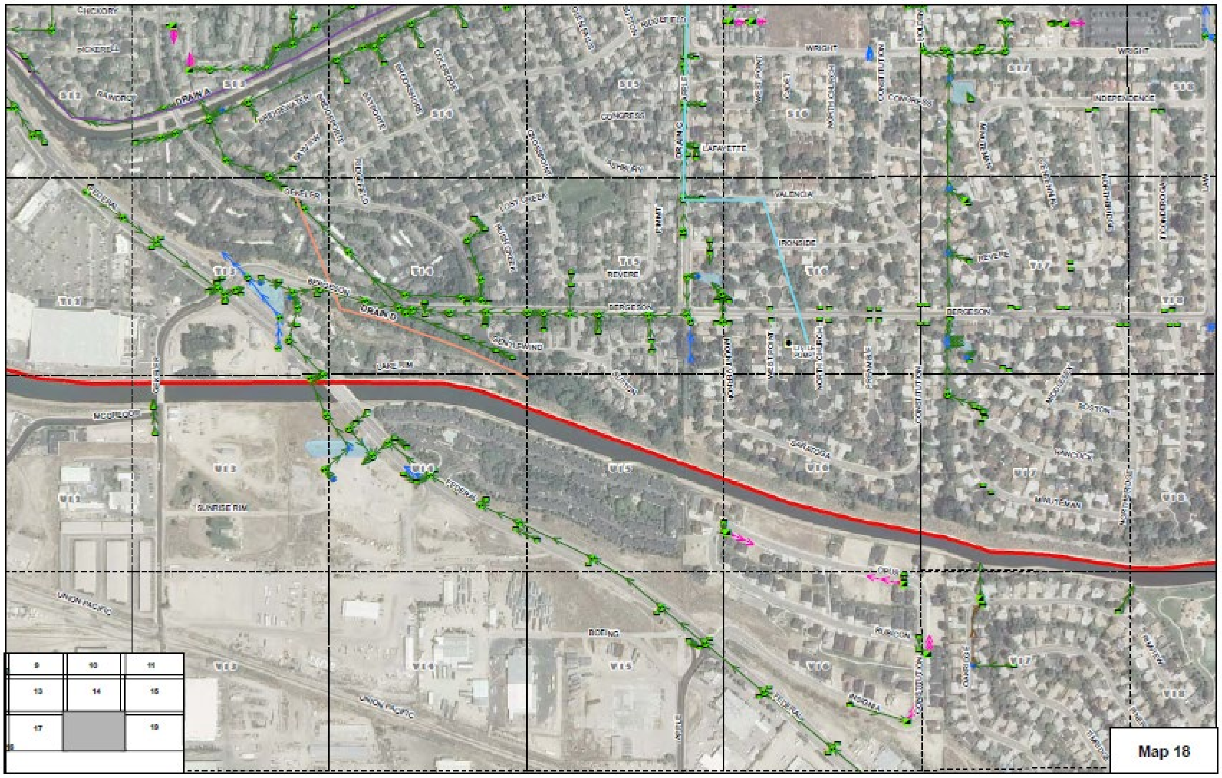
Map 14

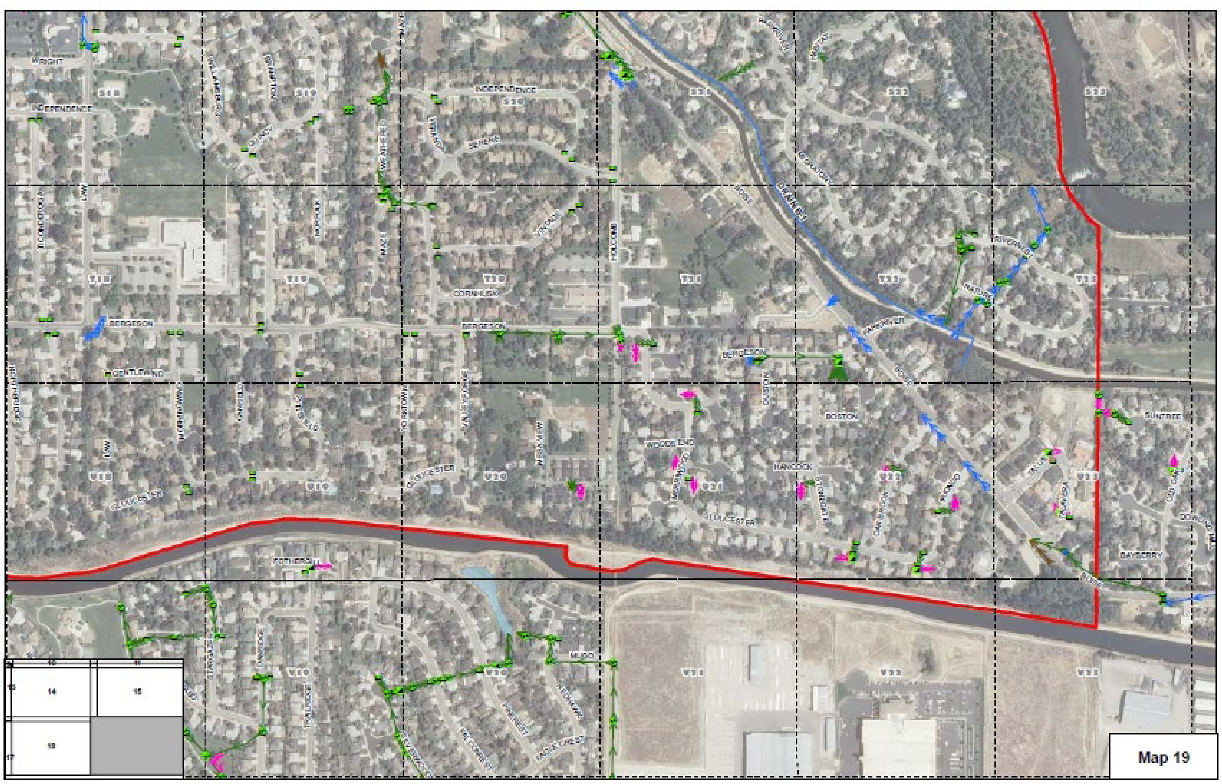

SILVERSPOT
STARLITE
WARM SPRINGS
MONTEREY
PARKCENTER
REGATTA
HOLDEN
SEASIDE
SEAPORT
SPINNAKER
CANOVA
MELODY
VICTORY
OLD SAYBROOK
BOISE
SILVERTON
CARTER
BRAMPTON
DRAIN B-1
WILDERNESS

Map 15


Map 16


Map 17


CHICKORY
PICKERELL
DRAIN A
WRIGHT
CONGRESS
LAFAYETTE
VALENCIA
IRONSIDE
REVERE
BERGESON
GENTLEWIND
LAKE RIM
INDEPENDENCE
BOSTON
HANCOCK
MINUTEMAN
SARATOGA
SUNRISE RIM
UNION PACIFIC
BOEING
9
10
11
13
14
15
17
19
Map 18


WRIGHT
INDEPENDENCE
BERGESON
GENTLEWIND
CORNHUSK
BOSTON
HANCOCK
WOODS END
GLOUCESTER
SUNTREE
BAYBERRY
MUSO
10
11
13
14
15
17
18
Map 19

Appendix C

Operation and Maintenance System Plan and BMPs

OPERATION AND MAINTENANCE SYSTEM PLAN AND BMPs

ADA COUNTY DRAINAGE DISTRICT #3

UPDATED OCTOBER, 2022

PREPARED BY ABIGAIL R. GERMAINE

TABLE OF CONTENTS

INTRODUCTION

The National Pollutant Discharge Elimination System, the provisions of the Clean Water Act, 33 U.S.C. § 151 et seq, as amended by the Water Quality Act of 1987, Public Law 100-4 ("Clean Water Act"), and the Rules Regulating the Idaho Pollutant Discharge Elimination System Program (IDAPA 58.01.25) ("Rules and Regulations") are designed to control pollutants associated with stormwater discharges through the use of the National Pollutant Discharge Elimination System ("NPDES") Municipal Separate Storm Sewer System (MS4) permits which allows the lawful discharge of stormwater into the waters of the United States.

On February 1, 2013, to Ada County Highway District ("ACHD"), Boise State University, city of Boise, city of Garden City, Ada County Drainage District No 3 ("DD3"), and the Idaho Transportation Department District #3, referred to as the "Permittees", received NPDES Permit #IDS027561, which was administratively extended until October 1, 2021.

On July 1, 2021, the Idaho Department of Environmental Quality ("IDEQ"), with delegated authority from the U.S. Environmental Protection Agency ("EPA"), took over primacy for the NPDES MS4 permits in Idaho and became responsible for the issuing of permits and assuring compliance with all permit requirements. Following this delegation, the Permittees received National Pollutant Discharge Elimination System ("NPDES") Permit IDS027561 (the "Permit"), effective October 1, 2021.

The Permit contains inspection procedures and reporting requirements; operation and maintenance activities and criteria used to determine when maintenance is needed; public education and outreach requirements; complaint and illicit discharge response procedures; and record keeping practices. Each Permittee is required to implement and enforce a Storm Water Management Program (SWMP) including best management practices (BMPs), controls, system design, reporting requirements, engineering methods, and other provisions appropriate to control and minimize the discharge of pollutants from the MS4s.

ROLES AND RESPONSIBILITIES

Responsibility for control of stormwater runoff and discharges to the MS4 stormwater system is shared by a number of entities within Boise City. Each Permittee is individually responsible for permit compliance related only to portions of the MS4 owned or operated solely by that Permittee and where the permit requires specific action. Each Permittee is jointly responsible for activities relating to the MS4 where operational or SWMP implementation authority has been transferred to all the Permittees in accordance with an intergovernmental agreement or agreement between the Permittees; related portions of the MS4 where Permittees jointly own or operate a portion of the MS4; related to the submission of individual reports or other documents required by the Permit; and where the Permit requires the Permittee to take action.

INSPECTION PROCEDURES AND SCHEDULES

Inspections are conducted to evaluate the operational status of the DD3 system and to identify problems and necessary maintenance actions. The District has several outfalls and drains under the purview of the Permit.

PERMITTEE INSPECTION FREQUENCY

In conjunction with ACHD as the lead Permittee, for the reporting period of each year, October 1 – September 30, 2022, wet weather stormwater outfall monitoring is conducted by ACHD in accordance with Part 6.2.1 of the Permit and the Storm Water Outfall Monitoring Plan. The details concerning stormwater sampling events are under the control of ACHD through cooperative actions of all the Permittees. Permittees must conduct visual dry weather screening of at least 20% of their total outfalls per year and screening must be conducted within the June 1 and September 30 timeframe for at least one third of the total outfalls to be screened annually. DD3 having less than seven (7) outfalls is permitted to conduct dry weather screening of one outfall, per year (Part 3.2.5.2). This dry weather screening is conducted by ACHD on DD3's behalf, through separate agreement. DD3 undertakes its own inspection and other activity of its system primarily during the irrigation season, generally from April through September of each year.

Inspection and maintenance forms are used to document potential problems and maintenance recommendations. Each system component is inspected to determine the conditions present.

OPERATION AND MAINTENANCE

Inspection and maintenance are performed primarily during the irrigation season. The type of maintenance is determined by inspection results and the maintenance schedule.

Routine maintenance typically consists of removal of debris and cleaning of discharge points. Litter is picked up as needed to keep open ditches clear of debris. Non-routine maintenance is occasionally required, e.g., beaver obstruction, illegal dumping, accidental spills, massive sediment, and debris inflow. When removing debris, all collected debris will be managed and disposed of in a manner such as to prevent such pollutants from entering the water of the U.S.

If there is an accidental spill, it will be isolated to keep it from reaching other water bodies. Stormwater system flow points, such as gates, valves, orifices, and outlet pipes, are kept closed to isolate the spill. If the spill consists of flammable or hazardous materials, the Boise City Fire Department or 911 is contacted for assistance.

INSPECTION SAFETY

The individual inspecting the stormwater system should always consider safety as the first priority. The inspector should have the proper safety equipment (heavy duty gloves, boots, and first aid kits, for example) before conducting any inspections. Although the safety precautions listed here are common sense, they should not be disregarded. Neglecting to follow even the simplest safety precaution can potentially cause serious injury. If the stormwater system inspection reveals a safety problem, then site activities may be modified to reduce or eliminate the safety risk.

WASTE DISPOSAL

Most storm water system waste consists of trash, leaves, grass, and sediment. The quality of waste is typically small and non-hazardous because of frequent inspection and maintenance activities. When removing debris, all collected debris will be managed and disposed of in a manner such as to prevent such pollutants from entering the water of the U.S.

COMPLAINT RESPONSE PROCEDURES

Inspections will also be conducted when a complaint is received from the public or referred by another agency.

RECEIPT AND REFERRAL OF COMPLAINT

When a complaint is received, a determination will be made of the severity of the situation. If the complaint involves hazardous substances or large quantities of substances that may pose a threat to life, health, and safety, the Fire Department will be notified (911). ACHD or other drainage entities should also be notified if their systems are impacted by the problem.

If the complaint is outside the District's jurisdiction or involves another Permittees infrastructure or stormwater system, it is referred to the appropriate agency or district.

COMPLAINT INVESTIGATION

The inspector will visit the site of reported complaint and will determine if immediate action is needed to keep pollutants out of the stormwater system or receiving water body. It is the responsibility of the liable party to keep pollutants from entering the stormwater system. However, when the inspector arrives on site, it may be necessary to assist in spill cleanup by using materials to absorb, contain, or divert pollutants to keep them from reaching the storm drain system. The inspector should educate the responsible party on proper cleanup and disposal methods. The inspector will also need to determine whether the system of another jurisdiction has been impacted and notify the appropriate entity, if necessary.

Once all immediate threats to the stormwater system or other water body have been addressed, or if there are no immediate threats, a site investigation will be completed. Information will be gathered, and the situation will be discussed with witnesses or responsible person. If necessary, photographs will be taken with a label containing date, location, time, and initials. All information shall be documented on a records form.

FOLLOW-UP PROCEDURES

The inspector ensures, by either a site drive-by or a follow-up investigation, that cleanup has occurred, and the problem is taken care of.

COMPLAINT REFERRALS

Complaints are referred to the appropriate agency for investigation. If the complaint is forwarded, through mutual agreement, the city can offer support to DD3 to resolve the problem.

ENFORCEMENT REFERRALS

The inspector should have a good understanding of what regulatory requirement was violated and how. An explanation of how a party failed to comply with the regulatory requirements is required in the referral report. Compliance determinations must be based solely on the factual information collected.

A determination of whether an enforcement action is warranted is based on what the determination is based on.

FACTORS RELATING TO IMPACT

An initial site visit and assessment should occur as soon as possible after the complaint is received.

FACTORS RELATING TO RESPONSIBLE PARTY

A referral package should be prepared and should include the inspection report and a list of violations alleged, along with the evidence. The referral package should contain a narrative summary including, and among other things, the following information: 1) the factual evidence in support of the alleged violation(s) and 2) inspector's determination, along with supporting facts, of whether this is a one-time, continuing, or recalcitrant violation.

RECORD KEEPING AND REPORTING

Proper records management is important to preserve information for reporting purposes and to support any enforcement action. The information related to inspection, maintenance, or complaint response activities comprise documentation of the Operation and Maintenance Plan and BMPs' activities and findings. Inspection forms, maintenance forms, and complaint response forms will be retained and filed. All information collected in an investigation of a complaint or violation will also be retained. This may include photographs, laboratory reports, drawings, or other forms of information that document site conditions.

An annual summary is prepared of inspection and maintenance activities for inclusion in the annual report to the IDEQ. The forms are organized by activity and system section and are filled out whenever one of these activities is undertaken.

ANNUAL REPORT

The Permit requires submission of an annual report that contains certain information related to program implementation. The information will be tracked on an ongoing basis and compiled quarterly. The annual report will be prepared consistent with the Permit reporting requirements.

2024 Attachment L - NPDES Phase 1 Temp Monitoring Approach

NPDES Phase I Temperature Monitoring Approach

Ada County Highway District

12/7/2022

Table of Contents

1. Introduction

The Environmental Protection Agency, Region 10 (EPA) issued the third cycle National Pollutant Discharge Elimination System (NPDES) Municipal Storm Separate Sewer System (MS4) Phase I Permit No. IDS027561 (Permit) effective October 1, 2021, to Ada County Highway District (ACHD), Boise State University (BSU), City of Boise, City of Garden City, Drainage District #3, and Idaho Transportation Department District #3 (ITD), referred to as the "Permittees." Starting July 1, 2021, the Idaho Department of Environmental Quality (IDEQ) acquired Permit authority through the Idaho Pollutant Discharge Elimination System (IPDES) Program. The Permit authorizes stormwater discharges from MS4 outfalls to waters of the United States in accordance with the conditions and requirements of the Permit. Under this permit, the Permittees are required to monitor temperature in stormwater discharges from the MS4 to the Boise River including assessment units (AU) 17050114SW005_06, 17050114SW005_06a, 17050114SW005_06b, to quantify stormwater impacts to this waterbody (Permit Part 4.1).

The Boise River AUs that are included within the Phase I permit area are 17050114SW011a_06 (Diversion Dam to Veteran's Memorial Parkway (VMP) bridge) and 17050114SW005_06 (Veteran's Memorial Parkway bridge to Star Road bridge). The remaining AUs listed in the Permit (17050114SW005_06a and 17050114SW005_06b) are outside of the permit area, and therefore do not have Permittee stormwater contribution.

Temperature monitoring has been incorporated into all NPDES monitoring projects conducted to date, in both dry weather and wet weather stormwater discharges. The majority of sampling under existing monitoring plans is completed at outfalls that discharge to the Boise River between Diversion Dam and VMP bridge (AU 17050114SW011a_06). To meet the additional requirement specific to AU 17050114SW005_06, outfall 4n2e30_012 was equipped with a temperature logger and data collection began under the *Plantation Lane Temperature Monitoring Plan* (Appendix A).

All NPDES monitoring plans were developed in line with the Quality Assurance Project Plan for NPDES Stormwater Permit Monitoring (QAPP) (ACHD, 2021) and contain details specific to the monitored outfall locations, procedures, and equipment. A summary of each monitoring plan with respect to temperature is provided below. Figure 1 shows a map of the location of each outfall, and the associated monitoring plan(s). Table 1 depicts the type and frequency of temperature readings from each monitored outfall.

1.1 Stormwater Outfall Monitoring Plan (SWOMP)

The *Stormwater Outfall Monitoring Plan* provides the methods for stormwater outfall monitoring and includes site and drainage area descriptive details for each monitoring station. Temperature data is collected in multiple ways at outfalls monitored under this plan. During monitored storm events, temperature is collected continuously, and a discrete temperature reading is collected as a grab sample. Additionally, continuous temperature data are collected year-round from stations that are known to have dry weather discharges.

1.2 Dry Weather Outfall Screening Plan (DWOSP)

The *Dry Weather Outfall Screening Plan* explains the process for dry weather outfall screening and provides comprehensive guidance for outfall investigation efforts. Under this plan, discrete temperature data are collected at outfalls that have dry weather discharge. Discrete samples are collected from outfalls with known dry weather flows up to three times per year, assuming flow is present.

1.3 Americana Subwatershed Monitoring Plan

The *Americana Subwatershed Monitoring Plan* describes the procedures for subwatershed monitoring within the Americana Subwatershed to determine sources of non-stormwater flow and areas of elevated pollutant loads. As a part of this plan, continuous temperature data are collected year-round at one outfall.

1.4 Plantation Lane Temperature Monitoring Plan

The *Plantation Lane Temperature Monitoring Plan* was developed to address temperature monitoring specific to the Boise River AU 17050114SW005_06. Under this plan, continuous temperature data are collected year-round at one outfall.

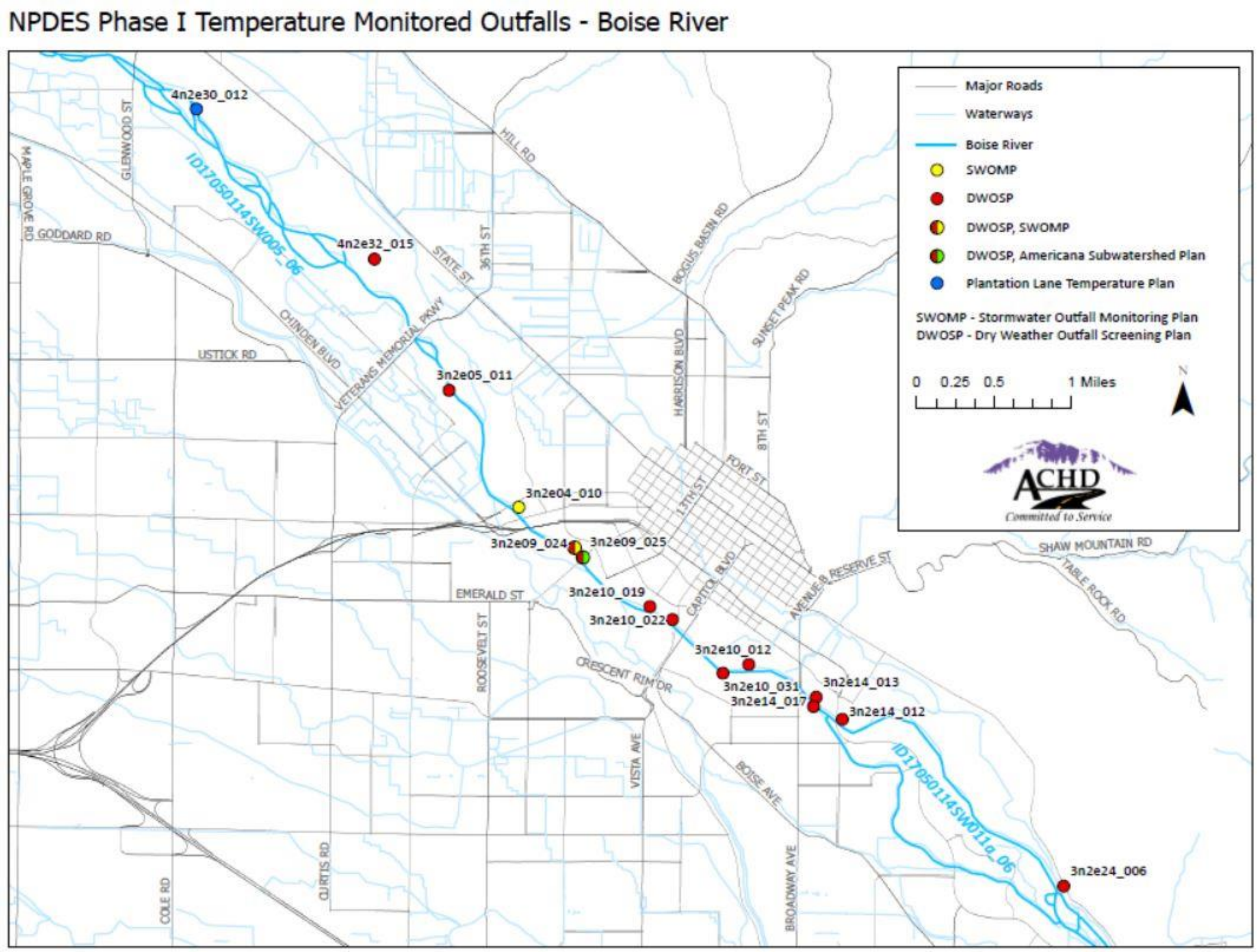


Figure 1 Temperature Monitored Outfalls

Table 1 NPDES Phase I Temperature Monitored Outfalls

Outfall ID (Station Name)	Boise River AU	Monitoring Plan	Equipment	Sample Type, Interval	Frequency
3n2e04_010 (Main)	17050114SW011a_06	SWOMP	Hach Submerged Area Velocity Sensor	Continuous, 15-minute	During monitored events
			In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	During monitored events
3n2e05_011	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e09_024 (Americana)	17050114SW011a_06	SWOMP	ISCO TIENet 350	Continuous, 15-minute	Year-round
			In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	During monitored events
		DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e09_025 (AS_7)	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
		Americana Subwatershed	ISCO 2150 Area Velocity Sensor	Continuous, 5-minute	Year-round
3n2e10_012	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e10_019	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e10_022	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e10_031	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e14_012	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e14_013	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e14_017	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
3n2e24_006	17050114SW011a_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present
4n2e30_012 (Plantation Lane)	17050114SW005_06	Plantation Lane Temperature Plan	HOBO MX2203	Continuous, 15-minute	Year-round
4n2e32_015	17050114SW005_06	DWOSP	In-Situ AquaTroll 400 In-Situ SmarTroll MP	Discrete	3x/year, if discharge is present

2. Methods

The method used to obtain all temperature readings, both discrete and continuous, for NPDES Phase I monitoring is EPA 170.1. Continuous samples are collected from a fixed location by equipment that is installed in the invert of the storm drain pipe. Discrete samples are collected from the discharge stream using a hand-held instrument. Detailed information about each equipment type is found in the relevant monitoring plans.

2.1 Equipment Inspection and Calibration

Visual inspections of the equipment are completed on a regular basis, during routine maintenance events and data downloads. An annual accuracy check will be performed by comparing the field equipment to a precision thermometer certified by the National Institute of Standards and Technology.

3. Data Management

Temperature data will be imported into Seveno DataSight (DataSight), a data management software used for handling data collected from all ACHD stormwater monitoring programs. DataSight provides a safe and secure platform for storing, viewing, validating, and analyzing data.

3.1 Data Validation

Raw data will be subject to review on a routine basis. The inspection of temperature trends will include physical logger range limits, practical environmental range units, and rates of temperature change. In the event of suspected erroneous data, the data will be flagged in DataSight using the appropriate flag discussed in QAPP section 4.2.2.

Appendix A – Plantation Lane Temperature Monitoring Plan

Plantation Lane Temperature Monitoring Plan

Ada County Highway District

Boise, Idaho

11/22/2022

Table of Contents

1. Introduction

1.1 Basis for Monitoring Plan

The Environmental Protection Agency, Region 10 (EPA) issued the third cycle National Pollutant Discharge Elimination System (NPDES) Municipal Storm Separate Sewer System (MS4) Phase I Permit No. IDS027561 (Permit) effective October 1, 2021, to Ada County Highway District (ACHD), Boise State University, City of Boise, City of Garden City, Drainage District #3, and Idaho Transportation Department District #3, referred to as the "Permittees." Starting July 1, 2021, the Idaho Department of Environmental Quality (IDEQ) acquired Permit authority through the Idaho Pollutant Discharge Elimination System (IPDES) Program. The Permit authorizes stormwater discharges from MS4 outfalls to waters of the United States in accordance with the conditions and requirements of the Permit. Under this permit, the Permittees are required to monitor temperature in stormwater discharges from the MS4 to the Boise River including assessment units (AU) 17050114SW005_06, 17050114SW005_06a, 17050114SW005_06b, to quantify stormwater impacts to this waterbody (Permit part 4.1).

ACHD has identified outfall '4n2e30_012' to address stormwater temperature monitoring into the Boise River AU 17050114SW005_06. The remaining two AUs listed in the Permit (17050114SW005_06a and 17050114SW005_06b) are outside of the Permit area, and therefore do not have Permittee stormwater contribution.

This Plantation Lane Temperature Monitoring Plan (Plan) has been developed in line with the *Quality Assurance Project Plan for NPDES Stormwater Permit Monitoring* (QAPP) (ACHD, 2021a). The Plan describes the overall approach to monitoring temperature in stormwater discharges and provides site and drainage area details for the monitoring station.

Certain Quality Assurance/Quality Control (QA/QC) procedures that have been identified using EPA guidance for QAPPs are also included in this plan. The QA/QC procedures are designed to ensure data collected meet specific data quality objectives developed specifically for Permit-required monitoring activities. The QC procedures and data management details included in this document are specific to this Plan.

1.2 Monitoring Plan Objective

The primary objective, derived from Permit part 4.1, is as follows:

- Quantify the temperature impacts of stormwater discharges from the MS4 to the Boise River AU 17050114SW005_06.

The data collected under this plan will help determine if water temperatures from stormwater discharges comply with temperature criteria for the protection of aquatic life (IDAPA 58.01.02.250.(b),(f)).

1.3 Monitoring Plan Elements

This document outlines the Plan's approach and includes specific QAPP elements recommended by the EPA. EPA-recommended QAPP elements are addressed as either program elements or monitoring plan elements.

Monitoring plan elements are described in full in this document, while program elements are addressed in the QAPP. Monitoring plan elements are those components that contain details specific to each individual monitoring plan. Program elements consist of the standardized monitoring components that all individual monitoring plans developed under the Permit reference. A list of program and monitoring plan elements is included in Table 1.

Table 1 QAPP Element Document Reference

EPA Recommended QAPP Elements	QAPP Element	Plan Element; Section
Group A: Project Management		
A1 – Title and Approval Sheet	x	
A2 – Table of Contents	x	x
A3 – Distribution List	x	
A4a – Project Organization	x	
A4b – Task Organization		x; 1.4
A5 – Problem Definition/Background	x	
A6 – Project/Task Description		x; 1
A7a – Quality Objectives and Criteria for Measurement Data	x	
A7b – Method Dependent Criteria for Measurement Data	x	
A8 – Special Training Needs/Certification	x	
A9 – Documents and Records	x	
Group B: Data Generation and Acquisition		
B1 – Sampling Process and Design		x; 2
B2 – Sampling Methods		x; 3
B3 – Sample Handling and Custody		n/a
B4 – Analytical Methods		n/a
B5 – Quality Control	x	x; 4
B6 – Instrument/Equipment Testing, Inspection, Maintenance		x; 3.1
B7 – Instrument/Equipment Calibration and Frequency		x; 3.1
B8 – Inspection/Acceptance of Supplies and Consumables	x	
B9 – Non-direct Measurements	x	
B10 – Data Managment	x	x; 3.2
Group C: Assessment and Oversight		
C1 – Assessments and Response Actions	x	
C2 – Reports to Management	x	
Group D: Data Validation and Useability		
D1 – Data Review, Verification, and Validation	x	
D2 – Verification and Validation Methods	x	
D3 – Reconciliation and User Requirements	x	

1.5 Task Organization

ACHD is the lead agency for monitoring under the Permit. Key roles and job functions are described in the QAPP. The organization chart for this Plan is presented in Figure 1.

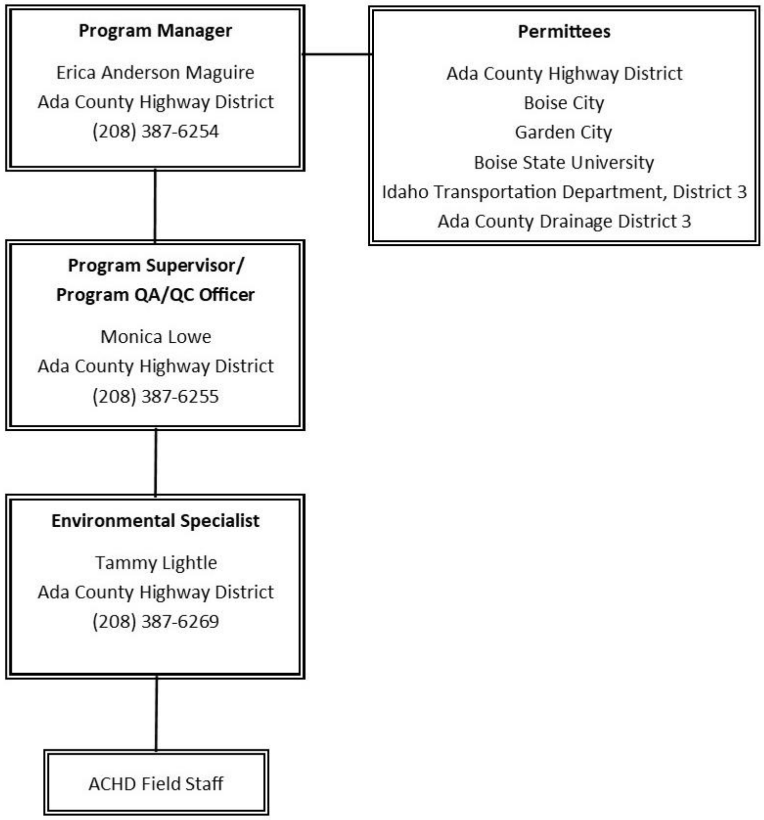


Figure 1 4n2e30_012 Temperature Monitoring Organization Chart

2. Study Area and Monitoring Location

The Boise River AU 17050114SW005_06 spans from Veterans Memorial Parkway bridge to Star Road bridge. Within this AU, ACHD owns and maintains six outfalls, and the remaining Permittees do not own any.

2.1 Site Description

Continuous water temperature monitoring of stormwater discharges will occur at one site within the Boise River assessment unit: outfall 4n2e30_012. The outfall is located at 6553 West Plantation Lane in northwest Boise. Access to the monitoring location is through a manhole located in Plantation Lane. To date, dry weather flows have not been observed from this subwatershed. Monitoring station and associated subwatershed information is provided in Table 2. A map of the monitored subwatershed is provided in Attachment A.

Table 2 Monitoring Station Information

Outfall ID (Station Name)	**4n2e30_012 (Plantation)**
Location	6553 W. Plantation Ln.
GPS Coordinates	43.657674, -116.270547
Subwatershed Area	22.43 acres
Receiving Water	Boise River
Assessment Unit	17050114SW005_06
Distance from Station to Outfall	331 ft
Pipe Construction	18 in, circular PVC
Equipment Location	In manhole

3. Methods

3.1 Equipment

Temperature monitoring will be accomplished using a HOBO® TidbiT® MX2203 temperature logger. The MX2203 has an internal temperature thermistor and two external screws which allow the logger to detect the presence of water. The logger is installed in a fixed location on a mounting band on the invert of the storm drain pipe.

3.1.1 Inspection and Calibration

The temperature logger will be visually inspected on a regular basis. An annual accuracy check will be performed by comparing the logger reading to a precision thermometer certified by the National Institute of Standards and Technology. A correction factor will be applied to the logger data if there is a discrepancy between the two temperature readings.

3.2 Data Collection and Management

Temperature readings will be collected at 15-minute intervals, logged by the data logger. Additionally, the logger checks for the presence of water every 15 seconds and records an event when the status changes. Data transfer will regularly occur using Bluetooth and a mobile device equipped with the HOBOconnect® application. The data will be imported into Seveno DataSight (DataSight), a data management software used for handling data collected from all ACHD stormwater monitoring programs. DataSight provides a safe and secure platform for storing, viewing, validating, and analyzing data.

4. Quality Assurance/Quality Control

Raw data will be subject to review on a routine basis. The inspection of temperature trends will include physical logger range limits, practical environmental range limits, and rates of temperature change. In the event of suspected erroneous data, the data will be flagged in DataSight using the appropriate flag discussed in QAPP section 4.2.2.

4.1 Data Quality Objective (DQO)

The DQO for ACHD stormwater temperature monitoring can be summarized by the following statement:

Monitoring efforts will provide data of sufficient quality and quantity in accordance with Permit requirements to characterize the impact of stormwater discharges on the water temperature of the Boise River.

4.2 Data Quality Indicators (DQIs)

DQIs have been established to set measurable qualitative and quantitative goals for data acceptance that meet the program DQO described above. Each DQI is summarized below. DQIs are the basis for addressing field and laboratory analytical instrument performance, as well as sample collection and handling procedures.

DQIs are described fully in Section 1.8.1 of the QAPP. A brief description of each DQI is included in the list below.

- Project Required Detection Limits (resolution): Achieving appropriate reported constituent concentration results at values that allow for comparison to baseline data and water quality standards.
- Accuracy: The accuracy of the data is a measure of the extent to which a measured value represents the true value.
- Representativeness: Representativeness is a measure of the extent of the degree to which data accurately and precisely indicate environmental conditions.
- Comparability: The comparability of a data set is the extent to which data accurately and precisely indicate environmental conditions.
- Completeness: Completeness is a comparison between the amount of usable data collected versus the total amount of data collected.
- Sufficiency: Data set sufficiency is the amount of data required to perform the level or type of analysis necessary for each monitoring element.

The target values for these indicators are listed in Table 3 below.

Table 3 Data Quality Indicator Targets

Constituent	Analytical Method	Resolution	Accuracy
Temperature	EPA 170.1	0.01°C	±0.25 °C from -20°C to 0°C ±0.2°C from 0°C to 70°C

5. Annual Reporting

A summary of stormwater temperature data from outfall 4n2e30_012 will be included in the MS4 Annual Report Form (NPDES Phase I Permit Appendix B) submitted to IDEQ annually. This summary will include a graph of the water temperature data collected during the reporting period (October 1 – September 30).

6. References

Ada County Highway District. (2021a). *Quality Assurance Project Plan for NPDES Stormwater Permit Monitoring.*

Ada County Highway District. (2021b). *Stormwater Outfall Monitoring Plan*.

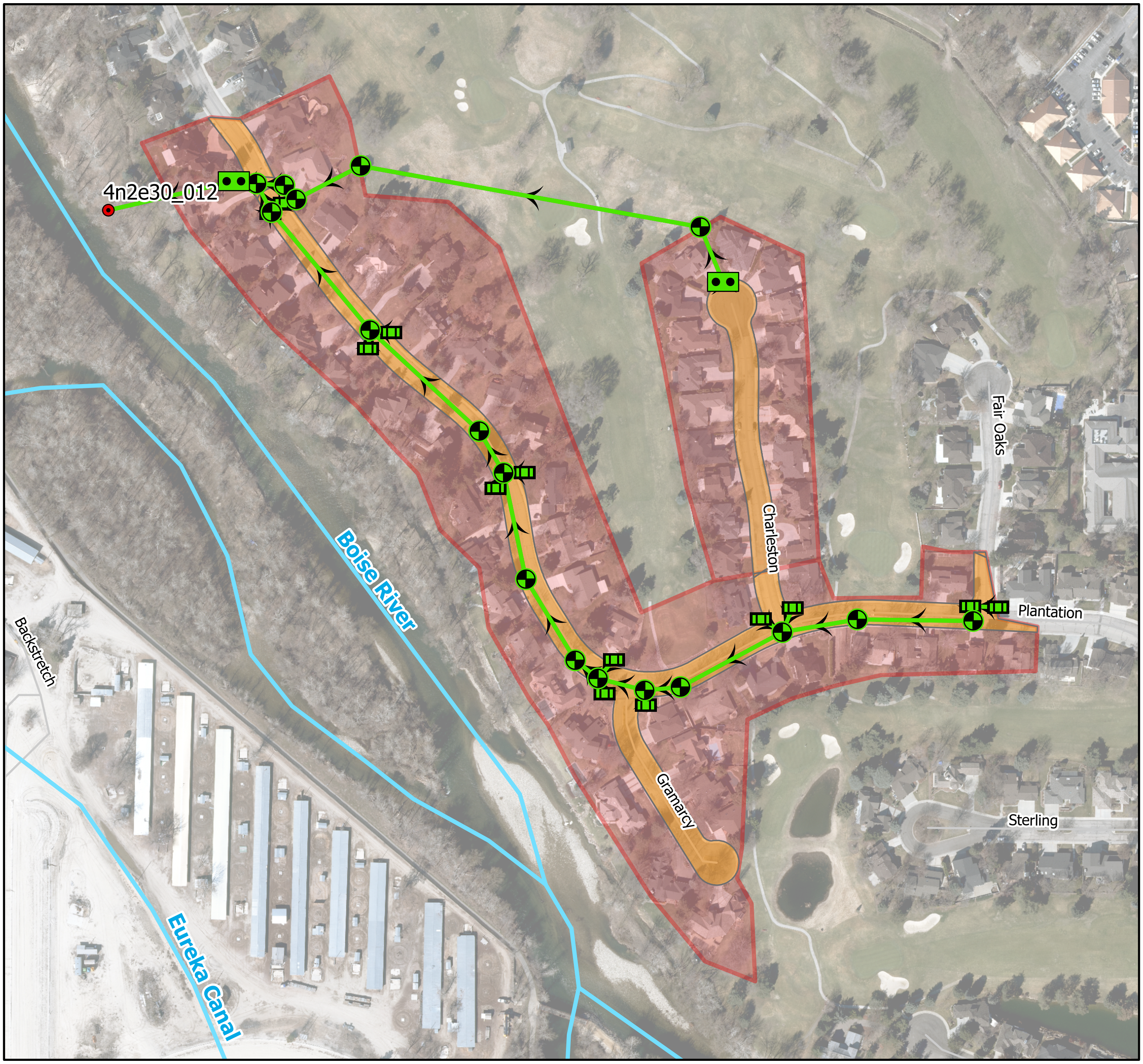
Code of Federal Regulations. (2022). *40 CFR Part 136.* Retrieved from https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-136.

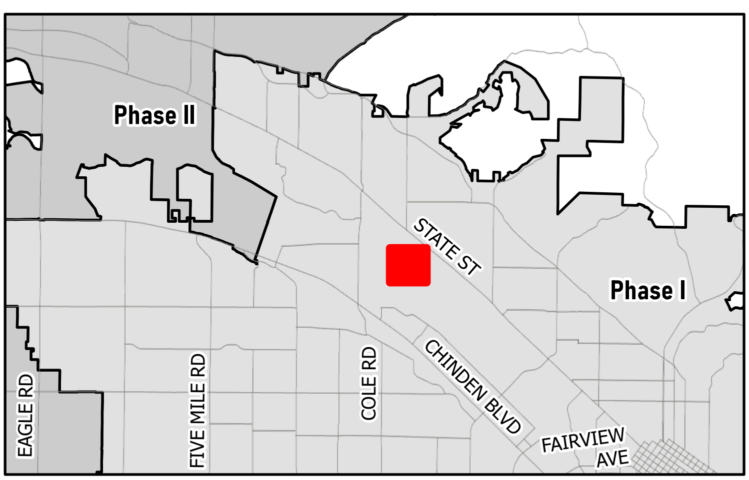
Idaho Department of Environmental Quality. (2022). *58.01.02 – Rules Regulating the Idaho Pollutant Discharge Elimination System Program.* Retrieved from https://adminrules.idaho.gov/rules/current/58/580125.pdf.

Onset Computer Corporation. (2017-2021). *HOBO® TidbiT® MX Temp 400 (MX2203) and Temp 5000 (MX2204) Logger Manual.* Retrieved from https://www.onsetcomp.com/sites/default/files/resources-documents/21537-M%20MX2203%20and%20MX2204%20Manual.pdf.

Attachment A - Map

Plantation Lane Monitoring Station (outfall 4n2e30_012)





Outfall
Storm Drain Inlet
Storm Drain Manhole
Sand and Grease Trap
Right-of-Way Drainage = 3.19 Acres
Drainage Area = 22.43 Acres
Storm Drain Pipe
Waterways
Roadway

N

0 125 250 500 Feet

ACHD
Committed to Service

2024 Attachment M - WY24 Stormwater Pollution Hotline Summary

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY COMPLAINT/REPORT FORM

Date of Report:	JAN 26 2024
Location of Reported Issue:	Linden + Leadville
Name/Contact Information of Reporting Party:	Thomas Curry 208-515-9521
Issue Identified:	wanted to know if the at corner of Linden And Leadville was DD3.
Site Visit Conducted:	Yes No
Action Taken if Required:	I told Thomas. It was Mike Harrison South Boise mutual water might be able to help. Because DD3 does not have anything there.
Outcome:	Thomas is going to call Mike Harrison
Date of Report:	
Location of Reported Issue:	
Name/Contact Information of Reporting Party:	
Issue Identified:	
Site Visit Conducted:	Yes No
Action Taken if Required:	
Outcome:	

2024 Attachment N - DD3 Manager, Dean Callen, Inspection Logs

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	10-4-23 Mileage 29 Hours 2
Location of Maintenance/Inspection:	DRAIN A Victory St - Garfield St - Joyce St - Martha St
Condition of Facility:	Cleared trash grates ditches run good
Notes:	
Date of Maintenance/Inspection:	10-4
Location of Maintenance/Inspection:	DRAIN B Williams Park Area
Condition of Facility:	Clear trash grates water is flowing good
Notes:	
Date of Maintenance/Inspection:	
Location of Maintenance/Inspection:	
Condition of Facility:	
Notes:	

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	10-10-23 Mileage 29 Hours 2.5
Location of Maintenance/Inspection:	DRAIN B William Park Area
Condition of Facility:	water flowing good, All trash grate clean
Notes:	
Date of Maintenance/Inspection:	10.10.23
Location of Maintenance/Inspection:	DRAIN A Victory St - Garfield St. - Joyce St - Martha St.
Condition of Facility:	Joyce St and Boise Ave needs work at the grate. water to high right now
Notes:	
Date of Maintenance/Inspection:	
Location of Maintenance/Inspection:	
Condition of Facility:	
Notes:	

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	10-13-23 Milage 29 Hour 2.5
Location of Maintenance/Inspection:	DRAIN A Victory St - Garfield st - Joyce - MARtha
Condition of Facility:	All trash grates clean Lots of leaves
Notes:	
Date of Maintenance/Inspection:	10-13-23
Location of Maintenance/Inspection:	DRAIN B Williams Parks Area
Condition of Facility:	Cleared trash grates
Notes:	
Date of Maintenance/Inspection:	
Location of Maintenance/Inspection:	
Condition of Facility:	
Notes:	

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	10-16-23 Mileage 29 Hours 25
Location of Maintenance/Inspection:	DRAIN A Victory St - Garfield St - Joyce St - Martha
Condition of Facility:	Lots of leaves and small branchs Cleared All trash grate
Notes:	
Date of Maintenance/Inspection:	10-16-23
Location of Maintenance/Inspection:	DRAIN B William Park Area
Condition of Facility:	Lots of leaves Cleared trash grates
Notes:	
Date of Maintenance/Inspection:	
Location of Maintenance/Inspection:	
Condition of Facility:	
Notes:	

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	10-20-23 Mileage 29 Hours 2.5
Location of Maintenance/Inspection:	Drain A Victory St - Garfield - Dundee - Joyce
Condition of Facility:	Cleared all trash grates Most water is out. Some running on lower Drain A
Notes:	
Date of Maintenance/Inspection:	10-20-23
Location of Maintenance/Inspection:	Drain B William Park Area
Condition of Facility:	Cleared trash grates Low water
Notes:	
Date of Maintenance/Inspection:	
Location of Maintenance/Inspection:	
Condition of Facility:	
Notes:	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: Oct 2023

DATE	TIME	hours DESCRIPTION OF ACTIVITIES	MILES
10/23	2.5	DRAIN A	29
		Victory St - Garfield St - Dundee St - Joyce St	
		Martha St - BSU Tennis Court	
		All grate are cleaned, some leaf clean-up,	
		very little water	
		DRAIN B	
		Williams Park Area	
		Grates are cleared, little leaf clean-up	
		Low water	
10/27	2.5	DRAIN A	29
		Victory St - Garfield St - Joyce St - Martha St	
		All trash grates are cleaned - low water	
		DRAIN B	
		William Park Area	
		All waters if any flowing great	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: Nov 2023

DATE	TIME hours	DESCRIPTION OF ACTIVITIES	MILES
11/2	1.5	DRAIN B Williams Park	
		Lots leaves clear trash grate, and some areas	
		up stream, water is low. Ditch looks good.	
	1.5	DRAIN A	
		Victory St. Lots of leaves clear trash grate and	29
		clear some areas upstream. Garfield St, Joyce St	
		and Martha St. No water. Little leaves at Martha	
		to clear up. All is good	
11/7	1	Drain B Williams Park	
		Clear trash grate. Low water, ditch look good	
	1.5	DRAIN A	
		Cleared trash grate at Victory St. All other	29
		Garfield St., Joyce St and Martha St. Little to	
		No water. Martha St had leaves backing what	
		water is flowing. Cleaned that grate and some	
		up stream	
	5.5	hours miles	58
	2.5	hours for Question and Concern	
		Report Form and Call back	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: Nov 2023

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
11/13	1	Drain B	
		Williams Park cleared trash grate. Very little	
		leaves or pine needles. All in good shape	
	1.5	Drain A	29
		Victory St, BSU Tennis Ct., Joyce St. Martha St.	
		Martha St cleared trash grate. All other are dry	
11/20	1.5	Drain B	
		Williams Park Lots of leaves at trash grate	
		Drain A	
	2	Victory St Clean no water, BSU Tennis Ct. leaves	29
		some branches cut up and stack on the bank	
		Joyce St. - clean Martha St. lots of leaves and	
		branches and small tree to cut down remove.	
11/27	3	Drain B	30
		Williams Park Clean trash grate, ditch is	
		clear and low water	
		Drain A	
		Victory St, Dundee St, Garfield St, BSU	
		Tennis Courts, Joyce St. and Martha St.	
		All grates are clean. Most ditches dry.	
	9 hrs total	miles	88

Total

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: DEC 2023

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
12/1		DRAIN A	
		Martha St, BSU Tennis Ct., Joyce St, Dundee St	
		and Victory St. Cleared all trash grates. Not	
		much water, lots leaves.	
12/1	2.5	DRAIN B	29
		Williams Park low water, lots of leaves	
		Cleared trash grate. Ditch is clear water	
		Running good.	
12/5		DRAIN A	
		Martha St, Joyce St. Dundee St. and Victory St	
		2 tree down will call Boise Tree Service on	
		removal. All grates are clear	
12/5	2.5	DRAIN B	29
		William Park	
		Cleared track grate, ditch is running	
		good.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** Dec 2023

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
12/8		Drain A	
		Martha St, BSU Tennis Ct., Joyce St, Dundee St	
		and Victory St. Cleared all trash grates. Not	
		much water, lots leaves.	
12/8	2.5	Drain B	29
		Williams Park low water, lots of leaves	
		cleared trash grate. Ditch is clear water	
		Running good.	
12/12		Drain A	
		Marthast, Joyce St. Dundee St. and Victory St.	
		2 tree down will call Boise tree service on	
		removal. All grates are clear. Called tree	
		service for appointment next week	
12/12	2.5	Drain B	29
		William Park	
		Cleared track grate, ditch is running	
		good.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: Dec 2023

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
12/15		Drain B	
		Williams Park grate cleared. Low water	
		Ditch looks good.	
12/15	2.5	Drain A	27
		Victory St, Dundee St. BSU Tennis Courts,	
		Joyce St - Boise Ave and Martha St. Very little	
		to no water. All trash grate were clear.	
12/19		Drain B	
		Williams Park	
		Trash grate was clear. Very little water	
12/19	2.5	Drain A	27
		Victory St, Dundee St, Garfield St, BSU Tennis	
		Courts, Joyce - Boise Ave and Martha st.	
		Tree down at 2125 Boise will get bids After	
		Christmas.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: Dec 2023

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
12/22		Drain A	
		Victory St., Dundee St. Garfield St.	
		BSU Tennis Courts, Joyce - Boise Ave. And Martha St	
		No water flowing in ditches. All ditches Look	
		good.	
12/22	2.5	Drain B	27
		Williams Park	
		Very low water grate is clear. No problems	
		on ditch	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN **PAYROLL PERIOD ENDING:** DEC 2023

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
12/26		DRAIN A	
		Victory St, Dundee St., Garfield St,	
		BSU Tennis Ct. Joyce-Boise Ave And Martha	
		St. VERY little water, All grates clean	
12/26	2.5	DRAIN B	27
		Williams Park	
		Trash grate clean VERY little water	
12/29		DRAIN A	
		No change from first part of wk	
12/29	2.5	DRAIN B	27
		No Change	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN **PAYROLL PERIOD ENDING:** JAN 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
1-1	2.5	DRAIN A	29
		Victory St, Dundee St., Garfield St,	
		BSU Tennis Ct. Joyce - Boise Ave and Martha	
		St. Very little water, All grates clean	
		DRAIN B	
		Williams Park	
		Trash grate clean very little water	
1-5	4	DRAIN A	30
		No change from first part of wk	
		DRAIN B	
		No Change	
		Monthly meeting for DD3	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: JAN 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
1-9	2.5	DRAIN A	29
		Victory St, Dundee St., Garfield St,	
		BSU Tennis Ct. Joyce-Boise Ave And Martha	
		St. Very little water, All grates clean	
		DRAIN B	
		Williams Park	
		Trash grate clean very little water	
1-12	2.5	DRAIN A	29
		No change from first part of wk	
		DRAIN B	
		No Change	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: JAN 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
1-16	2.5	DRAIN A	29
		Victory St, Dundee St., Garfield St,	
		BSU Tennis Ct. Joyce-Boise Ave and Martha	
		St. Very little water, All grates clean	
		DRAIN B	
		Williams Park	
		Trash grate clean very little water	
1-20	2.5	DRAIN A	29
		No change from first part of wk	
		DRAIN B	
		No Change	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: JAN 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
1-23	2.5	DRAIN A	29
		Victory St, Dundee St., Garfield St,	
		BSU Tennis Ct. Joyce - Boise Ave and Martha	
		St. Very little water, All grates clean	
		DRAIN B	
		Williams Park	
		Trash grate clean very little water	
1-26	2.5	DRAIN A	29
		No change from first part of wk	
		DRAIN B	
		No Change	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** ____________

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
		Drain A	
		Victory St, Dundee St., Garfield St,	
		BSU Tennis Ct. Joyce - Boise Ave and Martha	
		St. very little water, all grates clean	
		Drain B	
		Williams Park	
		Trash grate clean very little water	
		Drain A	
		No change from first part of wk	
		Drain B	
		No Change	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: ____________

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
		DRAIN A	
		Victory St, Dundee St., Garfield St,	
		BSU Tennis Ct. Joyce-Boise Ave and Martha	
		St. Very little water, All grates clean	
		DRAIN B	
		Williams Park	
		Trash grate clean Very little water	
		DRAIN A	
		No change from first part of wk	
		DRAIN B	
		No Change	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: Jan 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
1-30	2.5	Drain B	29
		Williams Park Area	
		Very little no water, Trash grate is clean,	
		ditches are all clear.	
		Drain A	
		Martha St, Boise Ave, BSU Tennis Courts	
		Garfield St, Dundee St and Victory St	
		All trash grates are clear.	

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY COMPLAINT/REPORT FORM

Date of Report:	JAN 26 2024
Location of Reported Issue:	Linden + Leadville
Name/Contact Information of Reporting Party:	Thomas Curry 208-515-9521
Issue Identified:	wanted to know if the at corner of Linden And Leadville was DD3.
Site Visit Conducted:	Yes No
Action Taken if Required:	I told Thomas. It was Mike Harrison South Boise mutual water. might be able to help. Because DD3 does not have anything there.
Outcome:	Thomas is going to call Mike Harrison
Date of Report:	
Location of Reported Issue:	
Name/Contact Information of Reporting Party:	
Issue Identified:	
Site Visit Conducted:	Yes No
Action Taken if Required:	
Outcome:	

4856-0657-5177, v. 2

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: FEB 2021

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
2-2	2.5	DD3 ditch meeting	
2.2		DRAIN A	
		Victory ST, Garfield St, Dundee St,	
		Boise Ave and Martha ST. All grates cleaned.	
		Very little water.	
2.2	3	DRAIN B	30
		William Park grates full, cleared that grate	
		ditch looks good.	
2-6	2.5	DRAIN B	
		Williams Park- Cleaned trash grate. Good	
		water flow. Ditch in good shape	
		DRAIN A	
		Victory St, Dundee St, Garfield St, BSU tennis	29
		Cts, Boise Ave. and Martha ST. All trash grates	
		checked. Low water.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: Feb 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
2/9		Drain A	
		All trash grates are cleared if needed.	
		Victory St, Dundee St, Garfield St, BSU tennis	
		Courts, Boise Ave and Martha St. Not much water	
2/9	2.5	Drain B	29
		Williams Park Trash grate cleared. Drain B	
		is in great condition.	
2/13	2.5	Drain A & B	
		Running the same as last week no change	29
		Very little water	
2/14	2.5	Drain A & B	
		All trash grate cleared. Ditches are good	29
		shape. Drain A ~~@~~ near Boise Ave and Joyce St.	
		still needs atension. Culvert is old needs to be	
		replaced.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: FEB 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
2/20		Drain A	
		Victory St, Dundee St, Garfield St, BSU Tennis Ct.	
		Boise Ave and Martha St.	
		All trash grates checked and Cleaned.	
2/20	2.5	Drain B	29
		William Park Area. Clean trash grate	
2/26		Drain A	
		Victory St, Garfield St. Remove small tree	
		from ditches and Clean trashgrates. BSU tennis	
		courts, Boise Ave and Martha St. Low water in	
		all ditches	
2/24	3.5	Drain B	
		Williams Park Area. Cleared trash grate	
		Low water no problems	29

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: MARCH 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
3/7	2.5	Monthly DD3 meeting	
		DRAIN A	
		Victory St, Dundee St, Garfield St. BSU tennis	
		courts, Boise Ave and Martha St. Cleared all	
		trash grates. All ditch are flowing good.	
	2.5	DRAIN B	27
		Williams Park Area Lots of pine needles	
		got that cleaned up. Ditch looks great, water	
		flowing well.	
3/12	2.5	DRAIN A SAME AS ABOVE	27
		DRAIN B	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** March 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
3/24		Drain A	
		Victory St, Dundee St, Garfield St., BSU	
		tennis courts, Boise Ave and Martha St	
		Very little water, trash grates are clear.	
		Martha St. needs some clean up. All others	
		are good shape.	
		Drain B	
		Williams Park area. Trash grates had lots of	
		leave, pine needles. Very little water.	
3/29		Drain A & B SAME AS ABOVE	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: April 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
4/1		DRAIN A	
		Victory St, Garfield St., BSU tennis ct.	
		Boise St and Martha St. Removed small trees	
		on Victory St. Clean all trash grates	
4/1	3	DRAIN B	29
		Williams Park Area	
		Clean trash grate. Ditch running great	
		no problems	
4/4		DRAIN A	
		Victory St., Dundee St., Garfield St.	
		Boise St. and Martha St. Remove limbs at	
		Martha St.. Clear all trash grates.	
4/4	4	Drain B	30
		William Park Area Clear trash grates	
		Check Big Pump on Apple St.. Works great	
		very noisy. This is yearly check.	
		Check small pump on North Church. Pump	
		leaks a little but works	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** April 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
4/9		Drain A	
		Victory St. Garfield St. - Boise Ave and	
		Martha St. All trash grates cleared	
4/9	2.5	Drain B	27
		Williams Park Area	
		Cleared trash grate. Ditch is in great shape	
		Drain A	
4/11		Victory St - Dundee St - Garfield St - Boise Ave	
		Martha St. Lots of rain and in grates. Cleared	
		All grates Garfield St. cleared limbs and small tree in ~~ck~~ ditch	
4/11	3.5	Drain B	27
		Williams Park Area Trash grate full of	
		pine needles and limbs.	
4/12		Drain A	27
		Victory St - Garfield St. - Martha St Clear trash grate	
4/12	2.5	Drain B	
		Williams Park Area Cleaned trash grates	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CULLEN **PAYROLL PERIOD ENDING:** April 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
4/16		DRAIN A	
		Victory St. Garfield St. - Boise Ave and	
		Martha St. All trash grates cleared	
4/16	2.5	DRAIN B	27
		Williams Park Area	
		Cleared trash grate. Ditch is in great shape	
4/19		DRAIN A	27
		Victory St - Dundee St - Garfield St - Boise Ave	
		Martha St. Lots of rain and in grates. Cleared	
		All grates	
4/19	2.5	Drain B	
		Williams Park Area Trash grate full of	
		pine needles and limbs.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Cullen **PAYROLL PERIOD ENDING:** April 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
4/23		DRAIN A	
		Victory St. Garfield St. - Boise Ave and	
		Martha St. All trash grates cleared	
4/23	2.5	DRAIN B	27
		Williams Park Area	
		Cleared trash grate. Ditch is in great shape	
4/26		DRAIN A	
		Victory St - Dundee St - Garfield St - Boise Ave	
		Martha St. Lots of rain and in grates. Cleared	
		all grates	
4/26		Drain B	
		Williams Park Area Trash grate full of	
		pine needles and limbs.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: April 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
4/30		Drain A	
		Victory, Garfield St, Boise Ave and Martha St	
		All ditches flowing good ~~clear~~ cleared the	
		trash racks	
	2.5	Drain B	27
		William Park ~~area~~ area. High water, trash grates	
		cleared. Ditch is flowing good.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: May 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
5/3	2.5	Monthly Drainage Meeting	
5/3		Drain A	
		Victory st. Garfield St, Boise Ave and	
		Martha St. All grates cleared. Water	
		flowing well in most ditches	
5/3	2	Drain B	27
		Williams Park Area	
		Cleared trash grates	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: MAY 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
5/7	2.5	DRAIN A	
		Victory St. Garfield St, BSU Tennis Court	
		Boise Ave, Martha St. Ditches good shape	
		All trash grates cleaned	
		DRAIN B	27
		Williams Park Area	
		Cleared trash grate	
5/10	2.5	Drain A+B	27
		SAME AS ABOVE	
5/14	2.5	Drain A+B	
		SAME AS ABOVE	27

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** May 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
Ø			
5/17	2.5	Drain A	
		Victory St, Dundee St: Garfield St,	
		Boise Ave and Martha St. All grates cleared	
		Drain B	27
		William Park Area	
		Cleaned trash racks	
5/20	2.5	Drain A & B	27
		Same as above	
5/24	2.5	Drain A & B	27
		Same as above	
5/28	2.5	Drain A & B	27
		Same as above	
5/31	2.5	Drain A & B	27
		Same as above	
		Not much change, Ditches are running	
		good. No problem so far.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** June 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
6/3	2	Drain A	
		Victory St, Garfeild St, Boise Ave and	
		Martha St. Cleared grates. Not alot of	
		water flowing. Ditches are flowing good.	
		Drain B	
		William Park Area	
		Clean grates Ditches are flowing good.	25
6/7	2	Drainage Ditch meeting	
		Drain A	
		Victory St. Dundee St, Grafeild St. Boise	
		Ave and Martha St. Cleared trash grates	
		Ditches are flowing well.	
	2.5	Drain B	27
		Williams Park Area	
		Cleared trash grates. lots of grass trimmings	
		Ditch is flowing well	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** June 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
6/12	2.5	Drain A	
		Victory St - Garfield St - BSU Tennis Courts	
		Boise Ave and Martha St. Cleared trash grates	
		Boise Ave moving slow.	
		Drain B	
		William Park Area	
		water flowing great. Cleared trash grates	27
6/18	3	Drain B	
		Williams Park Area Cleared trash grates	
		Drain A	
		Victory St, Garfeild St, BSU Tennis Courts	
		Boise Ave, and Martha St. Clear grates	
		Chrisway. has a dam and fence that interferes	
		with water flow, I'm tracking down home	
		owners to fix problem.	27

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** June 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
6/21		Drain B	
		Williams Park Area	
		Cleared trash grates, no problems on ditch	
	4 hrs	Drain A	27
		Victory St, Garfeild St, BSU Tennis Court,	
		Boise St. and Martha St. Cleared trash grates	
		Drain A on Chrisway had a dam and 2	
		fences impeding the flowing. Took 1½ hr	
		to clear rocks and fence from ditch. All is flowing	
		now.	
6/25		Drain A	
		Victory St, Garfield St, Boise Ave and Martha St.	
		Cleared all trash grates. Boise Ave still not	
		flowing good. Culvert needs replaced.	
	2.5	Drain B	
		Williams Park Area	
		Cleared trash grates All flowing good	27
6/28	2.5	Drain A+B	27
		Has not changed	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN **PAYROLL PERIOD ENDING:** July 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
7/1	2.5	MarthaSt, Boise Ave, BSU TENNIS Courts,	
		GarfieldST., LeadvilleSt. Drain A All ditchs ARE	
		flowing good. Boise Ave is running slow.	27
		DRAIN B	
		Williams PARK AREA Clear trash grates	
7/8	2.5	SAME AS ABOVE NO changes	27
7/15	2.5	SAME AS ABOVE NO Changes	27
7/23	2.5	SAME AS ABOVE NO changes	27
7/26	2.5	SAME AS ABOVE NO Changes	27
7/30	2.5	SAME AS ABOVE NO Changes	27

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen **PAYROLL PERIOD ENDING:** August 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
8/2	1.25	District meeting	
		Drain A	
		Victory Rd, Dundee St, Garfield St, BSU	
		Tennis courts, Boise Ave and Martha st.	
		All trash grates cleaned. Waters are all	
		running low and slow	
	2.75	Drain B	
		Williams Park Area	27
		cleaned grates. Ditch running and looking	
		good.	
8/7	2.5	Same as above all ditches clear trash grates	27
		and flowing good.	
8/13		Drain A	
		Victory St., Garfield st, BSU Tennis Court	
		Boise Ave., Martha St. All trash grates cleaned	
		Boise Ave around 2150 Boise Ave clear limbs. Need to	
		have tree service clear big tree.	
		Drain B	
	3.5	Williams Park Area. High water flowing real	27
		good.	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: August 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
8/16		Drain A	
		Walked drain from Broadway to Garfield.	
		Maniton Park needs attention. Will need bids	
		for that area. All other ditches trash grates	
		cleared	
		Drain B	
	3.5	Williams Park Area	27
		water back normal all is flowing good.	
8/19		Drain A	
		Victory St., Garfield St. BSU Tennis Courts,	
		Boise Ave, Martha St. All trash grates cleared	
		Water is low and running good.	
		Drain B.	
	2.5	Williams Park Area	27
		Trash grates cleared. Ditch is flowing	
		good.	
8/26	2.5	Drain A&B	27
		Same as above	
8/29	2.5	Drain A&B	27

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: Dean Callen PAYROLL PERIOD ENDING: Sept 2024

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
9/2	1.75	DD3 monthly Meeting (this was on the 6th	
		Drain A	
		Victory St, Dundee St, Garfield, Boise Ave	
		and Martha St. Boise Ave flowing real slow	
		All ~~else~~ else flowing well.	
	2.5	Drain B	
		Williams Park Area	
		All is flowing well. Trash grate all cleared	27
9/6	2.5	Drain A + B	27
		All the same as above	
~~9/?~~	2.5	Drain A + B	27
9/13		All the same as above	
9/16	2.5	Drain B	
		Williams Park Area all trash grates are	
		clear. Water is low and running well.	
		Drain A	
		Victory St, Garfeild St, Dundee St,	
		Boise Ave and Martha St. No change cleared	27
		all trash grates.	

2024 Attachment O - ACHD Spill Response Plan

ACHD SPILL RESPONSE PLAN

March 2024

Table of Contents

1.0 Purpose

The purpose of this document is to provide Ada County Highway District (ACHD) staff guidance on responsibilities, operating procedures, implementation, and training, associated with spill response in the ACHD right-of-way (ROW) by ACHD staff or ACHD contractor. The ACHD Spill Response Plan (Plan) outlines how ACHD will implement the *ACHD Policy for Right-of-Way Spill, Container, and Debris Response, Resolution 2152* (Spill Policy), located in Appendix A. The Plan will be amended as needed to ensure the information is current, relevant and applicable to ACHD spill response activities and consistent with the Spill Policy. Any changes to the Spill Policy must be approved by the ACHD Commission.

2.0 Definitions

For this Plan and the Spill Policy the following definitions apply.

Hazardous Substance – Liquid or solid material or waste that poses an immediate health or safety risk to people, i.e., strong corrosives, strong oxidizers, radioactive material, flammable, explosive, etc. ***An unknown substance is presumed to be hazardous.***

Pollutant Waste – Liquid or solid waste that is not health or life threatening but poses an unreasonable risk to the environment, i.e., oil, gas, antifreeze, non-lead paint, etc.

Common Waste – Solid waste that can be disposed of at the local landfill without any special considerations, i.e., household waste, construction waste, debris, etc.

Household Hazardous Waste – Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients.

Critical Spill – Any spill where vapors, smoke, dead or injured animals or people at the site of the spill or have any reason to believe the material is a hazardous substance.

Moderate Spill –Any release of a known pollutant waste over 25 gallons, pollutant waste that enters the stormwater drainage system, petroleum spills that cause a visible sheen on navigable waters, or petroleum spills that impact soils. Quantity is generally categorized as large.

Incidental Spill – Any release of known common waste, or pollutant waste that is less than 25 gallons total. Quantity is generally characterized as small.

Spiller – The person responsible for causing the spill to occur.

Safe Zone – Contamination-free zone established away from the spill where emergency operations can be directed and supported.

3.0 Key Spill Response Principles

Every spill response incident will vary. ACHD staff response is directly related to the nature of the spill or container and the quantity of the spilled material. The purpose of this section is to provide ACHD staff general guidance that applies to most spills and containers in the ACHD ROW and direction based on ACHD's Spill Policy. A laminated flow chart is provided in all vehicles as a quick reference (also located in Appendix B).

ACHD's **Key Response Principles** are:

- **Level of response is based on type and amount of waste and personnel level of training**

- Identify Spill Classification:
  - **Incidental Spill** (common waste or small quantities of pollutant waste)
  - **Moderate Spill** (known pollutant waste over 25 gallons, pollutant waste that enters the stormwater drainage system, petroleum spills that cause a visible sheen on navigable waters, or petroleum spills that impact soils)
  - **Critical Spill** (hazardous substances that may be an immediate threat to public health - ***an unknown substance is presumed to be hazardous*)**

- **Containers are presumed to contain hazardous materials. DO NOT REMOVE ANY CONTAINER in the ROW**. All containers in the ROW (unless placed there by a known party) will be picked up by a contractor dispatched by ACHD. Small quantities of household hazardous waste can be disposed of at the Ada County Landfill or mobile collection sites **by residents** of Ada County if they assume responsibility of the container. Note: ACHD cannot dispose of household hazardous waste at the Ada County Landfill.

- **Stay in the "safe zone" and do not get directly involved in hazardous spill cleanup.**

- **Maintenance On-Call Supervisors (Crew Chiefs and Lead Workers) may direct or participate in defensive measures in the "safe zone"** to prevent hazardous substances from entering the stormwater drainage system only if such measures are essential to prevent contamination of the stormwater drainage system and no other public or private resources are immediately available.

- **Always attempt to identify the spiller or owner of the container and advise on proper disposal.**

- **Qualified contractors will be hired for cleanup and disposal of all spills in the ROW where the responsible party is unknown.**

- General precautions and actions include:
  - **Stay uphill and upwind**
  - **Advise those at the scene to stay back, at a safe distance from spill**
  - **Follow documentation and notification procedures (Section 6)**
  - **Assist in traffic control as necessary**

4.0 ACHD Staff Spill Response Roles and Responsibilities

Spill response is an activity that may involve numerous ACHD staff, primarily from the Maintenance Operations Division and the Environmental Department. This Plan applies to spills in the ACHD ROW. If a spill occurs outside of the ROW, contact the proper authority based on jurisdiction (i.e., City of Boise, Ada County etc.). Refer to Appendix C for contacts. For spills that occur in ACHD Maintenance yards, please contact the Environmental Programs Coordinator. The Environmental Specialist can help determine the proper authority, if needed.

4.1 Overview

Roles and responsibilities for spill response vary based on staff expertise, position duties within the ACHD organization, level of training, and the time and day of the spill response. Following are the roles and responsibilities of the ACHD staff involved with ACHD spill response.

4.2 Administrative Specialist

The Administrative Specialist is the first point of contact for critical and moderate spills within ACHD ROW during normal office hours 8:00 AM-4:30 PM. The Administrative Specialist at Cloverdale or Adams should be the first to become notified of a spill from the public or field personnel requesting assistance. The Administrative Specialist first call will be to a Crew Chief or Lead Worker depending on their proximity to the spill location and availability to proceed through the Plan protocols. The Administrative Specialist has the following responsibilities.

- Receives, responds, and routes calls from the public regarding concerns about the storm drain system and ROW.
- Assists the Crew Chief or Lead worker responding to a spill as needed i.e., completion of Illicit Discharge Form, dispatching additional Crew Chiefs or Lead Workers, providing a purchase order number to Crew Chief or Lead Worker if contractor is hired for cleanup.

4.3 On-Call Supervisor

The On-Call Supervisor is the first point of contact for critical and moderate spills within ACHD ROW after hours and holidays (before 8:00 AM and after 4:30 PM). ACHD Lead Workers and Crew Chiefs serve in the On-Call Supervisor role on a scheduled rotating basis. The On-Call Supervisor’s responsibilities are divided according to location into northeast Ada County (Adams On-Call Supervisor) and southwest Ada County (Cloverdale On-Call Supervisor). A map of the designated areas is in Appendix D. An On-Call Supervisor is designated each week for Cloverdale and Adams and is available 24 hours a day. Each Tuesday at 8:00 AM a new Lead Worker or Crew Chief is assigned the On-Call Supervisor responsibility for the week. The contact numbers for the On-Call Supervisor at Cloverdale and Adams are the same two numbers regardless of the person on duty. These numbers are listed on the Spill Response Flow Chart, Appendix B as well as Contacts,

Appendix C. In addition to a designated cell phone, an on-call bag with this Plan is transferred each week to the On-Call Supervisor.

After business hours, the On-Call Supervisor has all the responsibilities of the Maintenance Superintendent. The On-Call Supervisor also has the following responsibilities:

- Serves as initial point of contact for spills occurring after hours and holidays.
- Initiates call to 911 and Idaho State Communication Center (State Comm) for moderate and critical spills and coordinates with the Maintenance Superintendent.
- Requests additional reinforcements as needed (i.e., additional Maintenance Superintendent, Crew Chiefs, Lead Workers, etc.).
- Contacts environmental contractor if needed; works with responsible party to ensure proper cleanup.
- Ensures all documentation is complete and forwarded to appropriate parties; Sends group text message to ACHD staff (see Appendix C) if ACHD equipment or environmental contractor are used for cleanup; and
- Briefs Maintenance Superintendent, as needed.

4.4 Maintenance Superintendent

The Maintenance Superintendent is responsible for the operation of ACHD's respective Maintenance Section. Maintenance Superintendent responsibilities are divided between Cloverdale, Ustick, and Adams. In addition, the Maintenance Superintendent has the following responsibilities:

- Provides assistance and guidance to On-Call Supervisor during Critical Spills and Moderate Spills.
- Participates in State Comm initiated bridge calls, if needed.
- Authorizes contracting of environmental cleanup services.
- Requests additional reinforcements and expertise as needed i.e., additional Maintenance Superintendent, Crew Chiefs, Lead Workers, Environmental Specialist, etc.
- Oversees complete cleanup of critical spills from start to finish; and
- Ensures all documentation (including Damage Claim Form and Hazardous or Non-Hazardous Waste Manifests, if applicable) is complete and forwarded to appropriate parties.

4.5 Environmental Specialist

The Environmental Specialist is responsible for working with Maintenance Superintendent, Safety Coordinator, and Training Specialist to update the Spill Response Plan as needed. In addition, the Environmental Specialist has the following responsibilities:

- Provides guidance on proper spill cleanup procedures.

- Provides training on the Plan annually.
- Coordinates with the Training Specialist to ensure NPDES required training elements on spill response and illicit discharge are met; and
- Tracks and compiles all spill response actions that originate from the public and require use of ACHD or contractor equipment for NPDES annual report documentation.
- Assists in the completion of Illicit Discharge Form, if needed, and ensures complete and accurate information is recorded.
- Serves as a liaison with Idaho Department of Environmental Quality (IDEQ) answering questions regarding final spill cleanup and disposal documentation.
- Participates in State Comm initiated bridge calls, if needed.
- Ensures IDEQ and the Environmental Protection Agency (EPA) notification requirements have been met depending on spilled substance and quantity.

The Environmental Planner or Environmental Supervisor may fill the role of Environmental Specialist, described above, if the Environmental Specialist is unavailable.

4.6 Facilities & Safety Manager

The Facilities and Safety Manager is responsible for review of the Plan with regards to ACHD personnel and public safety concerns. Modifications to this Plan that result in less protective measures than those specified may not be employed without approval by the Facilities and Safety Manager. In addition, the Facilities and Safety Manager has the following responsibilities:

- Develops and coordinates the overall ACHD health and safety program.
- Recommends appropriate safeguards and procedures with regards to Personnel Protective Equipment (PPE) and ACHD personnel safety.
- Conducts accident/injury investigations and recommends corrective measures to prevent reoccurrence of an injury or accident.
- Follows up on large or dangerous spill activities to make sure maintenance crews responded in a safe manner; and
- Coordinates with the Training Specialist as needed, to ensure safe procedures are taught to both the First Responder Awareness (Section 8.1) and Operator Training levels (Section 8.2).

4.7 Safety & Training Specialist

The Safety & Training Specialist develops and provides training resources to ACHD personnel. The Safety & Training Specialist assures training requirements for spill response training meet OSHA Regulations 29 CRF 1910.120 (q)(6)(i) and (ii) as stated in the ACHD Policy for *Right-of-Way Spill, Container, and Debris Response* (Appendix A). In addition, the Safety & Training Specialist has the following responsibilities:

- Ensures appropriate level of training depending on ACHD personnel's role in spill response.
- Evaluates competency in various training areas as required.
- Schedules, documents, and ensures training meets all required elements; and
- Coordinates with the Environmental Specialist on NPDES required training on spill response and pollution prevention.

4.8 Field Staff

Field Staff are often first to observe a spill within ACHD's ROW and will proceed to the Spill Response Flow Chart for direction (Laminated sheet in vehicle and Appendix B of this document). Field Staff's primary responsibility regarding spill response is to contact the Administrative Specialist and the Environmental Specialist in case of a moderate or critical spill. In addition, Field Staff has the following responsibilities:

- Directs and assists responsible party in cleanup of incidental spills, including applying absorbent, when needed.
- Documents spill on Illicit Discharge Report Form (Form ID1a), available on ACHD's intranet (Forms/General Forms/Maintenance Forms) and Appendix E or providing information to Administrative Assistant to complete form.
- Ensures documentation has been provided to the Environmental Specialist.

5.0 Waste Disposal

Proper disposal of waste from the ACHD ROW is dependent on type, quantity, spill location, and state of matter. Qualified contractors will be hired for cleanup and disposal of all spills in the ROW where the responsible party is unknown.

The wastes that ACHD crews may encounter and are responsible for disposing of are:

- Trash and debris
- Small amounts of petroleum contaminated soil (if < 1 cu.ft. of soil impacted, hire environmental contractor to take verification sample)
- Absorbent that has been bound to a known pollutant waste in small amounts that can be swept and disposed of appropriately. Use appropriate personal protective equipment when applying and sweeping absorbent.

  Note: A five-gallon bucket will contain approximately 1 cu.ft. of soil.
  Note: Contact Dig Line if impact to soils is greater than surface level.
  Note: Approximately 1 bag of absorbent will absorb 2 gallons of liquid.

Descriptions of waste types and proper disposal methods are:

- Common Waste

- Consists of trash, debris, or any product that does not have special disposal instruction on its label
- Can be disposed of in an appropriate waste receptacle

- Pollutant Waste
  - Consists of substances such as gasoline, antifreeze, grease/oil, non-lead-based paint
  - Qualified contractors will be hired for cleanup and disposal of all spills in the ROW where the responsible party is unknown.
  - **Any UNKNOWNS, even if solidified, SHOULD NOT be picked up by ACHD and WILL NOT be transported to ACHD yards.**

- Household Hazardous Waste/ Hazardous Waste
  - Consists of substances such as pesticides, bleach, solvents, and chlorine.
  - Contact an Environmental Contractor for pick up and disposal.
  - **Any UNKNOWNS, even if solidified, SHOULD NOT be picked up by ACHD and WILL NOT be transported to ACHD yards.**

5.1 ACHD known spills in the ROW

ACHD crews may apply floor dry to solidify incidental spills (see Section 2.0 Definitions) that has spilled onto the ROW from ACHD equipment only. These spills originate from ACHD equipment and ACHD sweepers may be deployed to assist in spill cleanup. In these situations, the solidified known spill will be taken to the Adams Maintenance Yard and deposited in the designated area. Currently materials are being kept in plastic wrapped "burritos" until the materials can be sampled and characterized for proper disposal.

- **If in doubt, ACHD crews always have the option of hiring an environmental contractor for all spills in the ROW.**

6.0 Documentation and Reporting

Documentation and reporting are essential component of ACHD's spill response activities. Documentation entails completing the Illicit Discharge Report Form ID1a (Appendix E). This form is also available electronically on ACHD's intranet under Forms/General Forms/Maintenance Forms. Maintenance Administrative Specialists and the Environmental Specialist can assist with completing the form as needed.

6.1 What Spills are Documented?

All complaints, inquiries, and investigations regarding spills or containers ACHD receives from the public (including those from Tellus) will be documented. Additionally, all spill response initiated by ACHD staff will be documented including:

- Response during normal work activities.
- Response due to referral or request from another agency that requires ACHD contractor be used for cleanup.

If the spill response was not initiated by ACHD staff and does not involve ACHD equipment or an ACHD contractor for cleanup, it will not be documented. For example, if ACHD is notified of a spill within the right-of-way from a motor vehicle accident, and the substance was absorbed and disposed of by emergency responders, it will not need documented unless the MS4, soils, or a waterway is impacted.

Generally, if the spill is large enough that a sweeper or more than one bag of absorbent is needed or cannot simply be thrown away; it should be documented and submitted to the Environmental Specialist.

6.2 Documentation Process

The following actions should be taken for documenting spills in the ACHD ROW. Maintenance Administrative Assistant, Field Staff, Maintenance Superintendent, and Environmental staffs are involved in the documentation process.

- Field Staff, with assistance from Maintenance Administrative Assistant (if requested) will complete Form ID1a and submit it to the Environmental Specialist as soon as possible after completion of the form.
- Hazardous waste response should also be documented on Form ID1a and additional actions, as listed in Section 6.3, should be followed.
- The Environmental Specialist will take completed Form ID1a, photos, and all other documentation and save it by location on the shared Q drive at Q:\Maintenance\Spill Response.
- The Environmental Specialist will report on annual spill response activities in ACHD's annual NPDES reports.

6.3 Hazardous Waste Records and Retention

A Uniform Hazardous or Non-Hazardous Waste Manifest (manifest) will be requested by the Maintenance Superintendent in all cases that an environmental contractor is used for transport of a hazardous waste for off-site treatment, recycling, storage, or disposal. The manifest will be saved by on the shared Q drive at Q:\Maintenance\Spill Response with other information i.e., illicit discharge form, photos, etc. relating to the incident.

6.4 State and Federal Reporting Requirements

The most common spills in the right-of-way are petroleum products. **The IDEQ must be contacted via phone at (208) 373-0502 (Appendix C) as soon as possible, but at least within 24 hours, when ANY of the following conditions occur:**

- **An above ground spill or overfill of petroleum results in a release that is more than 25 gallons.**
- **Spill reaches a surface water and causes a sheen (regardless of the amount spilled).**

- **Less than 25 gallons of petroleum is spilled, but it cannot be cleaned up within 24 hours.**

Note: Additional sampling required for reportable spills.

IDEQ should be notified immediately in the case of a hazardous material spill (anything other than petroleum products).

Calling the Idaho State Communications System (State Comm) to notify of a spill does not necessarily satisfy reporting requirements to IDEQ or EPA (See Appendix B, Flow Chart). There are instances when IDEQ will be notified for a small quantity petroleum release to soil, for example, where assistance is not requested and State Comm may not be notified. If in doubt, it is better to "over-report" than "under-report." Idaho Department and Administrative Procedures Act (IDAPA) 58.01.02- Water Quality Standards and Wastewater Treatment Requirements establish the State procedures for addressing hazardous material spills (IDAPA 58.01.02.850) and petroleum oil spills (58.01.02.851/852). Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the EPA has established a designated list of reportable quantities for approximately 800 hazardous substances which can be found at 40 Code of Regulations (CFR) 302.4. EPA also maintains a "list of lists" which is a consolidated list of chemicals subject to reporting requirements.

7.0 Cost Recovery

By law, the spiller or container owner is responsible for all cleanup costs; consequently, ACHD can recover labor, equipment, and supply costs used in responding to a spill or container from the spiller or container owner. If the spill cleanup or container removal is coordinated by ACHD or an ACHD contractor, then ACHD will be responsible for initiating cost recovery. The Maintenance Superintendent will initiate cost recovery, if warranted, by submitting a Damage Claim Form (Appendix F) to ACHD's Administration Department, Accounting.

If the response is coordinated via StateComm and IDEQ and determined to be a level III response (Federal resources needed, see Appendix G) the IDEQ will manage field cleanup activities and the Idaho Bureau of Homeland Security will coordinate cost recovery. Appendix H includes the paperwork required by the Bureau of Homeland Security for cost recovery.

8.0 Training

ACHD will implement training consistent with the training requirements set forth in OSHA Regulations 29 CFR 1910.120 (q)(6). This training is focused at two levels of training, the First Responder Awareness Level and the First Responder Operations Level. These levels of training and the personnel required to complete the training is described below.

8.1 First Responder Awareness Level

This training is required for all Field Staff at Supervisor’s discretion, excluding Lead Workers and Crew Chiefs.

First responders at the awareness level are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. First responders at the awareness level shall have annual First Responder Awareness training or have had sufficient experience to objectively demonstrate competency in the following areas:

1910.120(q)(6)(i)(A)
An understanding of what hazardous substances are, and the risks associated with them in an incident.

1910.120(q)(6)(i)(B)
An understanding of the potential outcomes associated with an emergency created when hazardous substances are present.

1910.120(q)(6)(i)(C)
The ability to recognize the presence of hazardous substances in an emergency.

1910.120(q)(6)(i)(D)
The ability to identify the hazardous substances, if possible.

1910.120(q)(6)(i)(E)
An understanding of the role of the first responder awareness individual in the employer's emergency response plan including site security and control and the U.S. Department of Transportation's Emergency Response Guidebook.

1910.120(q)(6)(i)(F)
The ability to realize the need for additional resources, and to make appropriate notifications to the communication center.

8.2 First Responder Operator Level

This training is required for all Crew Chiefs, Lead Workers, Maintenance Superintendents, and designated Environmental Specialists.

First responders at the operator level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. First responders at the operator level shall have annual ACHD Spill Response Plan training and at least eight hours of training or have had sufficient experience to objectively demonstrate competency in the following areas in addition to those listed for the awareness level and the employer shall so certify:

1910.120(q)(6)(ii)(A)
Knowledge of the basic hazard and risk assessment techniques.

1910.120(q)(6)(ii)(B)
Know how to select and use proper personal protective equipment provided to the first responder operational level.

1910.120(q)(6)(ii)(C)
An understanding of basic hazardous materials terms.

1910.120(q)(6)(ii)(D)
Know how to perform basic control, containment and/or confinement operations within the capabilities of the resources and personal protective equipment available with their unit.

1910.120(q)(6)(ii)(E)
Know how to implement basic decontamination procedures.

1910.120(q)(6)(ii)(F)
An understanding of the relevant standard operating procedures and termination procedures.

8.3 Spill Response Plan Training

This training is required for all Field Staff, Crew Chiefs, Lead Workers, Maintenance Superintendents, Maintenance Administrative Assistants and designated Environmental Specialists.

All Staff who receive the training outlined in Sections 8.1 and 8.2 will also be trained annually on this Spill Response Plan. The Spill Response Plan training will be conducted by the Environmental Specialist in coordination with the Training Specialist. The focus of this training will be on operating procedures, communication, coordination and documentation of the response. Spill scenarios will also be used in training to promote discussion and participation and reinforce operating procedures.

The Spill Response Plan training, in addition to the training discussed in Sections 8.1 and 8.2, fulfills NPDES Phase I Permit requirements that state all construction inspectors and maintenance field staff must be trained to identify and eliminate illicit discharges, spills, and illicit connections to the Municipal Separate Storm Sewer System. ACHD’s NPDES Phase II Permit states that all construction inspectors and maintenance field staff be sufficiently trained to respond to reports of illicit discharges and spill into the MS4. Orientation and training for new staff working on illicit discharge detection and elimination issues must be conducted in the first six (6) months of employment.

APPENDIX A SPILL POLICY

June 29, 2016

To:	ACHD Commission Bruce Wong, Director
From:	Timothy Morgan, Deputy Director Maintenance
Subject:	**Spill Response Policy and Plan – Resolution 2152**
Agenda Date:	July 20, 2016

Facts and Findings:

On June 13, 2007 the Ada County Highway District Board of Commissioners adopted Resolution 812 adopting and implementing the ACHD Standard Operating Plan for Right-of-Way Spill, Container and Debris Response.

Maintenance and Stormwater team members propose an updated policy to comply with current laws, our newest EPA permits and training best practices. We have also refined the policy and guidance documents for ease of use in the field during an actual spill response.

The proposed Resolution, Policy, Plan and the Staff Report were reviewed by ACHD Legal and approved to go before the ACHD Commission.

Fiscal Impacts:

Maintenance currently spends less than $5,000 per year on contracting for mitigation and removal right-of-way spills since most large spills are from a known spiller who is responsible for all costs. Training will be provided by our Safety and Training Coordinator with support from Stormwater and Maintenance team members.

Staff Recommendation:

Maintenance Staff recommends the ACHD Commission approve Resolution 2152 providing for repeal of Resolution 812 and adoption of a new internal policy for right-of-way spill, container and debris response and a new spill response plan as internal guidance documents of the Ada County Highway District.

Attachment(s)
Resolution 2152
Spill Response Plan

RESOLUTION NO. 2152

BY THE ADA COUNTY HIGHWAY DISTRICT BOARD OF COMMISSIONERS: KENT GOLDTHORPE, PAUL WOODS, REBECCA W. ARNOLD, SARA M. BAKER AND JIM D. HANSEN

A RESOLUTION PROVIDING FOR THE REPEAL OF RESOLUTION 812 AND ADOPTION OF A NEW INTERNAL POLICY FOR RIGHT-OF-WAY SPILL, CONTAINER AND DEBRIS RESPONSE AND A NEW SPILL RESPONSE PLAN AS INTERNAL GUIDANCE DOCUMENTS OF THE ADA COUNTY HIGHWAY DISTRICT.

WHEREAS, Ada County Highway District has jurisdiction and responsibility for all public highways and public rights-of-way within Ada County, Idaho, except state highways and interstate freeways; and

WHEREAS, the health and safety of Ada County Highway District employees is of the utmost concern to the Ada County Highway District Commissioners and Director; and

WHEREAS, on occasion, ACHD personnel may witness or discover in the right-of-way, spills of hazardous and/or unknown substances and various pollutants and common waste, as well as containers which may contain hazardous and/or unknown substances; and

WHEREAS, pursuant to Occupational Safety and Health Administration (OSHA) Regulation 29 CFR § 1910.120(q), ACHD personnel who may witness or discover in the right-of-way, spills of hazardous substances and containers which may contain hazardous substances are considered "emergency response" personnel. OSHA Regulation 29 CFR § 1910.120(q)(6) "emergency response" personnel must be appropriately trained depending upon their duties and functions relating to an emergency; and

WHEREAS, the ACHD Board of Commissioners and Director are committed to appropriate training of ACHD Construction Inspectors and Maintenance field personnel and in accordance with OSHA Regulation 29 CFR § 1910.120 and to ensure that such ACHD personnel have first responder awareness level training and the knowledge to initiate an emergency response sequence by notifying the property authorities of the release and to stay out of harm's way in a spill response situation; and

WHEREAS, the ACHD Board of Commissioners and Director are committed to appropriate training of ACHD Maintenance on-call personnel and supervisors in accordance with OSHA Regulation 29 CFR § 1910.120, to ensure that such ACHD personnel have first responder operator level training and the knowledge to initiate an emergency response sequence by notifying the proper authorities of a release and are able to direct and/or participate in defensive measures in the “safe zone” as determined by the on scene incident commander, to prevent hazardous substances and pollutant wastes from entering into the storm water drainage system only if such measures are deemed by such Maintenance on-call personnel and supervisors to be necessary and essential to prevent contamination of the storm water drainage system and no other public or private resources are immediately available; and

WHEREAS, in the interest of ACHD employee health and safety, the ACHD Commissioners and Director have determined that ACHD staff will not directly participate in hazardous substance clean up and that only properly trained and/or directed ACHD personnel may participate in limited containment of hazardous substances and pollutant wastes; and

WHEREAS, Environmental Protection Agency (EPA) Regulation 40 CFR § 122.26(d)(2)(iv)(B)(*4*), requires that applications for NPDES permits for large and medium municipal separate storm sewer systems include, “[a] description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.”; and

WHEREAS, in addressing EPA Regulation 40 CFR § 122.26(d)(2)(iv)(B)(*4*), ACHD’s NPDES permit provides in pertinent part: “f) Prevent and Respond to Spills to the MS4. Throughout the Permit term, the Permittees must coordinate appropriate spill prevention, containment and response activities throughout all appropriate departments, programs and agencies to ensure maximum water quality protection at all times.”; and

WHEREAS, adoption and implementation of an internal policy for right-of-way spill, container and debris response and a plan for right-of-way spill response which establish requirements for employee training and which clearly sets forth roles and responsibilities for ACHD personnel who may be engaged in such response will enhance ACHD’s risk management efforts in the areas of employee health and safety and incident management and response and will also assist ACHD’s efforts to comply with applicable regulations of the OSHA and EPA; and

WHEREAS, on June 13, 2007 the Ada County Highway District Board of Commissioners adopted Resolution 812 adopting and implementing the ACHD Standard Operating Plan for Right-of-Way Spill, Container and Debris Response, as an internal policy and guidance document of the Ada County Highway District and ACHD staff has reviewed the aforementioned Standard Operating Plan for Right-of-Way Spill, Container and Debris Response and prepared various revisions to it in the form of a proposed replacement Policy for Right-of-Way Spill, Container and Debris Response as an internal policy and a separate Spill Response Plan and it is in the interest of ACHD employee health and safety to repeal Resolution Number 812 and adopt a new and replacement Policy for

Right-of-Way Spill, Container and Debris Response as an internal policy and a separate Spill Response Plan; and

WHEREAS, it is the interest of ACHD employee health and safety to authorize ACHD staff to revise and modify the Spill Response Plan that is adopted by this Resolution as such revisions and modifications may be deemed necessary from time to time by the ACHD Director to ensure the information is current, relevant and applicable to ACHD spill response activities and consistent with the Policy for Right-of-Way Spill, Container and Debris Response.

NOW, THEREFORE, BE IT RESOLVED, that the Ada County Highway District Board of Commissioners does hereby repeal Resolution Number 812 and adopts and implements the attached Policy for Right-of-Way Spill, Container and Debris Response (Attachment "1") and a separate Spill Response Plan (Attachment "2") and the Commissioners do hereby authorize ACHD staff to revise and modify the Spill Response Plan that is adopted by this Resolution as such revisions and modifications may be deemed necessary from time to time by the ACHD Director to ensure the information is current, relevant and applicable to ACHD spill response activities and consistent with the Policy for Right-of-Way Spill, Container and Debris Response.

BE IT FURTHER RESOLVED, that this Resolution shall be in full force and effect immediately upon its adoption and approval.

Adopted and approved by the Board of Commissioners of the Ada County Highway District on the 20th day of July, 2016.

BOARD OF HIGHWAY DISTRICT COMMISSIONERS OF ADA COUNTY, IDAHO:

Kent Goldthorpe, President

Paul R. Woods
Paul Woods, Vice President

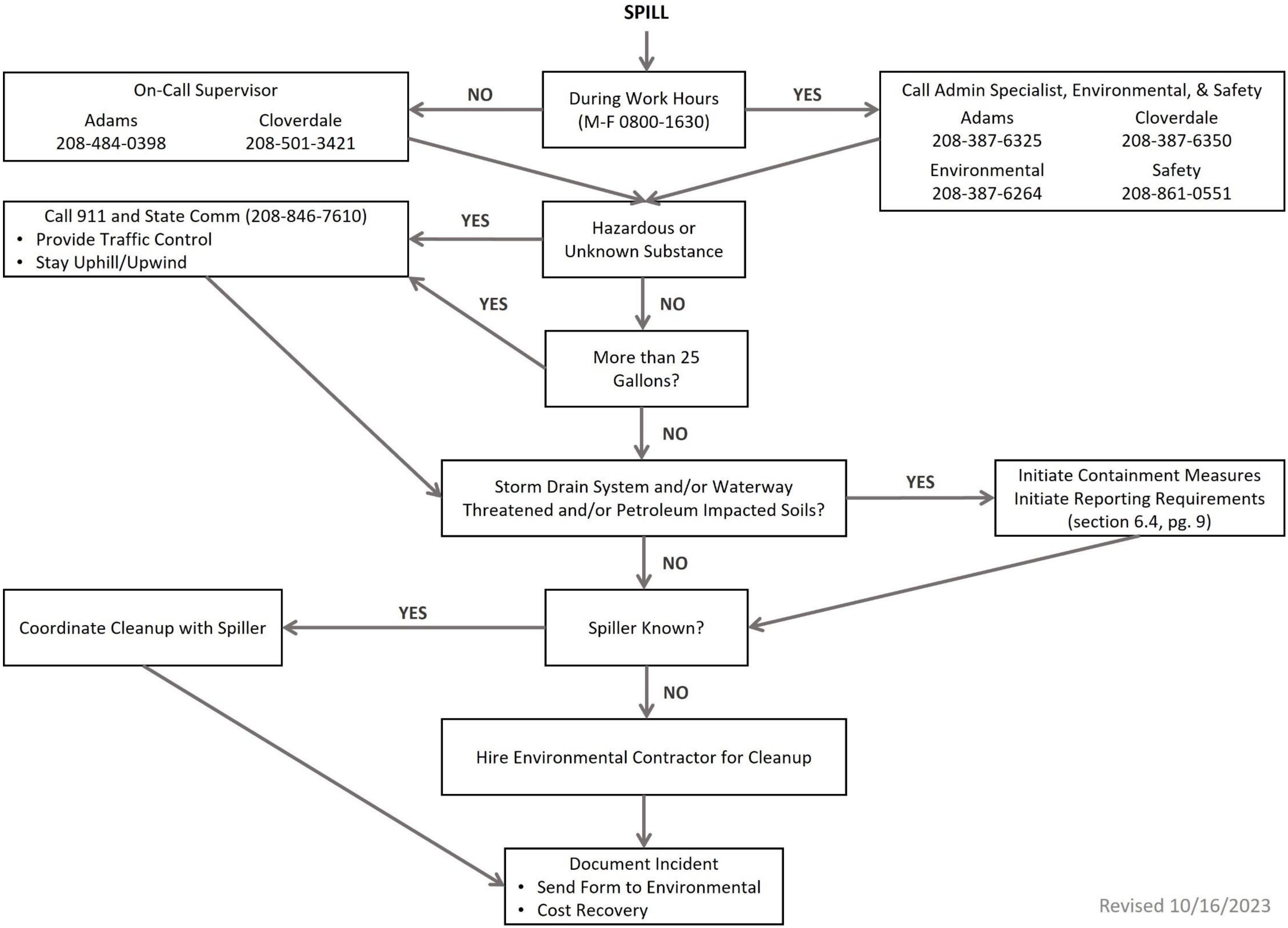
Rebecca W. Arnold, Commissioner

absent
Sara M. Baker, Commissioner

Jim D. Hansen
Jim D. Hansen, Commissioner

APPENDIX B FLOW CHART

SPILL RESPONSE FLOW CHART



Revised 10/16/2023

APPENDIX C CONTACTS

Spill Response Contractor

Master Environmental **P.O.# 63065564 for FY24**	(208) 888-7979	Services: 24 hour service, hazardous material disposal, sewer disposal, vac truck, drain field cleaning, and video camera line inspection equipment.
- Travis Bruegeman Environmental Account Manager	(208) 870-2423 (cell)	
Clean Harbor **P.O.# 63065565 for FY24**	1-800-645-8265	6679 S Supply Way, Boise, ID 83616
James Firestone (208)971-5589 or (208) 387-6001, Allan (208)297-297-8888 Cell		
Specialty Environmental **P.O.# 63065566 for FY24**	(208) 327-9977 (office)	24 hour services, Emergency Response, decontamination services, vac truck services, sampling, excavation/remediation
- Jeff Berlik	(208) 863-4667	
- Kurt Hoagland	(208) 869-1140	

Sewer Contractor Cleanup

Master Rooter	(208) 888-7979	Services: sewer disposal 24 hour service hi velocity jetting machine, drain field cleaning, tv video camera line inspection equipment and septic tank
- Mark Fisher - Rooter Account Manager	(208) 573-1700 (cell)	
Roto Rooter	(208) 562-8040	Services: 24 hour service hi velocity jetting machine, drain field cleaning, tv video camera line inspection equipment.

ACHD Contacts

Jennifer Berenger - Deputy Director, Maintenance	(208) 860-6604	Text sent to inform staff when ACHD equipment is deployed or contracted services for spill response after normal work hours.
Lloyd Carnegie - Manager, Maintenance	(208) 919-4623	
Bobby Amidon -Superintendent, Adams Maintenance	(208) 401-6624	
Rich Shaw - Superintendent, Cloverdale Maintenance	(208) 484-0389	
Heather Friddle- Superintendent, Ustick Maintenance	(208) 509-2031	
Erin Chestnut - Fleet Superintendent	(208) 871-0023	
Joe Shoen - Fleet Manager	(208) 593-1762	
Dean Cooper - Facility & Safety Manager	(208) 861-0551	
Seth Kuchenbecker - Environmental Specialist	(208) 860-6634	
Adams on-call cell	(208) 484-0398	
Cloverdale on-call cell	(208) 501-3421	

Dead Animals in Right-of-Way

Idaho Humane Society	(208) 342-3508	Services: Dead animal pick up in Ada County.
Animal Control - Idaho Humane Society	(208) 343-3166	Services: Provide animal control for public nuisance, running loose, injured, or barking animals.
Fish & Game - Southwest Region	(208) 465-8465	Services: Dispose of large game animals.
Darling International	(208) 344-8318	Services: A for profit service to dispose of livestock.

Pollutant Waste Disposal Facilities

Ada County Household Hazardous Materials Collection Facility	(208) 577-4736	Email: jmcconnell@AdaCounty.Id.gov
Hidden Hollow Landfill - Justin McConnell	(208) 941-5656	Services: Accepts residential household hazardous materials - paint, antifreeze, oil, solvents, pesticides, and cleaning supplies from residents in Ada County (NOT ACHD).
The L & R Group	(208) 813-7700	E-Mail: Regan@TLR.Group
- Ryan (L & R Group Associate)	(208) 243-2611	Disposal of contaminated soil.

Assisting Agencies

Boise Public Works Department	(208) 546-9956	Austin Walkins, Source Control Manager Services: Commercial and industrial billing and Stormwater complaint response.
Boise Fire Department	(208) 570-6500	
Congestion Management Center	(208) 387-6198	Service: Controls traffic signals within Ada County and provides remote intersection monitoring at many of the main Ada County intersections.
- Wendi Tillman	(208) 860-6660	
Garden City Environmental Department	(208) 472-2900 X 116	
- James Pavelek - Environmental Manager	(208) 472-2949	
Meridian City Code Enforcement (Lacy Ooi)	(208) 941-9715	
Meridian Fire Department	(208) 888-1234	
State Comm	(208) 846-7610	StateComm is the first agency notified by the 911 dispatcher when a hazardous spill has been reported. The StateComm Communications Moderator is tasked with setting up a bridge call with area experts and determining a course of action for spill containment, evacuation, and cleanup.
Idaho Department of Environmental Quality	(208) 373-0502	Petroleum Release
National Response Center	1-800-424-8802	If spill is a CERCLA chemical
Ada County - Hidden Hollow Landfill	(208) 577-4725	Contact Jessie McMillian to report garbage along Seaman's Gulch Road and Gary Lane. 208-576-1735

Revised 10/24/23

WY2023 MS4 CONTACT LIST

ABBR.	GOVERNMENT AGENCIES	CONTACT	PHONE	FAX	EMERGENCY (24/ 7)	NOTES
ADA C.	Ada County New Development Services	Zach Kirk	(208) 287-7925	(208) 287-7909	NA	Property outside city limits
ADA C.	Ada County Solid Waste	Kurt Hunt	(208) 577-4725	NA	Kurt Hunt (208) 941-5652 Jessie McMillian (208) 576-1735 Chad Schwend (208) 941-5656	Deputy Director Operations Supervisor Environmental Compliance Manager
ACHD	Ada County Highway District Maintenance	Paulina Bray (Adams) Sandy Kirk (Cloverdale)	(208) 387-6326 (208) 387-6351	(208) 387-6391	(208) 484-0398 (Adams) (208) 501-3421 (Cloverdale)	Flooding or spills in the public right-of-way Curb, sidewalk paving, anything in roadway
ACHD	Ada County Highway District Construction	Construction Desk Kristine Stansell	(208) 387-6281	(208) 387-6393	NA	ACHD Construction Sites
ACHD	Ada County Highway District Environmental	Seth Kuchenbecker	(208) 387-6264	(208) 387-6393	(208) 860-6634 (cell)	Construction site erosion control in public right of way
BOI	Airport	Airport Operations	(208) 383-3110	(208) 343-9667	(208) 383-3110	Airport Property
BOISE	Boise City – Source Control Manager	Austin Walkins	(208) 546-9956	(208) 433-5650	(208) 546-9956	Sanitary sewer, Private & City property
BOISE	Boise City – Parks and Recreation	Rotating System	(208) 608-7600	(208) 608-7648	NA	Parks and Recreation Facilities
BOISE	Boise City – Public Works Utility Maint.	Rotating System	(208) 608-7200	(208) 608-7210	(208) 869-9855 on call phone	Public Works Facilities Sewer Lines
BOISE	Boise City – Public Works Sewer Complaints	Rotating System	(208) 608-7200	NA	NA	Complaints, Sewer Line backups, Construction
BOISE	Boise City – Community Housing	Maureen Brewer	(208) 570-6845	(208) 384-4195	(208) 954-0664 Maint. contact center	Community Housing Facilities
BOISE	Boise City – Facility Services	Rob Bousfield	(208) 608-7514	(208) 384-3905	NA	Emergency Management Command Lead
BOISE	Boise City – Dep of Finance & Admin	Becky Sievers-Nathey (Admin Support)	(208) 972-8150	NA	NA	City Code Violations
BOISE	Boise City - Planning & Dev. Svcs.	Andy Long Michael Zawacki	(208) 794-8996 (208) 473-8333	(208) 388-4735	(208) 794-3958 (cell)	Construction Site erosion control on private property

ABBR.	GOVERNMENT AGENCIES	CONTACT	PHONE	FAX	EMERGENCY (24/ 7)	NOTES
FIRE 911	ADA County dispatch: Police, Fire, Paramedics	Emergency Response	(208) 377-7351	(208) 377-7371	911	Threat to Human health/safety (Command Line)
BLM	Bureau of Land Management	Brent Ralston	(208) 384-3430	(208) 384-3326	NA	BLM Property
BSU	Boise State University	Suzy Arnette Public Safety University Security	(208) 426-3906 (208) 426-6911	(208) 426-4435	(208) 426-1453	BSU Property
BOR	Bureau of Reclamation (Snake River)	Emergency Management Specialist David McCarville	(208) 501-6735	(208) 383-2237	On Call duty Officer (208) 507-1817	Agricultural drains & canals, Unauthorized use
CDHD	Central District Health Department	Mike Reno	(208) 327-8522	(208) 327-8553	(208) 869-9144 (cell)	Septic tank failures Septage Public health hazards
DEQ	Department of Environmental Quality	Mathew Pabich	(208) 373-0469	(208) 373-0287	1-800-632-8000 (State Emergency Response)	Waters of the State Deleterious materials
ISP	Idaho State Police	Rotating	(208) 846-7500	(208) 846-7520	911	Hazardous Material Spills, etc.
EPA	Environmental Protection Agency National Response Center	National Response Center	1-800-424-8802	NA	NA	For federal reporting purposes
GARDEN CITY	Garden City	North Ada County Fire James Pavelek	911 (208) 472-2949	NA (208) 472-2996	911 (208) 941-5995	Garden City Issues
IDA	Idaho Department of Agriculture	Brian Slabaugh	(208) 332-8608	(208) 334-3547	1-800-632-8000 (State Emergency Response)	Pesticides Dead Livestock
ISDA	Idaho State Dept of Ag	Mitch Vermeer	(208) 332-8541	(208) 334-4062	NA	
IDWR	Idaho Department of Water Resources	Brian Ragan	(208) 287-4934	(208) 287-6700	NA	Subsurface disposal: Type 5 Injection Wells
ITD	Idaho Transportation Department, District 3	Brad Wolfinger	(208) 334-8163	(208) 334-8917	(208) 334-8300	State & Federal Hwys Spills/Dumping ITD Construction Site Erosion Control
VEOLIA	Veolia Water	Customer Service	(208) 362-7304	(208) 362-1479	NA	Public Drinking Water

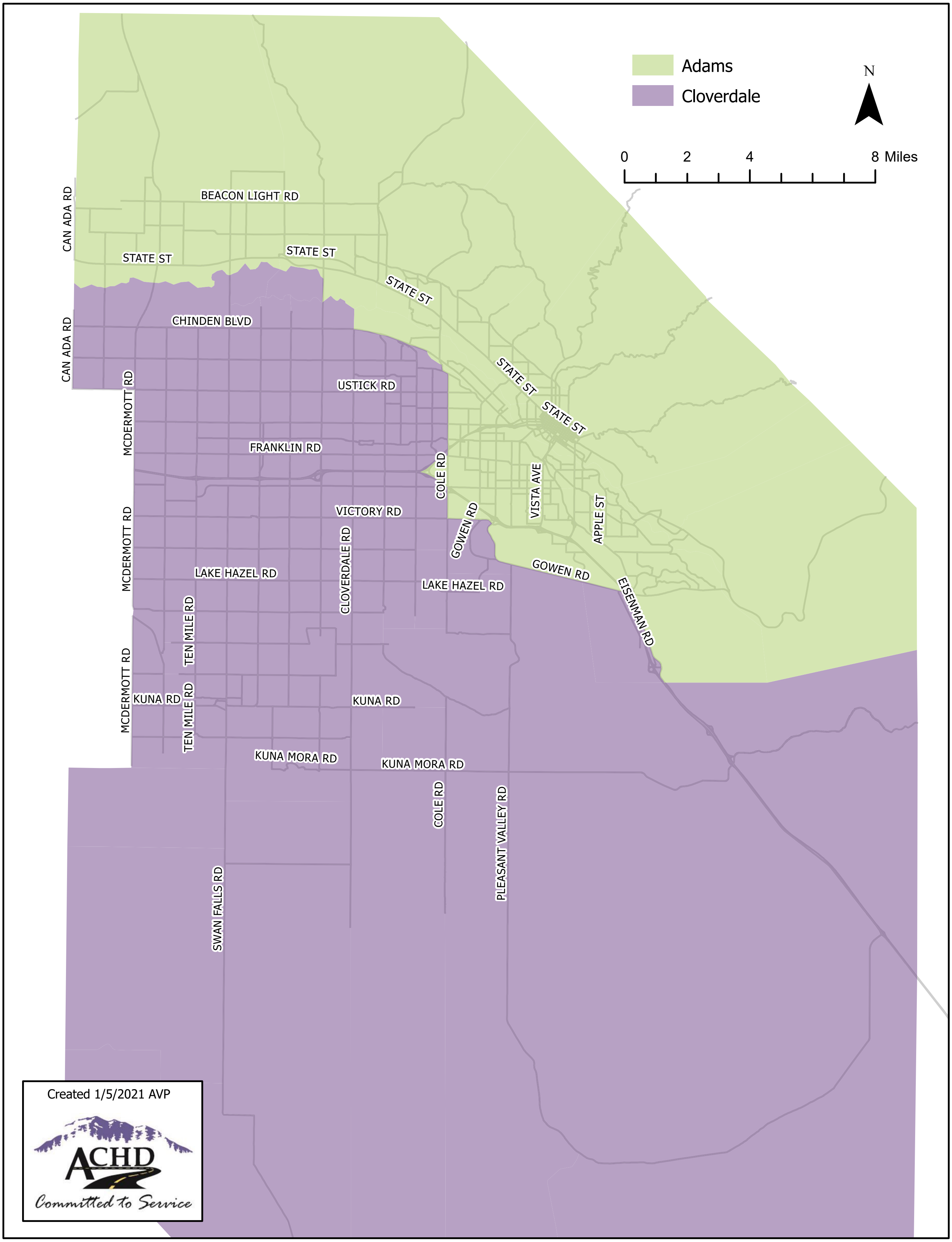
ABBR:	DRAINAGE DISTRICTS:	CONTACT	PHONE	FAX	EMERGENCY (24/7)	NOTES
DD2	Drainage District No. 2 & 4 (combined as No.2)	Allen Funkhouser (will retire by 12/31/21)	(208) 571-3804	NA	(208) 571-3804	District Canals
DD3	Drainage District No. 3	Dean Callen	(208) 602-1713	NA	NA	District Drains
DD2	Drainage District No. 2 (FKA No.4)	Bryce Farris Sawtooth Law Firm	(208) 629-7447	(208) 629-7559	(208) 571-3804	District Drains

IRRIGATION DISTRICTS:	CONTACT	PHONE	FAX	EMERGENCY (24/7)	NOTES
Boise Project Board of Control plus: ▪ Boise/Kuna Irrigation District ▪ New York Irrigation District ▪ Nampa/Meridian Irrigation District (south of Ridenbaugh)	Bob Carter Clint McCormick Rotating	(208) 344-1141 (208) 922-5603 (208) 342-5086 (208) 466-0663	(208) 344-1437	(208) 871-7696	District Canals
Boise City Canal Company	Mike Harrison	(208) 387-3526	NA	(208) 447-8600	District Canals
Boise Valley Irrigation Ditch Company	John Patten Megan Aubrey	(208) 941-2042 (208) 853-5288	NA	(208) 853-5288	District Canals
Nampa/Meridian Irrigation District	Greg Curtis	(208) 466-0663	(208) 463-0183	(208) 489-6345 when water is running	District Canals
Settlers Irrigation District	Mack Myers	(208) 344-2471	(208) 343-1642	(208) 870-4292 (water emergencies)	District Canals
Farmers Union Canal	Seth Kettering	(208) 994-8689	NA	NA	District Canals

SEWER DISTRICTS:	CONTACT	PHONE	FAX	NOTES
West Boise Sewer- City of Boise	David Silkins	(208) 375-8521	(208) 327-0894	Unauthorized Connections

APPENDIX D ADAMS & CLOVERDALE AREAS

Adams and Cloverdale Areas



APPENDIX E ILLICIT DISCHARGE FORM

ILLICIT DISCHARGE RESPONSE FORM

Form ID1a - Return to Seth Kuchenbecker (skuchenbecker@achdidaho.org, 208-860-6634)

Responder Information			
Responder Name:		Complaint Received Date/Time:	
Responder Contact Information:			

Incident Information			
Street Address:		City:	
Pollutant:			
Relative Quantity:			
Incident Description:			
Impacts (check if applicable):	☐ Impacted Storm Drain ☐ Impacted Soils		

Suspected Responsible Party Information	
Name for Report:	
Other Info. (Business Name, Address, License Plate Number, etc.):	

Follow-up Information	
Summary of Action Taken for Report:	
Severity:	

1: Very low/negligible effects
2: Discharge occurred and possible damage to system
3: Discharge occurred cleanup is necessary
4: Significant discharge ongoing cleanup necessary
5: Probable impairment to waterways

ACHD
Committed to Service

Illicit Discharge/Spill Response - Summary

Form ID1b - To Be Completed By Environmental Specialist

Summary Type	
☐ Illicit Discharge Investigation	☐ Spill Response
☐ Complaint Response	

Environmental Staff Information	
Name:	
Contact Information:	

Responder Information			
Name:			
Contact Information:			
Response Date:		Time of Arrival:	

Reporter Information			
Name:			
Contact Information:			
Report Date:		Report Time:	

Incident Information			
Incident Date:		Incident Time:	
Incident Location (Street Address):			
City:		Phase I or II:	
Latitude:		Longitude:	
Pollutant Type:		Relative Quantity:	
Severity: (See rating system)		☐ Impacted soils	
		☐ Impacted storm drain	
Incident Description:			

Investigation Notes
☐ No investigation made
Reason:
☐ Referred to different department/agency
Department/Agency:
☐ Investigated: No action necessary
Reason:
☐ Investigated: Action required
Description of actions:

Suspected Responsible Party	
Name for Report:	
Responsible Party Type:	
Other Information:	

Final		
☐ IDEQ 24-Hour Notification	☐ Spill cleanup completed	
☐ All documents received	Case Closed Date:	

Rating System	
0: None 1: Very low/negligible effects 2: Discharge occurred and possible damage to the system	3: Discharge occurred cleanup is necessary 4: Significant discharge ongoing cleanup necessary 5: Probable impairment to waterways

APPENDIX F DAMAGE CLAIM FORM

Damage Claim Form

ACHD
Committed to Service

Date:
Location:
Work Desc:

MATERIALS

Qty	Description	Unit Cost	Amount
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -

EQUIPMENT

Equipment #	Rate	Hours	Amount
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -

CONTRACT

Vendor Name	Amount
	$ -

LABOR

Employee Name	Rate	Hours	Amount
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -

TOTALS

Labor	$ -
Equipment	$ -
Contract	$ -
Materials	$ -
Total Amount Due	$ -

Date prepared:
Maria Schulthies

APPENDIX G   INCIDENT RESPONSE CLASSIFICATIONS

INCIDENT RESPONSE CLASSIFICATIONS

The Idaho State Communication Center (Idaho Office of Emergency Management – IOEM) provides assistance based on the following classifications. When IOEM is notified of an incident, IDEQ will be contacted. Together, they designate the level of response given the information they have.

Level I: An incident involving any response, public or private, to hazmat that can be contained, extinguished, and/or abated using resources immediately available to responders having jurisdiction.

Example – Incidents where local or municipal response is involved – police or fire.

Level II: An incident involving hazmat that is beyond the capabilities of the first responders on scene and may be beyond the capabilities of the public sector response agency having jurisdiction.

Example – When state assets are needed – Bomb squad or Regional Response Team (RRT) The RRT does hazardous waste characterization/testing on site. Response is billed to the State.

Level III: An incident involving weapons of mass destruction (WMD)/hazmat that will require multiple State of Idaho Regional Response Teams or other resources that do not exist within the State of Idaho.

Example – this includes if a military ordinance is found. CST – Civil Support Team at Gowen Field. This team is paid for by the federal government but housed at the state level. The CST has a mobile lab for nuclear, biological, and chemical agents.

APPENDIX H HOMELAND SECURITY FORM

IDAHO BUREAU OF HOMELAND SECURITY
EMERGENCY RESPONSE INCIDENT REPORT
STATE COMM NUMBER: ______________________

AGENCY SUBMITTING CLAIM:____________________________INCIDENT DATE:______________________

RESPONDING AGENCY (IES)
ADDRESS(S):____

____

COMPLETED BY:_________________________________PHONE #:____________________________________

E-MAIL ADDRESS:____

INCIDENT LOCATION:____

CITY:________________________________COUNTY:_____________________________ZIP:________________

GPS COORDINATES (If available):____

TIME RESPONSE BEGAN:___________________________ENDED:____________________________________

INCIDENT COMMANDER:_______________________________________AGENCY:______________________

RESPONSE TEAM LEADER_______________________________________RRT:__________________________

SOURCE/CAUSE OF RESPONSE:____

____

RESPONSIBLE PARTY/SUSPECT:____

____

CONTACT NAME:___________________________________TITLE: _______________________________________

MAILING ADDRESS:__________________________________CITY:____________STATE:______ZIP:_________

TELEPHONE:__________________________________MESSAGE PHONE:___________________________________

INSURANCE COMPANY:_____________________________AGENT:___________________________________

ADDRESS:____CITY:________STATE:______ZIP:_________

TELEPHONE:_________________________________MESSAGE PHONE:___________________________________

INCIDENT INFORMATION:____

SUBSTANCE(S) INVOLVED: ____

SUMMARY OF RESPONSE ACTION:____

ADDITIONAL INFORMATION____

DOCUMENTATION ATTACHED:

PHOTOS: ☐ VIDEO: ☐ RECEIPTS: ☐ NARRATIVE/TIMELINE: ☐

2024 Attachment O – City of Boise Spill Response Plan

Household Hazardous Waste and other Toxic Materials

The city coordinates with Ada County to facilitate the collection of Household Hazardous Waste (HHW) to ensure proper disposal. The program consists of a permanent collection facility located at the Ada County Landfill and city-sponsored mobile collection sites. Ada County residents may take HHW to any mobile collection site or the HHW Facility free of charge.

Materials accepted at HHW collection sites include household chemicals, cleaning products, paint, automotive products, lawn and garden chemicals, pool supplies, electronics, empty propane cylinders, and mercury-containing items such as fluorescent light tubes, compact-fluorescent bulbs, thermometers, and thermostats. These materials are recycled when possible. Liquids including oil, paint, solvents, and antifreeze are also collected. Medications are accepted from residents through local law enforcement offices and are not accepted through the HHW program.

In FY 2024, approximately 632,640 lbs of material were collected from Boise-area mobile HHW collection sites. Please note, the HHW program is available to all Ada County residents, and so materials from residents outside of Boise may have been collected at the Boise-area mobile HHW collection sites.

Products turned in to the HHW program that meet certain criteria are made available to the public free of charge in the “Reuse Area” located at the HHW Facility at the Ada County Landfill. Items available for reuse include paints, stains, pool/spa materials, garden/yard chemicals, and automotive fluids.

In addition to residents, businesses located within Ada County can take advantage of the Very Small Quantity Generator (VSQG) program that provides an affordable disposal option for businesses that generate small quantities of hazardous wastes. City departments that generate small quantities of used oil, fluorescent lightbulbs, and other hazardous materials manage those materials through the VSQG program. The VSQG program is operated out of the HHW Facility at the Ada County Landfill.

2024 Attachment P - ACHD Americana Subwatershed WY2024

Americana Subwatershed Monitoring Summary Report

Water Year 2024

Prepared by

Brown and Caldwell

Prepared for

Ada County Highway District

December 19, 2024

Americana Subwatershed Monitoring

Summary WY 2024

Ada County Highway District
12/19/2024

Brown AND Caldwell

Table of Contents

List of Figures

List of Tables

Section 1: Introduction

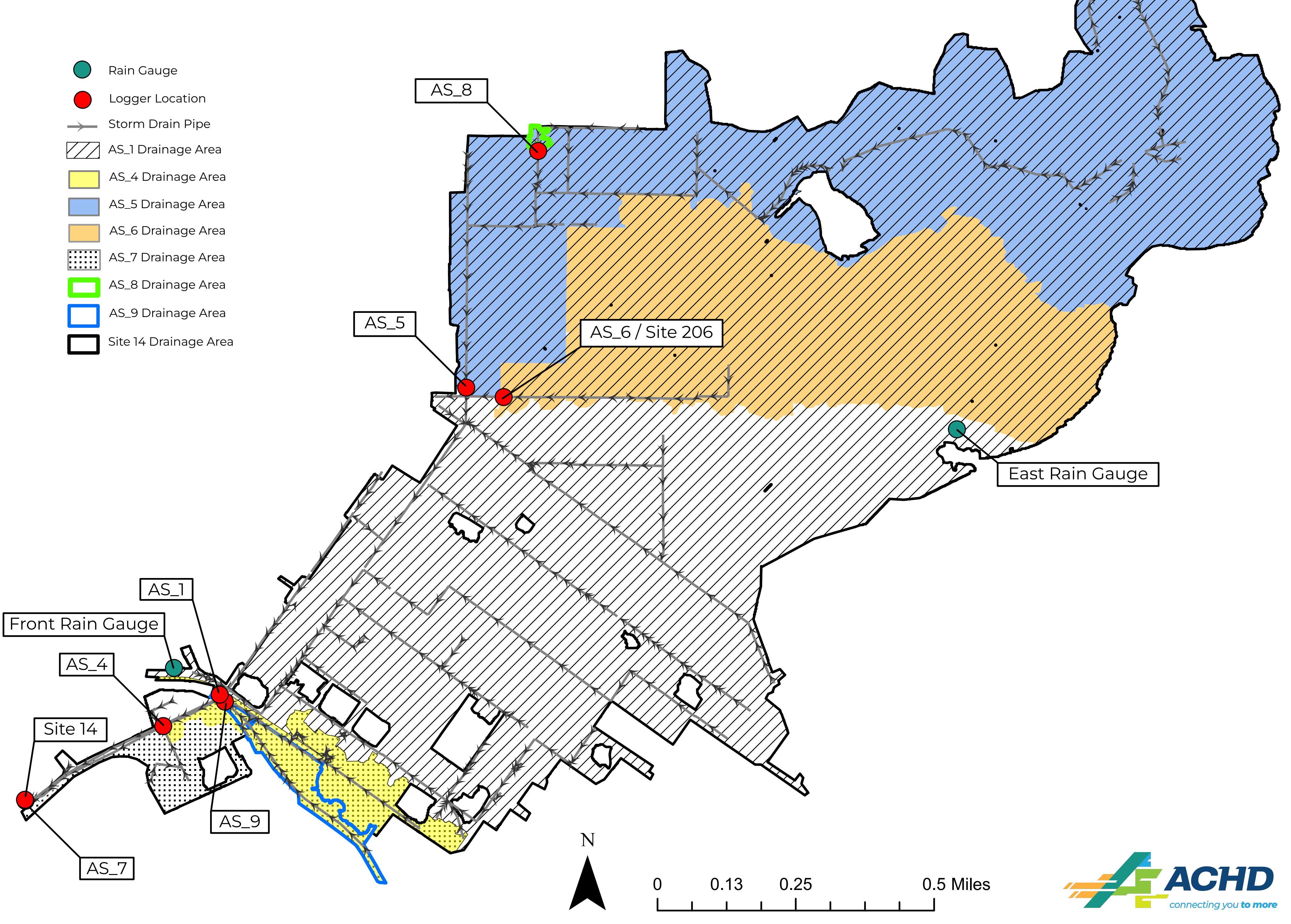
Ada County Highway District, Boise State University, City of Boise, City of Garden City, Drainage District #3, and the Idaho Transportation Department District #3 (Permittees) were issued a National Pollutant Discharge Elimination System Phase I Permit #IDS-027561 (Permit) on October 1, 2021. The Permit authorizes the Permittees to discharge from municipal separate storm sewer system outfalls to the Boise River and its tributaries. According to Permit Part 6.2.2, *Subwatershed Monitoring,* Permittees are required to conduct monitoring within the Americana subwatershed to better define wet weather and dry weather flow volumes, sources, and pollutant loads.

The Americana subwatershed is one of the largest urban subwatersheds on the lower Boise River and drains a significant portion of downtown Boise and the North End and Foothills residential areas. Stormwater discharge monitoring (flow measurement and analytical sample collection) is currently conducted at the Americana outfall as identified in the Stormwater Outfall Monitoring Plan (ACHD, 2022). While data collected at the outfall is important for understanding discharges to the Boise River, the dataset does not provide much information about the pollutant load and dry weather sources farther up in the storm drain system. Guided by the Americana Subwatershed Plan (ACHD, 2020), the Americana subwatershed is divided into subcatchments at major nodes in the system to parse out non-stormwater flow sources and characterize pollutant contributions. The following summary describes Americana subwatershed monitoring activities during water year (WY) 2024 (October 1, 2023–September 30, 2024).

In WY 2024, data collection throughout the Americana subwatershed included precipitation, water level, flow, and water quality samples. Precipitation data were collected at two representative locations, and water level data were collected at six subwatershed locations and at the Americana monitoring station. The water level data were compared to the precipitation data to look for anomalies in the municipal separate storm sewer system, such as instances when the water level in pipe increases or decreases without a corresponding precipitation event and when the water level increases from isolated subcatchment areas. Additionally, water quality data from wet weather discharges were collected from one subcatchment site (Site 206) to compare with the Americana outfall site (Site 14). The water quality data, along with flow data, were used to calculate pollutant loads and identify pollutants discharging from Site 206 that are disproportionately high compared to Site 14.

Americana Subwatershed Monitoring Sites for WY 2024

Figure 1.



Section 2: Monitoring Sites, Equipment, and Sample Types

Data was collected at the following monitoring sites during WY 2024: AS_1, AS_4, AS_7, AS_8, AS_9, Site 14, Site 206, Front, and East (Figure 1). Details on each of the monitoring sites, including subcatchment areas, pipe characteristics, and equipment deployment start and end dates, are found in Table 1. Figure 2 shows the locations of the monitoring sites in relation to each other using a conceptual layout of the storm drain system. Midway through WY 2023, the AS_5 and AS_6 logger sites were discontinued.

Site 14 is the Americana outfall monitoring station used in the National Pollutant Discharge Elimination System Phase I Stormwater Outfall Monitoring program. This monitoring site is equipped with a flowmeter and sampler to collect water level, velocity, flow, and composite samples. Water level, velocity, and flow data are collected at 15-minute intervals during dry weather and 1-minute intervals when the equipment is set up to monitor a forecasted storm event

Site 206 is a subcatchment of the Americana subwatershed. Similar to Site 14, it is equipped with a flowmeter and sampler to collect flow and water quality data during targeted storm events.

AS_7 is a secondary outfall to Site 14, with a connection between storm drain pipes farther up in the system. This site is equipped with a flowmeter to capture continuous water level, velocity, and flow data at 5-minute intervals.

The AS_8 site was installed during the second quarter of WY 2023 to replace AS_5. The AS_8 subwatershed is much smaller than the AS_5 subwatershed; however, it still captures Hull's Gulch flows into the Americana storm drain system.

The AS_9 site was added to measure dry weather flow at AS_4 by splitting the subwatershed into two areas, with AS_9 representing the upstream portion of the AS_4 subwatershed.

The AS_6 logger site was discontinued in the second quarter of WY 2023; however, Site 206 still collects flow and water quality data during targeted storm events.

AS_1, AS_4, AS_8, and AS_9 represent subcatchment areas within the Americana subwatershed. Each site is equipped with a water level logger to collect in-pipe water level data. The loggers continuously record pressure readings at 5-minute intervals. The pressure readings are corrected using local barometric pressure and converted to water level.

Front and East are rain gauge sites and are equipped with tipping bucket rain gauges. The rain gauges collect continuous precipitation data in 0.01-inch increments using event data loggers. The precipitation data are used to determine the date and times of wet weather storm events and dry weather periods.

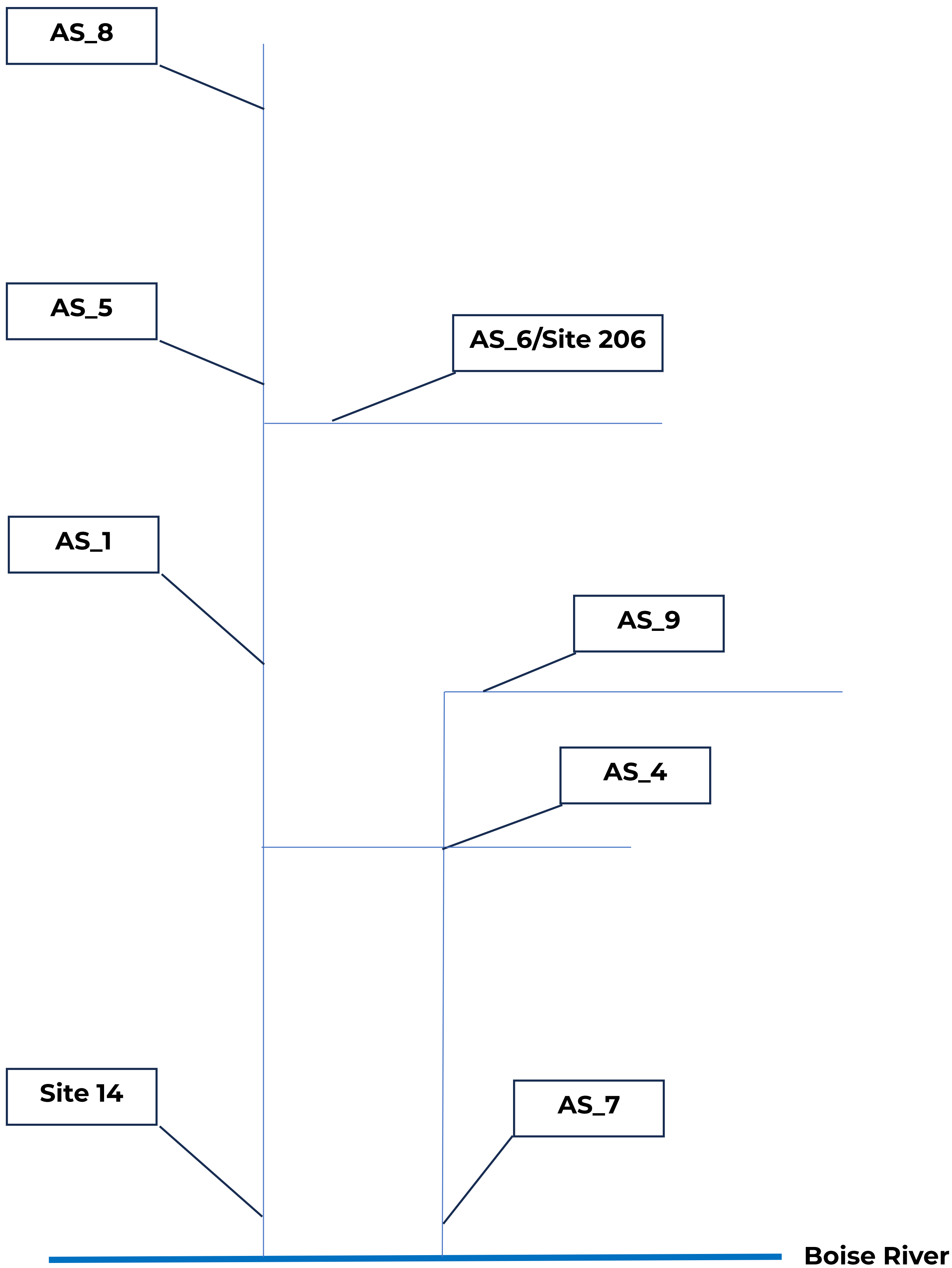


Figure 2. Conceptual Layout of Monitoring Sites

2.1 Water Quality Sample Types

The sample types collected during WY 2024 include grab samples and composite samples. Grab samples represent a discrete measurement from the overall storm discharge while composite samples represent the entire discharge.

Grab samples were manually collected from wet weather discharges using a swing sampler. The grab samples were submitted to the Boise City Public Works Water Quality Laboratory (WQL) and analyzed for *E. coli*. At the time that the grab samples were collected, field parameters (temperature, pH, dissolved oxygen, and conductivity) were measured using In-Situ smarTROLL or In-Situ Aqua TROLL handheld instruments.

Composite samples were collected using automatic samplers, which worked in conjunction with flowmeters. After a predetermined volume of flow was discharged, the flowmeters triggered the sampler to collect a subsample. Each subsample was deposited into a 15-liter carboy, resulting in a flow-proportional composite sample. The composite samples were submitted to WQL where they were split for analysis. The following constituents were analyzed: biological oxygen demand, 5-day (BOD_5); chemical oxygen demand (COD); hardness as calcium carbonate ($CaCO_3$); turbidity; total suspended solids (TSS); total dissolved solids (TDS); total phosphorus (TP); orthophosphate as P; ammonia, as N; nitrate + nitrite, as N; total Kjeldahl nitrogen (TKN); total arsenic; dissolved and total cadmium; dissolved copper; dissolved and total lead; total mercury; and dissolved zinc.

Section 3: Americana Subwatershed Monitoring Results

This section describes water level monitoring results and water quality results and provides high-level conclusions and outcomes based on WY 2024 data.

3.1 Water Level Monitoring Results

For WY 2024, water level data from six monitoring sites (AS_1, AS_4, AS_7, AS_8, AS_9, and Site 14) were evaluated for occurrences of increasing or decreasing water level not attributed to precipitation. Though the pipe size at each site differs, the change in water level is still evident in the data. When a change in water level is seen at one or more sites, the discharge must originate from the site that is farthest "up pipe" in the storm drain system. Figures 3–6 show hydrographs for each quarter of WY 2024. Color bands were applied to the hydrographs to indicate periods where no rain was recorded, but the water level fluctuated at one or more sites. Fluctuations of less than 2 hours were not included in the analysis as non-stormwater sources. Fluctuations lasting more than 72 hours are marked as extended periods of non-stormwater flow and are denoted in the hydrographs with hatched color bands. The following conclusions were extracted from visually inspecting the hydrographs:

- Sudden water level increases and decreases were observed, which are likely caused by human-related activities such as turning on a pump or opening a headgate.
- Reoccurring water level spikes were observed at AS_7 between 2330 and 0900. Similar spikes were observed in the second and third quarters of WY 2023. Therefore, AS_7 water level spikes were omitted from WY 2024 quarterly summaries, unless the AS_7 water level spike aligned with another site(s). An investigation on the source of level spikes at AS_7 is ongoing.
- Concurrent water level increases and decreases were observed at AS_1 and AS_4 but not in AS_9. Using the conceptual pipe layout in Figure 2 as a reference, it becomes apparent that there must be a different pipe connection farther in the AS_4 subcatchment area causing water

level anomalies. An investigation to confirm the location of the pipe in the AS_4 subcatchment area is ongoing.

- Based on historical Google Earth imagery, significant building and road construction activities have been observed in the AS_4 subwatershed area.
- An extended period of non-stormwater flow originating from AS_1 subcatchment (which includes downtown Boise) occurred on November 22, 2023, through November 27, 2023 (approx. 6 days).
- An extended period of non-stormwater flow originating from AS_8 subcatchment occurred on February 8, 2023, through February 13 (approx. 6 days). The non-stormwater source is likely snow melt in Hull's Gulch. A non-extended, non-stormwater discharge originating from AS_8 occurred once on February 26, 2024.
- Non-stormwater discharge originated from the AS_1 subcatchment 50 times, with the most anomalies generally occurring in the third quarter (36 percent)
- Non-stormwater discharge originated from AS_4 subcatchment 40 times, with the most anomalies generally occurring in the fourth quarter (38 percent)
- No anomalies were found at Site 14 and AS_9.

3.2 Water Quality Monitoring Results

During WY 2024, water quality samples from wet weather discharges were collected from one subcatchment site (Site 206) to compare with the Americana outfall site (Site 14). Samples were collected from five storm events. A summary of the storm dates and sample types collected is provided in Table 3-1. Attempts were made to collect samples from both Site 14 and Site 206 during the same storm event. When paired samples were successfully collected from both sites, the water quality results were directly compared to one another. Results from samples that were collected from only one of the two sites were omitted from the subsequent discussion; however, the values will be used when calculating statistics for the final report. Comprehensive analytical results from all samples collected are included in Table 2, attached.

Table 3-1. Storm Event Summary

Storm Event Date	Site 14	Site 206
10/10/23	Grab, composite [1]	–
11/19/23	Grab [2], composite	Grab, composite
02/01/24	Grab [3], composite	Grab [3], composite
02/26/24	Grab, composite	Grab, composite
03/28/24	Grab	Grab

– No data

[1] *Composite sample qualified due to lack of representativeness (50%–75%) of the calculated flow volume.*

[2] *Incomplete field parameter collection on the grab sample data form due to field error.*

[3] E. coli *sample qualified due to exceeded hold time.*

3.2.1 Grab Samples

Paired grab samples were collected from Site 14 and Site 206 on November 19, 2023; February 26, 2024; and March 28, 2024. *E. coli* and temperature results were compared from the samples collected on November 19, 2023. On February 26, 2024, and March 28, 2024, the samples were analyzed for *E. coli*, temperature, pH, dissolved oxygen, and conductivity. Notable conclusions from each storm event are provided below.

November 19, 2023

- *E. coli* at Site 206 was approximately one time higher than at Site 14.
- Field parameters (pH, dissolved oxygen, and conductivity) were not collected for Site 14 during sampling event due to field error.

February 26, 2024

- *E. coli* at Site 14 was approximately two times higher than at Site 206.
- Specific conductivity at Site 14 was nearly four times higher than Site 206.

March 28, 2024

- *E. coli* at Site 206 was approximately one time higher than at Site 14.
- Specific conductivity at Site 14 was two times higher than at Site 206

3.2.2 Composite Samples

Paired composite samples were collected from Site 14 and Site 206 on November 19, 2023; February 1, 2024; and February 26, 2024.

Event-specific pollutant loads for each analyzed constituent were calculated by multiplying the volume of discharge as measured at the site by the constituent concentration. The pollutant loads, in pounds, are in Table 3, attached.

To evaluate the contribution Site 206 had on the overall pollutant load discharging from the Americana outfall, the percentage of the pollutant load was compared to the percentage of discharge volume. When the percentage of the pollutant load is greater than the percentage of discharge volume, the pollutant load discharging from the subcatchment is disproportionately high. This logic statement is illustrated below.

$$IF$$

$$\frac{pollutant\ load\ (lbs) from\ subcatchment}{pollutant\ load\ (lbs) from\ outfall} > \frac{discharge\ volume\ (cf) from\ subcatchment}{discharge\ volume\ (cf) from\ outfall}$$

$$THEN$$

$$pollutant\ load\ from\ subcatchment\ is\ disproportionately\ high$$

The percent contribution of pollutant load and the percent contribution of discharge volume were calculated for both Site 206 and Site 14 from each storm event (Figures 7, 8, and 9). The graphs include a vertical orange line indicating the value for the percent of discharge. Constituent loads that exceed the orange line are disproportionately high. Noteworthy outcomes from each paired storm event are presented below.

November 19, 2023

- Load contributions from Site 206 were disproportionately high for all constituents except for the following parameters: hardness as $CaCO_3$; nitrate + nitrite, as N; total arsenic; total cadmium; and total mercury.
- The percent pollutant load from Site 206 was approximately 5.5 times higher than the percent of discharge volume for dissolved lead.
- The percent pollutant load from Site 206 was between 3.5 to 4.0 times higher than the percent discharge volume for the following parameters: BOD_5 and orthophosphate as P.

- The percent pollutant load from Site 206 was between 3.0 to 3.5 times higher than the percent discharge volume for the following parameters: total phosphorus and COD.
- The percent pollutant load from Site 206 was between 2.0 to 2.5 times higher than the percent discharge volume for the following parameters: TKN and dissolved zinc.
- The percent pollutant load from Site 206 was between 1.5 to 2.0 times higher than the percent discharge volume for the following parameters: TDS, dissolved copper, and total lead.

February 1, 2024

- Load contributions from Site 206 were disproportionately high for all constituents except for the following parameters: hardness as $CaCO_3$; TDS; ammonia, as N; nitrate + nitrite, as N; total arsenic; dissolved cadmium; and dissolved zinc.
- The percent pollutant load from Site 206 was approximately 3 times higher than the percent of discharge volume for dissolved lead.
- The percent pollutant load from Site 206 was between 2.0 to 2.5 times higher than the percent discharge volume for the following parameters: total phosphorus and orthophosphate as P.
- The percent pollutant load from Site 206 was between 1.5 to 2.0 times higher than the percent discharge volume for the following parameters: BOD_5, COD, TKN, total lead, and total mercury.

February 26, 2024

- Load contributions from Site 206 were disproportionately high for all constituents except for the following parameters: hardness as $CaCO_3$; TDS, nitrate + nitrite, as N; total arsenic; dissolved cadmium; total cadmium; and dissolved zinc.
- The percent pollutant load from Site 206 was approximately 3.5 times higher than the percent of discharge volume for dissolved lead.
- The percent pollutant load from Site 206 was approximately 2.5 times higher than the percent of discharge volume for orthophosphate as P.
- The percent pollutant load from Site 206 was between 1.5 to 2.0 times higher than the percent discharge volume for the following parameters: total phosphorus, TKN, and total lead.

Tables

Table 1. Monitoring Site Information

Location Name	Study ID	Latitude/ Longitude	Manhole ID (SWMM File)	Manhole ID (Americana Manholes Files)	Subcatchment Total Area (acres)	Subcatchment Impervious Area (acres)	Pipe Diameter (in)	Pipe Construction	Manning's Coefficient (n value)	Pipe Slope	Water Level During Installation (in)	Equipment ID	Equipment Deploy Start Date	Equipment Deploy End Date	Installation Notes
Americana Monitoring Station	Site 14	Americana Monitoring Station	NA	NA	915	291	48	concrete	NA	NA	NA	Hach Flowmeter (FL-23)	2013	9/8/2020	
												Hach Sampler (SA-17)	2013	9/8/2020	
												ISCO Signature Flowmeter (FL-29)	9/8/2020	NA	
												ISCO 6712 Sampler (SA-20)	9/8/2020	NA	
16th_Front	AS_1	43°37'7.57"N 116°12'52.66"W	J87872	33634	869	255	42	concrete	0.015	0.0001	4.13	HOBO Logger (SN:20029104)	8/10/2018	9/15/2023	Logger installed downstream of manhole with conduit facing downstream
												ISCO 2150 Flowmeter (FL-21)	10/25/2019	1/24/2020	
												HOBO Logger (SN:20029102)	9/15/2023	11/7/2023	
												HOBO Logger (SN:20029105)	11/7/2023	NA	
Americana_River_South	AS_2	43°37'4.63"N 116°13'0.20"W	J5567	35568	39	28	42	concrete	0.015	0.0001	1.5	HOBO Logger (SN:20029109)	8/10/2018	4/28/2020	Large pipe downstream of manhole (south) that leads to secondary outfall with conduit facing downstream flow
Americana_River_East	AS_3	43°37'4.63"N 116°13'0.20"W	J5567	35568	10	5	16	concrete	0.015	0.0001	2	HOBO Logger (SN:20029106)	8/10/2018	1/6/2021	Small pipe upstream of manhole (east) with conduit facing upstream
Americana_River	AS_4	43°37'4.63"N 116°13'0.20"W	J5567	35568	29	23	42	concrete	0.015	0.0001	NA	HOBO Logger (SN:20029101)	8/10/2018	3/7/2024	Large pipe upstream of manhole (north) with conduit perpendicular to flow
											2.7	ISCO 2150 Flowmeter (FL-21)	7/10/2020	3/5/2021	Water level at installation: 2.7 inches
											2	HOBO Logger (SN:20029102)	3/7/2024	4/2/2024	Water level at installation: 2.0 inches
											3	HOBO Logger (SN:21904490)	4/2/2024	NA	Water level at installation: 3.0 inches
15th_Resseguie	AS_5	43°37'36.17"N 116°12'21.10"W	J5577	23810	289	49	30	concrete	0.015	0.0001	1.5	HOBO Logger (SN:20029105)	8/10/2018	2/17/2023	Logger installed downstream of manhole with conduit facing downstream
14th_Resseguie	AS_6/ Site 206	43°37'35.73"N 116°12'16.60"W	J16834	13187	206	23	22	corrugated metal	0.024	0.0001	NA	HOBO Logger (SN:20029102)	8/17/2018	3/7/2023	Installed downstream of vault
					203	22	22	corrugated metal	0.024	0.0001	NA	Hach Flowmeter (FL-25)	1/23/2020	3/4/2020	Installed upstream of vault, has smaller drainage area than HOBO logger
												Hach Flowmeter (FL-18)	3/4/2020	4/18/2024	
												Hach Sampler (SA-11)	1/23/2020	10/9/2020	Installed upstream of vault, has smaller drainage area than HOBO logger
												Hach Sampler (SA-13)	10/9/2020	12/10/2021	
												Hach Sampler (SA-09)	12/10/2021	4/18/2024	
												ISCO Signature Flowmeter (FL-31)	9/18/2024	NA	
												ISCO 6712 Sampler (SA-17)	9/18/2024	NA	
Americana East	AS_7	43°36'57.66"N 116°13'17.75"W	NA	NA	40	30	42	concrete	0.015	0.0001	NA	ISCO 2150 Flowmeter (FL-20)	1/11/2019	NA	ISCO flowmeter installed
13th_Lemp to Heron	AS_8	43°37'59.05" 116°12'11.83"	NA	NA	1	0	36	corrugated metal	0.024	0.0001	NA	HOBO logger (SN: 20029106)	2/24/2023	11/7/2023	
												HOBO logger (SN:20029104)	11/7/2023	NA	
16th_Rhodes	AS_9	43°37'7.18" 116°12'52.07"	NA	NA	10	5	21	concrete	0.015	0.0001	NA	HOBO logger (SN:20029109)	2/24/2023	4/2/2024	
												HOBO logger (SN:21904491)	4/2/2024	NA	

Table 2. Field and Analytical Data Summary

Sample Date	Monitoring Station	Sample ID Grab	Field Parameters				Analytical Parameters																						
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli	Sample ID Composite	BOD_5	COD	Chloride	Hardness as $CaCO_3$	Turbidity	TSS	TDS	Total Phosphorus	Orthophosphate as P	Ammonia as N	Nitrate + Nitrite as N	TKN	Arsenic, total	Cadmium, dissolved	Cadmium, total	Copper, dissolved	Lead, dissolved	Lead, total	Mercury, total	Zinc, dissolved
			mg/L	S.U.	μS/cm	C	MPN/100 mL		mg/L	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
10/10/2023	Site 14	231010-14-WG	8.40	6.53	247.08	16.78	129.6	231010-14-WC	19.7 [2J]	77.0 [2J]	--	<0.100 [2J]	33.6 [2J]	23.6 [2J]	236 [2J]	0.308 [2J]	0.169 [2J]	0.353 [2J]	0.930 [2J]	1.44 [2J]	5.5 [2J]	0.021 [2J]	0.072 [2J]	8.2 [2J]	0.095 [2J]	2.4 [2J]	< 0.0100 [2J]	22.0 [2J]
11/19/2023	Site 14	231119-14-WG	– [3J]	– [3J]	– [3J]	14.16	1340.0	231119-14-WC	36.5	94.0	--	57.8	15.0	21.7	153	0.504	0.402	0.454	0.614	1.27	2.1	0.022	0.061	4.0[1]	0.11	1.9	< 0.0100	27.2
	Site 206	231119-206-WG	9.44	7.18	184.28	9.04	1732.9	231119-206-WC	162	329	--	43.3	21.1	28.7	263	2.06	1.71	0.563	0.136	3.17	1.7	0.029	0.059	8.5	0.93	3.3	< 0.0100	61.8
2/1/2024	Site 14	240201-14-WG	10.05	7.73	552.2	8.34	65.0 [4J]	240201-14-WC	6.98	55.0	64.1	93.3	89.6	50.7	224	0.213	0.116	0.193	0.905	1.05	3.4	0.016	0.063	3.4[1]	0.090	4.2	< 0.0100	17.3
	Site 206	240201-206-WG	9.33	8.03	542.9	5.55	290.9 [4J]	240201-206-WC	11.6	108	14.5	16.8	143	70.3	116	0.464	0.285	0.159	0.191	1.83	3.0	0.013	0.077	4.5	0.29	6.7	0.0168	10.5
2/26/2024	Site 14	240226-14-WG	10.54	7.53	470.55	8.74	125.9	240226-14-WC	12.6	85.0	56.1	102	51.1	54.3	214	0.276	0.106	0.496	0.940	1.47	3.3	0.021	0.097	4.0[1]	0.063	3.9	0.0148	24.3
	Site 206	240226-206-WG	9.39	7.44	124.28	6.49	53.7	240226-206-WC	17.7	122	9.39	22.2	75.5	75.8	85.8	0.570	0.289	0.522	0.278	2.43	2.2	0.016	0.087	5.0	0.26	6.3	0.0183	20.2
3/28/2024	Site 14	240328-14-WG	10.57	7.28	255.40	9.79	365.4	240328-14-WC	–	–	--	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Site 206	240328-206-WG	9.92	7.60	108.59	7.74	387.3	240328-206-WC	–	–	--	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Notes:

– No data

[1] *Analytical parameter is qualified due to being less than five times the value detected in the rinsate blank. See Table 6 in the WY 2024 Stormwater Outfall Monitoring Summary for rinsate blank results.*

[2J] *Data qualified due to lack of representativeness (50% –75%) of the calculated flow volume.*

[3J] *Incomplete field parameter collection on the grab sample form due to field error.*

[4J] *E. coli sample qualified due to exceeded hold time.*

Table 3. Event Pollutant Loading Estimates in Pounds

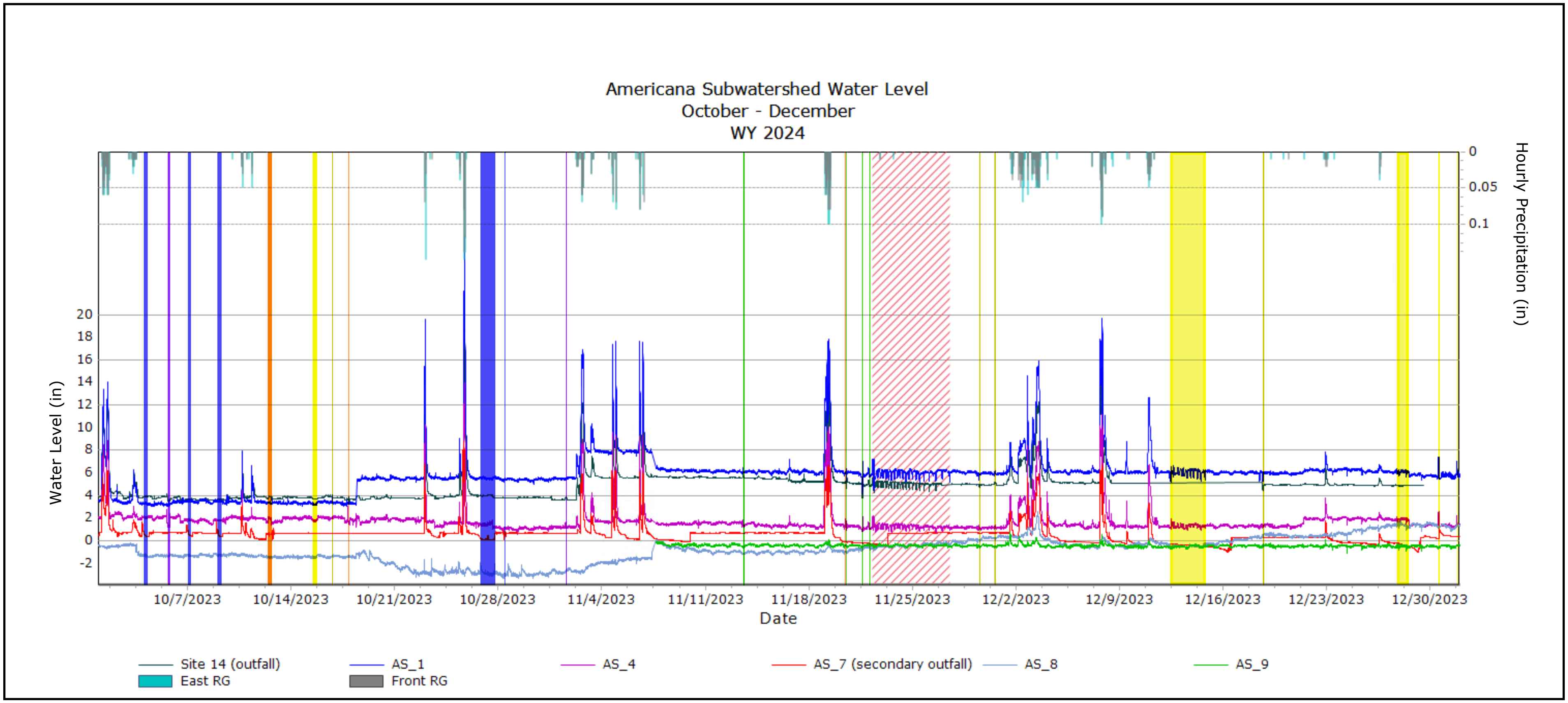
Event Date	BOD_5		COD		Hardness as CaCO3		Turbidity		TSS		TDS		Total Phosphorus		Orthophosphate as P		Ammonia as N		Nitrate + Nitrite as N	
	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206
11/19/2023	723	215	1861	436	1144	57.3	0.0	0.0	430	38.0	3029	348	10.0	2.73	7.96	2.26	8.99	0.746	12.2	0.180
2/1/2024	114	11.5	895	107	1518	16.7	0.0	0.0	825	69.8	3644	115	3.46	0.461	1.89	0.283	3.14	0.158	14.7	0.190
2/26/2024	110	6.02	743	41.5	891	7.55	0.0	0.0	474	25.8	1870	29.2	2.41	0.194	0.926	0.098	4.33	0.177	8.21	0.0945

Table 3. Event Pollutant Loading Estimates in Pounds

Event Date	TKN mg/L		Arsenic, total ug/L		Cadmium, dissolved ug/L		Cadmium, total ug/L		Copper, dissolved ug/L		Lead, dissolved ug/L		Lead, total ug/L		Mercury, total ug/L		Zinc, dissolved ug/L	
	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206	Site 14	Site 206
11/19/2023	25.1	4.20	0.0416	0.00225	0.000436	0.0000384	0.00121	0.0000781	0.0792	0.0113	0.00218	0.00123	0.0376	0.00437	0.000198	0.0000132	0.538	0.0818
2/1/2024	17.1	1.82	0.0553	0.00298	0.000260	0.0000129	0.00102	0.0000765	0.0553	0.00447	0.00146	0.000288	0.0683	0.00665	0.000163	0.0000167	0.281	0.0104
2/26/2024	12.8	0.826	0.0288	0.000748	0.000183	0.00000544	0.000848	0.0000296	0.0350	0.00170	0.000550	0.0000884	0.0341	0.00214	0.000129	0.00000622	0.212	0.00687

Figures

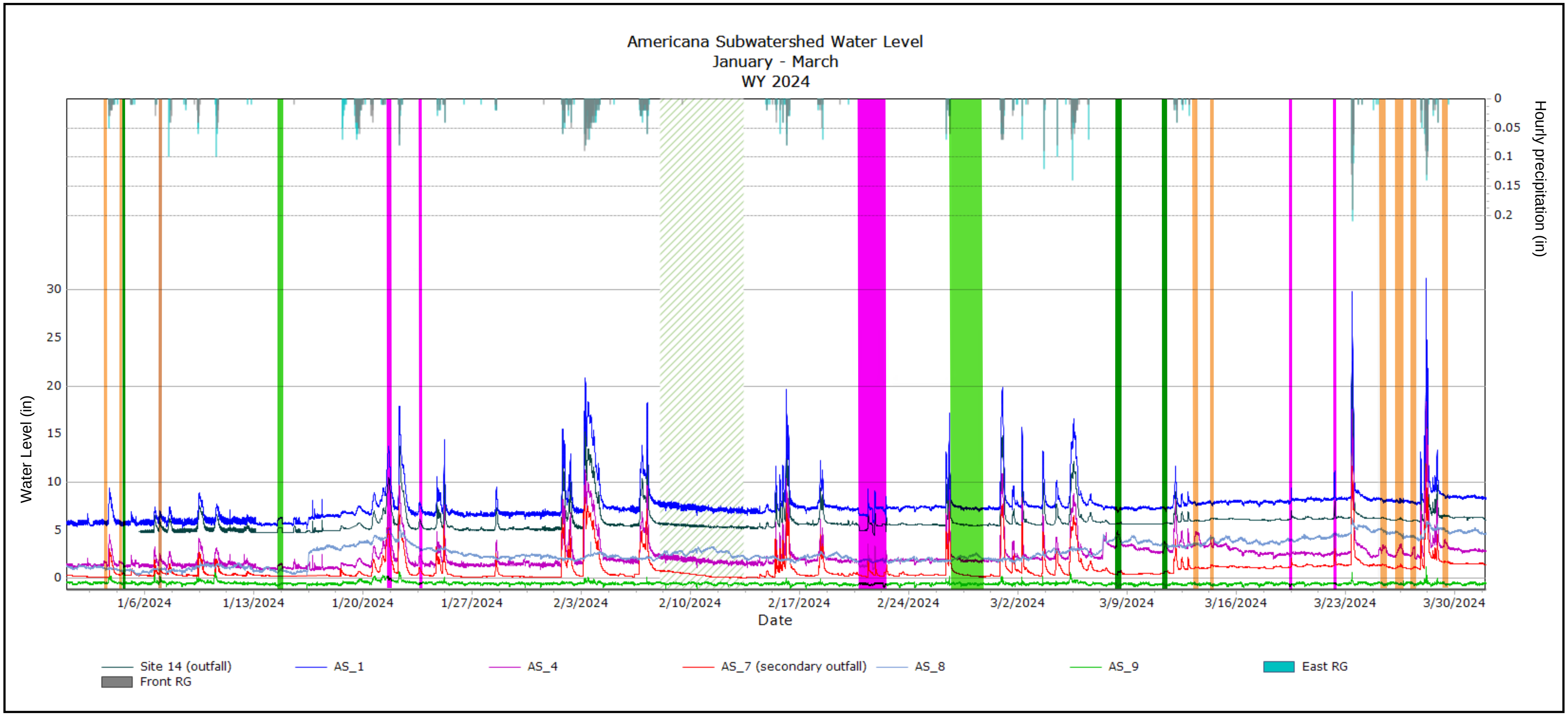
Americana Subwatershed Review WY24 Q1
Figure 3.



Americana Subwatershed Review WY24 Q1

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	10/3/2023 23:00:00	10.5	AS_7	AS_7 Subcatchment
	10/5/2023 15:00:00	6.0	AS_4, Site 14	AS_4 Subcatchment
	10/6/2023 23:00:00	9.5	AS_7	AS_7 Subcatchment
	10/8/2023 23:00:00	10.0	AS_7	AS_7 Subcatchment
	10/12/2023 8:00:00	10.0	AS_4, AS_7, Site 14	AS_4 Subcatchment
	10/15/2023 10:00:00	10.0	AS_1, AS_4	AS_1 Subcatchment
	10/16/2023 18:30:00	2.0	AS_1, Site 14	AS_1 Subcatchment
	10/17/2023 20:30:00	3.0	AS_4	AS_4 Subcatchment
	10/26/2023 18:30:00	25.0	AS_7	AS_7 Subcatchment
	10/28/2023 8:00:00	5.0	AS_7	AS_7 Subcatchment
	11/1/2023 13:00:00	2.5	AS_4, Site 14	AS_4 Subcatchment
	11/13/2023 13:00:00	2.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	11/20/2023 9:00:00	4.0	AS_4	AS_4 Subcatchment
	11/20/2023 13:00:00	2.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	11/21/2023 13:00:00	4.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	11/22/2023 0:00:00	3.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	11/22/2023 7:00:00	127.0	AS_1, AS_4, Site 14 (elongated)	AS_1 Subcatchment
	11/29/2023 12:00:00	2.0	AS_1, Site 14	AS_1 Subcatchment
	11/30/2023 12:00:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	12/12/2023 8:00:00	60.0	AS_1, AS_4	AS_1 Subcatchment
	12/18/2023 15:00:00	2.5	AS_1, Site 14	AS_1 Subcatchment
	12/27/2023 15:30:00	22.5	AS_1, AS_4	AS_1 Subcatchment
	12/30/2023 13:00:00	2.0	AS_1, AS_4	AS_1 Subcatchment
	12/31/2023 18:00:00	2.5	AS_1, AS_4	AS_1 Subcatchment

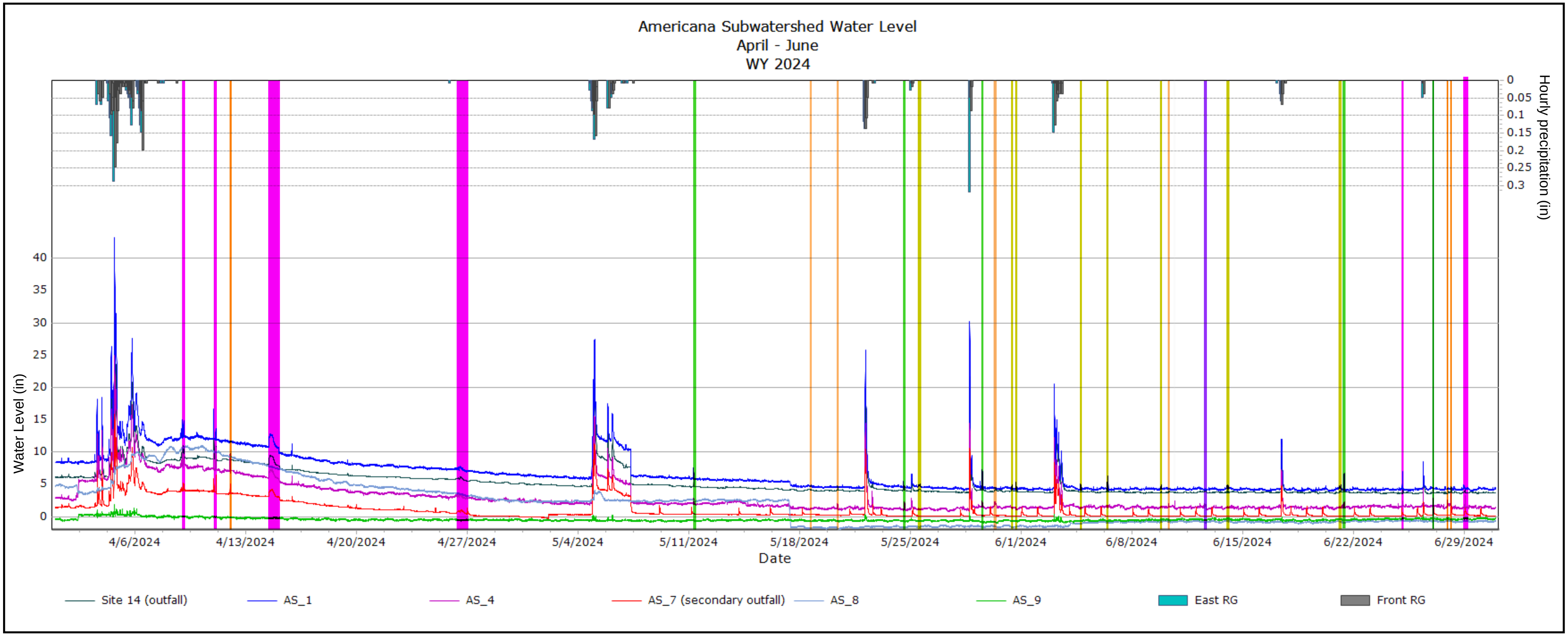
Americana Subwatershed Review WY24 Q2
Figure 4.



Americana Subwatershed Review WY24 Q2

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	1/3/2024 9:00:00	5.0	AS_4	AS_4 Subcatchment
	1/4/2024 8:00:00	4.5	AS_4	AS_4 Subcatchment
	1/4/2024 12:30:00	5.0	AS_4, AS_7	AS_4 Subcatchment
	1/6/2024 22:00:00	5.0	AS_1, AS_4, AS_9, Site 14	AS_1 Subcatchment
	1/14/2024 13:00:00	7.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	1/21/2024 11:00:00	9.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	1/23/2024 13:00:00	4.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	2/8/2024 1:00:00	129.5	AS_8 (elongated)	Hull's Gulch
	2/20/2024 18:30:00	44.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	2/26/2024 18:00:00	47.5	AS_8	AS_8 Subcatchment
	3/8/2024 6:00:00	10.5	AS_4, AS_7	AS_4 Subcatchment
	3/11/2024 7:30:00	9.0	AS_4, AS_7	AS_4 Subcatchment
	3/13/2024 7:30:00	9.0	AS_4	AS_4 Subcatchment
	3/14/2024 7:30:00	7.0	AS_4	AS_4 Subcatchment
	3/19/2024 11:30:00	2.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	3/22/2024 5:30:00	3.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	3/25/2024 1:30:00	14.0	AS_4	AS_4 Subcatchment
	3/26/2024 4:30:00	13.0	AS_4	AS_4 Subcatchment
	3/27/2024 5:00:00	10.5	AS_4	AS_4 Subcatchment
	3/29/2024 5:00:00	10.5	AS_4	AS_4 Subcatchment

Americana Subwatershed Review WY24 Q3
Figure 5.

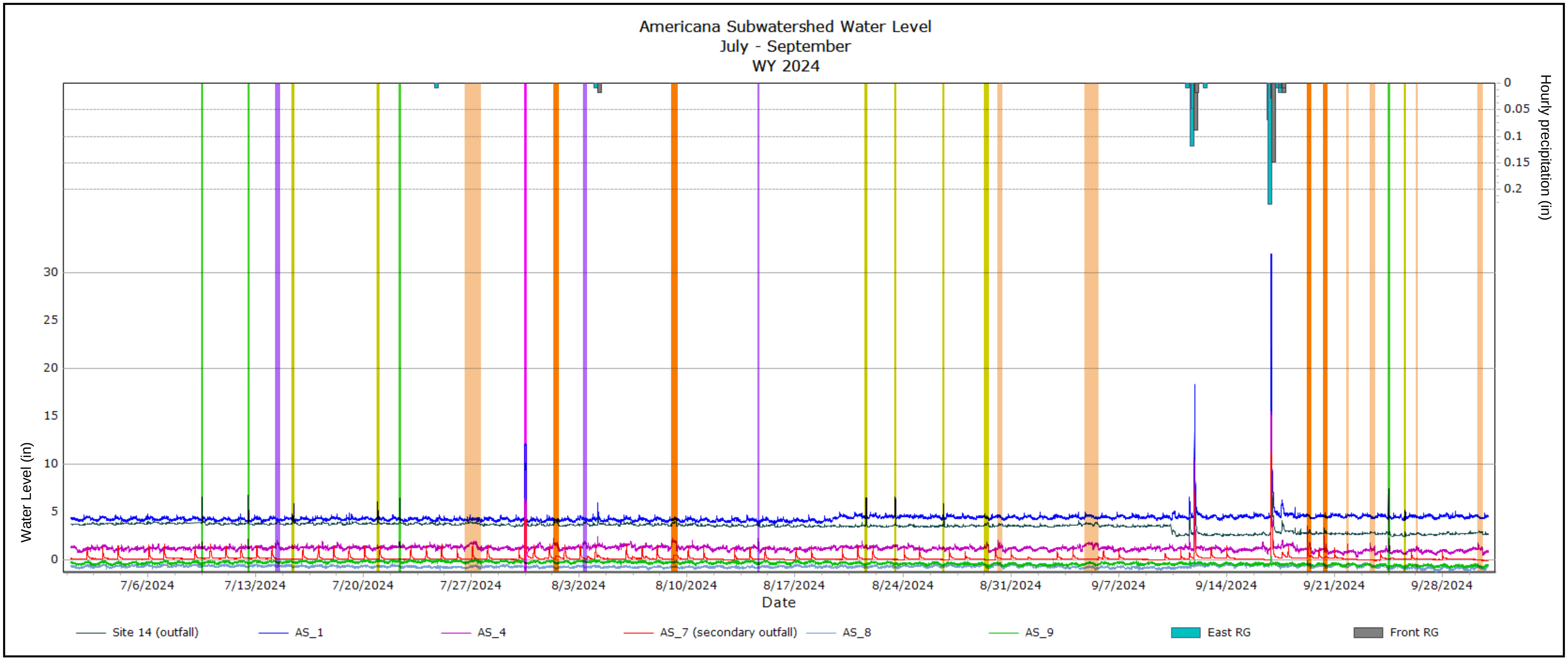


Note: Reoccurring water level spikes were observed at the AS_7 station. These spikes occur for an approximate duration of 4 hours between 2330 and 0900. The spikes have been omitted from this anomaly summary due to the uniformity of the spikes and similarity to spikes observed during WY 2023.

Americana Subwatershed Review WY24 Q3

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	4/8/2024 22:00:00	6.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	4/10/2024 23:00:00	5.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	4/12/2024 0:30:00	2.0	AS_4, AS_7, Site 14	AS_4 Subcatchment
	4/14/2024 11:00:00	17.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	4/26/2024 7:00:00	19.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	5/11/2024 7:00:00	2.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	5/20/2024 9:00:00	3.0	AS_4	AS_4 Subcatchment
	5/24/2024 14:00:00	3.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	5/25/2024 13:00:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	5/29/2024 12:30:00	2.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	5/30/2024 7:00:00	5.0	AS_4	AS_4 Subcatchment
	5/31/2024 9:30:00	2.0	AS_1, Site 14	AS_1 Subcatchment
	5/31/2024 16:00:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	6/4/2024 18:00:00	2.5	AS_1, Site 14	AS_1 Subcatchment
	6/6/2024 10:30:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	6/9/2024 19:00:00	3.0	AS_1, Site 14	AS_1 Subcatchment
	6/10/2024 7:00:00	2.5	AS_4	AS_4 Subcatchment
	6/10/2024 16:00:00	2.5	AS_4	AS_4 Subcatchment
	6/12/2024 14:00:00	4.0	AS_4, Site 14	AS_4 Subcatchment
	6/13/2024 23:30:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	6/21/2024 1:00:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	6/21/2024 7:30:00	4.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	6/25/2024 0:30:00	3.5	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	6/27/2024 0:00:00	4.0	AS_4, AS_7	AS_4 Subcatchment
	6/27/2024 23:00:00	3.5	AS_4, AS_7, Site 14	AS_4 Subcatchment
	6/28/2024 4:00:00	2.5	AS_4, AS_7, Site 14	AS_4 Subcatchment
	6/29/2024 0:00:00	7.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment

Americana Subwatershed Review WY24 Q4
Figure 6.



Note: Reoccurring water level spikes were observed at the AS_7 station. These spikes occur for an approximate duration of 4 hours between 2330 and 0900. The spikes have been omitted from this anomaly summary due to the uniformity of the spikes and similarity to spikes observed during WY 2023.

Americana Subwatershed Review WY24 Q4

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	7/9/2024 11:00:00	3.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	7/12/2024 12:00:00	2.0	AS_1, AS_4, Site 14	AS_1 Subcatchment
	7/14/2024 7:00:00	8.0	AS_4, Site 14	AS_4 Subcatchment
	7/15/2024 8:30:00	4.5	AS_1, Site 14	AS_1 Subcatchment
	7/20/2024 21:00:00	2.5	AS_1, Site 14	AS_1 Subcatchment
	7/22/2024 7:00:00	2.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	7/26/2024 13:00:00	28.5	AS_4	AS_4 Subcatchment
	7/30/2024 10:30:00	4.0	AS_1, AS_4, AS_7, Site 14	AS_1 Subcatchment
	8/1/2024 6:30:00	10.5	AS_4, AS_7, Site 14	AS_4 Subcatchment
	8/3/2024 5:30:00	6.5	AS_4, Site 14	AS_4 Subcatchment
	8/8/2024 21:30:00	12.5	AS_4, AS_7, Site 14	AS_4 Subcatchment
	8/14/2024 13:30:00	3.5	AS_4, Site 14	AS_4 Subcatchment
	8/21/2024 13:30:00	3.5	AS_1, Site 14	AS_1 Subcatchment
	8/23/2024 11:00:00	2.5	AS_1, Site 14	AS_1 Subcatchment
	8/26/2024 13:30:00	4.0	AS_1, Site 14	AS_1 Subcatchment
	8/29/2024 7:00:00	7.5	AS_4, Site 14	AS_4 Subcatchment
	8/30/2024 4:30:00	9.0	AS_4	AS_4 Subcatchment
	9/4/2024 19:30:00	22.0	AS_4	AS_4 Subcatchment
	9/19/2024 5:30:00	8.0	AS_4, AS_7, Site 14	AS_4 Subcatchment
	9/20/2024 7:30:00	6.0	AS_4, AS_7, Site 14	AS_4 Subcatchment
	9/21/2024 19:30:00	3.0	AS_4	AS_4 Subcatchment
	9/23/2024 7:30:00	8.5	AS_4	AS_4 Subcatchment
	9/24/2024 9:00:00	6.5	AS_1, AS_4, Site 14	AS_1 Subcatchment
	9/25/2024 12:00:00	5.5	AS_1, Site 14	AS_1 Subcatchment
	9/26/2024 7:00:00	5.5	AS_4	AS_4 Subcatchment
	9/30/2024 7:00:00	8.0	AS_4	AS_4 Subcatchment

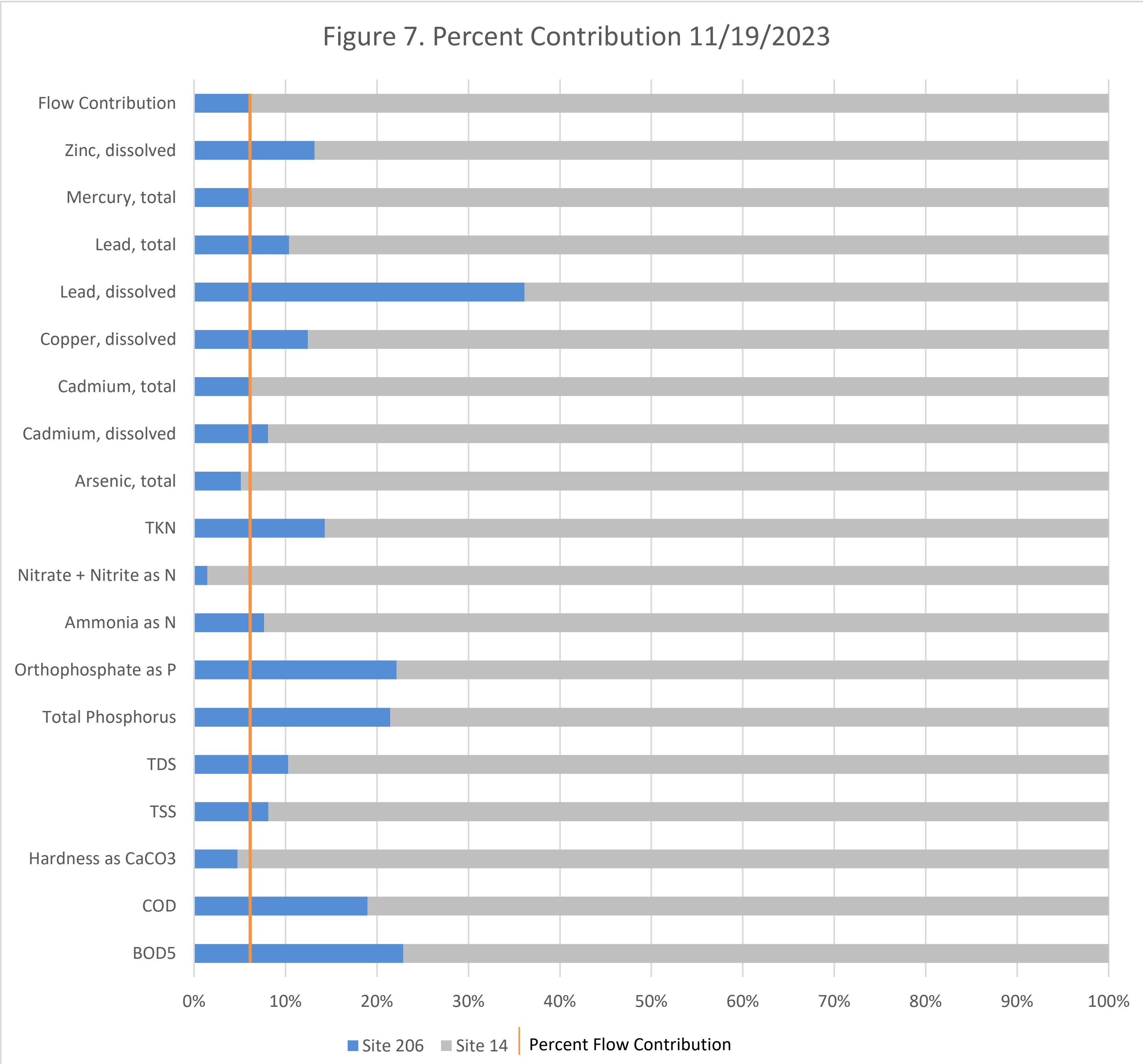


Figure 7. Percent Contribution 11/19/2023
Flow Contribution
Zinc, dissolved
Mercury, total
Lead, total
Lead, dissolved
Copper, dissolved
Cadmium, total
Cadmium, dissolved
Arsenic, total
TKN
Nitrate + Nitrite as N
Ammonia as N
Orthophosphate as P
Total Phosphorus
TDS
TSS
Hardness as CaCO3
COD
BOD5
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Site 206
Site 14
Percent Flow Contribution

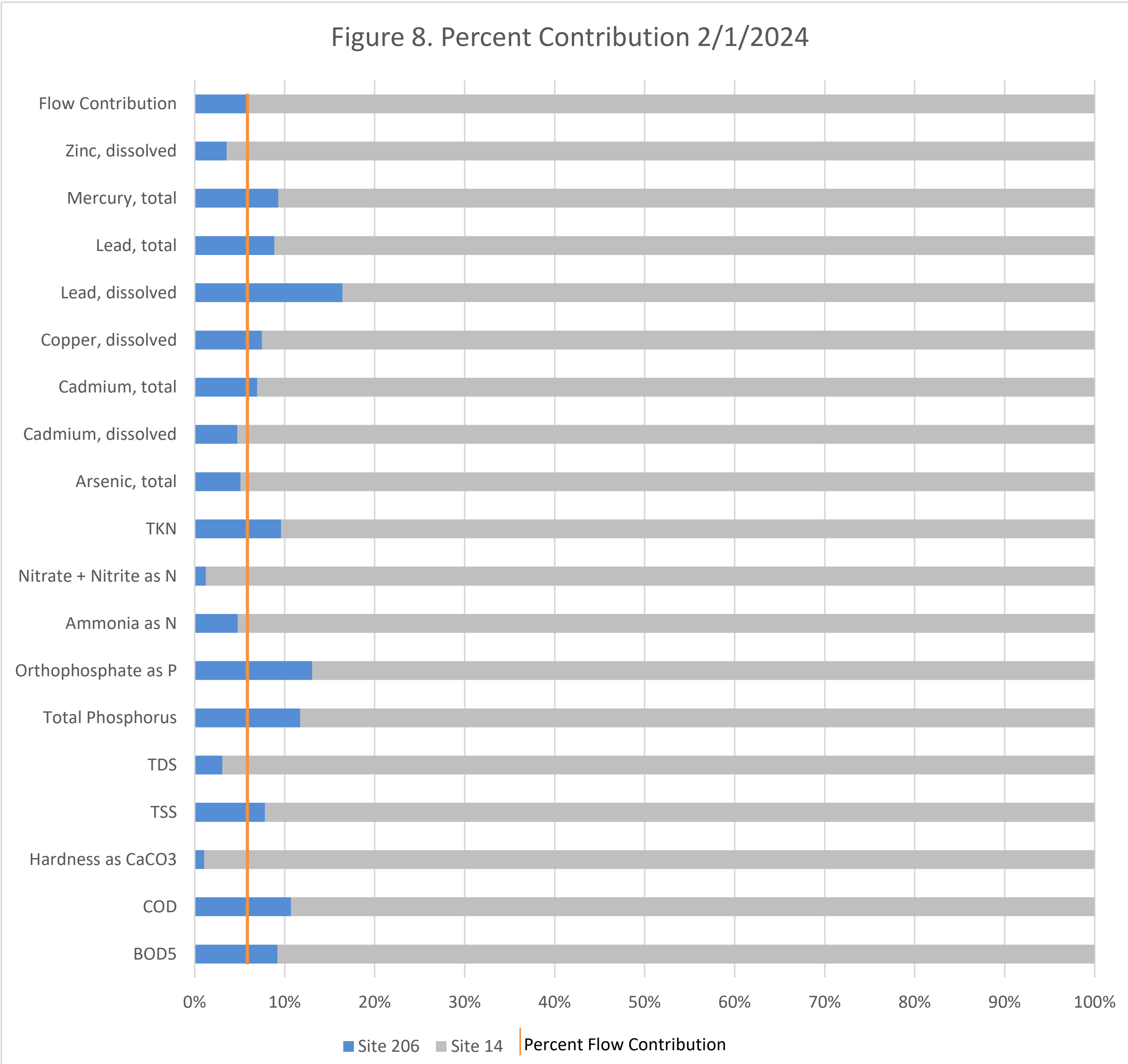


Figure 8. Percent Contribution 2/1/2024
Flow Contribution
Zinc, dissolved
Mercury, total
Lead, total
Lead, dissolved
Copper, dissolved
Cadmium, total
Cadmium, dissolved
Arsenic, total
TKN
Nitrate + Nitrite as N
Ammonia as N
Orthophosphate as P
Total Phosphorus
TDS
TSS
Hardness as CaCO3
COD
BOD5
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Site 206
Site 14
Percent Flow Contribution

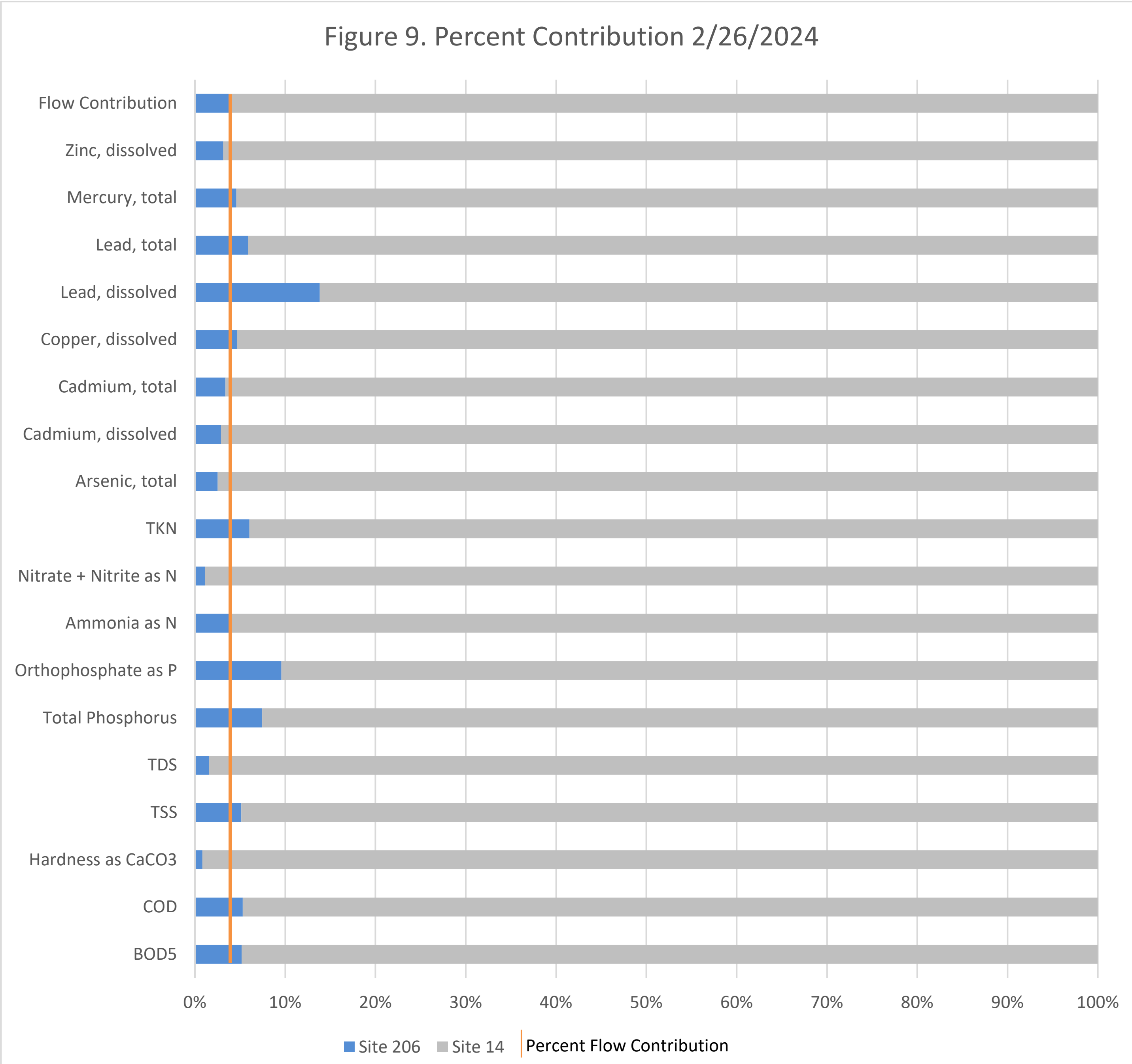


Figure 9. Percent Contribution 2/26/2024
Flow Contribution
Zinc, dissolved
Mercury, total
Lead, total
Lead, dissolved
Copper, dissolved
Cadmium, total
Cadmium, dissolved
Arsenic, total
TKN
Nitrate + Nitrite as N
Ammonia as N
Orthophosphate as P
Total Phosphorus
TDS
TSS
Hardness as CaCO3
COD
BOD5
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Site 206
Site 14
Percent Flow Contribution

2024 Attachment Q - Temperature Monitoring Summary WY 2024

Temperature Monitoring Summary WY 2024

Ada County Highway District

11/13/2024

Table of Contents

1. Introduction

Ada County Highway District, Boise State University, City of Boise, City of Garden City, Drainage District #3, and the Idaho Transportation Department District #3 (Permittees) were issued a National Pollutant Discharge Elimination System Phase I Permit #IDS027561 (Permit) on October 1, 2021. The Permit authorizes the Permittees to discharge from municipal separate storm sewer (MS4) outfalls to the Boise River and its tributaries. According to Permit Part 4.1, *Temperature Monitoring,* Permittees must monitor temperature in stormwater discharges from the MS4 to the Boise River including assessment units 17050114SW005_06, 17050114SW005_06a, and 17050114SW005_06b. The Boise River assessment units (AU) within the Permit area are 17050114SW011a_06 and 17050114SW005_06. The remaining two AUs, 17050114SW005_06a and 17050114SW005_06b are not in the Permit area and therefore do not receive Permittee stormwater contributions. Temperature data is collected from all water quality samples collected from the MS4 to the Boise River and other waterways. The following summary provides temperature data collected during water year (WY) 2024 (October 1, 2023 – September 20, 2024) from the MS4 directly to the Boise River assessment units 17050114SW011a_06 and 17050114SW005_06.

2. Monitoring Sites, Equipment, and Sample Type

Temperature monitoring occurred at 12 outfalls that discharge to the Boise River assessment units 17050114SW011a_06 and 17050114SW005_06. Temperature measurements are collected as either discrete or continuous. Discrete measurements represent one instance in time and were measured manually using an In-Situ aqua Troll or smarTroll handheld instrument. Continuous measurements were taken at a specified interval by equipment that is installed at the outfall site. In WY 2024, continuous temperature readings were taken at four outfall locations: three using area-velocity sensors and one using a Hobo Temperature Logger. Table 2-1 below shows the number of outfalls where temperature data was collected, the outfall ID, sample type, receiving water and assessment unit designation. Figure 1 is a map of the sampled outfall locations.

Table 2-1. Temperature Monitored Outfalls

Receiving Water	Assessment Unit	# of Temperature Monitored Outfalls	Outfall ID (Station Name)	Sample Type
Boise River	17050114SW011a_06	10	3n2e04_010 (Main)	Discrete and Continuous
			3n2e09_024 (Americana)	Discrete and Continuous
			3n2e09_025 (AS_7)	Continuous
			3n2e10_012	Discrete
			3n2e10_022	Discrete
			3n2e10_031	Discrete
			3n2e14_012	Discrete
			3n2e14_013	Discrete
			3n2e14_017	Discrete
			3n2e24_025	Discrete
	17050114SW005_06	2	4n2e30_012 (Plantation)	Continuous
			4n2e32_015	Discrete

3. Results

Discrete temperature results are depicted in Figure 2. These results were derived from both wet weather and dry weather discharges, which are symbolized by a circle or a star, respectively. Table 3-1 contains all discrete measurements by outfall site.

Graphs of continuous temperature results are found in Figures 3-6. Figure 4 depicts continuous temperature collected only during selected storm events. The graphs from sites where temperature is recorded using an area-velocity sensor (Figures 3-5) display water temperature, water level and hourly precipitation for reference. Temperature at the Plantation site is recorded using a Hobo Temperature Logger that records data associated with the presence of water. Notable observations from these graphs are discussed below.

Throughout the summer months, AS_7 (Figure 5), is generally characterized by no dry weather flow except for almost daily level spikes recorded during early morning hours. According to the sensor manufacturer, accuracy of the area velocity sensor decreases at water levels below one inch. Therefore, it is difficult to discern the accuracy of the low flow data and distinguish between air and water temperature under these conditions. Therefore, all recorded temperature data from AS_ 7 has been included in the graph shown in Figure 5.

Data gaps in the temperature data shown in Figure 6, Plantation (4n2e30_012), indicate water was not present or the data was rejected due to sediment interference. Unlike the other graphs of continuous temperature results, water level data is not available at this monitoring site. Sediment was observed on the temperature logger in October 2023 during routine data downloads. The presence of sediment yielded results that water was present when it was observed the site was dry. During WY24, ACHD increased inspection frequency of the logger, noting changes in site conditions when present. The storm drain system was cleaned in February 2024 and inspected bimonthly for sediment build up throughout the water year. Sediment on the logger was observed again from the end of September 2024 through the beginning of November 2024, indicating more frequent maintenance is required. Additionally, data from WY23 showed water was present, based on the recorded temperature data, when rainfall was not recorded. Visual observations during WY24 of the watershed indicate sprinkler runoff as a source of this flow. From mid-May through the end of September, daily intermittent water temperature readings were recorded. Due to the daily occurrences of these readings, temperature in Figure 6 appears to be continuous despite being intermittent throughout each day.

Table 3-1. Discrete Temperature Results			
Outfall ID (Station Name)	**Date**	**Weather**	**Temperature (C)**
3n2e04_010 (Main)	11/19/2023 2/1/2024 2/26/2024 3/28/2024	Wet Weather	10.54 6.3 9.53 10.91
3n2e09_024 (Americana)	12/14/2023 8/1/2024	Dry Weather	14.31 20.82
3n2e09_024 (Americana)	10/10/2023 11/19/2023 2/1/2024 2/26/2024 3/28/2024	Wet Weather	16.78 14.16 8.34 8.74 9.79
3n2e10_012	2/14/2024 8/5/2024	Dry Weather	8.76 15.94
3n2e10_022	3/15/2024 7/9/2024	Dry Weather	14 18.36
3n2e10_031	6/24/2024	Dry Weather	15.04
3n2e14_012	1/31/2024	Dry Weather	15.04
3n2e14_013	1/31/2024 8/13/2024	Dry Weather	14.62 16.12
3n2e14_017	12/17/2023 1/3/2024	Dry Weather	15.33 13.54
3n2e24_025	5/22/2023	Dry Weather	16.15
4n2e32_015	8/1/2023	Dry Weather	17.85

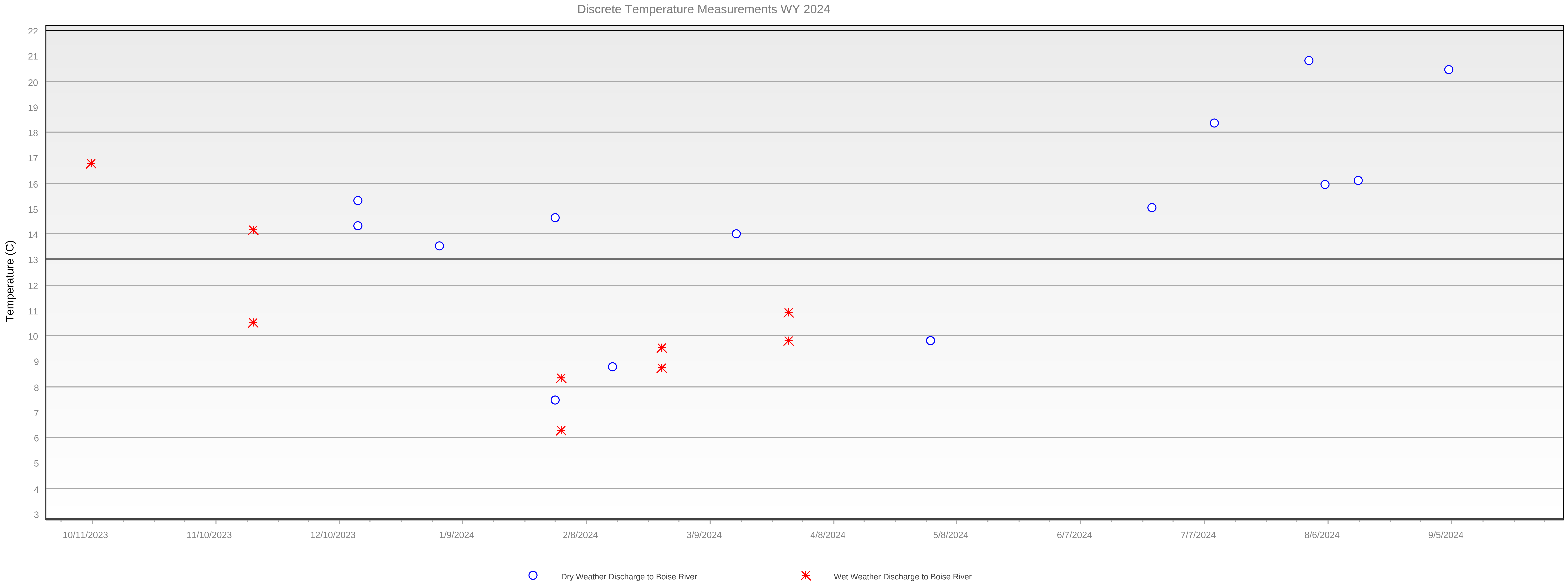
Appendix A: Figures

Figure 1

WY2024 Temperature Monitored Outfalls

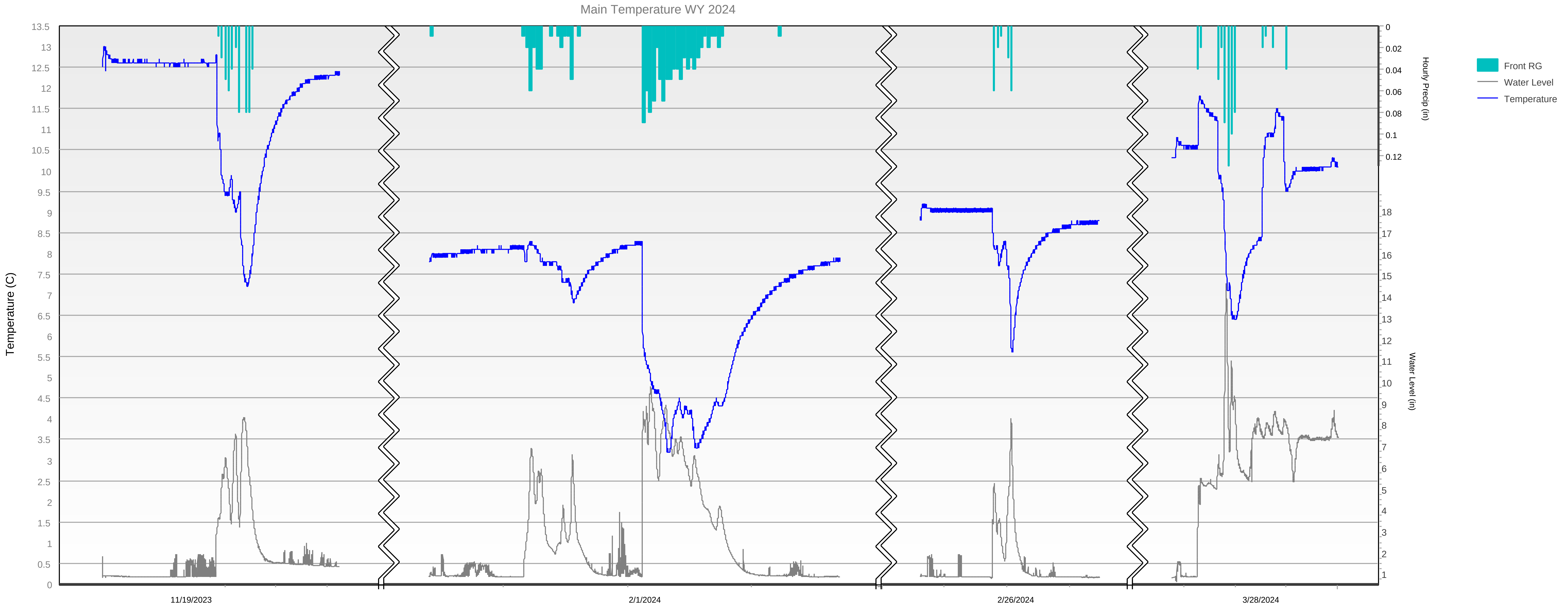
Created: 11/19/2024

Figure 2



Discrete Temperature Measurements WY 2024
Temperature (C)
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
10/11/2023
11/10/2023
12/10/2023
1/9/2024
2/8/2024
3/9/2024
4/8/2024
5/8/2024
6/7/2024
7/7/2024
8/6/2024
9/5/2024
Dry Weather Discharge to Boise River
Wet Weather Discharge to Boise River

Figure 3



Main Temperature WY 2024
Temperature (C)
Hourly Precip (in)
Water Level (in)
Front RG
Water Level
Temperature
11/19/2023
2/1/2024
2/26/2024
3/28/2024
13.5
13
12.5
12
11.5
11
10.5
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0.02
0.04
0.06
0.08
0.1
0.12
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Figure 4

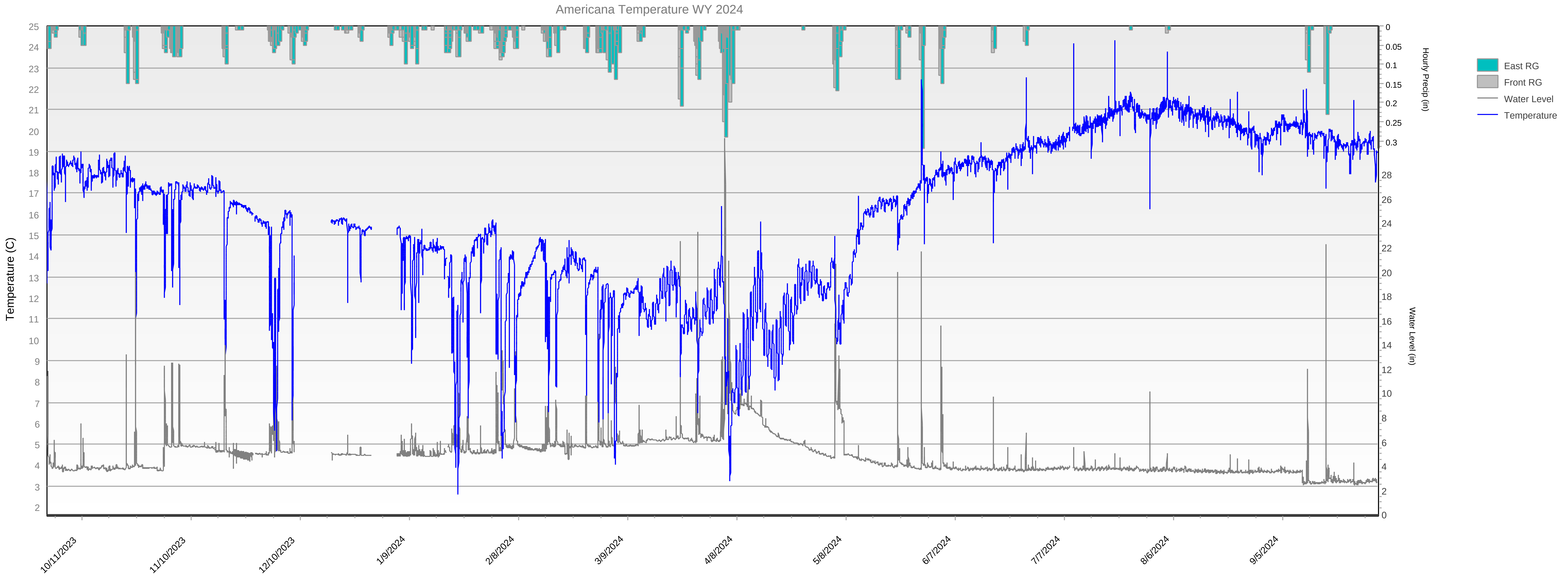

Americana Temperature WY 2024
Temperature (C)
Hourly Precip (in)
Water Level (in)
East RG
Front RG
Water Level
Temperature
10/11/2023
11/10/2023
12/10/2023
1/9/2024
2/8/2024
3/9/2024
4/8/2024
5/8/2024
6/7/2024
7/7/2024
8/6/2024
9/5/2024

Figure 5

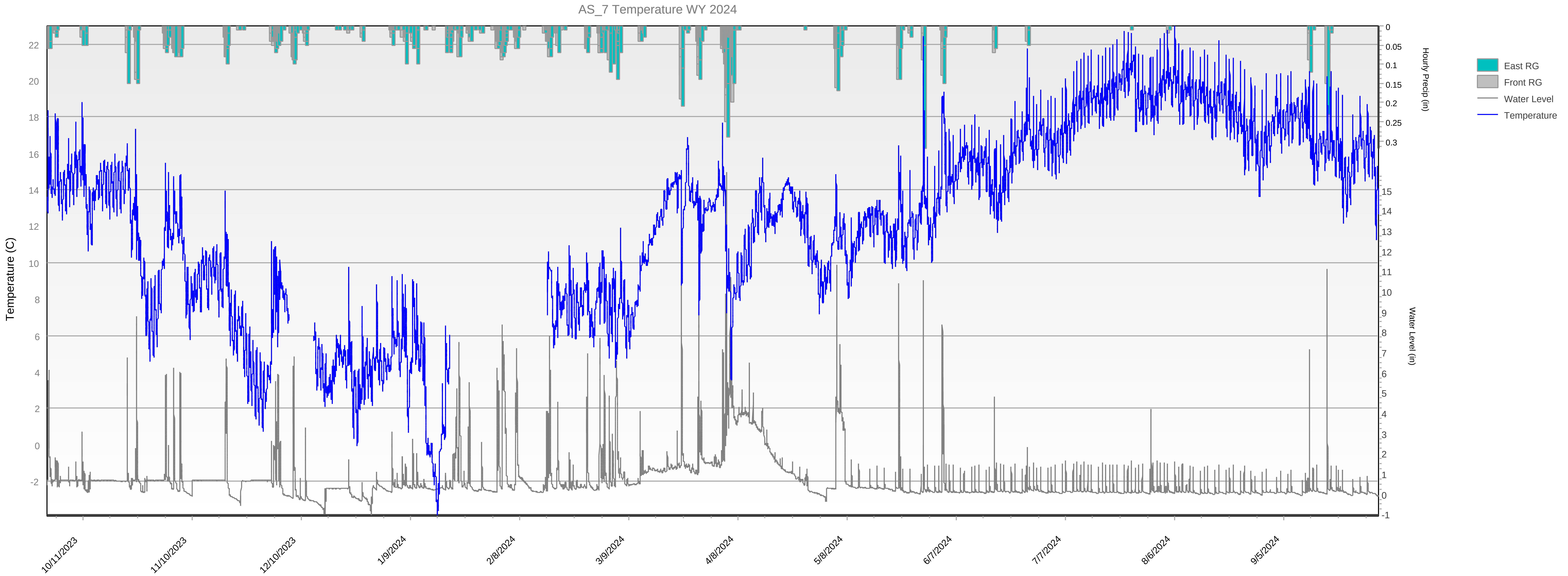
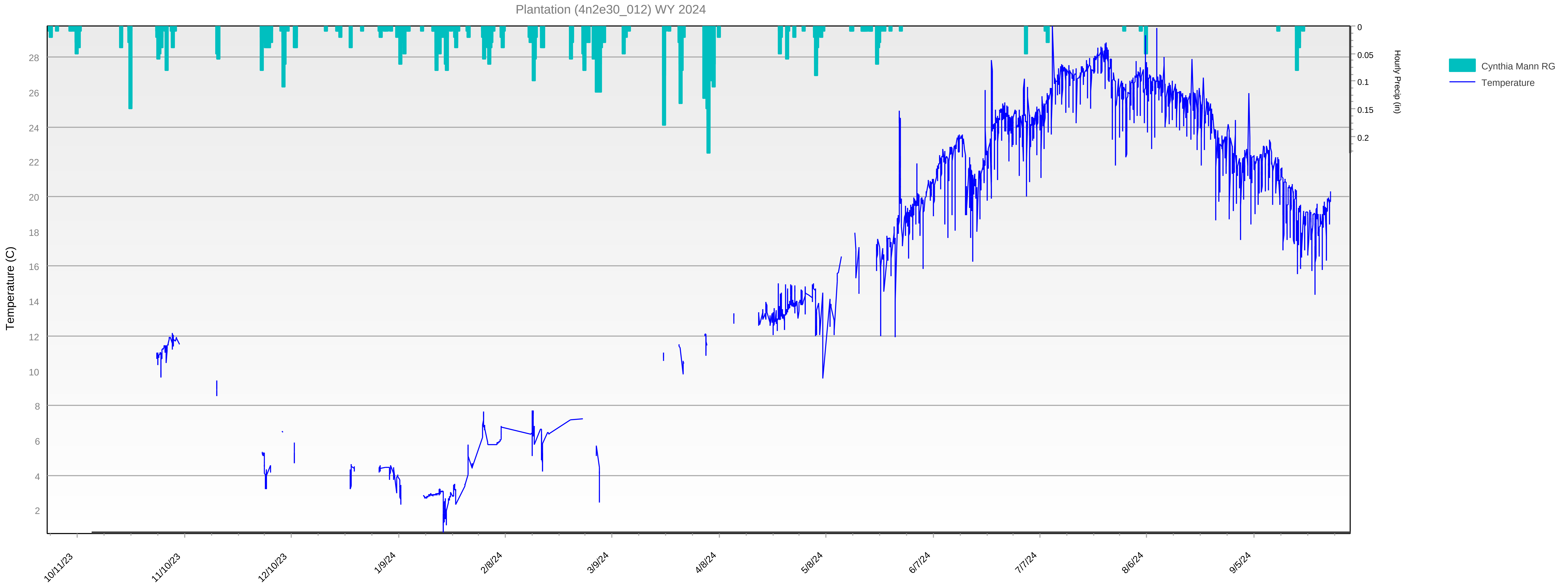

AS_7 Temperature WY 2024
Temperature (C)
Hourly Precip (in)
Water Level (in)
East RG
Front RG
Water Level
Temperature
10/11/2023
11/10/2023
12/10/2023
1/9/2024
2/8/2024
3/9/2024
4/8/2024
5/8/2024
6/7/2024
7/7/2024
8/6/2024
9/5/2024

Figure 6



Plantation (4n2e30_012) WY 2024
Temperature (C)
Hourly Precip (in)
Cynthia Mann RG
Temperature
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
0.05
0.1
0.15
0.2
10/11/23
11/10/23
12/10/23
1/9/24
2/8/24
3/9/24
4/8/24
5/8/24
6/7/24
7/7/24
8/6/24
9/5/24