NPDES Permit #IDS027561
Permit Appendix B - Annual Report Form

This Annual Report is due no later than January 30 of each year, beginning in Calendar Year 2023, and reflects the relevant reporting period, starting October 1, 2021. See Permit Part 6.4.2

Annual Reports and any attachments must be sent to IDEQ by U.S. Postal Mail to the following address:

Regional Administrator
Idaho Department of Environmental
Quality Attn: Water Quality Program
Boise Regional Office
1445 N. Orchard St.
Boise, ID 83706

Complete Sections 1 through IV. Do not leave any questions blank.

MS4 Permittee Name/Organization: Ada County Drainage District No. 3

Permit Number: IDS027561

Reporting Period:

- ○ **Year 1 Reporting Period:** Oct. 1, 2021 – Sept. 30, 2022 – **Annual Report due date:** January 30, 2023
- ◉ **Year 2 Reporting Period:** Oct. 1, 2022 – Sept. 30, 2023 – **Annual Report due date**: January 30, 2024
- ○ **Year 3 Reporting Period** Oct. 1, 2023 – Sept. 30, 2024 – **Annual Report due date:** January 30, 2025
- ○ **Year 4 Reporting Period** Oct. 1, 2024 – Sept. 30, 2025 – **Annual Report due date:** January 30, 2026
- ○ **Year 5 Reporting Period** Oct. 1, 2025 – Sept. 30, 2026 – **Annual Report due date: September 30, 2026**
- ○ Other

Certification: *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Signature:

Printed Name: Steve Sweet

Title: Ada County Drainage District No. 3 Chairman

Date: January 30, 2024

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Section I. General Information

MS4 Facility Site Name: Ada County Drainage District No. 3

MS4 Facility Organization Formal Name: Ada County Drainage District No. 3

MS4 Facility Contact Name: Abigail R Germaine

Title: Legal Counsel for Ada County Drainage District No. 3

MS4 Contact Telephone: (208) 343-5454

MS4 Contact Email Address: arg@elamburke.com

MS4 Facility Contact Type (all that apply): ☐ Owner ☐ Operator ☑ Main Contact

MS4 Facility Site Address: 251 E Front Street, Suite 300

MS4 Facility Site City, State, Zip Code: Boise, Idaho 83702

MS4 Facility Site Mailing Address: ***if different from above*** Same as above

Is the MS4 Facility Site Located On Tribal Land? ◯ **Yes** ◉ **No**

MS4 Facility Jurisdiction Type (check all that apply):

- ☐ Federal
- ☐ State
- ☐ College or University
- ☐ State Highway Department
- ☐ Municipal:
- ☐ County
- ☐ City or Town
- ☐ Highway District
- ☐ Tribal
- ☑ Other: Drainage District

List All Receiving Water(s) For the MS4 Discharges:

The Boise River and Loggers Creek, a tributary of the Boise River.

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Section II. Permittee Responsibility:
Please answer all questions. If the answer is "No," or "Not Applicable" and no other direction is provided, use the Comments field at the end of this section to explain the reason and the expected date(s) that the requirement will be met, and/or to explain why the requirement does not apply.

1. **This Permittee organization shares implementation responsibility for Permit compliance with one or more Permittees.**
   (●) *Yes* ( ) *No* ( ) *Not Applicable*

   Is the agreement between the Permittees described/cited in the Stormwater Management Program (SWMP) Document?

   (●) *Yes* ( ) *No* ( ) *Not Applicable*

2. **This Permittee organization shares implementation responsibility for Permit compliance with one or more outside (non-Permittee) entities.**

   Is the agreement with these other entity(ies) described/cited in the SWMP Document?

   ( ) *Yes* (●) *No* ( ) *Not Applicable*

3. **This Permittee organization maintains relevant ordinances or other regulatory mechanisms to control pollutant discharges into and from the MS4 to meet the requirements of the Permit**.

   ( ) *Yes* (●) *No* ( ) *Not Applicable*

   (If "No," use the Comment field to specify on overall progress to adopt adequate ordinances or utilizing available regulatory mechanisms.)

4. **This Permittee organization's SWMP Document is posted on a publicly accessible website**.

   (●) *Yes*

   Identify the URL for the webpage where the SWMP Document can be accessed:

   http:// https://adacountydrainagedistrict3.org/

   ( ) *No*

   ( ) *Not Applicable*

5. **The Permittee organization provided a summary of total costs associated with SWMP implementation over the reporting period.**

   (●) *Yes;*

   ( ) *No*

   ( ) *Not Applicable*

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6. **This Permittee organization regularly tracks certain activities to set priorities and assess compliance with the Permit requirements.**

(●) *Yes* ( ) *No* ( ) *Not Applicable*

7. During the reporting period, responsibility for SMWP implementation has changed due to a Transfer of Ownership or Operational Authority over a geographic portion of the MS4.

This Permittee's SWMP Document has been updated to reflect these changes in responsibility for any new or transferred areas served by the MS4.

( ) *Yes*

If yes, use the Comments field to provide a brief statement summarizing the change in ownership or operational authority.

(●) *No*

( ) *Not Applicable*

Section II Comments:

Questions 1: Please see Attachment K - Ada County Drainage District No. 3 Stormwater Management Plan NPDES Permit #IDS-027561 and attached Appendix A - Amended and Restated Intergovernmental Agreement for Roles and Responsibilities Under the National Pollutant Discharge Elimination System Permit (NPDES Permit #IDS-027561).

Question 3: Ada County Drainage District No. 3 does not have the authority or jurisdiction to implement ordinances or regulations to control pollutant discharges. The district boundaries of Ada County Drainage District No. 3 fall within the jurisdiction of Boise City and Ada County Highway District ("ACHD"). Both Boise City and ACHD have enforcement authority. Ada County Drainage District No. 3 does implement education and information outreach as necessary at the Ada County Drainage District No. 3 facilities.

Question 5: Please see Attachment A - SWMP Implementation Costs

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Section III. Status of SWMP Control Measures
Please answer all questions for each SWMP control measure and associated component activity. In the Comments field, cite any relevant information and/or statistics that helps illustrate the Permittee's implementation of the required action/activity.

If the answer is "No," use the Comments field to explain the reason, and outline the expected dates that the requirement will be met.

If the requirement does not apply to the Permittee's organization, mark "NA" and explain why it does not apply in the Comments field.

Public Education, Outreach and Involvement Program (Permit Part 3.1)

8. **This Permittee organization conducts an education, outreach, and public involvement program based on stormwater issues of significance in the Permittee's jurisdiction.**

- ○ *Yes, this organization conducts the education, outreach, and involvement activities required by the Permit*
- ◉ *Yes, this organization works through contract with other entities to conduct the education, outreach, and involvement activities required by the Permit*
- ○ *No*
- ○ *Not Applicable*

9. **Target Audience: During the reporting period, this Permittee organization focused its education, outreach, and public involvement messages to the following audience(s):**

- ☑ ***General Public*** *(including homeowners, homeowner's associations, landscapers, and property managers)*
- ☑ ***Business/Industrial/Commercial/Institutions*** *(including home based and mobile businesses)*
- ☑ ***Construction/Development*** *(e.g., Engineers, Contractors, Developers, Landscape Architects, Site Design Professionals)*
- ☐ ***Elected Officials, Land Use Policy and Planning Staff***
- ☐ Other *(describe in Comments section below)*

10. **Topics: During the reporting period, this Permittee organization focused its education, outreach, and public involvement messages on the following topics** *(select all that apply):*

- ☑ General impacts of stormwater flows into surface water, and appropriate actions to prevent adverse impacts;
- ☑ Impacts from impervious surfaces, techniques to avoid adverse impacts;
- ☑ Yard care techniques protective of water quality, such as composting;
- ☐ Proper use, application & storage of pesticides, herbicides, and fertilizers;

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- [x] Litter & trash control and recycling programs;
- [x] BMPs for power washing, carpet cleaning, auto repair &maintenance;
- [x] Low Impact Development/green infrastructure techniques, including site design, pervious paving, retention of mature trees/vegetation, landscaping and vegetative buffers;
- [x] Maintenance of landscape features providing water quality benefits;
- [ ] Stormwater treatment and volume control practices;
- [x] Technical standards for stormwater site plans; including appropriate selection, installation, and use of required construction site control measures
- [x] Source control BMPs and environmental stewardship;
- [x] Impacts of illicit discharges and how to report them;
- [x] Actions and opportunities for pet waste control/disposal,
- [x] Water wise landscaping, water conservation, water efficiency
- [x] BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, vehicle wash soaps and other hazardous materials;

11. During the reporting period, this Permittee organization began and/or continued distribution of the selected messages/activities to the intended target audience.

- (●) *Yes*

  Please summarize the message/activity conducted during the reporting period in the Comments section below.

- ( ) *No*

  Note: Permit Part 3.1.3 requires Permittees to conduct at least eight (8) educational messages or activities no later than ***September 30, 2026.***

- ( ) *Not Applicable*

12. During this reporting period, this Permittee organization assessed, or participated in efforts to assess, the understanding and adoption of intended behaviors by the target audience.

- (●) *Yes; In the Comments section below, please summarize efforts to assess the selected education, outreach and public involvement activities conducted during the reporting period. If information is available, describe how this information is used to improve the education/outreach efforts.*

- ( ) *No*

- ( ) *Not Applicable*

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13. During this reporting period, this Permittee organization offered (or worked with others to offer) training/education regarding construction site runoff control measures to site operators working in the Permittee's jurisdiction.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.1.7.1 requires Permittees to offer outreach/training on construction site control measures at least once per year during the permit term, no later than ***September 30, 2026.***

- ( ) *Not Applicable*

14. During this reporting period, this Permittee organization offered (or worked with others to offer) training/education regarding permanent stormwater controls to audiences working in the Permittee's jurisdiction.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.1.7.2 requires Permittees to offer outreach/training on permanent stormwater controls at least once per year during the permit term, no later than ***September 30, 2026.***

- ( ) *Not Applicable*

15. This Permittee organization maintains and promotes a publicly-accessible website that provides current SWMP-related information cited in Permit Part 3.1.8. This website was recently updated prior to submitting this Report.

- (●) *Yes*

  URL for the Permittee's webpage:

  http:// https://www.partnersforcleanwater.org/ https://adacountydrainagedistrict3.org/

- ( ) *No*
- ( ) *Not Applicable*

Comments on Public Education, Outreach, and Involvement Program:
Use this Comments field to explain or discuss unique implementation schedules, summarize nature of the education, outreach, and public involvement activities conducted during the reporting period

Questions 8-15: Pursuant to the Amended and Restated Intergovernmental Agreement for Roles and Responsibilities Under the National Pollutant Discharge Elimination System Permit (NPDES Permit #IDS-027561), entered into by the Permittees on December 7, 2022, Appendix A to Ada County Drainage District No. 3 SWMP (Attachment K), Boise City is the primary Permittee responsible for education and outreach as discussed by questions 8-15 above. Please refer to Boise City's annual report and associated attachments for specifics of the Permittees' joint activities. The information regarding the Boise City public education and outreach program, target audiences, activities, stormwater pollution prevention messaging, assessment and tracking, etc. can be found in Attachment B - The 2023 Public Education, Outreach, and Involvement Program.

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Illicit Discharge Detection and Elimination Program (Permit Part 3.2)

16. To the extent allowable pursuant to authority granted under Idaho law, this Permittee organization conducts and enforces a program to detect and eliminate illicit discharges into the MS4.

- (●) *Yes*
- ( ) *No*

  *Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary to comply with Permit Parts 3.2.2 through 3.2.9 no later than **April 3, 2026.***

- ( ) *Not Applicable*

17. This Permittee organization maintains a current MS4 Map and Outfall Inventory as described in Permit Part 3.2.2.

- (●) *Yes*
- ( ) *No*

  *Note: Permit Part 3.2 requires Permittees to update their Map(s) and Inventory no later than **April 3, 2026.***

- ( ) *Not Applicable*

18. To the extent allowable pursuant to authority granted under Idaho law, this Permittee organization prohibits non-storm water discharges into the MS4 (*except those identified in Permit Part 2.4*) through an ordinance or other regulatory mechanism.

- (●) *Yes – if yes, please provide citation/web address to the ordinance/regulatory mechanism:*

  Boise City Code 10-6-2 and http://www.achdidaho.org/Documents/ACHDpolicyManual/7000to9000/Section8000_DrainageStormwaterManagement.pdf (Section 8006 - Legal Authority for Stormwater Management)

- ( ) *No*

  *Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than **April 3, 2026.***

- ( ) *Not Applicable*

19. This Permittee organization maintains a dedicated telephone number, email address, and/or other means for the public to report illicit discharges,

- (●) *Yes – if yes, please provide phone number/web address:*

  Stormwater Pollution Prevention Hotline: (208) 395-8888; DD3 Hotline: (208) 602-1713

- ( ) *No*

  *Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than **April 3, 2026.***

- ( ) *Not Applicable*

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20. **This Permittee organization responds and investigates illicit discharge complaints or reports within two working days.**

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.2 requires Permittees to revise and update their existing programs as necessary no later than ***April 3, 2026.***

- ( ) *Not Applicable*

21. **Number of Public Complaints/Reports Received During this Reporting Period:**

~~2~~

22. **Number of Illicit Discharge Complaints/Reports Investigated through field visits, sampling or other follow-up action** 0

23. **Number of Illicit Discharge Complaints/Reports Resolved** 0

24. **This Permittee organization conducts a dry weather analytical and field screening monitoring program to identify non-stormwater flows from MS4 outfalls.**

(●) *Yes* ( ) *No* ( ) *Not Applicable*

25. **During the reporting period, this Permittee organization used its written protocols to prioritize and identify MS4 outfalls for dry weather discharge investigation.**

(●) *Yes* ( ) *No* ( ) *Not Applicable*

26. **Total Number of MS4 Outfalls in the Permittee's jurisdiction of the Permit Area:** 4

27. **During the reporting period, this Permittee organization completed visual dry weather screening on at least 20% of MS4 outfalls.**

- (●) *Yes*
- ( ) *No* – Total # outfalls < 7, so only one outfall screened this reporting period
- ( ) *Not Applicable*

28. **Of the 20% of MS4 outfalls screened during the reporting period:**

How many outfalls were discharging during dry weather? 1

How many of these identified dry weather discharges were sampled or otherwise investigated to determine the discharge source? 0

How many of the identified dry weather discharges resulted in the Permittee action to address and eliminate the discharge source? 0

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29. **During this reporting period, how many of the Permittee's MS4 outfalls have been identified as having dry weather flows caused by irrigation return flow or ground water seepage?**
Number of outfalls identified this reporting period 0
Total number of MS4 outfalls identified to date, as having dry weather flows from irrigation or groundwater seepage 0

Note: Permit Part 3.2.6 requires Permittees to provide a complete list of MS4 outfalls locations identified as having dry weather flows caused by irrigation return flow or ground water seepage as part of the Permit Renewal Application no later than ***April 3, 2026.***

30. **This Permittee organization maintains written spill response procedures and coordinates appropriate spill prevention, containment and response activities with other organizations in the Permit Area to ensure maximum water quality protection at all times.**

(●) *Yes* ( ) *No* ( ) *Not Applicable*

31. **This Permittee organization coordinates with appropriate local entities to educate employees and the public of the proper management and disposal or recycling of used oil, vehicle fluids, toxic materials, and other household hazardous wastes.**

(●) *Yes* ( ) *No* ( ) *Not Applicable*

32. **This Permittee organization's staff responsible for investigating, identifying and eliminating illicit discharges, spills, and illicit connections into the MS4 are trained to conduct such activities**

(●) *Yes* ( ) *No* ( ) *Not Applicable*

Comments on Illicit Discharge Detection and Elimination Program:
Use this Comments field to explain any unique implementation schedules, highlight investigation results or follow-up actions, discuss subsequent enforcement actions, etc. that were conducted during the relevant reporting period.

Questions 16 and 18: The Ada County Drainage District No. 3's district boundary is within Boise City and ACHD's jurisdiction. All applicable enforcement ordinances are governed by Boise City or ACHD and both entities have enforcement jurisdiction over activities occurring within the Ada County Drainage District No. 3 boundary. Boise City and ACHD are the primary Permittees responsible for illicit discharge detection and elimination program implementation as discussed by questions 16 and 18 above.

Question 17: Please see Attachment D - MS4 Map and Outfall Inventory.

Question 21-23: Please see Attachment M - IDDE Stormwater Pollution Hotline Report. All known public complaints and reports were followed up on and resolved by Ada County Drainage District No. 3's manager, Dean Callen.

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Construction Site Runoff Control Program (Permit Part 3.3)

33. This Permittee organization uses an ordinance or other regulatory mechanism to require erosion, sediment, and waste material management controls at construction project site activity that results in land disturbance of one (1) or more acres and discharges to the MS4.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

34. This Permittee organization requires construction site operators to submit construction site plans for Permittee review.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

35. This Permittee organization inspects construction sites to ensure compliance with applicable requirements for erosion, sediment and waste material management controls.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

36. This Permittee organization inspects construction sites using an inspection prioritization system.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

37. **This Permittee organization implements a written escalating enforcement response policy or plan (ERP) for construction site runoff control.**

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

38. This Permittee organization ensures that all persons responsible for preconstruction site plan review, site inspections, and enforcement of construction site runoff control requirements are appropriately trained to conduct such activities – specifically, this organization provides orientation and training for new staff working on construction runoff control issues within the first six (6) months of employment.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.3 requires Permittees to update their construction site runoff control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

Comments on Construction Site Runoff Control:
Use this Comments field to explain unique implementation schedules, summarize the number of site inspections, follow-up actions, and/or any subsequent enforcement actions, etc that were conducted during the relevant reporting period.

Questions 33-38: The Ada County Drainage District No. 3's district boundary is within Boise City and ACHD's jurisdiction. All applicable enforcement ordinances are governed by Boise City or ACHD, and both entities have enforcement jurisdiction over activities occurring within the Ada County Drainage District No. 3 boundary and are responsible for construction site runoff control program implementation as discussed by Questions 33-38 above. Please refer to Boise City and ACHD annual reports for specifics of Boise City and ACHD's enforcement of applicable ordinances and regulations. ACHD implements the Construction Site Runoff Control Program county-wide. In reporting year 2022-2023

Please see Attachment F - CSDC Enforcement Response Policy.

Please see Attachment F.1 - Boise City Construction Site Runoff Control

Please see Attachment Attachment G - Erosion and Sediment Control Plan Reviews and Site Inspection Map.

In addition, Ada County Drainage District No. 3 utilizes drainage agreements with developers who wish to conduct development projects in or around Ada County Drainage District No. 3's drains or outfalls. These drainage agreements require additional construction site protocols to help reduce or eliminate construction site runoff.

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Post Construction Stormwater Management in New Development & Redevelopment (Permit Part 3.4)

39. Through ordinance or other regulatory mechanism, this Permittee organization requires the installation and long-term maintenance of permanent stormwater controls at new development and redevelopment project sites that result from land disturbance of 5,000 square feet or more, excluding individual one- or two-family dwelling development or redevelopment and the infill or redevelopment of public pedestrian infrastructure projects. Required controls are sufficient to retain onsite the runoff volume produced from the first 0.6 inches of rainfall from a 24-hour event preceded by 48 hours of no measurable precipitation, and/or require runoff treatment providing equal or greater level of water quality benefit as this onsite retention standard.

(●) *Yes*

Please cite to the ordinance containing the permanent stormwater control requirements:

See Boise City Code 10-6-3 and https://www.achdidaho.org/Documents/ACHDpolicyManual/7000to9000/Section8000_DrainageStormwaterManagement.pdf (Section 8007.2)

( ) *No*

Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than ***April 3, 2026.***

( ) *Not Applicable*

40. This Permittee organization requires permanent storm water controls through written specifications.

(●) *Yes*

Please cite to the document containing the permanent stormwater control requirements:

See Boise City Code 10-6-3 and https://www.achdidaho.org/Documents/ACHDpolicyManual/7000to9000/Section8000_DrainageStormwaterManagement.pdf (Section 8007.2), and Attachment G and H

( ) *No*

Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than ***April 3, 2026.***

( ) *Not Applicable*

41. This Permittee organization requires preconstruction site plan review and approval for permanent storm water controls at new development and redevelopment sites.

(●) *Yes*

( ) *No*

Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than ***April 3, 2026.***

( ) *Not Applicable*

41.b This Permittee organization cooperates in the implementation of the Green Infrastructure Strategy to employ innovative approaches to control stormwater quality and quantity in the Lower Boise River watershed.

Use this field below to describe any relevant Permittee actions during the reporting period, as applicable. .

Questions 39-41: The Ada County Drainage District No. 3's district boundary is within Boise City and ACHD's jurisdiction. All applicable enforcement ordinances are governed by the Boise City or ACHD, and both entities have enforcement jurisdiction over activities occurring within the Ada County Drainage District No. 3 boundary and are responsible for post construction stormwater management in new development and redevelopment as discussed by questions 39-41 above. Please refer to Boise City and ACHD annual reports for specifics of the Boise City and ACHD's enforcement of applicable ordinances and regulations.

In addition, Ada County Drainage District No. 3 utilizes drainage agreements with developers who wish to conduct development projects in or around Ada County Drainage District No. 3's drains or outfalls. These drainage agreements require additional post construction site protocols to help manage stormwater post construction.

Question 41b: The Ada County Drainage District No. 3's district boundary is within Boise City and ACHD's jurisdiction. In 2017, ACHD included Green Stormwater Infrastructure (GSI) Best Management Practices (BMPs) into ACHD's stormwater management design standards and has since programmed funding for GSI implementation annually. All new, rebuilt, and retrofitted ACHD stormwater basins are vegetated to mitigate stormwater pollutants and GSI opportunities are explored for all new roadway projects. In the Phase I Permit area, ACHD owns and actively manages 46 stormwater tree cells and 30 vegetated basins and bioretention swales. ACHD works cooperatively through an agreement with the City of Boise to maintain stormwater tree cells located in the Greater Downtown Boise Area. ACHD maintains and cleans the stormwater tree cell inlets and distribution pipe, and the City of Boise maintains the soil and trees. In reporting year 2022-2023, 12 GSI projects were designed or constructed. ACHD continues development and implementation of the GSI Program through piloting and refining strategies and processes to improve the success of newly constructed GSI facilities and basin retrofits. GSI Program updates and project descriptions are provided in Attachment G of ACHD's Annual report in the following tables:

- Table 1 – Phase I ACHD-Owned Vegetated Basins and Bioretention Swales 2016-2023
- Table 2 – Phase I ACHD Basin Improvement Projects 2022-2023
- Table 3 - GSI Projects Designed or Constructed 2022-2023
- Table 4 – Phase I ACHD GSI Program Updates 2022-2023

More information on activities ACHD conducts to address requirements for post-construction stormwater management for new development and redevelopment is described in the Phase I SWMP, Section 5.4.2.2.

42. This Permittee organization has identified high priority locations in the jurisdiction where the Permittee regularly inspects the installation, and long-term operation, of permanent stormwater controls.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

43. This Permittee organization has an enforcement strategy to ensure and maintain the functional integrity of permanent stormwater controls within this jurisdiction.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

44. This Permittee organization uses a database inventory to track and manage the operational condition of permanent stormwater controls within this jurisdiction.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than ***April 3, 2026.***

- ( ) *Not Applicable*

45. This Permittee organization requires enforceable and transferable O&M Agreements, where parties other than this Permittee organization are responsible for operation and maintenance of permanent storm water controls?

- (●) *Yes*
- ( ) *No - Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than* ***April 3, 2026.***
- ( ) *Not Applicable*

46. This Permittee organization ensures that all persons responsible for reviewing site plans for permanent stormwater controls and/or for inspecting the installation and operation of permanent controls are trained to conduct such activities

- (●) *Yes*
- ( ) *No - Note: Permit Part 3.4 requires Permittees to update their permanent stormwater control requirements no later than* ***April 3, 2026.***
- ( ) *Not Applicable*

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Comments on Post Construction Stormwater Management in New Development and Redevelopment

Use this Comments field as necessary to explain any unique implementation schedules, summarize inspections, actions, etc. that were conducted during the relevant reporting period.

Questions 42-46: The Ada County Drainage District No. 3's district boundary is within Boise City and ACHD's jurisdiction. All applicable enforcement ordinances are governed by Boise City or ACHD, and both entities have enforcement jurisdiction over activities occurring within the Ada County Drainage District No. 3 boundary and are responsible for permanent storm water controls in construction as discussed by questions 42-46 above. Please refer to Boise City and ACHD's annual reports for specifics of Boise City and ACHD's enforcement of applicable ordinances and regulations.

In addition, Ada County Drainage District No. 3 utilizes drainage agreements with developers who wish to conduct development projects in or around Ada County Drainage District No. 3's drains or outfalls. These drainage agreements require additional permanent storm water controls to help manage storm water post construction.

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Stormwater Infrastructure and Street Management (Permit Part 3.5)

47. This Permittee organization inspects all MS4 catch basins and inlets in the jurisdiction at least once every two years and takes appropriate maintenance or cleaning action based on those inspections.

- (●) *Yes*
- ( ) *No – Permittee uses an alternate inspection & maintenance schedule as outlined in the SWMP Document.*
- ( ) *No*

  Note: Permit Part 3.5 requires Permittees to update their pollution prevention and good housekeeping *as needed to properly operate and maintain their MS4s no later than* ***April 3, 2026.***
- ( ) *Not Applicable*

Total Number of catch basins and inlets inspected this reporting period 6.0

48. This Permittee organization operates and maintains Streets, Roads, Highways and/or Parking Lots in its jurisdiction in a manner that protects water quality and reduces the discharge of pollutants through the MS4.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than ***April 3, 2026***
- ( ) *Not Applicable*

49. This Permittee organization operates all street/road maintenance material storage locations in a manner that prevents pollutants in stormwater runoff from discharging to the MS4 or into any receiving waterbody. A description of each Material Storage Location is included in the SWMP Document, as required by Permit Part 3.5.4

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than ***.***
- ( ) *Not Applicable*

50. This Permittee organization sweeps all streets, roads, highways, and parking lots according to a sweeping management plan and the sweeping schedule outlined in Permit Part 3.5.5.

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than ***April 3, 2026***

- ( ) *Not Applicable*

51. This Permittee organization has reviewed its operation and maintenance activities for the types of activities listed below and confirms that all such activities are conducted in a manner that protects water quality and reduces the discharge of pollutants through the MS4. Municipal Activities to be addressed include: *grounds/park and open space maintenance operations; fleet maintenance and vehicle washing operations; building maintenance; snow disposal site operation and maintenance; solid waste transfer activities; municipal golf course maintenance; materials storage; hazardous materials storage; used oil recycling; and spill control and prevention measures for municipal refueling facilities.*

- ( ) *Yes*
- ( ) *No*

  Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than ***April 3, 2026***

- (●) *Not Applicable*

52. **This Permittee organization ensures appropriate practices to reduce the discharge of pollutants to the MS4 associated with the application, storage and disposal of pesticides, herbicides and fertilizers. All employees or contractors applying pesticides, etc. are instructed to follow all label requirements, including those regarding application methods, rates, number of applications allowed, and disposal of the pesticide/herbicide/fertilizer and rinsate.**

- (●) *Yes*
- ( ) *No*

  Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than ***April 3, 2026.***

- ( ) *Not Applicable*

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53. This Permittee organization uses site specific Storm Water Pollution Prevention Plans for all Permittee-owned material storage facilities, heavy equipment storage areas, and maintenance yards located in the Permit Area.

- ○ *Yes*
- ○ *No*

  *Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **April 3, 2026.***

- ◉ *Not Applicable*

54. This Permittee organization ensures that all persons responsible for municipal operations and maintenance activities are trained to conduct such activities

- ○ *Yes*
- ○ *No*

  *Note: Permit Part 3.5 requires Permittees to update their requirements pollution prevention/good housekeeping for MS4 Operations no later than **April 3, 2026.***

- ◉ *Not Applicable*

Comments on Stormwater Infrastructure and Street Management

Use this Comments field as necessary to explain any unique implementation schedules, summarize inspections, actions, etc. that were conducted during the relevant reporting period

Question 47 - Ada County Drainage District Manager, Dean Callen, inspects all Ada County Drainage District No. 3 drains at least once every two years. Where referring to "catch basins", Ada County Drainage District No. 3 has listed six (6) individual drains. Please see Attachment N - DD3 Manager, Dean Callen, Inspection Logs.

Questions 48-50 - ACHD is responsible for the maintenance and operations of all roads and right-of-ways within Ada County Drainage District No. 3's district boundary.

Question 51 - This question does not apply to Ada County Drainage District No. 3 as it does not maintain any of the above mentioned facilities or does not participate in such activities listed.

Question 52 - Ada County Drainage District No. 3's Manager, Dean Callen, is instructed to follow all label requirements, including those regarding application methods, rates, number of applications allowed, and disposal of the pesticide/herbicide/fertilizer.

Question 53 - Ada County Drainage District No. 3 does not maintain any material storage facilities, heavy equipment storage areas, or maintenance yards.

Question 54 - This question does not apply to Ada County Drainage District No. 3 as it is not a municipal operation.

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Industrial and Commercial Stormwater Discharge Management (Permit Part 3.6)

55. ***This Permittee organization maintains an inventory of industrial & commercial facilities within the Permit Area, and inspects such facilities on a prioritized basis as required by Permit Part 3.6.***

Use this comment box to summarize Permittee activities related to Permit Part 3.6.

The Ada County Drainage District No. 3's district boundary is within Boise City and ACHD's jurisdiction. All applicable enforcement ordinances are governed by Boise City or ACHD, and both entities have enforcement jurisdiction over activities occurring within the Ada County Drainage District No. 3 boundary and are responsible for industrial and commercial facilities compliance with stormwater discharge management. Please refer to Boise City and ACHD annual report for specifics of the Boise City and ACHD inventory of such enforcement efforts.

ACHD’s jurisdiction is limited to public right of way and does not include private property. To implement the commerical and industrial monitoring program, ACHD contracts with the City of Boise and City of Garden City to maintain an inventory of industrial and commercial facilities described in Permit Part 3.6.2. A narrative description of the inventories and additional information on ACHD’s Industrial and Commercial Stormwater Discharge Management Program is provided in ACHD's Phase I SWMP, Section 5.6. An inspection summary table and facility inspection reports for reporting year 2022-2023 are in the Phase I SWMP, Appendix K.

See attached Attachment I: Industrial and Commercial Discharge Facility Inspection Reports.

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Section V. Response To Excursions Above Idaho Water Quality Standards

56. During this or any prior reporting period, did the Permittee submit written notification to EPA and IDEQ regarding MS4 discharge that are causing or contributing to an excursion above the WQS as directed by Permit Part 5.1?

- ○ *Yes – if yes, proceed to Q.56*
- ◉ *No*
- ○ *Not Applicable*

57. During this or any prior reporting period, did the Permittee submit an Adaptive Management Report to EPA and IDEQ, as directed by Permit Part 5.2?

- ○ *Yes – if yes, proceed to Q.57*
- ◉ *No*
- ○ *Not Applicable*

58. Provide a summary of the Permittee's efforts to date that address the MS4 discharges contributing to the original water quality excursion, including the results of any monitoring, assessment, or evaluation efforts conducted during the reporting period.

Question 56 and 57. NA

Question 58 - Pursuant to the Amended and Restated Intergovernmental Agreement for Roles and Responsibilities Under the National Pollutant Discharge Elimination System Permit (NPDES Permit #IDS-027561), entered into by the Permittees on December 7, 2022, Appendix A to Ada County Drainage District No. 3 SWMP (Attachment K), ACHD is the primary Permittee responsible for monitoring and water quality assessments. Please refer to ACHD's annual report and associated attachments for specifics of the Permittees' joint activities. ACHD, on behalf of the Permittees, continued to conduct wet weather stormwater monitoring and subwatershed monitoring as required under the Stormwater Monitoring and Evaluation Program requirements in Permit Part 6.2. Annual monitoring summaries for activities conducted in reporting year 2022-2023 are provided in the following attachments to this annual report:

Attachment L - NPDES Phase I Temperature Monitoring Approach
Attachment J - NPDES Phase I Stormwater Outfall Monitoring Plan
Attachment C- Stormwater Outfall Monitoring Summary WY2023
Attachment P - Americana Subwatershed Monitoring Summary WY 20223
Attachment Q - Temperature Monitoring Summary WY 2023

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59. List any attachments submitted as part of this Annual Report:

Note: Part 6.2.1 requires an updated *Stormwater Outfall Monitoring Plan* to be submitted as part of the Year 1 Annual Report, due January 30, 2023.

Attachment A - SWMP Implementation Costs
Attachment B - The 2023 Public Education, Outreach, and Involvement Program
Attachment C - Stormwater Outfall Monitoring Summary WY2023
Attachment D - MS4 Map and Outfall Inventory
Attachment E - 2023 DD3 Dry Weather Testing
Attachment F - CSDC Enforcement Response Policy
Attachment F.1 - Boise City Construction Site Runoff Control
Attachment G - Erosion and Sediment Control Plan Reviews and Site Inspection Map
Attachment H - ACHD Vegetated Basins, Bioretention Swales, and GIS Program Activities
Attachment I - Industrial and Commercial Discharge Facility Inspection Reports
Attachment J - NPDES Phase I Stormwater Outfall Monitoring Plan
Attachment K - Ada County Drainage District No. 3 Stormwater Management Plan NPDES Permit #IDS-027561
Attachment L - NPDES Phase 1 Temperature Monitoring Approach
Attachment M - IDDE Stormwater Pollution Hotline Report
Attachment N - DD3 Manager, Dean Callen, Inspection Logs
Attachment O - Spill Response and Household Hazardous Wastes Controls
Attachment P - Americana Subwatershed Monitoring Summary WY 2023
Attachment Q - Temperature Monitoring Summary WY 2023

Attachment A
SWMP Implementation Costs

DRAINAGE DISTRICT NO. 3
General Ledger
As of September 30, 2023

Type	Date	Num	Name	Memo	Debit	Credit	Balance
100 · Wells Fargo - Checking							37,503.10
Deposit	10/06/2022			Deposit	163.16		37,666.26
Check	10/10/2022	3463	Boise City Public Wo...			403.65	37,262.61
Check	10/10/2022	3464	Idaho Power			75.95	37,186.66
Check	10/10/2022	3465	Travis Jeffries, P.A.	Inv. #326495		795.00	36,391.66
Check	10/10/2022	3466	Verizon Wireless	Inv. #9916399...		52.33	36,339.33
Check	10/10/2022	3467	Elam & Burke			1,494.30	34,845.03
Check	10/25/2022	3468	Dean E Callen			149.38	34,695.65
Check	10/25/2022	3469	USI Insurance Servic...	10/9/2022 Co...		1,958.00	32,737.65
Paycheck	10/30/2022	3470	Dean E Callen			993.85	31,743.80
Liability Check	10/31/2022	ET	Idaho State Tax Com...	000193978		60.00	31,683.80
Liability Check	10/31/2022	EFTPS	United States Treasury	82-0392173		510.90	31,172.90
Check	10/31/2022			Service Charge		3.50	31,169.40
Deposit	10/31/2022			Interest	0.35		31,169.75
Check	11/01/2022	3471	Verizon Wireless	Inv. #9918770...		56.76	31,112.99
Check	11/07/2022	3472	Quadrant Consulting,...			756.04	30,356.95
Check	11/07/2022	3473	Idaho Power			75.44	30,281.51
Check	11/07/2022	3474	Elam & Burke			2,821.52	27,459.99
Deposit	11/08/2022			Deposit	102.06		27,562.05
Check	11/15/2022	3475	Charles R. Gains	Board mtg - N...		100.00	27,462.05
Check	11/15/2022	3476	Steve Sweet	Board mtg - N...		100.00	27,362.05
Check	11/15/2022	3477	ACHD	4th Qtr (Jul. - ...		2,452.13	24,909.92
Paycheck	11/30/2022	3479	Dean E Callen			993.85	23,916.07
Check	11/30/2022			Service Charge		3.50	23,912.57
Deposit	11/30/2022			Interest	0.56		23,913.13
Check	12/07/2022	3480	Idaho Power			84.50	23,828.63
Check	12/07/2022	3481	Dean E Callen			136.88	23,691.75
Check	12/07/2022	3482	Quadrant Consulting,...			935.39	22,756.36
Check	12/07/2022	3483	Verizon Wireless	Inv. #9921154...		51.76	22,704.60
Check	12/07/2022	3484	Dean E Callen			524.00	22,180.60
Check	12/08/2022	3485	Charles R. Gains	Board mtg - D...		100.00	22,080.60
Check	12/08/2022	3486	Steve Sweet	Board mtg - D...		100.00	21,980.60
Deposit	12/08/2022			Deposit	28.76		22,009.36
Check	12/21/2022	3487	Elam & Burke			5,496.53	16,512.83
Check	12/21/2022	3488	Travis Jeffries, P.A.	Inv. #326678		5,380.00	11,132.83
Paycheck	12/30/2022	3489	Dean E Callen			993.85	10,138.98
Check	12/30/2022	3490	Payne West Insurance	Inv. #349123, ...		318.00	9,820.98
Check	12/30/2022			Service charge		3.50	9,817.48
Deposit	12/31/2022			Interest	0.97		9,818.45
Check	01/06/2023	3491	Verizon Wireless	Inv. #9923539...		3.38	9,815.07
Check	01/10/2023	3492	Idaho Power			77.48	9,737.59
Check	01/10/2023	3493	Boise City Public Wo...			248.22	9,489.37
Check	01/10/2023	3494	Steve Sweet	Board mtg - Ja...		100.00	9,389.37
Check	01/10/2023	3495	Ashley Newbry	Board mtg - Ja...		100.00	9,289.37
Check	01/10/2023	3496	Carolyn Strickling	Board mtg - Ja...		100.00	9,189.37
Deposit	01/17/2023		Payne West Insurance	Cancelled Bon...	345.00		9,534.37
Deposit	01/23/2023		Ada County	Deposit	65,536.79		75,071.16
Check	01/25/2023	3497	Elam & Burke			5,179.65	69,891.51
Check	01/25/2023	3498	Travis Jeffries, P.A.	Inv. #326707		795.00	69,096.51
Paycheck	01/31/2023	3499	Dean E Callen			995.85	68,100.66
Check	01/31/2023		Wells Fargo Bank	Service charge		3.50	68,097.16
Liability Check	01/31/2023	ET	Idaho State Tax Com...	000193978		60.00	68,037.16
Liability Check	01/31/2023	EFTPS	United States Treasury	82-0392173		510.90	67,526.26
Deposit	01/31/2023			Interest	0.96		67,527.22
Check	02/06/2023	3500	Verizon Wireless	Inv. #9925915...		116.73	67,410.49
Check	02/09/2023	3501	Elam & Burke			9,279.05	58,131.44
Check	02/09/2023	3502	Idaho Power			77.48	58,053.96
Check	02/09/2023	3503	Steve Sweet	Board mtg - F...		100.00	57,953.96
Check	02/09/2023	3504	Ashley Newbry	Board mtg - F...		100.00	57,853.96
Check	02/09/2023	3505	Carolyn Strickling	Board mtg - F...		100.00	57,753.96
Check	02/10/2023	3506	State Insurance Fund	STMT# 25901...		627.00	57,126.96
Deposit	02/10/2023			Deposit	1,474.86		58,601.82
Check	02/23/2023	3507	Dean E Callen			116.15	58,485.67
Paycheck	02/28/2023	3508	Dean E Callen			995.85	57,489.82
Check	02/28/2023	3509	ESRI	Q-491007		550.00	56,939.82
Check	02/28/2023		Wells Fargo Bank	Service charge		3.50	56,936.32
Deposit	02/28/2023			Interest	2.40		56,938.72
Check	03/08/2023	3510	Steve Sweet	Board mtg - M...		100.00	56,838.72
Check	03/08/2023	3511	Ashley Newbry	Board mtg - M...		100.00	56,738.72
Check	03/08/2023	3512	Carolyn Strickling	Board mtg - M...		100.00	56,638.72
Check	03/08/2023	3513	ACHD	1st Qtr (Oct - ...		2,441.56	54,197.16
Check	03/08/2023	3514	Elam & Burke			5,172.46	49,024.70
Check	03/08/2023	3515	Idaho Power			83.03	48,941.67
Check	03/08/2023	3516	Payne West Insurance	VOID: Inv. #35...	0.00		48,941.67
Check	03/08/2023	3517	Quadrant Consulting,...			1,152.00	47,789.67
Check	03/08/2023	3518	Verizon Wireless	Inv. #9928297...		85.82	47,703.85
Check	03/08/2023	3519	Payne West Insurance	Inv. #354573 ...		250.00	47,453.85
Deposit	03/09/2023			Deposit	460.30		47,914.15

DRAINAGE DISTRICT NO. 3
General Ledger
As of September 30, 2023

Type	Date	Num	Name	Memo	Debit	Credit	Balance
Check	03/24/2023	3520	Quadrant Consulting,...			4,942.13	42,972.02
Paycheck	03/31/2023	3522	Dean E Callen			995.85	41,976.17
Check	03/31/2023		Wells Fargo Bank	Service charge		3.50	41,972.67
Deposit	03/31/2023			Interest	2.15		41,974.82
Check	04/07/2023	3523	Verizon Wireless	Inv. #9930709...		85.82	41,889.00
Deposit	04/07/2023			Deposit	438.07		42,327.07
Liability Check	04/28/2023	ET	Idaho State Tax Com...	000193978		60.00	42,267.07
Liability Check	04/28/2023	EFTPS	United States Treasury	82-0392173		504.90	41,762.17
Check	04/30/2023			VOID: Service ...	0.00		41,762.17
Paycheck	04/30/2023	3524	Dean E Callen			995.85	40,766.32
Deposit	04/30/2023			Interest	1.75		40,768.07
Transfer	05/01/2023			Funds Transfe...		40,500.00	268.07
Deposit	05/05/2023			Deposit	446.49		714.56
Check	05/31/2023			VOID: Service ...	0.00		714.56
Deposit	05/31/2023			Interest	0.09		714.65
Check	06/21/2023	3526	ICCU	VOID:	0.00		714.65
Check	06/21/2023	3528	Drainage District #3	Transfer to IC...		711.15	3.50
Deposit	06/30/2023			Interest	0.02		3.52
Check	07/17/2023	3532	Drainage District #3	Close WF acc...		3.52	0.00
Paycheck	09/08/2023	DD1004	Dean E Callen	Direct Deposit	0.00		0.00
Total 100 · Wells Fargo - Checking					69,004.74	106,507.84	0.00
106 · ICCU - Checking							0.00
Transfer	05/01/2023			Funds Transfer	40,500.00		40,500.00
Check	05/02/2023	201	Steve Sweet			100.00	40,400.00
Check	05/02/2023	202	Ashley Newbry			100.00	40,300.00
Check	05/02/2023	203	Carolyn Strickling			100.00	40,200.00
Check	05/02/2023	204	Boise City Public Wo...	#IO348		471.40	39,728.60
Check	05/02/2023	205	Dean E Callen			374.56	39,354.04
Check	05/02/2023	206	Dynamic Visions	Inv. #100		1,290.00	38,064.04
Check	05/02/2023	207	Elam & Burke			3,242.10	34,821.94
Check	05/02/2023	208	Idaho Power			75.90	34,746.04
Check	05/02/2023	209	Quadrant Consulting,...			958.50	33,787.54
Check	05/02/2023	210	Travis Jeffries, P.A.	Inv. #327360		1,736.25	32,051.29
Check	05/02/2023	211	Verizon Wireless	Inv. #9933101...		85.31	31,965.98
Check	05/02/2023	212	Lucinda Reinke			130.00	31,835.98
Check	05/02/2023	212	Lucinda Reinke	Reimb to open...	100.00		31,935.98
Check	05/09/2023	213	Idaho Power			72.12	31,863.86
Check	05/11/2023	214	Streamline	A012C4B7-0001		250.00	31,613.86
Check	05/11/2023	215	ACHD	Inv. 17686		2,001.92	29,611.94
Check	05/11/2023	216	Elam & Burke			3,855.95	25,755.99
Liability Check	05/31/2023		QuickBooks Payroll ...	Created by Pa...		997.60	24,758.39
Paycheck	06/01/2023	DD1001	Dean E Callen	Direct Deposit	0.00		24,758.39
Check	06/01/2023	217	Verizon Wireless	Inv. #9935478...		85.31	24,673.08
Check	06/12/2023	218	Dean E Callen			84.50	24,588.58
Check	06/12/2023	219	Idaho Power			81.79	24,506.79
Check	06/12/2023	220	Streamline	A012C4B7-0002		1,080.00	23,426.79
Check	06/12/2023	221	Steve Sweet			100.00	23,326.79
Check	06/12/2023	222	Ashley Newbry			100.00	23,226.79
Check	06/21/2023	3526	ICCU	VOID	0.00		23,226.79
Check	06/21/2023	3528	Drainage District #3	Transfer from ...	711.15		23,937.94
Deposit	06/21/2023			Deposit	2,861.46		26,799.40
Check	06/22/2023	223	Elam & Burke			1,941.05	24,858.35
Check	07/06/2023	224	Verizon Wireless	Inv. #9937841...		85.31	24,773.04
Liability Check	07/07/2023		QuickBooks Payroll ...	Created by Pa...		568.32	24,204.72
Paycheck	07/10/2023	DD1002	Dean E Callen	Direct Deposit	0.00		24,204.72
Check	07/10/2023	225	Idaho Power			88.77	24,115.95
Check	07/17/2023	3532	Drainage District #3	Close WF acc...	3.52		24,119.47
Deposit	07/20/2023			Deposit	34,505.86		58,625.33
Check	07/25/2023	226	Boise City Public Wo...	#IO358		745.64	57,879.69
Check	07/25/2023	227	Elam & Burke			1,385.70	56,493.99
Transfer	07/26/2023			Funds Transfer		30,000.00	26,493.99
Liability Check	07/31/2023	ET	Idaho State Tax Com...	000193978		40.00	26,453.99
Liability Check	07/31/2023	EFTPS	United States Treasury	82-0392173		336.60	26,117.39
Check	08/07/2023	228	Elam & Burke			1,954.50	24,162.89
Check	08/07/2023	229	Idaho Power			97.35	24,065.54
Check	08/07/2023	230	Steve Sweet			100.00	23,965.54
Check	08/07/2023	231	Ashley Newbry			100.00	23,865.54
Check	08/07/2023	232	Travis Jeffries, P.A.	Inv #327886		1,905.00	21,960.54
Check	08/07/2023	233	Verizon Wireless	Inv #99402168...		85.40	21,875.14
Liability Check	08/09/2023		QuickBooks Payroll ...	Created by Pa...		664.86	21,210.28
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit	0.00		21,210.28
Deposit	08/11/2023		Ada County	Deposit	455.45		21,665.73
Check	08/24/2023	234	ACHD	Inv 17845		3,086.99	18,578.74
Liability Check	09/07/2023		QuickBooks Payroll ...	Created by Pa...		842.45	17,736.29
Check	09/07/2023	235	Idaho Power			103.27	17,633.02
Check	09/07/2023	236	Verizon Wireless	Inv #99426087...		85.40	17,547.62

DRAINAGE DISTRICT NO. 3
General Ledger
As of September 30, 2023

Type	Date	Num	Name	Memo	Debit	Credit	Balance
Deposit	09/08/2023			Deposit	244.84		17,792.46
Check	09/11/2023	237	Steve Sweet			100.00	17,692.46
Check	09/11/2023	238	Ashley Newbry			100.00	17,592.46
Check	09/11/2023	239	Carolyn Strickling			100.00	17,492.46
Check	09/11/2023	240	Elam & Burke			3,672.50	13,819.96
Check	09/25/2023	241	QRS Consulting, LLC			936.00	12,883.96
Total 106 · ICCU - Checking					79,382.28	66,498.32	12,883.96
108 · ICCU - Savings							0.00
Check	05/02/2023	212	Lucinda Reinke	Reimb to open...	25.00		25.00
Transfer	07/26/2023			Funds Transfer	30,000.00		30,025.00
Total 108 · ICCU - Savings					30,025.00	0.00	30,025.00
120 · Local Gvt Investment Pool							18,425.58
General Journal	10/01/2022	TJ 202...		09-22 Interest	31.78		18,457.36
General Journal	11/01/2022	TJ 202...		10-22 Interest	39.85		18,497.21
General Journal	12/01/2022	TJ 202...		11-22 Interest	42.92		18,540.13
General Journal	01/30/2023	TJ 202...		12-22 Interest	48.64		18,588.77
General Journal	02/28/2023	TJ 202...		01-23 Interest	57.72		18,646.49
General Journal	03/31/2023	TJ 202...		02-23 Interest	61.70		18,708.19
General Journal	04/30/2023	TJ 202...		03-23 Interest	68.80		18,776.99
General Journal	05/31/2023	TJ 202...		04-23 Interest	70.14		18,847.13
General Journal	06/30/2023	TJ 202...		05-23 Interest	74.96		18,922.09
General Journal	07/31/2023	TJ 202...		06-23 Interest	75.25		18,997.34
General Journal	08/31/2023	TJ 202...		07-23 Interest	79.46		19,076.80
General Journal	09/30/2023	TJ 202...		08-23 Interest	83.74		19,160.54
Total 120 · Local Gvt Investment Pool					734.96	0.00	19,160.54
11000 · Accounts Receivable							0.00
Total 11000 · Accounts Receivable							0.00
12000 · Undeposited Funds							0.00
Total 12000 · Undeposited Funds							0.00
121 · Accrued interest receivable							31.78
Total 121 · Accrued interest receivable							31.78
150 · Taxes receivable							3,043.37
Deposit	10/06/2022			Deposit		144.40	2,898.97
Deposit	11/08/2022			Deposit		90.34	2,808.63
Deposit	12/08/2022			Deposit		26.35	2,782.28
Deposit	01/23/2023		Ada County	Deposit		65,501.12	-62,718.84
Deposit	02/10/2023			Deposit		1,459.58	-64,178.42
Deposit	03/09/2023			Deposit		449.10	-64,627.52
Deposit	04/07/2023			Deposit		430.60	-65,058.12
Deposit	05/05/2023			Deposit		439.23	-65,497.35
Deposit	06/21/2023			Deposit		2,842.59	-68,339.94
Deposit	07/20/2023			Deposit		34,462.99	-102,802.93
Deposit	08/11/2023		Ada County	Deposit		420.00	-103,222.93
Deposit	09/08/2023			Deposit		221.14	-103,444.07
Total 150 · Taxes receivable					0.00	106,487.44	-103,444.07
160 · Prepaid insurance							597.30
Total 160 · Prepaid insurance							597.30
200 · Drainage System							148,305.87
Total 200 · Drainage System							148,305.87
2110 · Direct Deposit Liabilities							0.00
Liability Check	05/31/2023		QuickBooks Payroll ...	Created by Pa...	995.85		995.85
Paycheck	06/01/2023	DD1001	Dean E Callen	Direct Deposit		995.85	0.00
Liability Check	07/07/2023		QuickBooks Payroll ...	Created by Pa...	566.57		566.57
Paycheck	07/10/2023	DD1002	Dean E Callen	Direct Deposit		566.57	0.00
Liability Check	08/09/2023		QuickBooks Payroll ...	Created by Pa...	663.11		663.11
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit		663.11	0.00
Liability Check	09/07/2023		QuickBooks Payroll ...	Created by Pa...	840.70		840.70
Paycheck	09/08/2023	DD1004	Dean E Callen	Direct Deposit		840.70	0.00
Total 2110 · Direct Deposit Liabilities					3,066.23	3,066.23	0.00
300 · Accounts payable							-2,970.61
Total 300 · Accounts payable							-2,970.61
301 · Federal tax withheld							0.00
Total 301 · Federal tax withheld							0.00
302 · State tax withheld							0.00

DRAINAGE DISTRICT NO. 3
General Ledger
As of September 30, 2023

Type	Date	Num	Name	Memo	Debit	Credit	Balance
Total 302 · State tax withheld							0.00
310 · Payroll taxes payable							-570.90
Paycheck	10/30/2022	3470	Dean E Callen			190.30	-761.20
Paycheck	10/30/2022	3470	Dean E Callen		0.00		-761.20
Liability Check	10/31/2022	ET	Idaho State Tax Com...	000193978	60.00		-701.20
Liability Check	10/31/2022	EFTPS	United States Treasury	82-0392173	510.90		-190.30
Paycheck	11/30/2022	3479	Dean E Callen			190.30	-380.60
Paycheck	11/30/2022	3479	Dean E Callen		0.00		-380.60
Paycheck	12/30/2022	3489	Dean E Callen			190.30	-570.90
Paycheck	12/30/2022	3489	Dean E Callen		0.00		-570.90
Paycheck	01/31/2023	3499	Dean E Callen			188.30	-759.20
Paycheck	01/31/2023	3499	Dean E Callen		0.00		-759.20
Liability Check	01/31/2023	ET	Idaho State Tax Com...	000193978	60.00		-699.20
Liability Check	01/31/2023	EFTPS	United States Treasury	82-0392173	510.90		-188.30
Paycheck	02/28/2023	3508	Dean E Callen			188.30	-376.60
Paycheck	02/28/2023	3508	Dean E Callen		0.00		-376.60
Paycheck	03/31/2023	3522	Dean E Callen			188.30	-564.90
Paycheck	03/31/2023	3522	Dean E Callen		0.00		-564.90
Liability Check	04/28/2023	ET	Idaho State Tax Com...	000193978	60.00		-504.90
Liability Check	04/28/2023	EFTPS	United States Treasury	82-0392173	504.90		0.00
Paycheck	04/30/2023	3524	Dean E Callen			188.30	-188.30
Paycheck	04/30/2023	3524	Dean E Callen		0.00		-188.30
Paycheck	06/01/2023	DD1001	Dean E Callen	Direct Deposit		188.30	-376.60
Paycheck	06/01/2023	DD1001	Dean E Callen	Direct Deposit	0.00		-376.60
Paycheck	07/10/2023	DD1002	Dean E Callen	Direct Deposit		102.62	-479.22
Paycheck	07/10/2023	DD1002	Dean E Callen	Direct Deposit	0.00		-479.22
Liability Check	07/31/2023	ET	Idaho State Tax Com...	000193978	40.00		-439.22
Liability Check	07/31/2023	EFTPS	United States Treasury	82-0392173	336.60		-102.62
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit		116.40	-219.02
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit	0.00		-219.02
Paycheck	09/08/2023	DD1004	Dean E Callen	Direct Deposit		143.92	-362.94
Paycheck	09/08/2023	DD1004	Dean E Callen	Direct Deposit	0.00		-362.94
Total 310 · Payroll taxes payable					2,083.30	1,875.34	-362.94
30000 · Opening Balance Equity							0.00
Total 30000 · Opening Balance Equity							0.00
400 · Invested in Capital Assets							-148,305.87
Total 400 · Invested in Capital Assets							-148,305.87
401 · Unrestricted Net Assets							-56,059.62
Total 401 · Unrestricted Net Assets							-56,059.62
501 · Assessment revenue							0.00
Total 501 · Assessment revenue							0.00
502 · Other Income							0.00
Total 502 · Other Income							0.00
504 · Application fees							0.00
Total 504 · Application fees							0.00
506 · Interest on delinquent taxes							0.00
Deposit	10/06/2022			Deposit		18.76	-18.76
Deposit	11/08/2022			Deposit		11.72	-30.48
Deposit	12/08/2022			Deposit		2.41	-32.89
Deposit	01/23/2023		Ada County	Deposit		35.67	-68.56
Deposit	02/10/2023			Deposit		15.28	-83.84
Deposit	03/09/2023			Deposit		11.20	-95.04
Deposit	04/07/2023			Deposit		7.47	-102.51
Deposit	05/05/2023			Deposit		7.26	-109.77
Deposit	06/21/2023			Deposit		18.87	-128.64
Deposit	07/20/2023			Deposit		42.87	-171.51
Deposit	08/11/2023		Ada County	Deposit		35.45	-206.96
Deposit	09/08/2023			Deposit		23.70	-230.66
Total 506 · Interest on delinquent taxes					0.00	230.66	-230.66
507 · Interest income							0.00
General Journal	10/01/2022	TJ 202...		09-22 LGIP		31.78	-31.78
Deposit	10/31/2022			Interest		0.35	-32.13
General Journal	11/01/2022	TJ 202...		10-22 LGIP		39.85	-71.98
Deposit	11/30/2022			Interest		0.56	-72.54
General Journal	12/01/2022	TJ 202...		11-22 LGIP		42.92	-115.46
Deposit	12/31/2022			Interest		0.97	-116.43
General Journal	01/30/2023	TJ 202...		12-22 LGIP		48.64	-165.07
Deposit	01/31/2023			Interest		0.96	-166.03
General Journal	02/28/2023	TJ 202...		01-23 LGIP		57.72	-223.75

DRAINAGE DISTRICT NO. 3
General Ledger
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Type	Date	Num	Name	Memo	Debit	Credit	Balance
Deposit	02/28/2023			Interest		2.40	-226.15
General Journal	03/31/2023	TJ 202...		02-23 LGIP		61.70	-287.85
Deposit	03/31/2023			Interest		2.15	-290.00
Deposit	04/30/2023			Interest		1.75	-291.75
General Journal	04/30/2023	TJ 202...		03-23 LGIP		68.80	-360.55
General Journal	05/31/2023	TJ 202...		04-23 LGIP		70.14	-430.69
Deposit	05/31/2023			Interest		0.09	-430.78
General Journal	06/30/2023	TJ 202...		05-23 LGIP		74.96	-505.74
Deposit	06/30/2023			Interest		0.02	-505.76
General Journal	07/31/2023	TJ 202...		06-23 LGIP		75.25	-581.01
General Journal	08/31/2023	TJ 202...		07-23 LGIP		79.46	-660.47
General Journal	09/30/2023	TJ 202...		08-23 LGIP		83.74	-744.21
Total 507 · Interest income					0.00	744.21	-744.21
605 · Accounting							0.00
Check	10/10/2022	3465	Travis Jeffries, P.A.	3rd Qtr 2022	795.00		795.00
Check	12/21/2022	3488	Travis Jeffries, P.A.	F/S YE 9-30-2...	5,380.00		6,175.00
Check	01/25/2023	3498	Travis Jeffries, P.A.	4Q2022	795.00		6,970.00
Check	05/02/2023	210	Travis Jeffries, P.A.	QTR 1 2023	1,736.25		8,706.25
Check	08/07/2023	232	Travis Jeffries, P.A.	QTR 2 2023	1,905.00		10,611.25
Total 605 · Accounting					10,611.25	0.00	10,611.25
610 · Wages							0.00
Paycheck	10/30/2022	3470	Dean E Callen		1,100.00		1,100.00
Paycheck	11/30/2022	3479	Dean E Callen		1,100.00		2,200.00
Paycheck	12/30/2022	3489	Dean E Callen		1,100.00		3,300.00
Paycheck	01/31/2023	3499	Dean E Callen		1,100.00		4,400.00
Paycheck	02/28/2023	3508	Dean E Callen		1,100.00		5,500.00
Paycheck	03/31/2023	3522	Dean E Callen		1,100.00		6,600.00
Paycheck	04/30/2023	3524	Dean E Callen		1,100.00		7,700.00
Paycheck	06/01/2023	DD1001	Dean E Callen	Direct Deposit	1,100.00		8,800.00
Paycheck	07/10/2023	DD1002	Dean E Callen	Direct Deposit	540.00		9,340.00
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit	630.00		9,970.00
Paycheck	09/08/2023	DD1004	Dean E Callen	Direct Deposit	810.00		10,780.00
Total 610 · Wages					10,780.00	0.00	10,780.00
615 · Engineering							0.00
615-01 · General							0.00
Check	11/07/2022	3472	Quadrant Consulting,...	Inv. #12296	72.00		72.00
Check	12/07/2022	3482	Quadrant Consulting,...	Inv. #12336	647.39		719.39
Check	03/08/2023	3517	Quadrant Consulting,...	Inv. #12452	360.00		1,079.39
Check	03/24/2023	3520	Quadrant Consulting,...	Inv. #12501	3,332.63		4,412.02
Check	05/02/2023	209	Quadrant Consulting,...	Inv. #12544	564.00		4,976.02
Check	09/25/2023	241	QRS Consulting, LLC	Inv #1824	360.00		5,336.02
Total 615-01 · General					5,336.02	0.00	5,336.02
615-05 · 702 E Boise Ave Chipotle							0.00
Total 615-05 · 702 E Boise Ave Chipotle							0.00
615-06 · Boise Ave SHP							0.00
Check	11/07/2022	3472	Quadrant Consulting,...	Inv. #12297	108.01		108.01
Check	12/07/2022	3482	Quadrant Consulting,...	Inv. #12357	288.00		396.01
Total 615-06 · Boise Ave SHP					396.01	0.00	396.01
615-07 · 112 E Boise Ave							0.00
Check	03/24/2023	3520	Quadrant Consulting,...	Inv. #12503	313.50		313.50
Check	05/02/2023	209	Quadrant Consulting,...	Inv. #12546	178.50		492.00
Check	09/25/2023	241	QRS Consulting, LLC	Inv #1825	576.00		1,068.00
Total 615-07 · 112 E Boise Ave					1,068.00	0.00	1,068.00
615-08 · 1289 S Protest Rd							0.00
Total 615-08 · 1289 S Protest Rd							0.00
615-09 · 2476 W Boise Ave							0.00
Total 615-09 · 2476 W Boise Ave							0.00
615-10 · 1385 Capitol Blvd							0.00
Check	11/07/2022	3472	Quadrant Consulting,...	Inv. #12298	576.03		576.03
Check	03/08/2023	3517	Quadrant Consulting,...	Inv. #12453	792.00		1,368.03
Check	03/24/2023	3520	Quadrant Consulting,...	Inv. #12502	1,296.00		2,664.03
Check	05/02/2023	209	Quadrant Consulting,...	Inv. #12545	216.00		2,880.03
Total 615-10 · 1385 Capitol Blvd					2,880.03	0.00	2,880.03
615 · Engineering - Other							0.00

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Type	Date	Num	Name	Memo	Debit	Credit	Balance
Total 615 · Engineering - Other							0.00
Total 615 · Engineering					9,680.06	0.00	9,680.06
625 · Bank charges							0.00
Check	10/31/2022			Service Charge	3.50		3.50
Check	11/30/2022			Service Charge	3.50		7.00
Check	12/30/2022			Service charge	3.50		10.50
Check	01/31/2023		Wells Fargo Bank	Service charge	3.50		14.00
Check	02/28/2023		Wells Fargo Bank	Service charge	3.50		17.50
Check	03/31/2023		Wells Fargo Bank	Service charge	3.50		21.00
Check	04/30/2023			VOID: Service ...	0.00		21.00
Check	05/02/2023	212	Lucinda Reinke	Reimb for ban...	5.00		26.00
Check	05/31/2023			VOID: Service ...	0.00		26.00
Total 625 · Bank charges					26.00	0.00	26.00
627 · Charitable contribution							0.00
Total 627 · Charitable contribution							0.00
630 · Commissioners fees							0.00
Check	11/15/2022	3475	Charles R. Gains	Board mtg - N...	100.00		100.00
Check	11/15/2022	3476	Steve Sweet	Board mtg - N...	100.00		200.00
Check	12/08/2022	3485	Charles R. Gains	Board mtg - D...	100.00		300.00
Check	12/08/2022	3486	Steve Sweet	Board mtg - D...	100.00		400.00
Check	01/10/2023	3494	Steve Sweet	Board mtg - Ja...	100.00		500.00
Check	01/10/2023	3495	Ashley Newbry	Board mtg - Ja...	100.00		600.00
Check	01/10/2023	3496	Carolyn Strickling	Board mtg - Ja...	100.00		700.00
Check	02/09/2023	3503	Steve Sweet	2-3-23	100.00		800.00
Check	02/09/2023	3504	Ashley Newbry	2-3-23	100.00		900.00
Check	02/09/2023	3505	Carolyn Strickling	2-3-23	100.00		1,000.00
Check	03/08/2023	3510	Steve Sweet	3-3-23	100.00		1,100.00
Check	03/08/2023	3511	Ashley Newbry	3-3-23	100.00		1,200.00
Check	03/08/2023	3512	Carolyn Strickling	3-3-23	100.00		1,300.00
Check	05/02/2023	201	Steve Sweet	April board me...	100.00		1,400.00
Check	05/02/2023	202	Ashley Newbry	April board me...	100.00		1,500.00
Check	05/02/2023	203	Carolyn Strickling	April board me...	100.00		1,600.00
Check	06/12/2023	221	Steve Sweet	June board m...	100.00		1,700.00
Check	06/12/2023	222	Ashley Newbry	June board m...	100.00		1,800.00
Check	08/07/2023	230	Steve Sweet	8/4/23 board ...	100.00		1,900.00
Check	08/07/2023	231	Ashley Newbry	8/4/23 board ...	100.00		2,000.00
Check	09/11/2023	237	Steve Sweet	9/8/23 board ...	100.00		2,100.00
Check	09/11/2023	238	Ashley Newbry	9/8/23 board ...	100.00		2,200.00
Check	09/11/2023	239	Carolyn Strickling	9/8/23 board ...	100.00		2,300.00
Total 630 · Commissioners fees					2,300.00	0.00	2,300.00
635 · Truck operation							0.00
Check	10/25/2022	3468	Dean E Callen	Mileage throug...	149.38		149.38
Check	12/07/2022	3481	Dean E Callen	Mileage throug...	136.88		286.26
Check	02/23/2023	3507	Dean E Callen	mileage throug...	116.15		402.41
Check	05/02/2023	205	Dean E Callen	Mileage throug...	99.56		501.97
Check	06/12/2023	218	Dean E Callen	Mileage	84.50		586.47
Paycheck	07/10/2023	DD1002	Dean E Callen	Direct Deposit	87.88		674.35
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit	90.72		765.07
Paycheck	09/08/2023	DD1004	Dean E Callen	Direct Deposit	112.66		877.73
Total 635 · Truck operation					877.73	0.00	877.73
640 · Legal							0.00
640-01 · General							0.00
Check	10/10/2022	3467	Elam & Burke	Inv. #198509	401.30		401.30
Check	11/07/2022	3474	Elam & Burke	Inv. #198948	732.57		1,133.87
Check	12/21/2022	3487	Elam & Burke	Inv. #199443	3,316.73		4,450.60
Check	01/25/2023	3497	Elam & Burke	Inv. #200030	2,507.50		6,958.10
Check	02/09/2023	3501	Elam & Burke	Inv. #200514	3,359.00		10,317.10
Check	03/08/2023	3514	Elam & Burke	Inv. #201180	3,527.00		13,844.10
Check	05/02/2023	207	Elam & Burke	-MULTIPLE-	1,667.10		15,511.20
Check	05/11/2023	216	Elam & Burke	Inv. #202078	1,805.00		17,316.20
Check	06/22/2023	223	Elam & Burke	Inv. #202329	793.55		18,109.75
Check	07/25/2023	227	Elam & Burke	Inv. #202876	1,305.00		19,414.75
Check	08/07/2023	228	Elam & Burke	Inv. #203407	1,527.00		20,941.75
Check	09/11/2023	240	Elam & Burke	Inv #203868	3,155.00		24,096.75
Total 640-01 · General					24,096.75	0.00	24,096.75
640-02 · NPDES							0.00
Check	10/10/2022	3467	Elam & Burke	Inv. #198510	595.00		595.00
Check	11/07/2022	3474	Elam & Burke	Inv. #198949	1,658.95		2,253.95
Check	12/21/2022	3487	Elam & Burke	Inv. #199444	1,355.80		3,609.75

DRAINAGE DISTRICT NO. 3
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Type	Date	Num	Name	Memo	Debit	Credit	Balance
Check	01/25/2023	3497	Elam & Burke	Inv. #200031	1,259.65		4,869.40
Check	02/09/2023	3501	Elam & Burke	Inv. #200515	5,042.55		9,911.95
Check	05/02/2023	207	Elam & Burke	Inv. #201628	562.50		10,474.45
Check	05/11/2023	216	Elam & Burke	Inv. #202079	969.45		11,443.90
Check	06/22/2023	223	Elam & Burke	Inv. #202330	405.00		11,848.90
Check	07/25/2023	227	Elam & Burke	Inv. #202877	80.70		11,929.60
Check	08/07/2023	228	Elam & Burke	Inv. #203408	427.50		12,357.10
Total 640-02 · NPDES					12,357.10	0.00	12,357.10
640-03 · Legislation							0.00
Check	12/21/2022	3487	Elam & Burke	Inv. #199445	112.50		112.50
Check	02/09/2023	3501	Elam & Burke	Inv. #200516	270.00		382.50
Check	03/08/2023	3514	Elam & Burke	Inv. #201181	655.46		1,037.96
Check	05/02/2023	207	Elam & Burke	Inv. #201629	112.50		1,150.46
Check	05/11/2023	216	Elam & Burke	Inv. #202080	91.50		1,241.96
Check	06/22/2023	223	Elam & Burke	Inv. #202331	652.50		1,894.46
Total 640-03 · Legislation					1,894.46	0.00	1,894.46
640-04 · City of Boise							0.00
Total 640-04 · City of Boise							0.00
640-05 · 702 E Boise Ave Chipotle							0.00
Total 640-05 · 702 E Boise Ave Chipotle							0.00
640-06 · Boise Ave SHP							0.00
Check	10/10/2022	3467	Elam & Burke	Inv. #198507	83.00		83.00
Total 640-06 · Boise Ave SHP					83.00	0.00	83.00
640-07 · 112 E Boise Ave							0.00
Check	12/21/2022	3487	Elam & Burke	Inv. #199441	29.00		29.00
Check	05/02/2023	207	Elam & Burke	Inv. #201625	652.50		681.50
Check	05/11/2023	216	Elam & Burke	Inv. #202076	810.00		1,491.50
Check	06/22/2023	223	Elam & Burke	Inv. #202328	90.00		1,581.50
Check	09/11/2023	240	Elam & Burke	Inv #203867	517.50		2,099.00
Total 640-07 · 112 E Boise Ave					2,099.00	0.00	2,099.00
640-08 · 1289 S Protest Rd							0.00
Total 640-08 · 1289 S Protest Rd							0.00
640-09 · 2476 W Boise Ave							0.00
Check	10/10/2022	3467	Elam & Burke	Inv. #198553	177.50		177.50
Total 640-09 · 2476 W Boise Ave					177.50	0.00	177.50
640-10 · 1385 Capitol Blvd							0.00
Check	10/10/2022	3467	Elam & Burke	Inv. #198508	237.50		237.50
Check	11/07/2022	3474	Elam & Burke	Inv. #1198946	430.00		667.50
Check	12/21/2022	3487	Elam & Burke	Inv. #199442	682.50		1,350.00
Check	01/25/2023	3497	Elam & Burke	Inv. #200029	1,412.50		2,762.50
Check	02/09/2023	3501	Elam & Burke	Inv. #200513	607.50		3,370.00
Check	03/08/2023	3514	Elam & Burke	Inv. #201179	990.00		4,360.00
Check	05/02/2023	207	Elam & Burke	Inv. #201626	247.50		4,607.50
Check	05/11/2023	216	Elam & Burke	Inv. #202077	180.00		4,787.50
Total 640-10 · 1385 Capitol Blvd					4,787.50	0.00	4,787.50
640 · Legal - Other							0.00
Total 640 · Legal - Other							0.00
Total 640 · Legal					45,495.31	0.00	45,495.31
641 · Consulting							0.00
Check	05/02/2023	206	Dynamic Visions	Inv. #100, GIS...	1,290.00		1,290.00
Total 641 · Consulting					1,290.00	0.00	1,290.00
645 · Insurance							0.00
Check	10/25/2022	3469	USI Insurance Servic...	Policy# GPNU...	1,958.00		1,958.00
Paycheck	10/30/2022	3470	Dean E Callen		0.00		1,958.00
Paycheck	11/30/2022	3479	Dean E Callen		0.00		1,958.00
Paycheck	12/30/2022	3489	Dean E Callen		0.00		1,958.00
Check	12/30/2022	3490	Payne West Insurance	Bond for C.Stri...	318.00		2,276.00
Deposit	01/17/2023		Payne West Insurance	-MULTIPLE-		345.00	1,931.00
Paycheck	01/31/2023	3499	Dean E Callen		0.00		1,931.00
Paycheck	02/28/2023	3508	Dean E Callen		0.00		1,931.00
Check	03/08/2023	3516	Payne West Insurance	Bond for S. S...	0.00		1,931.00
Check	03/08/2023	3519	Payne West Insurance	Bond for S. S...	250.00		2,181.00
Paycheck	03/31/2023	3522	Dean E Callen		0.00		2,181.00

DRAINAGE DISTRICT NO. 3
General Ledger
As of September 30, 2023

Type	Date	Num	Name	Memo	Debit	Credit	Balance
Paycheck	04/30/2023	3524	Dean E Callen		0.00		2,181.00
Liability Check	05/31/2023		QuickBooks Payroll ...	Fee for 1 direc...	1.75		2,182.75
Paycheck	06/01/2023	DD1001	Dean E Callen	Direct Deposit	0.00		2,182.75
Paycheck	07/10/2023	DD1002	Dean E Callen	Direct Deposit	0.00		2,182.75
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit	0.00		2,182.75
Paycheck	09/08/2023	DD1004	Dean E Callen	Direct Deposit	0.00		2,182.75
Total 645 · Insurance					2,527.75	345.00	2,182.75
650 · Payroll taxes							0.00
Paycheck	10/30/2022	3470	Dean E Callen		84.15		84.15
Paycheck	11/30/2022	3479	Dean E Callen		84.15		168.30
Paycheck	12/30/2022	3489	Dean E Callen		84.15		252.45
Paycheck	01/31/2023	3499	Dean E Callen		84.15		336.60
Paycheck	02/28/2023	3508	Dean E Callen		84.15		420.75
Paycheck	03/31/2023	3522	Dean E Callen		84.15		504.90
Paycheck	04/30/2023	3524	Dean E Callen		84.15		589.05
Paycheck	06/01/2023	DD1001	Dean E Callen	Direct Deposit	84.15		673.20
Paycheck	07/10/2023	DD1002	Dean E Callen	Direct Deposit	41.31		714.51
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit	48.20		762.71
Paycheck	09/08/2023	DD1004	Dean E Callen	Direct Deposit	61.96		824.67
Total 650 · Payroll taxes					824.67	0.00	824.67
651 · Worker's compensation							0.00
Check	02/10/2023	3506	State Insurance Fund	Policy # 27125...	627.00		627.00
Total 651 · Worker's compensation					627.00	0.00	627.00
655 · Utilities							0.00
Check	10/10/2022	3464	Idaho Power	-MULTIPLE-	75.95		75.95
Check	11/07/2022	3473	Idaho Power	-MULTIPLE-	75.44		151.39
Check	12/07/2022	3480	Idaho Power	-MULTIPLE-	84.50		235.89
Check	01/10/2023	3492	Idaho Power	-MULTIPLE-	77.48		313.37
Check	02/09/2023	3502	Idaho Power	-MULTIPLE-	77.48		390.85
Check	03/08/2023	3515	Idaho Power	-MULTIPLE-	83.03		473.88
Check	05/02/2023	208	Idaho Power	-MULTIPLE-	75.90		549.78
Check	05/09/2023	213	Idaho Power	-MULTIPLE-	72.12		621.90
Check	06/12/2023	219	Idaho Power	-MULTIPLE-	81.79		703.69
Check	07/10/2023	225	Idaho Power	-MULTIPLE-	88.77		792.46
Check	08/07/2023	229	Idaho Power	-MULTIPLE-	97.35		889.81
Check	09/07/2023	235	Idaho Power	-MULTIPLE-	103.27		993.08
Total 655 · Utilities					993.08	0.00	993.08
658 · Monitoring fees							0.00
Check	10/10/2022	3463	Boise City Public Wo...	#IO319 NPDE...	403.65		403.65
Check	11/15/2022	3477	ACHD	NPDES 4th Qt...	2,452.13		2,855.78
Check	01/10/2023	3493	Boise City Public Wo...	#IO333 NPDE...	248.22		3,104.00
Check	03/08/2023	3513	ACHD	NPDES 1st Qt...	2,441.56		5,545.56
Check	05/02/2023	204	Boise City Public Wo...	#IO348 NPDE...	471.40		6,016.96
Check	05/11/2023	215	ACHD	2 Qtr (Jan - M...	2,001.92		8,018.88
Check	07/25/2023	226	Boise City Public Wo...	#IO358 NPDE...	745.64		8,764.52
Check	08/24/2023	234	ACHD	3 Qtr (Apr. - Ju...	3,086.99		11,851.51
Total 658 · Monitoring fees					11,851.51	0.00	11,851.51
660 · Repairs and maintenance							0.00
Check	12/07/2022	3484	Dean E Callen	Critter Ridder -...	524.00		524.00
Total 660 · Repairs and maintenance					524.00	0.00	524.00
661 · Telephone							0.00
Check	10/10/2022	3466	Verizon Wireless	Acct# 871658...	52.33		52.33
Check	11/01/2022	3471	Verizon Wireless	Acct# 871658...	56.76		109.09
Check	12/07/2022	3483	Verizon Wireless	Acct# 871658...	51.76		160.85
Check	01/06/2023	3491	Verizon Wireless	Acct# 871658...	3.38		164.23
Check	02/06/2023	3500	Verizon Wireless	Acct# 871658...	116.73		280.96
Check	03/08/2023	3518	Verizon Wireless	Acct# 871658...	85.82		366.78
Check	04/07/2023	3523	Verizon Wireless	Acct# 871658...	85.82		452.60
Check	05/02/2023	211	Verizon Wireless	Acct# 871658...	85.31		537.91
Check	06/01/2023	217	Verizon Wireless	Acct# 871658...	85.31		623.22
Check	07/06/2023	224	Verizon Wireless	Acct# 871658...	85.31		708.53
Check	08/07/2023	233	Verizon Wireless	Acct# 871658...	85.40		793.93
Check	09/07/2023	236	Verizon Wireless	Acct# 871658...	85.40		879.33
Total 661 · Telephone					879.33	0.00	879.33
665 · Miscellaneous							0.00
Check	02/28/2023	3509	ESRI	GIS Software l...	550.00		550.00
Check	05/02/2023	205	Dean E Callen	Stormwater cl...	275.00		825.00

DRAINAGE DISTRICT NO. 3
General Ledger
As of September 30, 2023

Type	Date	Num	Name	Memo	Debit	Credit	Balance
Liability Check	07/07/2023		QuickBooks Payroll ...	Fee for 1 direc...	1.75		826.75
Liability Check	08/09/2023		QuickBooks Payroll ...	Fee for 1 direc...	1.75		828.50
Paycheck	08/10/2023	DD1003	Dean E Callen	Direct Deposit	10.59		839.09
Liability Check	09/07/2023		QuickBooks Payroll ...	Fee for 1 direc...	1.75		840.84
Total 665 · Miscellaneous					840.84	0.00	840.84
670 · Contract labor							0.00
Total 670 · Contract labor							0.00
675 · Website hosting							0.00
Check	05/11/2023	214	Streamline	A012C4B7-0001	250.00		250.00
Check	06/12/2023	220	Streamline	A012C4B7-0002	1,080.00		1,330.00
Total 675 · Website hosting					1,330.00	0.00	1,330.00
No accnt							0.00
Total no accnt							0.00
TOTAL					**285,755.04**	**285,755.04**	**0.00**

Attachment B
The 2023 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 2 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 and public service announcements, billboards, and online ads. The media campaign reaches all target audiences with general messages on water quality with a continued focus on pet waste and yard waste in 2023.

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. Please see Section 7 below for more details.

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 resource 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 will be closed until the fall of 2024. Limited programming will be offered during renovations.

Social Media

The Partners are active on social media through a Partners Instagram page, as well as each permittee's social media pages. The City of Boise 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.

3. 2023 Outreach Events and Activities:

Media Campaign

The media campaign for 2023 included radio ads, social media posts, and online ads on websites such as BoiseDev and KTVB.

Themes highlighted in 2023 include picking up pet waste, illicit discharge reporting, and proper fertilizer use, seen in Figures 1-3 below.



Figure 1. 2023 Pet Waste Graphic



Figure 2. 2023 Illicit Discharge Reporting Graphic



Figure 3. 2023 Fertilizer Application Graphic

Around 600 radio ads were aired on radio stations including KIZN 92.3, KKGL 96.9, KQXR 100.3, KSAS 103.5, KOOL 101.5, KSRV 96.1, KDBI 106.7, KPDA 100.7, Boise State Public Radio, and Radio Boise. 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 4. 2023 Bus Wrap

2022 Events

Several events were held during Permit Year 2 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. Fly Fishing Expo:





2. Shade City BrewFest:



3. WaterShed Earth Day:





4. Neighborhood Concert Series:





5. First Thursday:



6. BSU Engineering Course Outreach: This event was coordinated by Boise Parks and Recreation with a BSU class. Partners staff spoke about the stormwater infrastructure at the Hyatt Hidden Lakes Reserve and the pollutant removal potential of the property. We also discussed the effects of nitrogen and phosphorus on water quality, and the major water quality issues in the region.

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 5. Outreach postcard sent to Central Rim Neighborhood residents

Next, we will send out a 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 and 2023 to measure if more leaves were collected from this neighborhood. 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 3 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 2023, 718 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 2023. The goal of this training was to provide guidance to local audiences on the operation and maintenance activities 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.

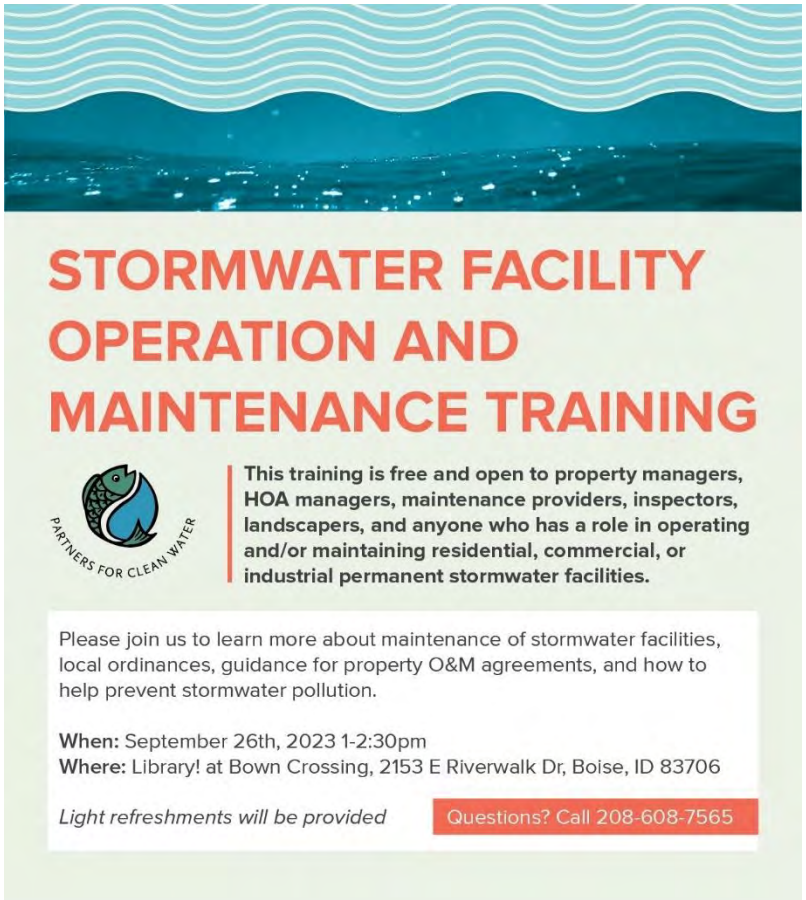


Figure 4. 2023 Permanent SW Control ad

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

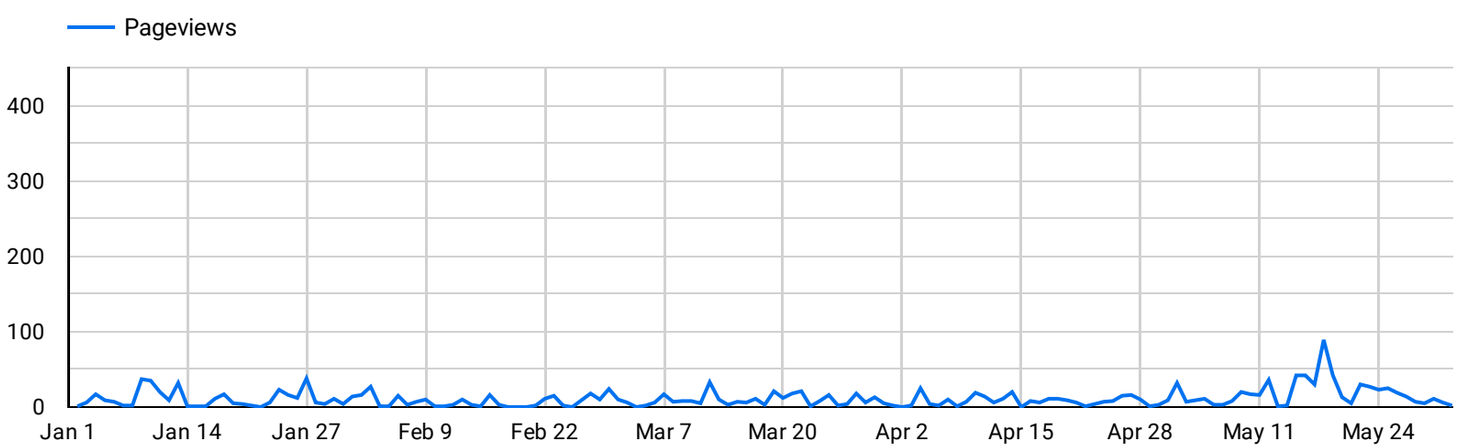
4878-3753-0015, v. 1

Partners for Clean Water - 2023 Report

January-June *(Google Analytics)*

Users	Pageviews	Avg. Session Duration	Bounce Rate	Pages / Session
898	1,694	00:01:01	78.32%	1.52

Source / Medium	Pageviews ❶ ▾	Avg. Session Duration	Bounce Rate ❷ ▾
(direct) / (none)			
google / organic			
BoiseDev / Display			
cityofboise.org / referral			
bing / organic			
facebook.com / referral			
baidu.com / referral			
adacountydrainagedistrict3.org ...			
usc-word-edit.officeapps.live.co...			
appsecadmintest.cityofboise.or...			
aqualisco.com / referral			
duckduckgo / organic			
city-of-trees-challenge-boise.hub...			
lens.google.com / referral			
yahoo / organic			
smithspestmanagement.com / r...			
croach.com / referral			
blancablog.online / referral			
Grand total	**1,694**	**00:01:01**	**78.32%**



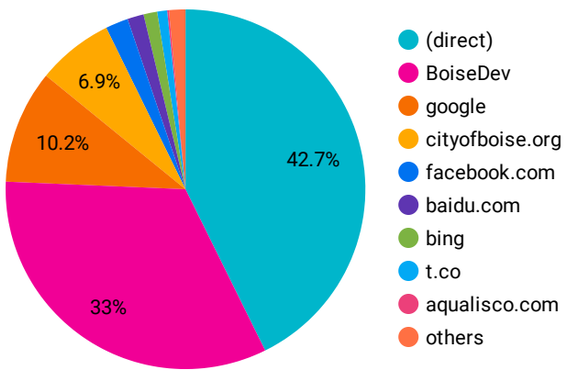
Partners for Clean Water - 2023 Report

January-June *(Google Analytics)*

VIEWS PER PAGE

	Page Title	Pageviews ▼
1.	Partners for Clean Water	1,268
2.	General Information | Partners for Clean Water	132
3.	Report an Issue | Partners for Clean Water	118
4.	Annual Report | Partners for Clean Water	72
5.	City of Boise | Partners for Clean Water	65
6.	Landscaping, Gardening and Home Maintenance | Partners for Clean Water	61
7.	ACHD | Partners for Clean Water	49
8.	Gophers | Partners for Clean Water	39
9.	Pets | Partners for Clean Water	37
10.	Drainage District #3 | Partners for Clean Water	36
11.	City of Caldwell | Partners for Clean Water	34
12.	Boise State | Partners for Clean Water	34
13.	Partners for Clean Water Meetings | Partners for Clean Water	33
14.	Contact Partners | Partners for Clean Water	32
15.	Permit Info | Partners for Clean Water	25
16.	Garden City | Partners for Clean Water	21
17.	Automobile Maintenance | Partners for Clean Water	15
18.	ITD DIST #3 | Partners for Clean Water	13
19.	Construction | Partners for Clean Water	11
20.	2018 Stormwater Conference: Growing	11

SESSION SOURCE



TOTAL USERS PER LANDING PAGE

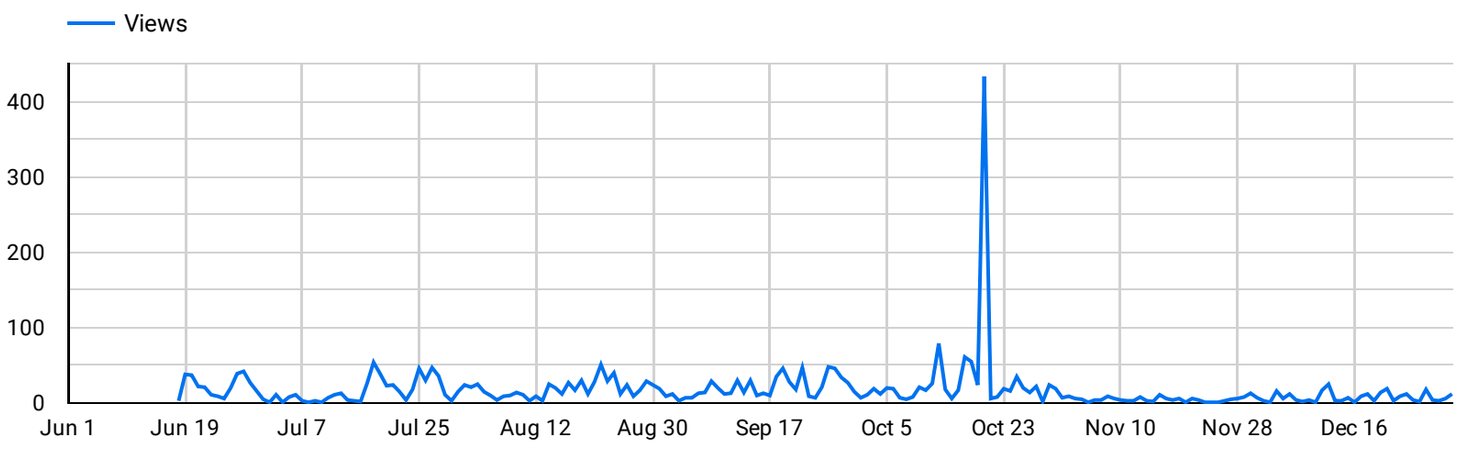
	Landing page	Total use…
1.	/	1,998
2.		126
3.	/report-an-issue	78
4.	/residents/landscaping-gardening-and-home-maintenance	40
5.	/aboutpartners/drainage-district-3	26
6.	/aboutpartners/city-of-boise	25
7.	/businesses/general-information	19
8.	/residents/general-information	18
9.	/aboutpartners/city-of-caldwell	17
10.	/meetings/partners-for-clean-water-meetings	16
11.	/report-an-issue/contact-partners	16
12.	/residents/pest-control/gophers	16
13.	/aboutpartners/achd	14
14.	/residents/pets	12
15.	/aboutpartners/boise-state	11
16.	/aboutpartners/garden-city	10
17.	/aboutpartners/annual-report	10
18.	/aboutpartners/permit-info	10
19.	/aboutpartners/itd-dist-3	9
20.	/2018-stormwater-conference-growing-our-town-improving-our-river	7
21.	/businesses/construction	6
22.	/residents/pest-control	5
23.	/home-maintenance	3
24.	/residents/pest-control/weed-control	3
25.	/businesses/engineers-surveyors	2
26.	/residents/pest-control/fleas	2
27.	/residents/pest-control/yellowjackets	2
28.	/searchresults	2
29.	/residents/automobile-maintenance	1
30.	/residents/pest-control/ants	1
31.	/residents/pest-control/roses	1
32.	/residents/pest-control/spiders	1
33.	/stormwater-management-program-plan-swmp-comments	1

Partners for Clean Water - 2023 Report

June - December *(Google Analytics 4)*

Total users	Views	Average session duration	Bounce rate	Views per session
2,462	3,419	00:00:29	88.34%	1.22

Session source / medium	Views ❶ ▾	Average session duration	Bounce rate ❷ ▾
BoiseDev / Display			
(direct) / (none)			
google / organic			
cityofboise.org / referral			
bing / organic			
statics.teams.cdn.office.net …			
baidu / organic			
duckduckgo / organic			
(not set)			
lm.facebook.com / referral			
search.brave.com / referral			
CbvffEfi / Evfcybl			
aqualisco.com / referral			
facebook.com / referral			
mix106radio.com / referral			
sites.google.com / referral			
yahoo / organic			
Grand total	**3,419**	**00:00:29**	**88.34%**



Spike: October 20, 2023, Source: BoiseDev

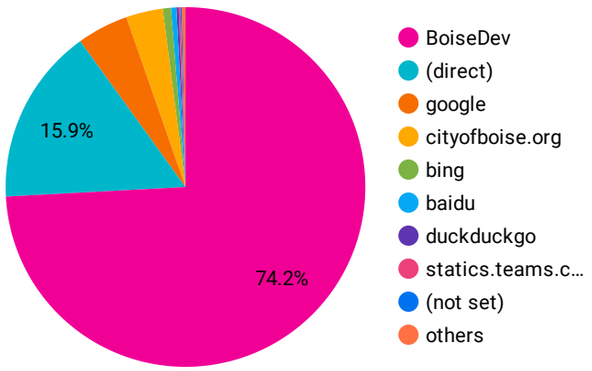
Partners for Clean Water - 2023 Report

June-December *(Google Analytics 4)*

VIEWS PER PAGE

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1.	BoiseDev / Display	2,142
2.	(direct) / (none)	596
3.	google / organic	309
4.	cityofboise.org / referral	276
5.	bing / organic	42
6.	statics.teams.cdn.office.net / referral	22
7.	baidu / organic	12
8.	duckduckgo / organic	7
9.	(not set)	3
10.	lm.facebook.com / referral	2
11.	search.brave.com / referral	2
12.	CbvffEfi / Evfcybl	1
13.	aqualisco.com / referral	1
14.	facebook.com / referral	1
15.	mix106radio.com / referral	1
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17.	yahoo / organic	1

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2.		126
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4.	/residents/landscaping-gardening-and-home-maintenance	40
5.	/aboutpartners/drainage-district-3	26
6.	/aboutpartners/city-of-boise	25
7.	/businesses/general-information	19
8.	/residents/general-information	18
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Attachment C
Stormwater Outfall Monitoring Summary WY 2023

Stormwater Outfall Monitoring Summary WY 2023

Ada County Highway District

1/12/2024

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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) 2023 (October 1, 2022–September 30, 2023). WY 2023 represents the second year of monitoring under the new Permit cycle.

The Stormwater Outfall Monitoring Program (SWOMP) was developed in line with the Quality Assurance Project Plan for NPDES Stormwater Permit Monitoring (QAPP) (ACHD, 2022) 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 2023, data collection for the SWOMP 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. Sampling equipment was installed up-pipe at the Main Alternate site when high river flows surcharged the Main outfall monitoring site in spring 2023. Although sampling was attempted on May 5, 2023, successful samples were not collected from this location. 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 SWOMP 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

	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 2023 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 Water Quality Laboratory 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 Boise City Water Quality Laboratory, where they were split for analysis. The following constituents were analyzed during WY 2023: biological oxygen demand, 5-day; chemical oxygen demand; hardness as calcium carbonate; turbidity; total suspended solids (TSS); total dissolved solids (TDS); total phosphorus (TP); orthophosphate, as P (ortho-P); ammonia; nitrate + nitrite; total Kjeldahl nitrogen (TKN); total arsenic (As); 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 2023, samples were attempted during six 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 six sampling events during WY 2023 are included in Appendix C.

Table 3-1. Storm Events and Sample Types

	Lucky	Whitewater	Main	Americana
October 22, 2022	G[1], FD, FB, C[2]	G, C[3]	G, C[2]	G, C[2]
January 9, 2023	G[4]	G[4]	G[4], FD, FB	G[4]
March 10, 2023	G, C[5]	G, C[5]	G, C[5]	G
March 29, 2023	G[6], FD, FB, C[5,6]	G[6], C[5,6]	G[6], C[6]	G, C
August 21, 2023	G, C, FD, FB	G[7], C	G[7], C[3]	C

Sample types: G = grab, C = composite

QC Sample types: FD = field duplicate, FB = field blank

[1] *E. coli* sample qualified due to exceeded holding time.

[2] Qualified due to lack of representativeness (50%–75%).

[3] Rejected due to lack of representativeness (< 50%).

[4] Rejected due to insufficient rainfall (< 0.08 inches).

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

[6] Sample qualified due to insufficient rainfall (0.09–0.10 inches).

[7] Rejected due to collecting grab sample after composite sampling duration.

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 2023. 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 5.90 to 11.36 milligrams per liter (mg/L).
- Biological oxygen demand, 5-day concentrations ranged from 8.04 to 225 mg/L.
- Chemical oxygen demand concentrations ranged from 62.0 to 725 mg/L.

pH, temperature, conductivity, and hardness

- pH values ranged from 6.41 to 7.93 standard units.
- Temperature ranged from 5.75 to 20.7 degrees Celsius.
- Conductivity ranged from 62.65 to 1,282.6 micro-siemens per centimeter.
- Hardness ranged from 23.1 to 207 mg/L as calcium carbonate.

Bacteria

- *E. coli* ranged from 10.7 to 20,140 most probable number per 100 milliliters.

Sediment

- Turbidity ranged from 21.6 to 550 nephelometric turbidity units.
- TSS ranged from 26.6 to 947 mg/L.
- TDS ranged from 73.5 to 592 mg/L.

Nitrogen

- Ammonia ranged from 0.211 to 1.50 mg/L as N.
- Nitrate + nitrite ranged from 0.166 to 1.08 mg/L as N.
- TKN ranged from 1.28 to 9.06 mg/L.

Phosphorus

- TP ranged from 0.205 to 1.46 mg/L
- Ortho-P ranged from 0.0678 to 0.985 mg/L as P.

Metals

- Total arsenic ranged from 1.20 to 9.60 micrograms per liter (µg/L).
- Dissolved cadmium ranged from below the method detection limit (MDL) (< 0.0250) to 0.0300 µg/L.
- Total cadmium ranged from 0.026 to 0.65 µg/L.
- Dissolved copper ranged from 2.50 to 10.2 µg/L.
- Dissolved lead ranged from 0.08 to 0.280 µg/L.
- Total lead ranged from 0.68 to 59.7 µg/L.
- Total mercury ranged from below the MDL (< 0.0100) to 0.0712 µg/L.

- Dissolved zinc ranged from 12.2 to 91.2 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, nitrate + nitrite, 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. A summary of the estimated ranges of pollutant loading for the storm events monitored during WY 2023 is presented below.

- TSS loading estimates ranged from 0.151 to 7.76 lbs/ac.
- TP loading estimates ranged from 0.000136 to 0.0324 lbs/ac.
- Ammonia loading estimates ranged from 0.000183 to 0.0511 lbs/ac.
- Nitrate + nitrite loading estimates ranged from 0.000186 to 0.0231 lbs/ac.
- TKN loading estimates ranged from 0.000639 to 0.167 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 2023. 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 2023 are shown in Figure 7 (Appendix A).

4 Quality Assurance/Quality Control

Quality assurance (QA) and quality control (QC) measures for the SWOMP are presented in detail in the QAPP and SWOMP. No deviations from the QAPP and SWOMP occurred during WY 2023. QA and QC measures conducted during the WY 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 Table 2 and Table 3 (Appendix B), respectively. Further information regarding qualified samples is included in the Storm Event Reports located in Appendix A.

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 2023, the grab sample collected from the Lucky monitoring station on October 22, 2022, was

qualified due to an exceeded hold time (> 8 hours). The composite samples collected from the Lucky, Main, and Americana monitoring stations were qualified due to lack of representativeness (50%– 75%) during the same October 2022 storm event. The composite samples collected from the Whitewater monitoring station were rejected due to lack of representativeness (< 50%) during the October 2022 storm event. The grab samples collected on January 9, 2023, from each of the monitoring stations were rejected due to insufficient rainfall (< 0.08 inches) during the January 2023 storm event. The grab and composite samples collected on March 29, 2023, from each of the monitoring stations were qualified due to insufficient rainfall (0.06–0.10 inches) during the March 2023 storm event. The grab samples collected on August 21, 2023, from Whitewater and Main monitoring stations were rejected due to collecting samples after composite sampling duration. The composite samples collected from the Main monitoring station were rejected due to lack of representativeness (< 50%) during the August 2023 storm event.

4.2 Field QA/QC Sample Results

During WY 2023, field QA/QC samples collected included field blanks, field duplicate samples, equipment blanks and rinsate blanks. Sample results for all field QC samples are included in Table 6 (Appendix B).

4.2.1 Field Duplicate and Blank Samples

Field duplicates are field grab samples that were taken alongside a parent grab sample to compare the accuracy of the data. For *E. coli*, the allowable logarithmic relative percent difference (RPD) between the duplicate sample and the parent sample is 40 percent. All field duplicate samples collected during WY 2023 met the RPD standard.

Analytical results from field and composite blanks are expected to be less than the MDL. If a water quality parameter is detected in a field 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 samples collected had a result less than the MDL. No composite blanks were collected or analyzed in WY23.

4.2.2 Equipment and Rinsate Blank Samples

The equipment blank is collected before sampling for the WY begins, when new equipment is installed. For WY 2023, the equipment blank was collected on October 2, 4, and 5, 2023, at the Main, Whitewater, Americana, and Lucky monitoring stations. All composite constituents mentioned in Section 2 were detected in the sample. Dissolved copper results that were collected on March 29, 2023, and August 21, 2023, at Whitewater are less than five times the value detected in the blank; therefore, they have been qualified and are considered estimates. All other results were greater than five times the detected value in the blank and are unqualified.

The rinsate blank is collected after sampling for the WY has been completed. The rinsate blank for WY 2023 was collected on October 2, 4, and 5, 2023, at the Main, Whitewater, Americana, and Lucky monitoring stations. All composite constituents mentioned in Section 2 were detected in the sample. Dissolved copper results that were collected on March 29, 2023, and August 21, 2023, at Whitewater and Americana are less than five times the value detected in the blank; therefore, they have been qualified and are considered estimates. In addition, dissolved zinc collected on March 29, 2023, at Lucky also resulted in less than five times the value detected in the blank; therefore, it has been qualified and is considered an estimate. All other results were greater than five times the detected value in the blank and are unqualified.

Appendix A: Figures

Figure 1. Vicinity Map
Figure 2. WY 2023 *E. coli* Results
Figure 3. WY 2023 TSS, TDS, and Turbidity Results
Figure 4. WY 2023 Ammonia, Nitrate + Nitrite, and TKN Results
Figure 5. WY 2023 Total Phosphorus and Orthophosphate Results
Figure 6. WY 2023 Pollutant Loadings
Figure 7. WY 2023 Monthly Precipitation

Figure 1: Vicinity Map
Phase I NPDES Outfall Sampling Stations

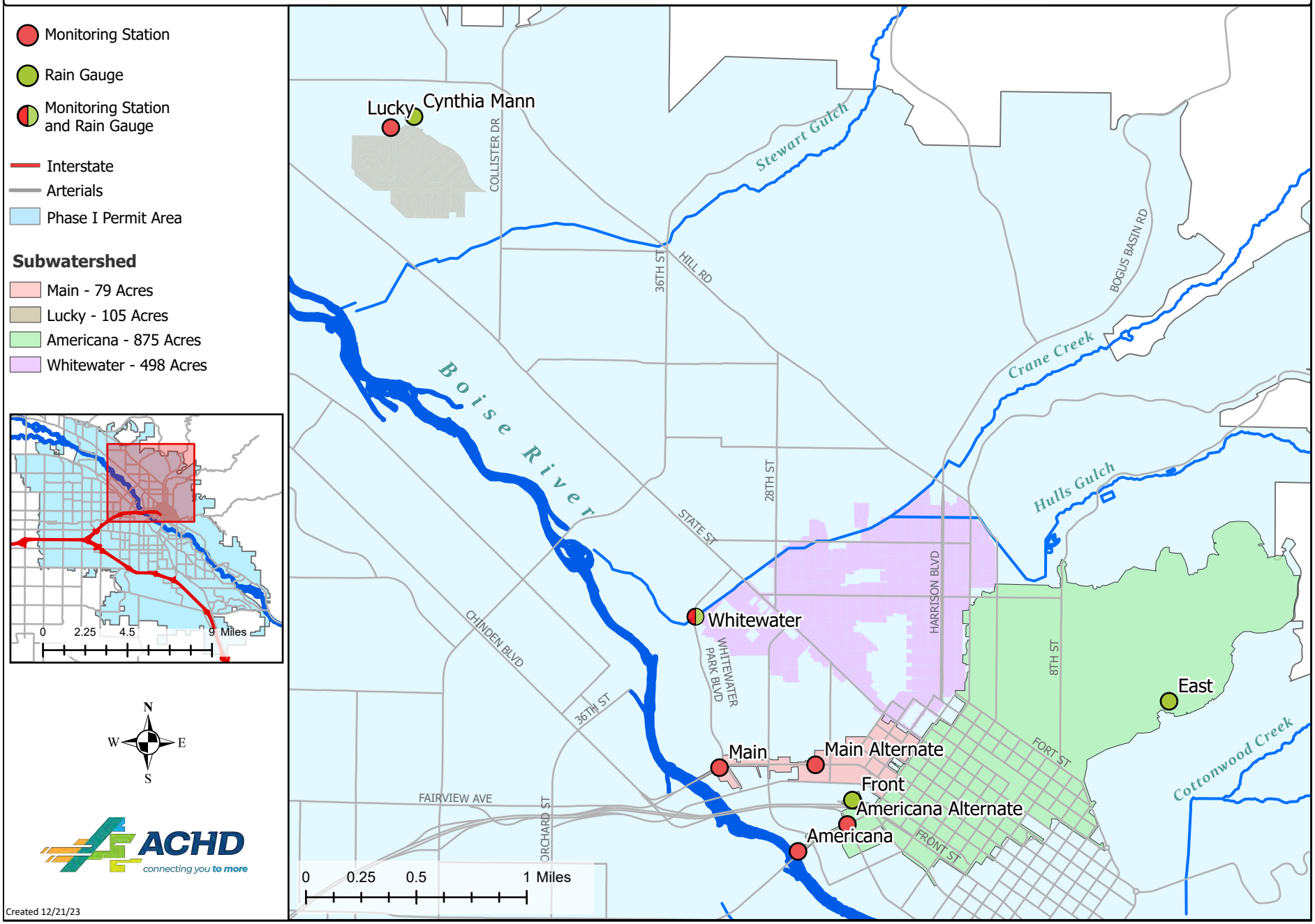


Figure 2: WY23 E. coli Results

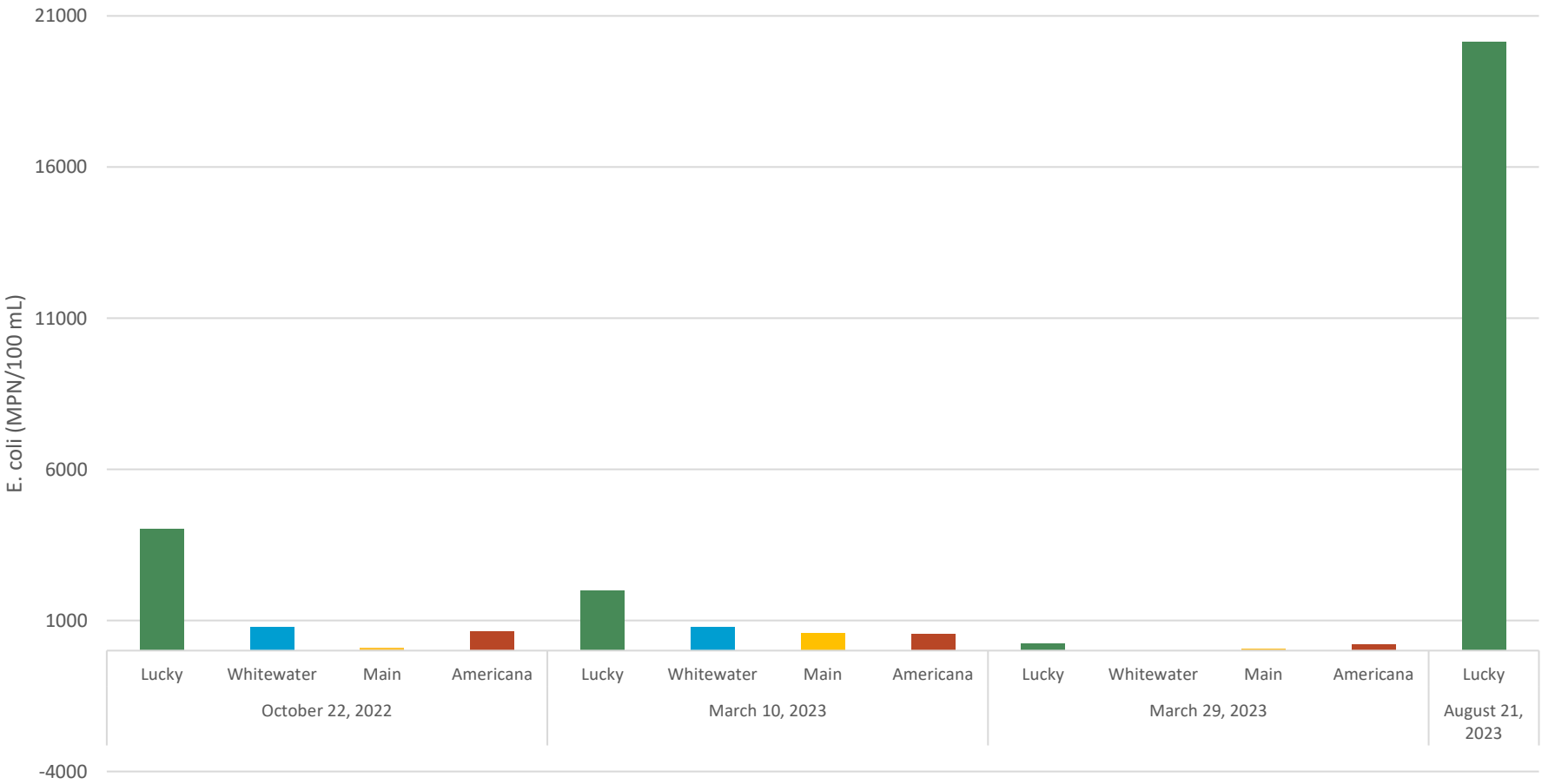
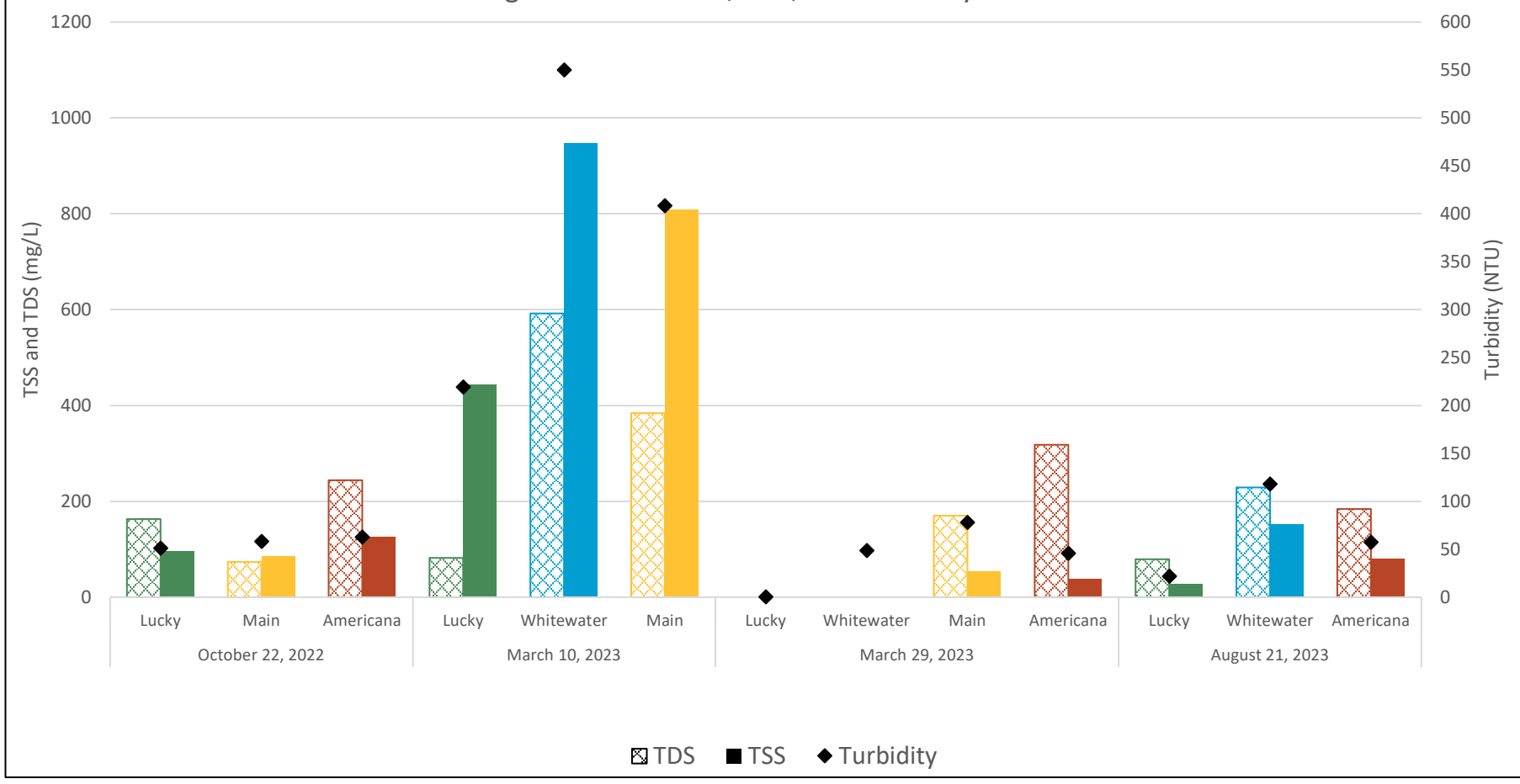
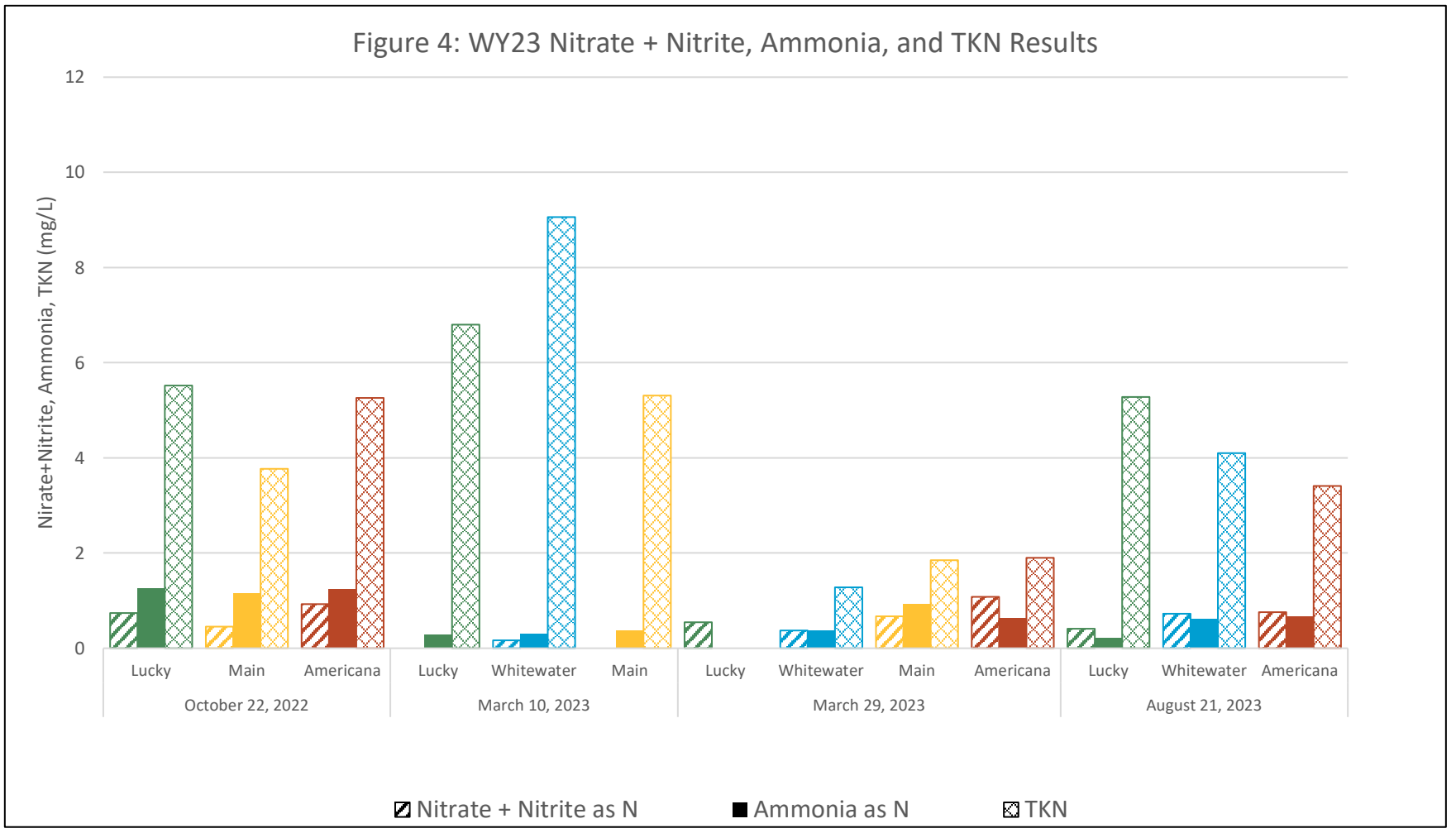


Figure 3: WY23 TSS, TDS, and Turbidity Results




Figure 4: WY23 Nitrate + Nitrite, Ammonia, and TKN Results
Nirate+Nitrite, Ammonia, TKN (mg/L)
12
10
8
6
4
2
0
Lucky
Main
Americana
Lucky
Whitewater
Main
Lucky
Whitewater
Main
Americana
Lucky
Whitewater
Americana
October 22, 2022
March 10, 2023
March 29, 2023
August 21, 2023
Nitrate + Nitrite as N
Ammonia as N
TKN

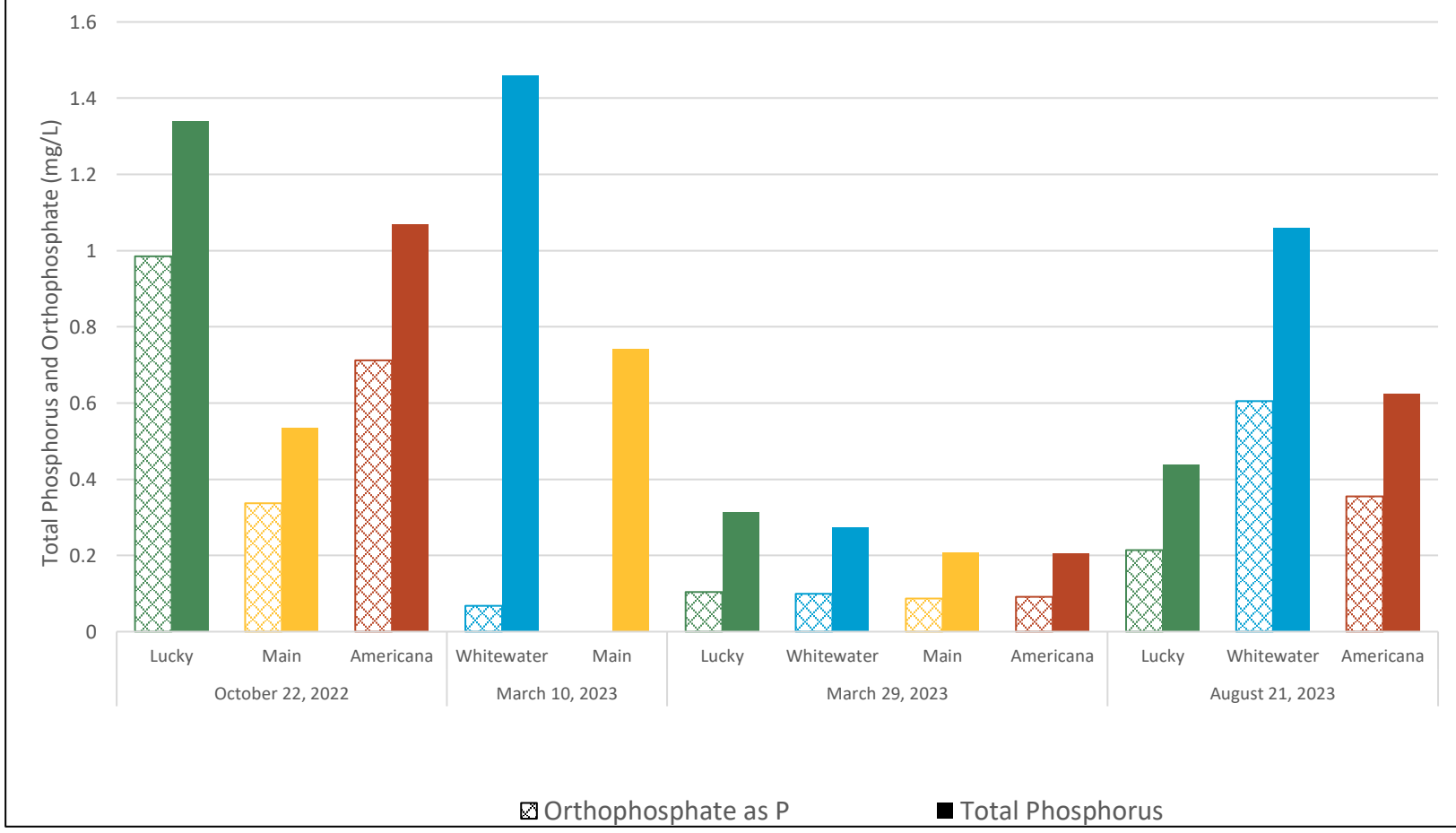

Figure 5: WY23 Total Phosphorus and Orthophosphate
Total Phosphorus and Orthophosphate (mg/L)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Lucky
Main
Americana
Whitewater
Main
Lucky
Whitewater
Main
Americana
Lucky
Whitewater
Americana
October 22, 2022
March 10, 2023
March 29, 2023
August 21, 2023
Orthophosphate as P
Total Phosphorus

Figure 6: WY23 Pollutant Loadings

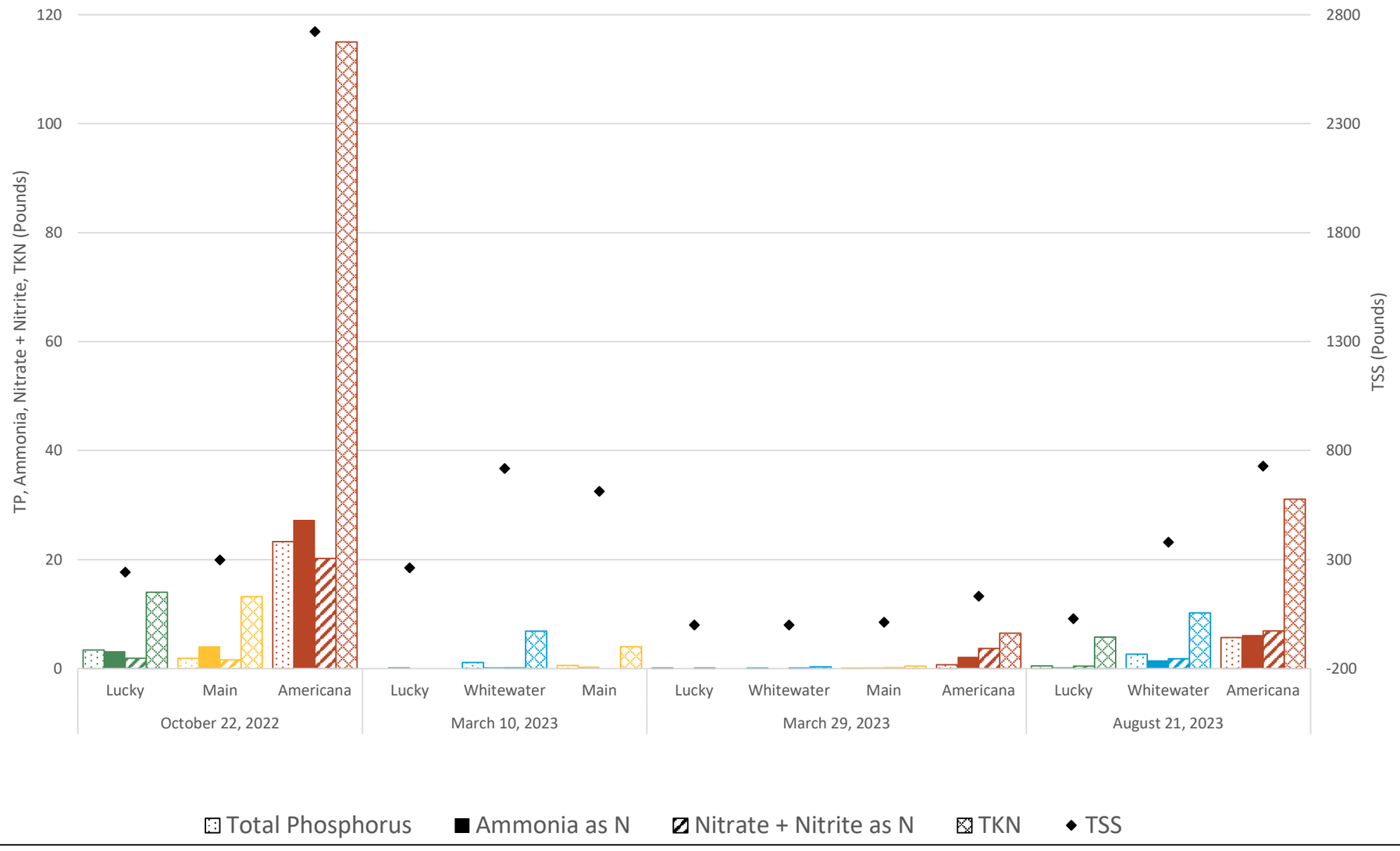
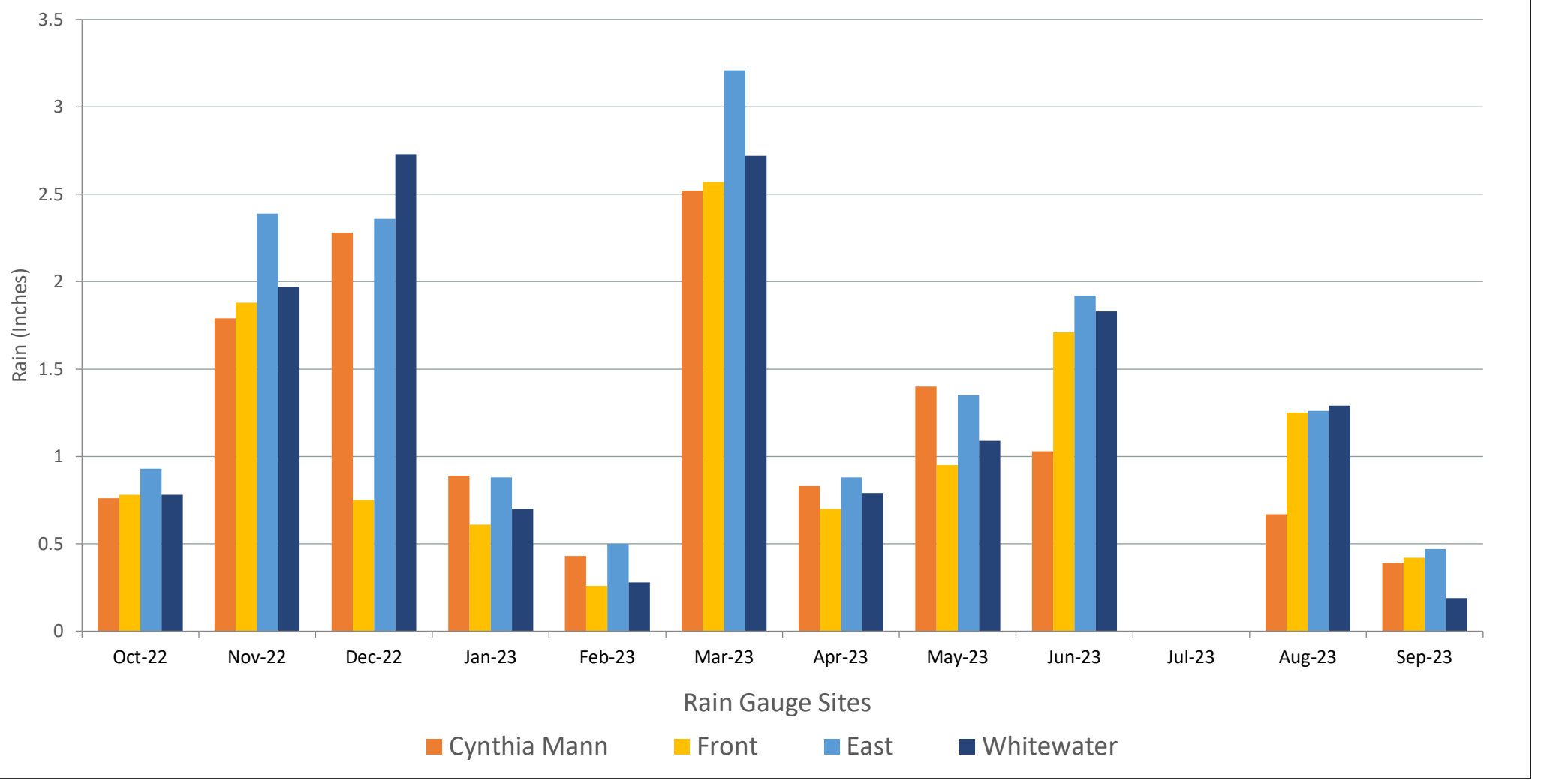


Figure 7: WY23 Monthly Precipitation



Appendix B: Tables

Table 1. Monitored Storms and Samples Collected

Table 2. Field Parameter Summary

Table 3. Analytical Results Summary

Table 4. Event Loading for Monitored Drainages in Pounds

Table 5. Event Loading in Pounds per Acre

Table 6. QC Sample Summary

Table 1. Monitored Storms and Samples Collected					
Event Date	Sampling Information	Lucky	Whitewater	Main	Americana
October 22, 2022	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 > 3.6	level > 2.0	level > 2.2	level > 6.75
	Percent of storm flow sampled	67%	36%	57%	58%
	Composite sample duration (hrs.)	4.5	3.5	4.5	5.0
	Storm precipitation (in)	0.70	0.70	0.71	0.71/0.84
January 9, 2023	Grab samples collected and submitted?	YES	YES	YES	YES
	Composite samples collected and submitted?	NO	NO	NO	NO
	Trigger volume	2,895 gal	800 ft^3	3,411 gal	2,960 ft^3
	Sampler enable condition (in)	level > 3.31	level > 1.4	level > 2.25	level > 7.0
	Percent of storm flow sampled	–	–	–	–
	Composite sample duration (hrs.)	–	–	–	–
	Storm precipitation (in)	0.07	0.05	0.05	0.05/0.07
March 10, 2023	Grab samples collected and submitted?	YES	YES	YES	YES
	Composite samples collected and submitted?	YES	YES	YES	NO
	Trigger volume	7,899 gal	2,185 ft^3	9,313 gal	8,071 ft^3
	Sampler enable condition (in)	level > 2.4	level > 1.0	level > 2.25	level > 6.30
	Percent of storm flow sampled	95%	95%	92%	–
	Composite sample duration (hrs.)	2.0	3.0	1.5	–
	Storm precipitation (in)	0.13	0.16	0.13	0.13/0.13
March 29, 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 > 2.6	level > 2.5	level > 2.4	level > 6.7
	Percent of storm flow sampled	94%	81%	95%	98%
	Composite sample duration (hrs.)	5.0	3.5	4.0	5.5
	Storm precipitation (in)	0.09	0.10	0.09	0.09/0.12
August 21, 2023	Grab samples collected and submitted?	YES	YES	YES	NO
	Composite samples collected and submitted?	YES	YES	YES	YES
	Trigger volume	6,582.8 gal	1,821 ft^3	7,757.3 gal	6,726 ft^3
	Sampler enable condition (in)	level > 2.72	level > 1.30	level > 1.77	level > 4.91
	Percent of storm flow sampled	83%	90%	36%[1]	84%
	Composite sample duration (hrs.)	9.5	7.5	1.5	9.0
	Storm precipitation (in)	0.30	0.37	0.33	0.33/0.37

Notes:

-- = no data

[1] At the Main monitoring site, the volume of discharge sampled and total runoff volume were erratic and do not align with the precipitation data. The Environmental Protection Agency runoff calculation was performed to estimate the total event runoff and sampled runoff values based on impervious surface of the drainage basin to obtain the percent of storm flow sampled.

Table 2. Field Parameter Results					
Event Date	Monitoring Station	Field Parameters			
		Dissolved Oxygen	Temperature	pH	Conductivity
		mg/L	C	S.U.	µS/cm
October 22, 2022	Lucky	8.61	13.94	6.48	178.9
	Whitewater	7.41	14.85	6.89	231.9
	Main	8.18	17.07	6.41	242.3
	Americana	8.05	17.12	7.03	367.6
January 9, 2023	Lucky	9.04 [2R]	11.77 [2R]	6.90 [2R]	119.14 [2R]
	Whitewater	8.54 [2R]	10.04 [2R]	6.86 [2R]	147.42 [2R]
	Main	11.2 [2R]	6.14 [2R]	6.56 [2R]	231.0 [2R]
	Americana	9.98 [2R]	9.51 [2R]	6.60 [2R]	517.1 [2R]
March 10, 2023	Lucky	11.36	5.78	7.90	95.3
	Whitewater	10.92	6.04	6.83	462.62
	Main	10.68	7.99	7.90	420.12
	Americana	11.16	6.68	7.44	1282.6
March 29, 2023	Lucky	5.90 [3J]	10.99 [3J]	7.30 [3J]	222.85 [3J]
	Whitewater	7.70 [3J]	8.65 [3J]	7.43 [3J]	134.99 [3J]
	Main	10.10 [3J]	7.74 [3J]	7.93 [3J]	209.7 [3J]
	Americana	10.42 [3J]	7.65 [3J]	7.67 [3J]	481.7 [3J]
August 21, 2023	Lucky	7.17	20.65	7.29	62.65
	Whitewater	5.22 [3R]	23.15 [3R]	7.15 [3R]	130.88 [3R]
	Main	7.07 [3R]	22.21 [3R]	6.86 [3R]	95.3 [3R]
	Americana	–	–	–	–

Notes:

-- = no data

[2R] Data rejected due to insufficient rainfall (< 0.08 inches).

[3J] Data qualified due to insufficient rainfall (0.09–0.10 inches).

[3R] Data rejected due to collecting sample after composite sampling duration.

Table 3. Analytical Results

Event Date	Monitoring Station	Sample ID	Analytical Parameters																		
			E. coli	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
			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
October 22, 2022	Lucky	221022-03-WG/WC	4040.0 [1J]	147 [2J]	323 [2J]	30.3 [2J]	51.1 [2J]	95.8 [2J]	163 [2J]	1.34 [2J]	0.985 [2J]	1.26 [2J]	0.740 [2J]	5.52 [2J]	2.6 [2J]	<0.025 [2J]	0.12 [2J]	8.6 [2J]	0.09 [2J]	2.6 [2J]	0.0125 [2J]	91.2 [2J]
	Whitewater	221022-11-WG/WC	770.1	875 [1R]	1310 [1R]	54.9 [1R]	79.6 [1R]	159 [1R]	681 [1R]	2.40 [1R]	1.71 [1R]	1.95 [1R]	1.54 [1R]	8.56 [1R]	4.2 [1R]	<0.025 [1R]	0.18 [1R]	14.6 [1R]	0.70 [1R]	11.3 [1R]	0.0344 [1R]	74.4 [1R]
	Main	221022-12-WG/WC	88.2	42.5 [2J]	146 [2J]	23.5 [2J]	58.1 [2J]	85.4 [2J]	73.5 [2J]	0.534 [2J]	0.337 [2J]	1.15 [2J]	0.454 [2J]	3.77 [2J]	2.2 [2J]	0.025 [2J]	0.14 [2J]	8.3 [2J]	0.28 [2J]	11.8 [2J]	0.0154 [2J]	65.9 [2J]
	Americana	221022-14-WG/WC	648.8	225 [2J]	416 [2J]	55.9 [2J]	62.5 [2J]	125 [2J]	244 [2J]	1.07 [2J]	0.712 [2J]	1.25 [2J]	0.927 [2J]	5.26 [2J]	5.1 [2J]	<0.025 [2J]	0.19 [2J]	10.1 [2J]	0.14 [2J]	8.2 [2J]	0.0147 [2J]	61.6 [2J]
January 9, 2023	Lucky	230109-03-WG	435.2 [2R]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Whitewater	230109-11-WG	235.9 [2R]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Main	230109-12-WG	172.2 [2R]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Americana	230109-14-WG	2850.0 [2R]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
March 10, 2023	Lucky	230310-03-WG/WC	1986.3	26.4	411	–	219	444	82.0	–	–	0.283	–	6.80	–	–	–	–	–	–	0.0369	–
	Whitewater	230310-11-WG/WC	770.1	43.5	725	207	550	947	592	1.46	0.0678	0.309	0.166	9.06	9.6	–	0.65	–	–	55.7	0.0712	–
	Main	230310-12-WG/WC	579.4	19.7	540	151	408	809	384	0.743	–	0.380	–	5.31	8.3	–	0.54	–	–	59.7	0.0581	–
	Americana	230310-14-WG	547.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
March 29, 2023	Lucky	230329-03-WG/WC	222.4 [3J]	–	–	34.5 [3J]	–	–	–	0.314 [3J]	0.104 [3J]	–	0.546 [3J]	–	1.9 [3J]	0.012 [3J]	0.026 [3J]	2.5 [3J]	0.096 [3J]	0.72 [3J]	–	12.2 [1,3J]
	Whitewater	230329-11-WG/WC	10.7 [3J]	8.04 [3J]	69.0 [3J]	56.6 [3J]	48.7 [3J]	–	–	0.273 [3J]	0.0993 [3J]	0.366 [3J]	0.373 [3J]	1.28 [3J]	1.8 [3J]	0.017 [3J]	0.045 [3J]	3.9 [2,3J]	0.25 [3J]	3.2 [3J]	<0.0100 [3J]	29.4 [3J]
	Main	230329-12-WG/WC	52.8 [3J]	12.1 [3J]	105 [3J]	44.7 [3J]	77.7 [3J]	54.0 [3J]	170 [3J]	0.209 [3J]	0.0869 [3J]	0.929 [3J]	0.671 [3J]	1.85 [3J]	2.1 [3J]	0.020 [3J]	0.081 [3J]	5.7 [3J]	0.089 [3J]	5.7 [3J]	0.0187 [3J]	33.4 [3J]
	Americana	230329-14-WG/WC	218.7 [3J]	9.64 [3J]	62 [3J]	133 [3J]	45.8 [3J]	38.6 [3J]	318 [3J]	0.205 [3J]	0.0914 [3J]	0.633 [3J]	1.08 [3J]	1.9 [3J]	3.6 [3J]	0.023 [3J]	0.065 [3J]	3.4 [2,3J]	0.08 [3J]	3.6 [3J]	0.03 [3J]	20.5 [3J]
August 21, 2023	Lucky	230821-03-WG/WC	20,140	16.9	85.0	23.1	21.6	26.6	79.2	0.439	0.214	0.211	0.410	5.28	1.2	0.014	0.034	4.7	0.086	0.68	<0.0100	48.5
	Whitewater	230821-11-WG/WC	27,550 [3R]	107	323	52.3	118	152	229	1.06	0.605	0.611	0.725	4.10	5.0	0.017	0.13	10.2	0.25	7.3	0.0195	48.6
	Main	230821-12-WG/WC	9,850 [3R]	46.1 [1R]	222 [1R]	46.3 [1R]	79.9 [1R]	197 [1R]	166 [1R]	0.558 [1R]	0.222 [1R]	1.36 [1R]	0.817 [1R]	2.14 [1R]	3.8 [1R]	0.057 [1R]	0.2 [1R]	13.7 [1R]	0.38 [1R]	13.8 [1R]	0.0446 [1R]	112 [1R]
	Americana	230821-14-WC	–	67.7	213	57.7	57.1	80.0	184	0.625	0.355	0.676	0.758	3.41	3.6	0.023	0.13	9.0 [1]	0.22	5.6	0.0118	62.5

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] Sample qualified due to exceeded hold time.

[1R] Data rejected due to lack of representativeness (< 50%).

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

[2R] Data rejected due to insufficient rainfall (< 0.08 inches).

[3J] Data qualified due to insufficient rainfall (0.09–0.10 inches).

[3R] Data rejected due to collecting sample after composite sampling duration.

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 22, 2022	Lucky	243 [2J]	3.40 [2J]	3.19 [2J]	1.88 [2J]	14.0 [2J]
	Whitewater	559 [1R]	8.43 [1R]	6.85 [1R]	5.41 [1R]	30.1 [1R]
	Main	299 [2J]	1.88 [2J]	4.04 [2J]	1.60 [2J]	13.2 [2J]
	Americana	2723 [2J]	23.3 [2J]	27.2 [2J]	20.2 [2J]	115 [2J]
January 9, 2023	Lucky	–	–	–	–	–
	Whitewater	–	–	–	–	–
	Main	–	–	–	–	–
	Americana	–	–	–	–	–
March 10, 2023	Lucky	262	–	0.167	–	–
	Whitewater	718	1.11	0.234	0.126	6.87
	Main	613	0.563	0.288	–	4.03
	Americana	–	–	–	–	–
March 29, 2023	Lucky	–	0.0277 [3J]	–	0.0482 [3J]	–
	Whitewater	–	0.0678 [3J]	0.0909 [3J]	0.0927 [3J]	0.318 [3J]
	Main	13.4 [3J]	0.0519 [3J]	0.231 [3J]	0.167 [3J]	0.460 [3J]
	Americana	132 [3J]	0.700 [3J]	2.16 [3J]	3.69 [3J]	6.49 [3J]
August 21, 2023	Lucky	29.1	0.480	0.231	0.449	5.78
	Whitewater	379	2.64	1.52	1.81	10.2
	Main	768 [1R]	2.18 [1R]	5.30 [1R]	3.19 [1R]	8.34 [1R]
	Americana	729	5.70	6.16	6.91	31.1

Notes:

-- = no data

[1R] Data rejected due to lack of representativeness (< 50%).

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

[3J] Data qualified due to insufficient rainfall (0.09–0.10 inches).

Table 5. Event Loading in Pounds/Acre						
Event Date	Monitoring Station	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
October 22, 2022	Lucky	2.31 [2J]	0.0324 [2J]	0.0304 [2J]	0.0179 [2J]	0.133 [2J]
	Whitewater	1.12 [1R]	0.0169 [1R]	0.0138 [1R]	0.0109 [1R]	0.0604 [1R]
	Main	3.78 [2J]	0.0238 [2J]	0.0511 [2J]	0.0203 [2J]	0.167 [2J]
	Americana	3.11 [2J]	0.0266 [2J]	0.0311 [2J]	0.0231 [2J]	0.131 [2J]
January 9, 2023	Lucky	–	–	–	–	–
	Whitewater	–	–	–	–	–
	Main	–	–	–	–	–
	Americana	–	–	–	–	–
March 10, 2023	Lucky	2.50	–	0.00159	–	–
	Whitewater	1.44	0.00222	0.000470	0.000253	0.0138
	Main	7.76	0.00713	0.00365	–	0.0510
	Americana	–	–	–	–	–
March 29, 2023	Lucky	–	0.000264 [3J]	–	0.000459 [3J]	–
	Whitewater	–	0.000136 [3J]	0.000183 [3J]	0.000186 [3J]	0.000639 [3J]
	Main	0.170 [3J]	0.000657 [3J]	0.00292 [3J]	0.00211 [3J]	0.00582 [3J]
	Americana	0.151 [3J]	0.000800 [3J]	0.00247 [3J]	0.00422 [3J]	0.00742 [3J]
August 21, 2023	Lucky	0.277	0.00457	0.00220	0.00427	0.0550
	Whitewater	0.761	0.00531	0.00306	0.00363	0.0205
	Main	9.72 [1R]	0.0276 [1R]	0.0671 [1R]	0.0404 [1R]	0.106 [1R]
	Americana	0.834	0.00651	0.00704	0.00790	0.0355

Notes:

– = no data

[1R] Data rejected due to lack of representativeness (< 50%).

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

[3J] Data qualified due to insufficient rainfall (0.09–0.10 inches).

Table 6. QC Sample Results

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 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
October 22, 2022	Lucky grab	221022-03-001	Field blank	< 1.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Lucky grab	221022-03-101	Field duplicate	4950	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calculated parent/duplicate RPD			**2%**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
January 9, 2023	Main grab	230109-12-001	Field Blank	< 1.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Main grab	230109-12-101	Field Duplicate	69.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calculated parent/duplicate RPD			**13%**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
March 29, 2023	Lucky grab	230329-03-001	Field Blank	< 1.0	–	–	–	–	–	–	–	–	–	–	–	–	--	–	–	–	–	–	–
	Lucky grab	230329-03-101	Field Duplicate	313	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calculated parent/duplicate RPD			**4%**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
August 21, 2023	Lucky grab	230821-03-001	Field Blank	< 1.0	–	–	–	–	–	–	–	–	–	–	–	–	--	–	–	–	–	–	–
	Lucky grab	230821-03-101	Field Duplicate	4730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Calculated parent/duplicate RPD			**11%**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
October 2, 2023	–	231002-12-004	Rinsate blank	–	< 2.00	7.0	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.0030	0.0370	< 0.0250	< 0.200	< 0.0700	< 0.0100	< 0.0100	0.25	< 0.0090	0.0220	< 0.0100	0.73
	–	231002-12-003	Equipment blank	–	< 2.00	7.0	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.0030	0.0560	< 0.0250	< 0.200	< 0.0700	< 0.0100	< 0.0100	0.18	< 0.0090	< 0.0100	< 0.0100	0.80
October 4, 2023	–	231004-11-004	Rinsate blank	–	< 2.00	< 7.0	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	0.0099	< 0.0350	< 0.0250	< 0.200	< 0.0700	< 0.0100	< 0.0100	1.20	0.0100	0.0120	< 0.0100	1.20
	–	231004-11-003	Equipment blank	–	< 2.00	< 7.0	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.0030	< 0.0350	< 0.0250	< 0.200	< 0.0700	< 0.0100	< 0.0100	2.20	0.0180	0.0250	< 0.0100	1.40
October 5, 2023	–	231005-14-004	Rinsate blank	–	< 2.00	< 7.0	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.0030	< 0.0350	< 0.0250	< 0.200	< 0.0700	< 0.0100	< 0.0100	2.00	0.0120	0.0220	< 0.0100	0.77
	–	231005-14-003	Equipment blank	–	< 2.00	< 7.0	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.0030	< 0.0350	< 0.0250	< 0.200	< 0.0700	< 0.0100	< 0.0100	0.50	< 0.0090	< 0.0100	< 0.0100	0.55
	–	231005-03-004	Rinsate blank	–	< 2.00	< 7.0	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.0030	< 0.0350	< 0.0250	< 0.200	< 0.0700	< 0.0100	< 0.0100	0.28	< 0.0090	< 0.0100	< 0.0100	3.00
	–	231005-03-003	Equipment blank	–	< 2.00	< 7.0	< 0.100	< 0.3	< 0.900	< 20.0	< 0.0120	< 0.0030	< 0.0350	< 0.0250	< 0.200	< 0.0700	< 0.0100	< 0.0100	0.41	< 0.0090	0.0210	< 0.0100	1.40
Allowable RPD				40%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%

– = No data

Cells highlighted in gray are flagged for discussion.

Appendix C: Storm Event Reports

Storm Event Report No. 1: October 22, 2022

Storm Event Report No. 2: January 9, 2023

Storm Event Report No. 3: March 10, 2023

Storm Event Report No. 4: March 29, 2023

Storm Event Report No. 5: May 5, 2023

Storm Event Report No. 6: August 21, 2023

Storm Event Report for October 22, 2022

Technical Memorandum

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

Phone: 208-389-7700

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2023

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for October 22, 2022

Date: January 19, 2023

To: Tammy Lightle

Cc: Monica Lowe

From: Shannon Kronz, Project Engineer

Prepared by: Shannon Kronz, Project Engineer

Reviewed by: Melissa Jannusch, 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 September 30, 2022. 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) 2023 (October 1, 2022, through September 30, 2023). The following storm event report summarizes stormwater sampling results from the October 22, 2022, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2023 Phase I Stormwater Outfall Monitoring.

Table 2-1. WY 2023 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 22, 2022	G[1], C[2]	G, C[3]	G, C[2]	G, C[2]	G, C[2]
Collected:		1G	1G	1G	1G

Notes:

C = composite sample

G = grab sample

[1] E. coli *sample qualified due to exceeded holding time.*

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

[3] *Composite samples rejected due to lack of representativeness (<50%).*

After the October 22, 2022, storm event, ACHD still needs to collect two grab samples from Whitewater, Main, Americana, and AS_6 and three grab samples from Lucky for WY 2023. In addition, three composite samples need to be collected from all Phase I monitoring sites.

Section 3: Storm Event Summary

The October 22, 2022, 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 21, 2022, is included in Attachment A for reference.

Friday, October 21, 2022

- On the morning of October 21, 2022, the National Weather Service issued a forecast for widespread rain in the Boise area, starting the evening of October 21, 2022, and continuing into October 22, 2022. Rain shadowing was not expected. The chance of precipitation was 100 percent, with 0.58 inch of precipitation forecasted.
- Setup was accomplished on October 21, 2022. An expected precipitation depth of 0.30 inch was used to set trigger volumes at monitoring stations.

Saturday, October 22, 2022

- Steady rain started at approximately 2230 on Friday evening and continued until 0600 Saturday, with the heaviest wave between 0400 and 0500.
- Precipitation totals ranged between 0.70 and 0.84 inch at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrographs for each 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 October 21, 2022, 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 the AS_6 flowmeter. Setup and sampling information are included in Table 1. The field forms completed during setup/shutdown and sampling can be found in Attachment C.

Grab Samples

Two, two-member teams mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment around midnight on October 22, 2022. Grab samples were submitted to the West Boise Water Quality Lab at 0234 on October 22. Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are located in Attachment D.

Composite Samples

Composite samples were collected at Lucky, Whitewater, Main, Americana, and AS_6 monitoring stations. Volumes of the composite samples submitted were sufficient for all parameters. The composite samples were submitted to the West Boise Water Quality Lab at 1052 on October 22. Analytical results are included in Table 2. Pollutant loading estimates for the event are detailed in Table 3.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the October 22, 2022, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Lucky 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
221022-03-001	Field blank	Lucky grab	No *E. coli* detection was reported in the field blank.
221022-03-101	Field duplicate	Lucky 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. The accepted holding time for *E. coli* samples is 8 hours. The grab sample and field duplicate sample collected at Lucky were analyzed outside of the acceptable holding time, and the reported values are considered estimates.

An accepted composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. The composite samples collected at Lucky, Main, Americana, and AS_6 represented between 57–67 percent of total discharge over 4–5 hours and are, therefore, qualified. The composite sample collected at Whitewater represented 36 percent of the total discharge over 3.5 hours and is rejected.

All other acceptance and performance measured for analytical and non-analytical criteria were met for this storm event.

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 (ft^3)	7899 gal	2,185	9,313 gal	8,071	602
Velocity cutoff (fps)	–	–	–	–	0.02
Sampler enable condition (in)	level > 3.6	level > 2.0	level > 2.2	level > 6.75	–
Runoff start time	2358 [1]	0108	0000	1139 [1]	0035
Grab sample collection time	0124	0157	0024	0042	0106
Composite sample stop time	0523	0450	0504	0509	0521
Runoff stop time	1004	1059	0944	1059	0909
Volume of discharge sampled (ft^3)	27,092	50,999	32,165	202,385	14,558
Total runoff volume (ft^3)	40,606	143,500	56,293	348,982	22,988
Percent of storm flow sampled (%)	67%	36%	57%	58%	63%
Composite sample duration (hrs)	4.5	3.5	4.5	5.0	4.0
Storm precipitation (in)	0.70	0.70	0.71	0.71/0.84	0.71/0.84
Referenced rain gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	24	23	24	24	24
Number of composite bottles filled	1	1	1	1	1
Composite sample volume (Approx.; ml)	14,750	13,250	14,000	14,000	14,750

Notes:

[1] Runoff started on 10/21/22.

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	10/22/2022	221022-03-WG	8.61	6.48	178.9	13.94	4040.0 [1J]	221022-03-WC	147 [2J]	323 [2J]	30.3 [2J]	51.1 [2J]	95.8 [2J]	163 [2J]	1.34 [2J]	0.985 [2J]	1.26 [2J]	0.740 [2J]	5.52 [2J]	2.6 [2J]	<0.025 [2J]	0.12 [2J]	8.6 [2J]	0.09 [2J]	2.6 [2J]	0.0125 [2J]	91.2 [2J]
Whitewater	10/22/2022	221022-11-WG	7.41	6.89	231.9	14.85	770.1	221022-11-WC	875 [1R]	1310 [1R]	54.9 [1R]	79.6 [1R]	159 [1R]	681 [1R]	2.40 [1R]	1.71 [1R]	1.95 [1R]	1.54 [1R]	8.56 [1R]	4.2 [1R]	<0.025 [1R]	0.18 [1R]	14.6 [1R]	0.70 [1R]	11.3 [1R]	0.0344 [1R]	74.4 [1R]
Main	10/22/2022	221022-12-WG	8.18	6.41	242.3	17.07	88.2	221022-12-WC	42.5 [2J]	146 [2J]	23.5 [2J]	58.1 [2J]	85.4 [2J]	73.5 [2J]	0.534 [2J]	0.337 [2J]	1.15 [2J]	0.454 [2J]	3.77 [2J]	2.2 [2J]	0.025 [2J]	0.14 [2J]	8.3 [2J]	0.28 [2J]	11.8 [2J]	0.0154 [2J]	65.9 [2J]
Americana	10/22/2022	221022-14-WG	8.05	7.03	367.6	17.12	648.8	221022-14-WC	225 [2J]	416 [2J]	55.9 [2J]	62.5 [2J]	125 [2J]	244 [2J]	1.07 [2J]	0.712 [2J]	1.25 [2J]	0.927 [2J]	5.26 [2J]	5.1 [2J]	<0.025 [2J]	0.19 [2J]	10.1 [2J]	0.14 [2J]	8.2 [2J]	0.0147 [2J]	61.6 [2J]
AS_6	10/22/2022	221022-206-WG	8.30	7.08	325.9	14.83	1299.7	221022-206-WC	680 [2J]	1200 [2J]	51.3 [2J]	106 [2J]	301 [2J]	542 [2J]	2.84 [2J]	1.96 [2J]	1.5 [2J]	0.890 [2J]	9.29 [2J]	4.5 [2J]	<0.025 [2J]	0.23 [2J]	13.6 [2J]	0.77 [2J]	15.0 [2J]	0.0309 [2J]	119 [2J]

Notes:

[1J] Sample qualified due to exceeded hold time

[2J] Data qualified due to lack of representativeness (50% - 75%)

[1R] Data rejected due to lack of representativeness (<50%)

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	10/22/2022	243 [2J]	3.40 [2J]	3.19 [2J]	1.88 [2J]	14.0 [2J]
Whitewater	10/22/2022	559 [1R]	8.43 [1R]	6.85 [1R]	5.41 [1R]	30.1 [1R]
Main	10/22/2022	299 [2J]	1.88 [2J]	4.04 [2J]	1.60 [2J]	13.2 [2J]
Americana	10/22/2022	2723 [2J]	23.3 [2J]	27.2 [2J]	20.2 [2J]	115 [2J]
AS_6	10/22/2022	432 [2J]	4.07 [2J]	2.15 [2J]	1.28 [2J]	13.3 [2J]

Notes:

[2J] Data qualified due to lack of representativeness (50% - 75%)

[1R] Data rejected due to lack of representativeness (<50%)

Table 4. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli
				mpn/100 mL
10/22/2022	221022-03-WG	221022-03-001	Field Blank	<1.0
10/22/2022	221022-03-WG	221022-03-101	Field Duplicate	4950
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: 10/21/2022	Time: 7:52 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?)		Yes

Past 72 hr Precip	0.00”
Date and time of expected event	10/21 6pm
Expected amount of precipitation	0.58”
Percent chance of precipitation	100%
Percent chance of >0.10” over 12 hours	95%

NWS Update

I spoke with Anna at NWS this morning. They are very confident that we will get >0.10”. It is looking like we will get a bit of sprinkles coming in starting around 6pm, but the bulk of the rain should be arriving around 11pm-12am, with the heaviest rain from 1am-5am. The totals from 12am – 6am are 0.30” and the totals from 6am on are another 0.20”. The rain is going to be widespread, with little to no chance of rain shadowing. The models are in good agreement, with the median precip amount for the 24 hour period being 0.40”.

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 SW Garden City ID
Issued by: National Weather Service Boise, ID
Last Update: 3:44 am MDT Oct 21, 2022

Today: Mostly sunny, with a high near 67. Calm wind becoming west northwest 5 to 7 mph in the afternoon.
Tonight: Rain. Low around 44. Calm wind becoming south southwest 5 to 9 mph after midnight. Chance of precipitation is 100%. New precipitation amounts between a quarter and half of an inch possible.
Saturday: Showers. Steady temperature around 47. West northwest wind around 14 mph. Chance of precipitation is 80%. New precipitation amounts between a tenth and quarter of an inch possible.
Saturday Night: A 30 percent chance of showers before midnight. Mostly cloudy, with a low around 33. West northwest wind around 9 mph.
Sunday: Mostly sunny, with a high near 51. Northwest wind 8 to 15 mph.
Sunday Night: Mostly clear, with a low around 30.
Monday: A 20 percent chance of showers after noon. Mostly sunny, with a high near 52.
Monday Night: A 40 percent chance of showers, mainly before midnight. Mostly cloudy, with a low around 38.

Tuesday: A 20 percent chance of showers after noon. Mostly cloudy, with a high near 53.
Tuesday Night: A 40 percent chance of showers. Mostly cloudy, with a low around 38.
Wednesday: A 50 percent chance of showers. Mostly cloudy, with a high near 51.
Wednesday Night: A 20 percent chance of showers. Mostly cloudy, with a low around 32.
Thursday: Mostly sunny, with a high near 50.

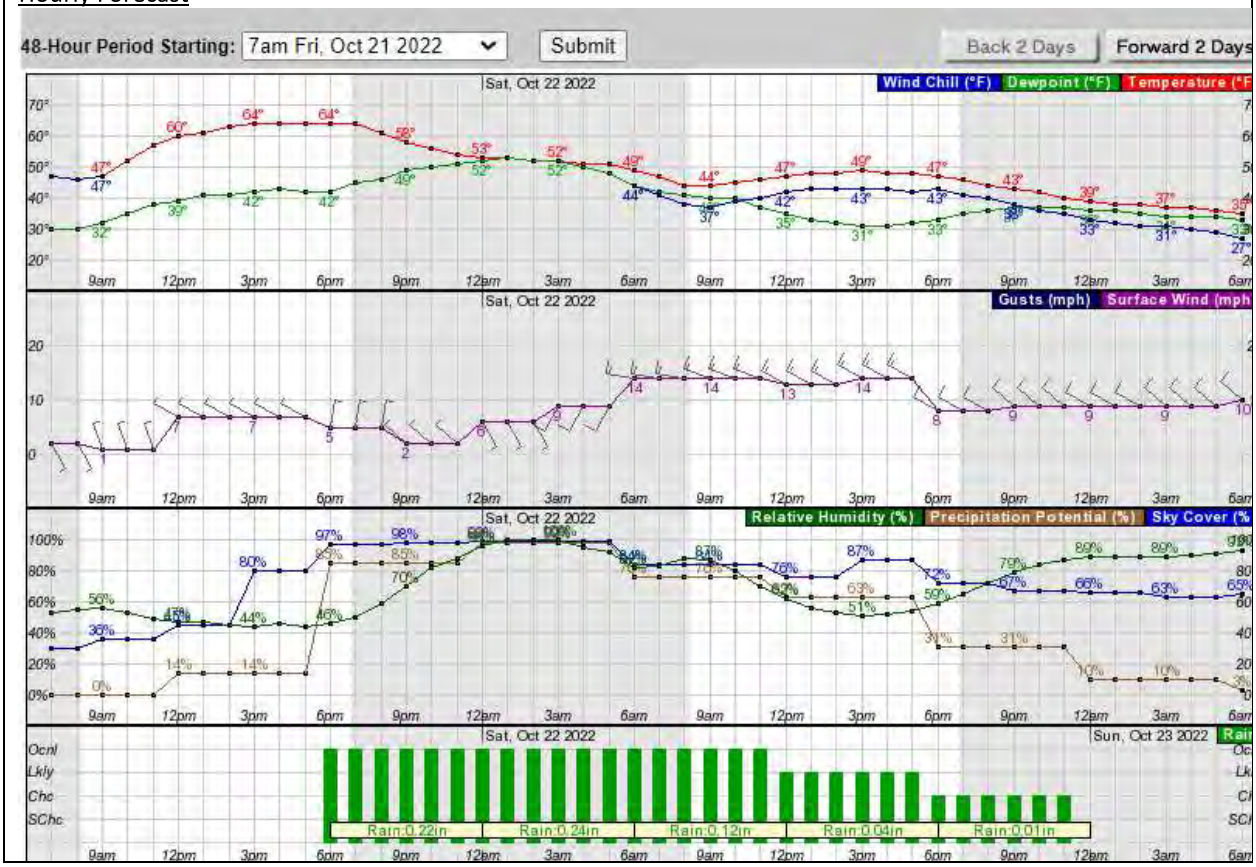
Forecast Discussion
Area Forecast Discussion
National Weather Service Boise ID
333 AM MDT Fri Oct 21 2022

.SHORT TERM...Today through Sunday night...Today will be the last dry and mild day for most of the area before the onset to a significant pattern change to cool wet and windy conditions this weekend. Precipitation will start to develop across the north - mainly from Baker County to the West Central ID Mountains - later this afternoon as **a moist and vigorous low pressure system enters the Pacific Northwest. The precipitation will overspread the area from north to south tonight with widespread rain** and high-elevation snow. Snow levels will lower to around 7000 feet in the north and remain high (above 9000 feet) near the Nevada border. Gusty winds will also develop ahead of a cold front this afternoon. The winds will continue to increase and become windy this evening, and remain windy through Saturday with the passage of a cold front and the arrival of colder air behind it. Winds will be near advisory levels in the higher elevations of Harney/Malhuer County in SE Oregon and Owyhee County in SW Idaho. Snow levels will continue to lower on Saturday, reaching down to 4500-5500 feet. **The widespread precipitation will transition to showers on Saturday** as the cold unstable upper trough settles into the region. Snow accumulations will be mainly confined to the higher elevations above 6000 feet where several inches are expected. **Rain and snow showers will persist through Saturday night with additional light snowfall accumulations above 4500 feet.** Winds will diminish, but it will remain breezy overnight. The upper trough will continue to develop on Sunday while slowly drifting to our east. Snow showers will linger over the higher elevations of SW Idaho, although with little or no additional snow accumulation. Models have ramped up the wind speeds/gusts on Sunday, especially in far SW Idaho. Winds will approach advisory levels in a corridor from south of Boise to the Nevada border. Temperatures will trend colder each day, with highs only in the 40s and 50s in the valleys. Lows Sunday morning will be around 32F in some locations in the Snake Plain, with evening colder temperatures (mid 20s-low 30s) forecast on **Monday morning for the first widespread freeze event this season.**

.LONG TERM...Monday through Friday...**Active weather pattern continues with a weak trough passage on Monday. This will bring mountain snow and valley rain showers.** Snow amounts will be light. A brief break in the precipitation follows for Tuesday as the flow shifts to the west-southwest. Ensembles are split with the

next system mid-week. Deterministic along with about 55% of the ensembles favor another trough passage with the remaining 45% favoring another upper level ridge. Current forecast favors another cold trough passage Wednesday but confidence remains low. A drier conditions follow into the weekend with weak ridging over the Intermountain West. Temperatures will average around 5 degrees below normal.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE 22/022

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			reviewed QC sample times
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)	0.70	0.70	0.71	.71/.84	.71/.84	> 0.10"	X		
3. Sampled amount (% of total run-off)	67	36	57	58	63	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject		X	WW X
4. Composite sample duration (hours)	4.5	3.5	4.5	5.0	4.0				
4. Ecoli sample holding time (hours)	12	6	7.75	7.5	7	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X	Lucky X	
5. Filtering of samples for dissolved parameter analysis (hours)	8.5	7	8.5	8	6.5	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

Reviewed by Tamara Tighe **Date** 12.01.22

Approved by Monica Love **Date** 12/2/22

Storm Runoff Estimates and Trigger Volumes

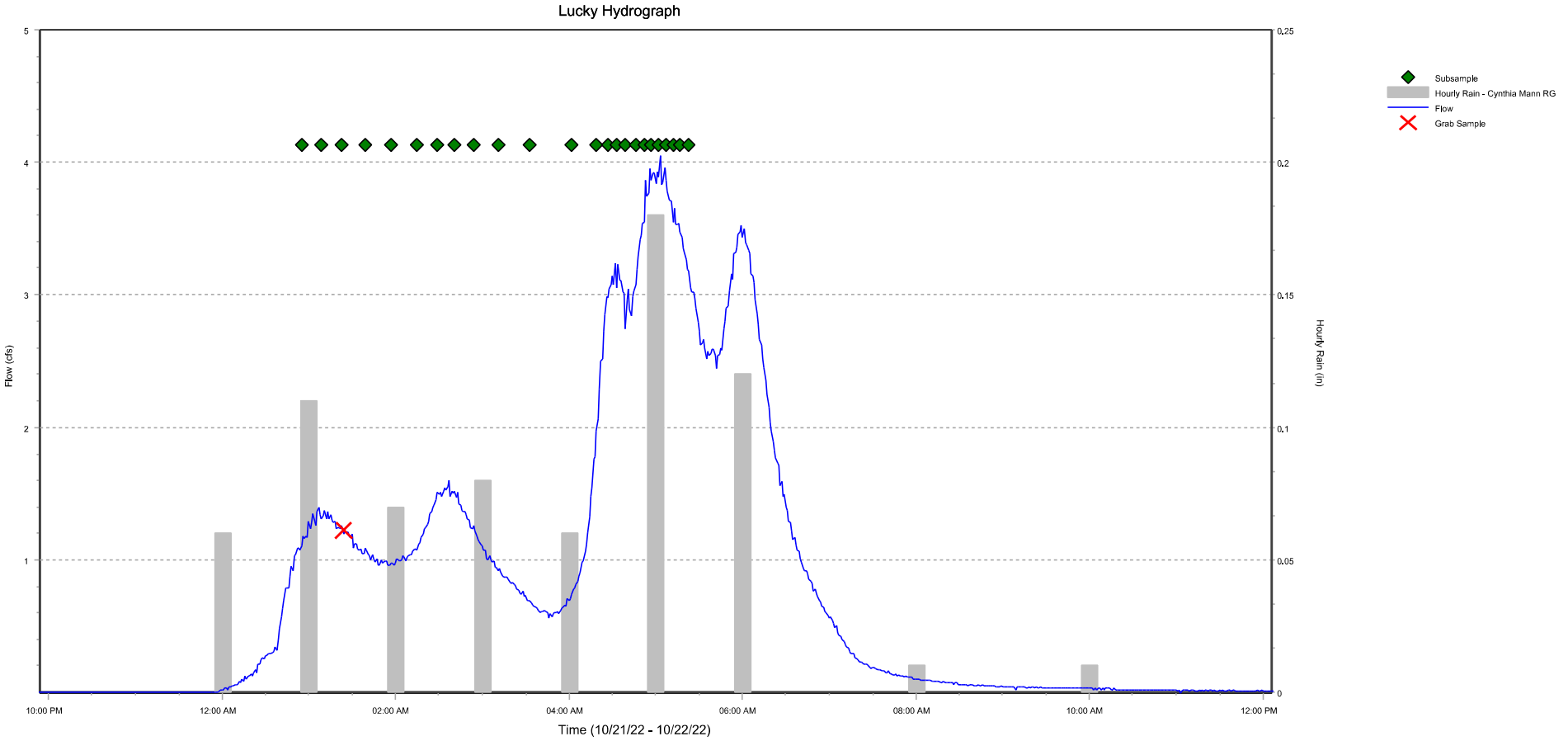
Simple Method

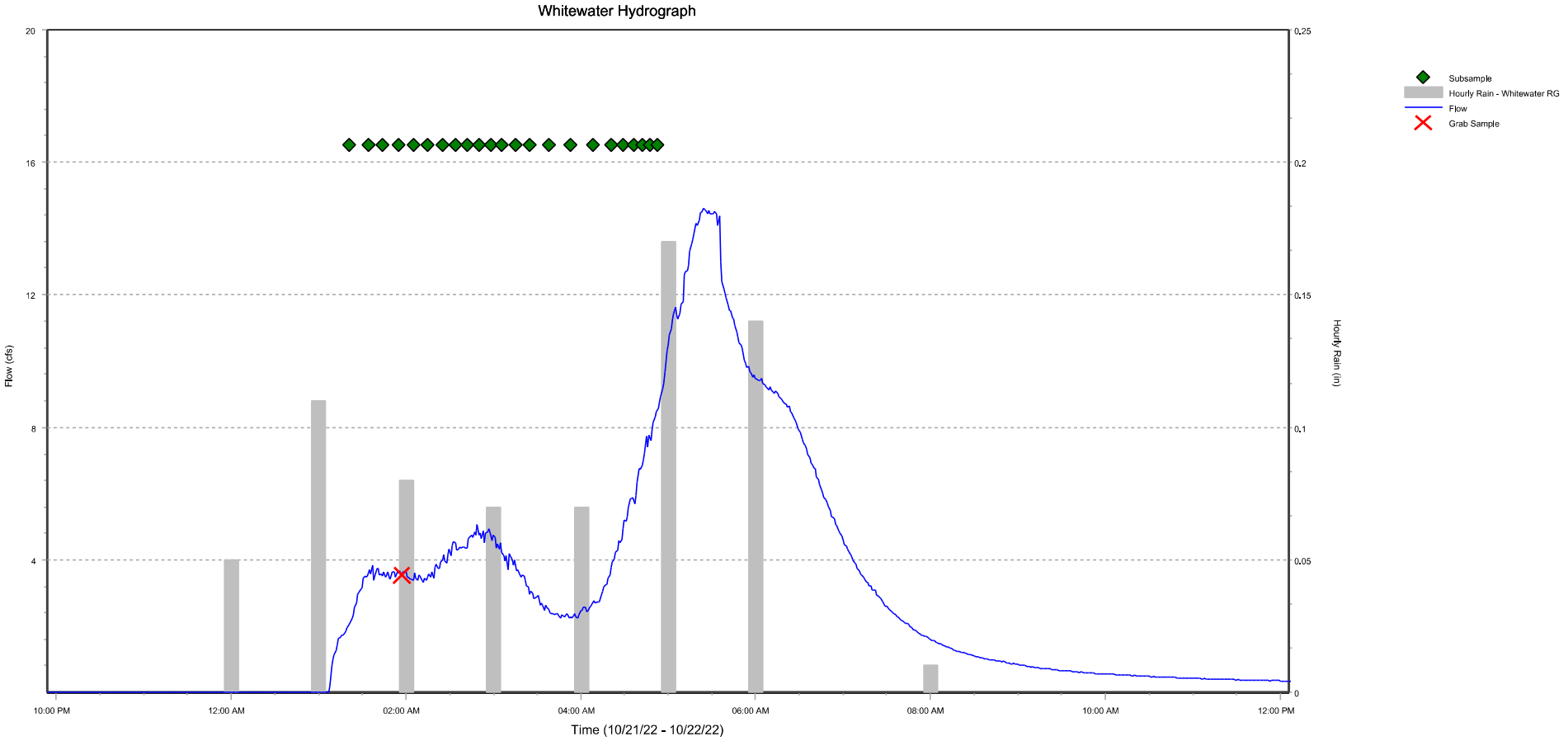
Expected Precipitation Depth =	0.3	in
Square Feet per Acre =	43560	ft^2/ac
Inches per Foot=	12	in/ft
Aliquots per Sample=	17	

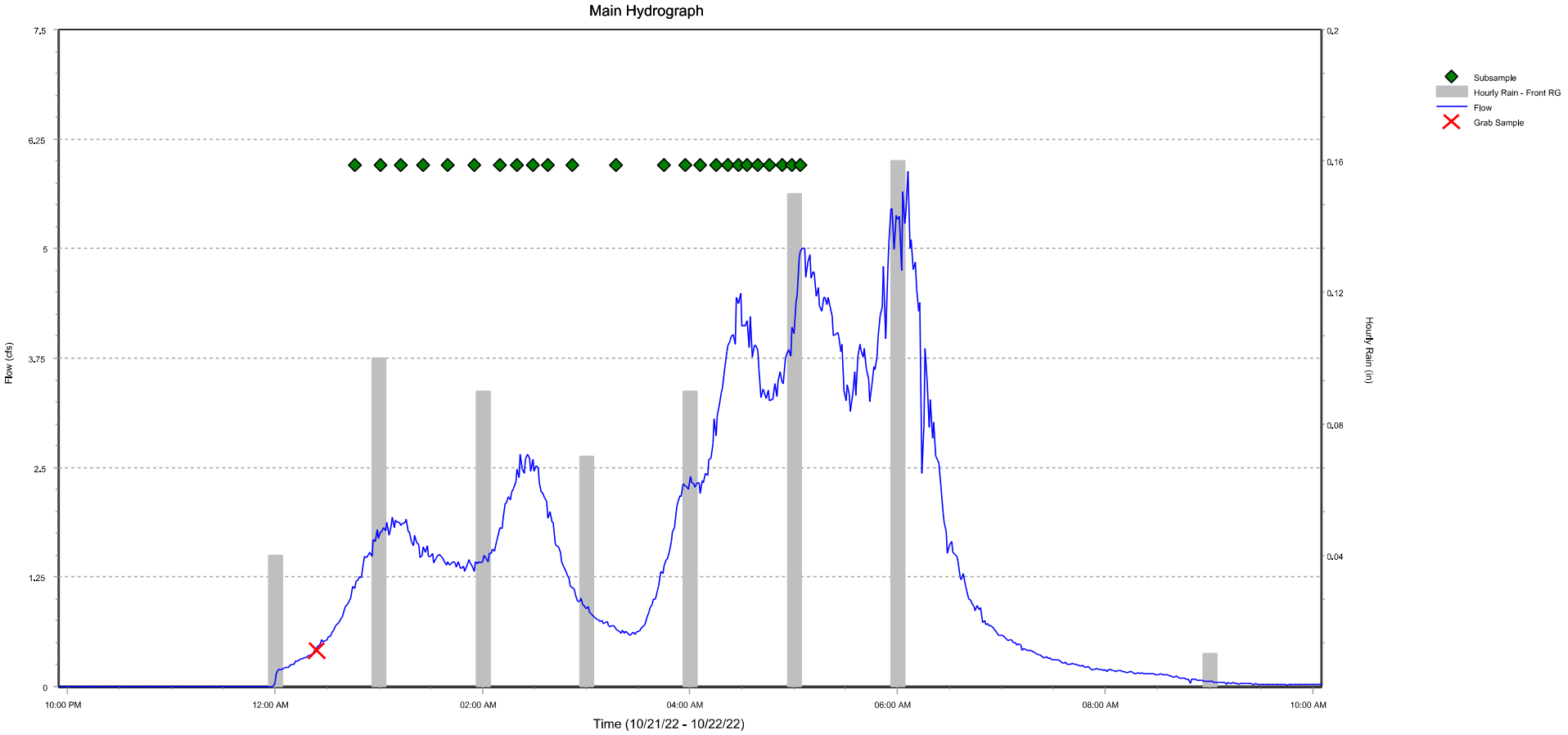
Step 1. Enter runoff coefficients in yellow cells.
Step 2. Enter expected precipitation depth in inches in blue cell.
Step 3. Read trigger volumes (**bold**) in green cells.

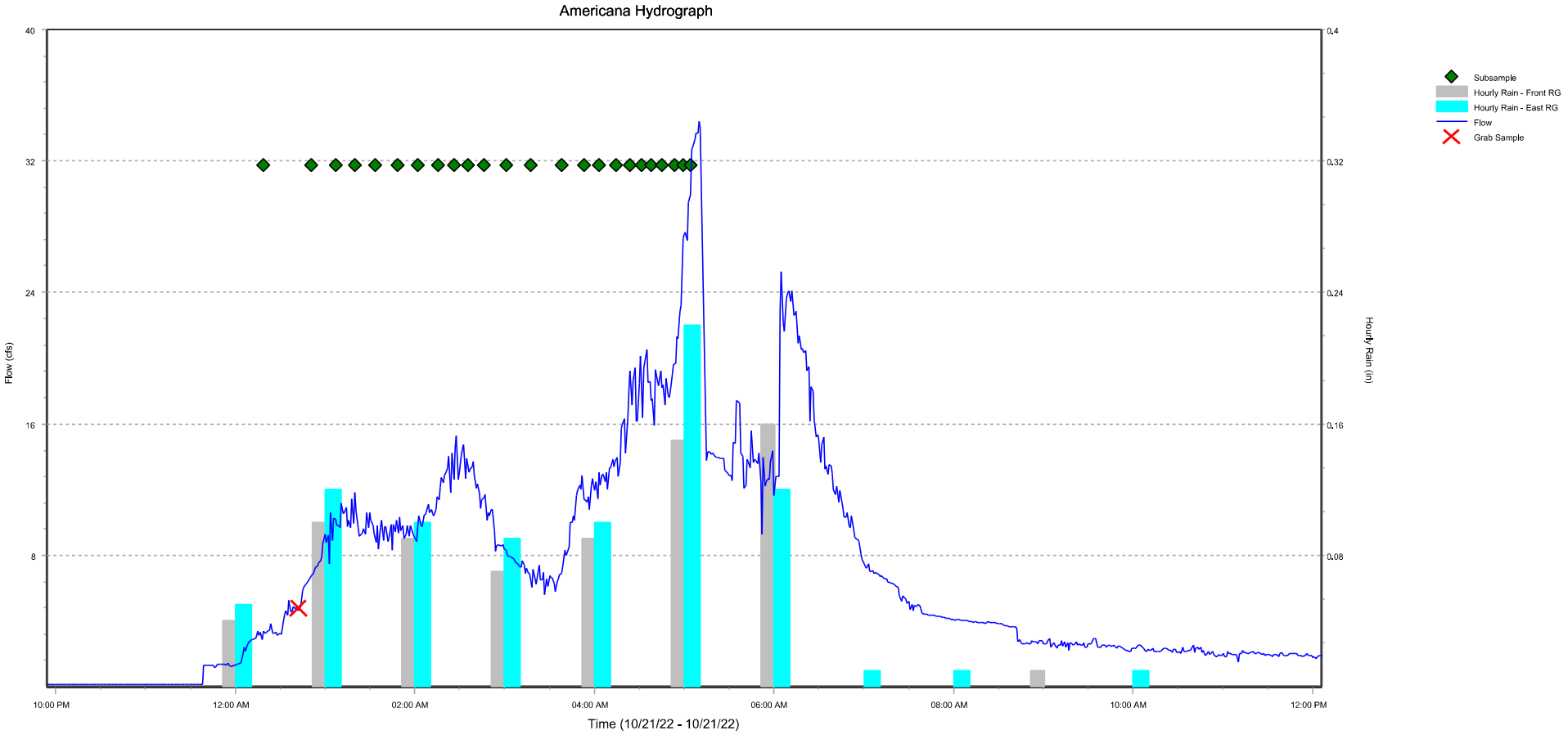
Site	Area (ac)	Using RC Based on Land Use			Using Manually-entered RC				Used in Field
		RC	Expected Vol. (ft^3)	Trigger Vol. (ft^3)	RC	Expected Vol. (ft^3)	Trigger Vol. (ft^3)	Trigger Vol. (Gal)	Trigger Vol.
Lucky #3	105	0.401	45852	**2697**	0.157	17952.17	**1056**	7899	7899 ft^3
Whitewater #11	498	0.437	236995	**13941**	0.116	62909.35	**3701**	27683	2185 ft^3
Main #12	79	0.437	37596	**2212**	0.246	21163.63	**1245**	9313	9313 gal
Americana #14	875	0.446	424982	**24999**	0.144	137214.00	**8071**	60371	8071 ft^3
AS_6 #206	204	0.257	57094	**3358**	0.046	10241.39	**602**	4503	602 gal

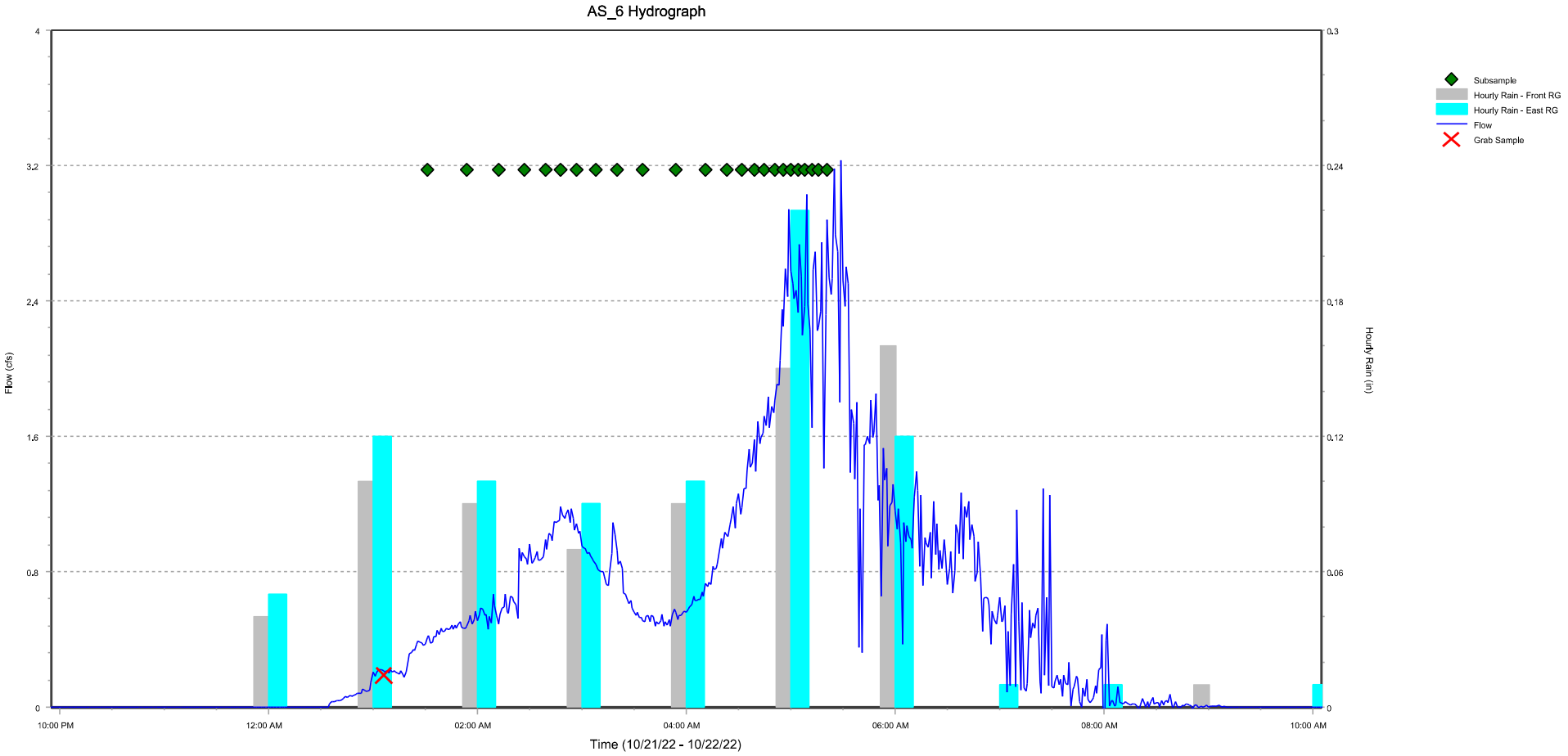
Attachment B: Storm Event Hydrographs


Lucky Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (10/21/22 - 10/22/22)
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 - Cynthia Mann RG
Flow
Grab Sample


Whitewater Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (10/21/22 - 10/22/22)
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
20
16
12
8
4
0.25
0.2
0.15
0.1
0.05
0
Subsample
Hourly Rain - Whitewater RG
Flow
Grab Sample


Main Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (10/21/22 - 10/22/22)
7.5
6.25
5
3.75
2.5
1.25
0
0.2
0.16
0.12
0.08
0.04
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
Subsample
Hourly Rain - Front RG
Flow
Grab Sample


Americana Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (10/21/22 - 10/21/22)
40
32
24
16
8
0.4
0.32
0.24
0.16
0.08
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
Hourly Rain - East RG
Flow
Grab Sample


AS_6 Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (10/21/22 - 10/22/22)
10:00 PM
12:00 AM
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
0
0.8
1.6
2.4
3.2
4
0
0.06
0.12
0.18
0.24
0.3
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample

Attachment C: Field Forms

Set Up/ Shut Down Form – HACH

TATION: Lucky

SET UP

Personnel: SMK, TLL

Date/Time On-Site: 10/21/22 1332

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1336	2.14	0	0	12.8

Enable Condition or Velocity Cutoff:	3.6 in
Deadband:	1.5 in
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:

SHUT DOWN

Personnel: TLL

Date/Time On-Site: 10.24.22 1142

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1144	2.05	0	0		12.3
	Downloaded to:	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: TLL, SMK **Date/Time On-Site:** 10.22.22 / 0900

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	221022-03 -WC
Approx Sample Volume (mL):	14750
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	10/22 ~~09~~ 00 55	Success	13	10/22 04:19	Success
2	01:09		14	04:27	
3	01:23		15	04:33	
4	01:39		16	04:39	
5	01:57		17	04:46	
6	02 15		18	04:52	
7	02:29		19	04:57	
8	02:41		20	05 02	
9	02:54		21	05 07	
10	03 11		22	05:12	
11	03:33		23	05:17	
12	04:02		24	05:23	

Comments:

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: Lucky

Personnel: SMK, DEB **Date/Time On-Site:** 10/22/22 00:25

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
01:35	7.13	480.74	1.20	12.8	00:30	—

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	221022-03 -WG	10/22/22	01:24	☑
Field Duplicate *E.Coli*	221022-03 -101	10/22/22	~~1:27~~ 12:00	☑
Field Blank *E.Coli*	221022-03 -001	10/22/22	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	01:32	13.94	8.61	6.48	178.9

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

Comments:

Set Up/ Shut Down Form – ISCO

TATION: Whitewater

SET UP

Personnel: TLL, SMR

Date/Time On-Site: 10/21/22 12:58

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1001	0.48	0	0.15	—
1258	0.49	0	0.15	—
Enable Condition:	level > 2"			
Hysteresis:	1.5"			
Flow Pulse Interval:	2185 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 10/21 1001
- ☒ 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: TLL

Date/Time On-Site: 10.24.22 / 1124

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1125	0.15	0	0.05	—
Downloaded to:	—			

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

Flowlink (Refer to Flowlink Instructions, if needed)
- ☒ Direct or Remote Date/time 10/25 1029
- ☒ 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: White Water **Bottle** 1 **of** 1

Personnel: TLL, SMK **Date/Time On-Site:** 10/22/22 09:20

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	221022-11 -WC
Approx Sample Volume (mL):	13250 mL
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Very 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	10122122 01:19	Success	13	10122122 03:13	Success
2	01:32		14	03:23	
3	01:42		15	03:36	
4	01:53		16	03:51	
5	02:03		17	04:06	
6	02:13		18	04:19	
7	02:23		19	04:27	
8	02:31		20	04:34	
9	02:40		21	04:40	
10	02:48		22	04:45	
11	02:56		23	04:50	
12	03:04		24	04:54	Power failed

Comments:

Battery J

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: SMK, DEB **Date/Time On-Site:** 10/22/22 01:49

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
01:49	7.54	3.42	2.21	–	1:45	

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	221022-11 · -WG	10/22/22	01:57	☑
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	02:00	14.85	7.41	6.89	231.9

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

Comments:

Set Up/ Shut Down Form – HACH

TATION: Main

SET UP

Personnel: TLL, SMK

Date/Time On-Site: 10/21/22 1144

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1147	1.19	0	0	13.4

Enable Condition or Velocity Cutoff:	level > 2.2"
Deadband:	1.0"
Trigger Volume:	9313 gal

- [x] Install batteries on flowmeter and sampler
- [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] Verify all cable and tubing connections
- [x] Check date and time on flowmeter and sampler
- [x] Set flowmeter program and sampler program parameters
- [x] Set logging interval to 1 minute
- [x] Start flowmeter program and sampler program
- [x] Verify running

Comments:

SHUT DOWN

Personnel: TLL

Date/Time On-Site: 10.24.22 / 1057

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1101	1.21	0	0		12.2
Downloaded to:		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** 1

Personnel: SMK, TLL **Date/Time On-Site:** 10/22/22 0155

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	221022-12 -WC
Approx Sample Volume (mL):	14000
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	10/22/22 0046	Success	13	10/22/22 0345	Success
2	0101		14	0357	
3	0113		15	0406	
4	0126		16	0415	
5	0140		17	0422	
6	0155		18	0428	
7	0210		19	0433	
8	0220		20	0439	
9	0229		21	0446	
10	0238		22	0453	
11	0252		23	0459	
12	0317		24	0504	

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: Main

Personnel: TL, STm **Date/Time On-Site:** 10/22/22 0022

Flow Meter Current Status						
Time	Level (in)	Flow ~~(cfs)~~ gpm	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0024	4.34	185	0.94	130		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	221022-12 -WG	10/22	0024	☒
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)
MP10	00:30	17.07	8.18	6.41	242.33

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

Comments:

Set Up/ Shut Down Form – ISCO

LOCATION: Americana

SET UP

Personnel: TL, SMK

Date/Time On-Site: 10/21/22 1213

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0951	5.18	0.12	0.165	11.72
1214	5.21	0.08	0.109	11.91
Downloaded to:		—		
Enable Condition:		level > 6.75" hysteresis 1.5"		
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 Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 10/21 0951
- ☒ 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: TL

Date/Time On-Site: 10.24.22 / 1107

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1107	5.73	1.09	1.281	11.69
Downloaded to:		—		

On-Site

- ☒ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 10/25 1027
- ☒ 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: SMK, TLC **Date/Time On-Site:** 10/22/22 09:48

☑ Halt Sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	221022-14 -WC
Approx Sample Volume (mL):	14000
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	Sampler Message/ Subsample Result	Trigger #	Date/Time	Sampler Message/ Subsample Result
1	10/22/22 0019	Success	13	10/22/22 0317	Success
2	0051		14	0339	
3	0107		15	0353	
4	0120		16	0403	
5	0134		17	0414	
6	0149		18	0424	
7	0203		19	0432	
8	0215		20	0438	
9	0227		21	0445	
10	0236		22	0453	
11	0247		23	0459	
12	0301		24	0509	

Comments:

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:** _____
	☐ 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: TL ~~SMATH~~ STM **Date/Time On-Site:** 10.22.22 0039

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0039	9.90	4.76	2.388	11.90		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	221022-14 -WG	10/22/22	0042	☒
Field Duplicate *E.Coli*	221022-14 -101	"	0043	☒
Field Blank *E.Coli*	221022-14 -001	"	0048	☒

*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)
MP10	0051	17.12	8.05	7.03	367.61

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	1

Comments:

Set Up/ Shut Down Form – HACH

STATION: AS-6

SET UP

Personnel: SMK, TLL

Date/Time On-Site: 10/21/22 1235

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1235	0	0	0	12.3

Enable Condition or Velocity Cutoff:	0.02 ft/s
Deadband:	-
Trigger Volume:	602 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:

SHUT DOWN

Personnel: TLL

Date/Time On-Site: 10.24.22 / 1009

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1010	0	0	0	22963	11.9
	Downloaded to:	R7			

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** 1

Personnel: SMK, TLL **Date/Time On-Site:** 10/22/22 09 36

☑ Halt Sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	221022-206 -WC
Approx Sample Volume (mL):	14750
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Very dark 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	10/22/22 01:31	Success	13	10/22/22 04:23	Success
2	01:54		14	04:32	
3	02:12		15	04:39	
4	02:27		16	04:45	
5	02:39		17	04:51	
6	02:48		18	04:56	
7	02:57		19	05:00	
8	03:08		20	05:04	
9	03:20		21	05:08	
10	03:35		22	05:12	
11	03:54		23	05:16	
12	04:11		24	05:21	

Comments:

If Sampling is Complete:
- ☒ Power off Samplers
- ☒ Disable Flow Meter pacing
- ☒ Resume Flow Meter program
- ☒ Verify Flow Meter is running
- ☒ Add ice to sample transport cooler
- ☒ Complete COC form; arrange transport to lab
- ☒ Current **Velocity Cutoff (fps):** 0.02

If Continuing Sampling (sample bottle change-out):
- ☐ Keep Flow Meter 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: AS-6

Personnel: TL, STM **Date/Time On-Site:** 10.22.22 / 0104

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0104	2.629	0.22	1.23	12.4		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	221022-206 -WG	10/22	0106	☒
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)
MP10	01:12	14.83	8.30	7.08	325.92

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

Comments:

Attachment D: Storm Event Analytical Reports

Report Date: 11/16/2022 13:30

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
AC00260-01	ACST1B	221022-03-WG	Water		10/22/2022	10/22/2022
AC00260-02	ACST1B	221022-03-101	Water		10/22/2022	10/22/2022
AC00260-03	ACST1B	221022-03-001	Water		10/22/2022	10/22/2022
AC00260-04	ACST1B	221022-11-WG	Water		10/22/2022	10/22/2022
AC00260-05	ACST1B	221022-12-WG	Water		10/22/2022	10/22/2022
AC00260-06	ACST1B	221022-14-WG	Water		10/22/2022	10/22/2022
AC00260-07	ACST1B	221022-206-WG	Water		10/22/2022	10/22/2022

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: 11/16/2022 13:30

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:	221022-03-WG
Date/Time Collected:	10/22/2022 01:24		
Lab Number:	AC00260-01	Sample Collector:	SMK
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B224079	4040.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	10/22/22 13:22	10/23/22 13:30	ASE	H D
Wet Chemistry										
Chlorine Screen	B224078	Absent				SM 4500-CL G-2000 mod	10/22/22	10/22/22 8:18	MER	

* 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.

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Report Date: 11/16/2022 13:30

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:	221022-03-101
Date/Time Collected:	10/22/2022 12:00		
Lab Number:	AC00260-02	Sample Collector:	SMK
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B224079	4950.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	10/22/22 13:22	10/23/22 13:30	ASE	D
Wet Chemistry										
Chlorine Screen	B224078	Absent				SM 4500-CL G-2000 mod	10/22/22	10/22/22 8:18	MER	

* 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.

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Report Date: 11/16/2022 13:30

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:	221022-03-001
Date/Time Collected:	10/22/2022 12:00		
Lab Number:	AC00260-03	Sample Collector:	SMK
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B224079	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	10/22/22 08:10	10/23/22 9:35	ASE	U
Wet Chemistry										
Chlorine Screen	B224078	Absent				SM 4500-CL G-2000 mod	10/22/22	10/22/22 8:18	MER	

* 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.

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No duplication of this report is allowed, except in its entirety

Report Date: 11/16/2022 13:30

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:	221022-11-WG
Date/Time Collected:	10/22/2022 01:57		
Lab Number:	AC00260-04	Sample Collector:	SMK
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B224079	770.1	MPN/100 mL	1.0	1.0	IDEXX - Colilert	10/22/22 08:10	10/23/22 9:35	ASE	
Wet Chemistry										
Chlorine Screen	B224078	Absent				SM 4500-CL G-2000 mod	10/22/22	10/22/22 8:18	MER	

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Report Date: 11/16/2022 13:30

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1B	Location Description:	221022-12-WG
Date/Time Collected:	10/22/2022 00:24		
Lab Number:	AC00260-05	Sample Collector:	T.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B224079	88.2	MPN/100 mL	1.0	1.0	IDEXX - Colilert	10/22/22 08:10	10/23/22 9:35	ASE	
Wet Chemistry										
Chlorine Screen	B224078	Absent				SM 4500-CL G-2000 mod	10/22/22	10/22/22 8:18	MER	

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Analysis Report

Location:	ACST1B	Location Description:	221022-14-WG
Date/Time Collected:	10/22/2022 00:42		
Lab Number:	AC00260-06	Sample Collector:	T.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B224079	648.8	MPN/100 mL	1.0	1.0	IDEXX - Colilert	10/22/22 08:10	10/23/22 9:35	ASE	
Wet Chemistry										
Chlorine Screen	B224078	Absent				SM 4500-CL G-2000 mod	10/22/22	10/22/22 8:18	MER	

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Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1B	Location Description:	221022-206-WG
Date/Time Collected:	10/22/2022 01:06		
Lab Number:	AC00260-07	Sample Collector:	T.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B224079	1299.7	MPN/100 mL	1.0	1.0	IDEXX - Colilert	10/22/22 08:10	10/23/22 9:35	ASE	
Wet Chemistry										
Chlorine Screen	B224078	Absent				SM 4500-CL G-2000 mod	10/22/22	10/22/22 8:18	MER	

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B224079									
Blank (B224079-BLK1)									
E. Coli	Absent						10/23/2022	ASE	
LCS (B224079-BS1)									
E. Coli				Present			10/23/2022	ASE	
Duplicate (B224079-DUP1)	Source ID: AC00260-01								
E. Coli					Pass	128	10/23/2022	ASE	

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Notes and Definitions

Item	Definition
D	Data reported from a dilution
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



Janet Finegan-Kelly
Water Quality Laboratory Manager



Stephen Quintero or Azubike Emenari
QA/QC Coordinator

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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: 63061761
Project: Stormwater-PI
Sampler(s): Tammy Lightle, Sam Malinowski, Shannon Kranz, Dylan Burrell

Lab# AC00260	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	10.22.22		0124		221022-03-WG	SMK	X	X												X					1
-02			1200		221022-03-101	SMK	X	X												X					1
03			1200		221022-03-001	SMK	X	X												X					1
-04			0157		221022-11-WG	SMK	X	X												X					1
-05			0024		221022-12-WG	TL	X	X												X					1
-06			0042		221022-14-WG	TL	X	X												X					1
-07			0106		221022-206-WG	TL	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Tammy Lightle	10/22/22 / 0234	CMR 10-22-22	11.30
			AC00260

AC00260

Report Date: 11/17/2022 14:09

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
AC00258-01	ACST1C	221022-03-WC	Water		10/22/2022	10/22/2022
AC00258-02	ACST1C	221022-11-WC	Water		10/22/2022	10/22/2022
AC00258-03	ACST1C	221022-12-WC	Water		10/22/2022	10/22/2022
AC00258-04	ACST1C	221022-14-WC	Water		10/22/2022	10/22/2022
AC00258-05	ACST1C	221022-206-WC	Water		10/22/2022	10/22/2022

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

Analysis Report

Location:	ACST1C	Location Description:	221022-03-WC
Date/Time Collected:	10/22/2022 00:55 - 10/22/2022 05:23		
Lab Number:	AC00258-01	Sample Collector:	S.K
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Wet Chemistry										
Ammonia, as N	B224155	1.26	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/29/22	10/29/22 13:35	GKH	
BOD5	B224082	147	mg/L	2.00	2.00	SM 5210 B-2011	10/23/22	10/28/22 11:15	GKH	
COD	B224081	323	mg/L	13.0	13.0	HH 8000, Standard Method 5220 D	10/23/22	10/23/22 12:33	ASE	
Nitrate-Nitrite, as N	B224164	0.740	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	10/31/22	10/31/22 11:12	ALN	
TKN	B224112	5.52	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	10/26/22	10/27/22 9:09	ALN	
Total Dissolved Solids	B224111	163	mg/L	25.0	25.0	SM 2540 C-2011	10/25/22	10/27/22 13:45	ALG	
Total Suspended Solids	B224074	95.8	mg/L	0.900	0.900	SM 2540 D-2011	10/22/22	10/22/22 15:24	MER	
Turbidity	B224077	51.1	NTU	0.6	0.3	EPA 180.1, Rev. 2.0 (1993)	10/22/22	10/22/22 14:41	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B224083	0.985	mg/L	4.00E-3	2.00E-3	EPA 365.1, Rev. 2.0 (1993)	10/23/22	10/23/22 13:12	BAK	D
Total Metals										
Mercury	B224114	0.0125	ug/L	0.0100	0.0100	EPA 245.2	10/26/22	10/27/22 8:06	SAS	
Arsenic	B224220	2.6	ug/L	0.040	0.040	EPA 200.8	11/06/22	11/9/22 13:11	DMW	
Cadmium	B224220	0.12	ug/L	0.025	0.025	EPA 200.8	11/06/22	11/9/22 13:11	DMW	
Calcium	B224087	8.87	mg/L	0.0460	0.0460	EPA 200.7	10/24/22	10/31/22 15:15	EDM	
Lead	B224220	2.6	ug/L	0.050	0.050	EPA 200.8	11/06/22	11/9/22 13:11	DMW	
Magnesium	B224087	1980	ug/L	50.0	50.0	EPA 200.7	10/24/22	10/31/22 15:15	EDM	
Phosphorus as P	B224087	1.34	mg/L	6.00E-3	6.00E-3	EPA 200.7	10/24/22	10/31/22 15:15	EDM	
Hardness	B224087	30.3	mg/L	0.115	0.115	EPA 200.7	10/24/22	10/31/22 15:15	EDM	
Dissolved Metals										
Cadmium	B224219	<0.0250	ug/L	0.025	0.025	EPA 200.8	11/04/22	11/4/22 14:30	DMW	U
Copper	B224219	8.6	ug/L	0.15	0.15	EPA 200.8	11/04/22	11/4/22 14:30	DMW	
Lead	B224219	0.093	ug/L	0.050	0.050	EPA 200.8	11/04/22	11/4/22 14:30	DMW	
Zinc	B224219	91.2	ug/L	0.78	0.78	EPA 200.8	11/04/22	11/4/22 14:30	DMW	

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Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	221022-11-WC
Date/Time Collected:	10/22/2022 01:19 - 10/22/2022 04:54		
Lab Number:	AC00258-02	Sample Collector:	S.K
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Wet Chemistry										
Ammonia, as N	B224155	1.95	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/29/22	10/29/22 12:35	GKH	
BOD5	B224082	875	mg/L	8.00	2.00	SM 5210 B-2011	10/23/22	10/28/22 11:10	GKH	D
COD	B224081	1310	mg/L	13.0	13.0	HH 8000, Standard Method 5220 D	10/23/22	10/23/22 12:33	ASE	
Nitrate-Nitrite, as N	B224164	1.54	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	10/31/22	10/31/22 11:17	ALN	
TKN	B224214	8.56	mg/L	1.00	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	11/03/22	11/4/22 10:14	JAL	D
Total Dissolved Solids	B224111	681	mg/L	25.0	25.0	SM 2540 C-2011	10/25/22	10/27/22 13:46	ALG	
Total Suspended Solids	B224074	159	mg/L	0.900	0.900	SM 2540 D-2011	10/22/22	10/22/22 13:55	MER	
Turbidity	B224077	79.6	NTU	0.6	0.3	EPA 180.1, Rev. 2.0 (1993)	10/22/22	10/22/22 14:49	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B224083	1.71	mg/L	0.0100	2.00E-3	EPA 365.1, Rev. 2.0 (1993)	10/23/22	10/23/22 13:18	BAK	D
Total Metals										
Mercury	B224114	0.0344	ug/L	0.0100	0.0100	EPA 245.2	10/26/22	10/27/22 8:20	SAS	
Arsenic	B224220	4.2	ug/L	0.040	0.040	EPA 200.8	11/06/22	11/9/22 13:20	DMW	
Cadmium	B224220	0.18	ug/L	0.025	0.025	EPA 200.8	11/06/22	11/9/22 13:20	DMW	
Calcium	B224087	16.0	mg/L	0.0460	0.0460	EPA 200.7	10/24/22	10/31/22 15:20	EDM	
Lead	B224220	11.3	ug/L	0.050	0.050	EPA 200.8	11/06/22	11/9/22 13:20	DMW	
Magnesium	B224087	3620	ug/L	50.0	50.0	EPA 200.7	10/24/22	10/31/22 15:20	EDM	
Phosphorus as P	B224087	2.40	mg/L	6.00E-3	6.00E-3	EPA 200.7	10/24/22	10/31/22 15:20	EDM	
Hardness	B224087	54.9	mg/L	0.115	0.115	EPA 200.7	10/24/22	10/31/22 15:20	EDM	
Dissolved Metals										
Cadmium	B224219	<0.0250	ug/L	0.025	0.025	EPA 200.8	11/04/22	11/4/22 14:40	DMW	U
Copper	B224219	14.6	ug/L	0.15	0.15	EPA 200.8	11/04/22	11/4/22 14:40	DMW	
Lead	B224219	0.70	ug/L	0.050	0.050	EPA 200.8	11/04/22	11/4/22 14:40	DMW	
Zinc	B224219	74.4	ug/L	0.78	0.78	EPA 200.8	11/04/22	11/4/22 14:40	DMW	

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Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	221022-12-WC
Date/Time Collected:	10/22/2022 00:46 - 10/22/2022 05:04		
Lab Number:	AC00258-03	Sample Collector:	S.K
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Wet Chemistry										
Ammonia, as N	B224155	1.15	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/29/22	10/29/22 12:53	GKH	
BOD5	B224082	42.5	mg/L	2.00	2.00	SM 5210 B-2011	10/23/22	10/28/22 11:06	GKH	
COD	B224081	146	mg/L	13.0	13.0	HH 8000, Standard Method 5220 D	10/23/22	10/23/22 12:33	ASE	
Nitrate-Nitrite, as N	B224164	0.454	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	10/31/22	10/31/22 11:18	ALN	
TKN	B224112	3.77	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	10/26/22	10/27/22 9:14	ALN	
Total Dissolved Solids	B224111	73.5	mg/L	25.0	25.0	SM 2540 C-2011	10/25/22	10/27/22 13:47	ALG	
Total Suspended Solids	B224074	85.4	mg/L	0.900	0.900	SM 2540 D-2011	10/22/22	10/22/22 15:12	MER	
Turbidity	B224077	58.1	NTU	0.6	0.3	EPA 180.1, Rev. 2.0 (1993)	10/22/22	10/22/22 14:53	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B224083	0.337	mg/L	2.00E-3	2.00E-3	EPA 365.1, Rev. 2.0 (1993)	10/23/22	10/23/22 13:13	BAK	
Total Metals										
Mercury	B224114	0.0154	ug/L	0.0100	0.0100	EPA 245.2	10/26/22	10/27/22 8:24	SAS	
Arsenic	B224220	2.2	ug/L	0.040	0.040	EPA 200.8	11/06/22	11/9/22 13:23	DMW	
Cadmium	B224220	0.14	ug/L	0.025	0.025	EPA 200.8	11/06/22	11/9/22 13:23	DMW	
Calcium	B224087	6.90	mg/L	0.0460	0.0460	EPA 200.7	10/24/22	10/31/22 15:25	EDM	
Lead	B224220	11.8	ug/L	0.050	0.050	EPA 200.8	11/06/22	11/9/22 13:23	DMW	
Magnesium	B224087	1510	ug/L	50.0	50.0	EPA 200.7	10/24/22	10/31/22 15:25	EDM	
Phosphorus as P	B224087	0.534	mg/L	6.00E-3	6.00E-3	EPA 200.7	10/24/22	10/31/22 15:25	EDM	
Hardness	B224087	23.5	mg/L	0.115	0.115	EPA 200.7	10/24/22	10/31/22 15:25	EDM	
Dissolved Metals										
Cadmium	B224219	0.025	ug/L	0.025	0.025	EPA 200.8	11/04/22	11/4/22 14:42	DMW	
Copper	B224219	8.3	ug/L	0.15	0.15	EPA 200.8	11/04/22	11/4/22 14:42	DMW	
Lead	B224219	0.28	ug/L	0.050	0.050	EPA 200.8	11/04/22	11/4/22 14:42	DMW	
Zinc	B224219	65.9	ug/L	0.78	0.78	EPA 200.8	11/04/22	11/4/22 14:42	DMW	

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Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1C	Location Description:	221022-14-WC
Date/Time Collected:	10/22/2022 00:19 - 10/22/2022 05:09		
Lab Number:	AC00258-04	Sample Collector:	S.K
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Wet Chemistry										
Ammonia, as N	B224155	1.25	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/29/22	10/29/22 13:08	GKH	
BOD5	B224082	225	mg/L	2.00	2.00	SM 5210 B-2011	10/23/22	10/28/22 10:59	GKH	
COD	B224081	416	mg/L	13.0	13.0	HH 8000, Standard Method 5220 D	10/23/22	10/23/22 12:33	ASE	
Nitrate-Nitrite, as N	B224164	0.927	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	10/31/22	10/31/22 11:19	ALN	
TKN	B224112	5.26	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	10/26/22	10/27/22 9:15	ALN	
Total Dissolved Solids	B224111	244	mg/L	25.0	25.0	SM 2540 C-2011	10/25/22	10/27/22 13:48	ALG	
Total Suspended Solids	B224074	125	mg/L	0.900	0.900	SM 2540 D-2011	10/22/22	10/22/22 14:57	MER	
Turbidity	B224077	62.5	NTU	0.6	0.3	EPA 180.1, Rev. 2.0 (1993)	10/22/22	10/22/22 14:59	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B224083	0.712	mg/L	4.00E-3	2.00E-3	EPA 365.1, Rev. 2.0 (1993)	10/23/22	10/23/22 13:20	BAK	D
Total Metals										
Mercury	B224114	0.0147	ug/L	0.0100	0.0100	EPA 245.2	10/26/22	10/27/22 8:43	SAS	
Arsenic	B224220	5.1	ug/L	0.040	0.040	EPA 200.8	11/06/22	11/9/22 13:25	DMW	
Cadmium	B224220	0.19	ug/L	0.025	0.025	EPA 200.8	11/06/22	11/9/22 13:25	DMW	
Calcium	B224087	16.9	mg/L	0.0460	0.0460	EPA 200.7	10/24/22	10/31/22 15:30	EDM	
Lead	B224220	8.2	ug/L	0.050	0.050	EPA 200.8	11/06/22	11/9/22 13:25	DMW	
Magnesium	B224087	3370	ug/L	50.0	50.0	EPA 200.7	10/24/22	10/31/22 15:30	EDM	
Phosphorus as P	B224087	1.07	mg/L	6.00E-3	6.00E-3	EPA 200.7	10/24/22	10/31/22 15:30	EDM	
Hardness	B224087	55.9	mg/L	0.115	0.115	EPA 200.7	10/24/22	10/31/22 15:30	EDM	
Dissolved Metals										
Cadmium	B224219	<0.0250	ug/L	0.025	0.025	EPA 200.8	11/04/22	11/4/22 14:45	DMW	U
Copper	B224219	10.1	ug/L	0.15	0.15	EPA 200.8	11/04/22	11/4/22 14:45	DMW	
Lead	B224219	0.14	ug/L	0.050	0.050	EPA 200.8	11/04/22	11/4/22 14:45	DMW	
Zinc	B224219	61.6	ug/L	0.78	0.78	EPA 200.8	11/04/22	11/4/22 14:45	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.

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Boise City Public Works
Water Quality Laboratory
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Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1C	Location Description:	221022-206-WC
Date/Time Collected:	10/22/2022 01:31 - 10/22/2022 05:21		
Lab Number:	AC00258-05	Sample Collector:	S.K
Sample Type:	Composite	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Wet Chemistry										
Ammonia, as N	B224155	1.50	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	10/29/22	10/29/22 13:21	GKH	
BOD5	B224082	680	mg/L	8.00	2.00	SM 5210 B-2011	10/23/22	10/28/22 10:55	GKH	D
COD	B224081	1200	mg/L	13.0	13.0	HH 8000, Standard Method 5220 D	10/23/22	10/23/22 12:33	ASE	
Nitrate-Nitrite, as N	B224164	0.890	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	10/31/22	10/31/22 11:21	ALN	
TKN	B224214	9.29	mg/L	1.00	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	11/03/22	11/4/22 10:15	JAL	D
Total Dissolved Solids	B224111	542	mg/L	25.0	25.0	SM 2540 C-2011	10/25/22	10/27/22 13:48	ALG	
Total Suspended Solids	B224074	301	mg/L	0.900	0.900	SM 2540 D-2011	10/22/22	10/22/22 14:56	MER	
Turbidity	B224077	106	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	10/22/22	10/22/22 15:07	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B224083	1.96	mg/L	0.0100	2.00E-3	EPA 365.1, Rev. 2.0 (1993)	10/23/22	10/23/22 13:23	BAK	D
Total Metals										
Mercury	B224114	0.0309	ug/L	0.0100	0.0100	EPA 245.2	10/26/22	10/27/22 8:47	SAS	
Arsenic	B224220	4.5	ug/L	0.040	0.040	EPA 200.8	11/06/22	11/9/22 13:28	DMW	
Cadmium	B224220	0.23	ug/L	0.025	0.025	EPA 200.8	11/06/22	11/9/22 13:28	DMW	
Calcium	B224087	14.3	mg/L	0.0460	0.0460	EPA 200.7	10/24/22	10/31/22 15:37	EDM	
Lead	B224220	15.0	ug/L	0.050	0.050	EPA 200.8	11/06/22	11/9/22 13:28	DMW	
Magnesium	B224087	3790	ug/L	50.0	50.0	EPA 200.7	10/24/22	10/31/22 15:37	EDM	
Phosphorus as P	B224087	2.84	mg/L	6.00E-3	6.00E-3	EPA 200.7	10/24/22	10/31/22 15:37	EDM	
Hardness	B224087	51.3	mg/L	0.115	0.115	EPA 200.7	10/24/22	10/31/22 15:37	EDM	
Dissolved Metals										
Cadmium	B224219	<0.0250	ug/L	0.025	0.025	EPA 200.8	11/04/22	11/4/22 14:47	DMW	U
Copper	B224219	13.6	ug/L	0.15	0.15	EPA 200.8	11/04/22	11/4/22 14:47	DMW	
Lead	B224219	0.77	ug/L	0.050	0.050	EPA 200.8	11/04/22	11/4/22 14:47	DMW	
Zinc	B224219	119	ug/L	0.78	0.78	EPA 200.8	11/04/22	11/4/22 14:47	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.

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B224074									
Blank (B224074-BLK1)									
Total Suspended Solids	<0.9	mg/L					10/22/2022	MER	U
LCS (B224074-BS1)									
Total Suspended Solids			102	90-110			10/22/2022	MER	
Duplicate (B224074-DUP1)	Source ID: BB02469-01								
Total Suspended Solids					6.03	20	10/22/2022	MER	
Batch: B224077									
Blank (B224077-BLK1)									
Turbidity	<0.3	NTU					10/22/2022	KMR	U
LCS (B224077-BS2)									
Turbidity			109	90-110			10/22/2022	KMR	
Duplicate (B224077-DUP1)	Source ID: AC00258-01								
Turbidity					2.45	25	10/22/2022	KMR	D
Batch: B224081									
Blank (B224081-BLK1)									
COD	<13	mg/L					10/23/2022	ASE	U
LCS (B224081-BS1)									
COD			99.0	90-110			10/23/2022	ASE	
Duplicate (B224081-DUP1)	Source ID: AC00258-03								
COD					2.03	10	10/23/2022	ASE	
Batch: B224082									
Blank (B224082-BLK1)									
BOD5	<2	mg/L					10/28/2022	GKH	Seed-02, U
LCS (B224082-BS1)									
BOD5			102	84.6-115.4			10/28/2022	GKH	
LCS (B224082-BS2)									
BOD5			107	84.6-115.4			10/28/2022	GKH	
Duplicate (B224082-DUP1)	Source ID: BB02472-01								
BOD5					0.880	30	10/28/2022	GKH	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B224111									
Blank (B224111-BLK1)									
Total Dissolved Solids	<25	mg/L					10/27/2022	ALG	U
LCS (B224111-BS1)									
Total Dissolved Solids			99.5	90-110			10/27/2022	ALG	
Duplicate (B224111-DUP1) Source ID: AC00258-01									
Total Dissolved Solids					0.00	10	10/27/2022	ALG	
Batch: B224112									
Blank (B224112-BLK1)									
TKN	<0.1	mg/L					10/27/2022	ALN	U
LCS (B224112-BS1)									
TKN			98.4	80-120			10/27/2022	ALN	
Duplicate (B224112-DUP1) Source ID: AC00258-01									
TKN					1.13	20	10/27/2022	ALN	
Duplicate (B224112-DUP2) Source ID: BB02464-01									
TKN					1.06	20	10/27/2022	ALN	D
Matrix Spike (B224112-MS1) Source ID: AC00258-01									
TKN			115	80-120			10/27/2022	ALN	
Matrix Spike (B224112-MS2) Source ID: BB02464-01									
TKN			104	80-120			10/27/2022	ALN	D
Matrix Spike Dup (B224112-MSD1) Source ID: AC00258-01									
TKN			107	80-120	3.87	20	10/27/2022	ALN	
Matrix Spike Dup (B224112-MSD2) Source ID: BB02464-01									
TKN			111	80-120	2.00	20	10/27/2022	ALN	D
Batch: B224155									
Blank (B224155-BLK1)									
Ammonia, as N	<0.035	mg/L					10/29/2022	GKH	U
LCS (B224155-BS1)									
Ammonia, as N			99.4	90-110			10/29/2022	GKH	
Duplicate (B224155-DUP1) Source ID: BB02456-01									
Ammonia, as N					8.42	10	10/29/2022	GKH	
Duplicate (B224155-DUP2) Source ID: BB02463-01									
Ammonia, as N					1.55	10	10/29/2022	GKH	D
Matrix Spike (B224155-MS1) Source ID: BB02456-01									
Ammonia, as N			97.2	80-120			10/29/2022	GKH	
Matrix Spike (B224155-MS2) Source ID: BB02463-01									
Ammonia, as N			95.1	80-120			10/29/2022	GKH	D
Matrix Spike Dup (B224155-MSD1) Source ID: BB02456-01									
Ammonia, as N			96.1	80-120	1.03	10	10/29/2022	GKH	
Matrix Spike Dup (B224155-MSD2) Source ID: BB02463-01									
Ammonia, as N			96.5	80-120	1.03	10	10/29/2022	GKH	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B224164									
Blank (B224164-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					10/31/2022	ALN	U
Blank (B224164-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					10/31/2022	ALN	U
LCS (B224164-BS1)									
Nitrate-Nitrite, as N			96.7	90-110			10/31/2022	ALN	
LCS (B224164-BS2)									
Nitrate-Nitrite, as N			97.8	90-110			10/31/2022	ALN	
Duplicate (B224164-DUP1) Source ID: AC00258-01									
Nitrate-Nitrite, as N					0.752	10	10/31/2022	ALN	
Duplicate (B224164-DUP3) Source ID: WB02153-06									
Nitrate-Nitrite, as N					8.54	10	10/31/2022	ALN	
Duplicate (B224164-DUP4) Source ID: BB02456-01RE1									
Nitrate-Nitrite, as N					0.175	10	10/31/2022	ALN	D
Matrix Spike (B224164-MS1) Source ID: AC00258-01									
Nitrate-Nitrite, as N			96.1	90-110			10/31/2022	ALN	
Matrix Spike (B224164-MS3) Source ID: WB02153-06									
Nitrate-Nitrite, as N			97.0	90-110			10/31/2022	ALN	
Matrix Spike (B224164-MS4) Source ID: BB02456-01RE1									
Nitrate-Nitrite, as N			101	90-110			10/31/2022	ALN	D
Matrix Spike (B224164-MS5) Source ID: LS01356-01									
Nitrate-Nitrite, as N			97.5	90-110			10/31/2022	ALN	
Matrix Spike Dup (B224164-MSD1) Source ID: AC00258-01									
Nitrate-Nitrite, as N			96.3	90-110	0.205	10	10/31/2022	ALN	
Matrix Spike Dup (B224164-MSD3) Source ID: WB02153-06									
Nitrate-Nitrite, as N			96.9	90-110	0.0981	10	10/31/2022	ALN	
Matrix Spike Dup (B224164-MSD4) Source ID: BB02456-01RE1									
Nitrate-Nitrite, as N			102	90-110	0.287	10	10/31/2022	ALN	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B224214									
Blank (B224214-BLK1)									
TKN	<0.1	mg/L					11/04/2022	JAL	U
Blank (B224214-BLK2)									
TKN	<0.1	mg/L					11/04/2022	JAL	U
LCS (B224214-BS1)									
TKN			99.7	80-120			11/04/2022	JAL	
LCS (B224214-BS2)									
TKN			104	80-120			11/04/2022	JAL	
Duplicate (B224214-DUP1) Source ID: BB02489-01									
TKN					0.822	20	11/04/2022	JAL	D
Duplicate (B224214-DUP2) Source ID: BB02494-02									
TKN					8.92	20	11/04/2022	JAL	D
Duplicate (B224214-DUP3) Source ID: LS01358-02									
TKN					0.144	20	11/04/2022	JAL	D
Matrix Spike (B224214-MS1) Source ID: BB02489-01									
TKN			113	80-120			11/04/2022	JAL	D
Matrix Spike (B224214-MS2) Source ID: BB02494-02									
TKN			108	80-120			11/04/2022	JAL	D
Matrix Spike (B224214-MS3) Source ID: LS01358-02									
TKN			111	80-120			11/04/2022	JAL	D
Matrix Spike Dup (B224214-MSD1) Source ID: BB02489-01									
TKN			105	80-120	2.25	20	11/04/2022	JAL	D
Matrix Spike Dup (B224214-MSD2) Source ID: BB02494-02									
TKN			113	80-120	1.72	20	11/04/2022	JAL	D
Matrix Spike Dup (B224214-MSD3) Source ID: LS01358-02									
TKN			108	80-120	1.08	20	11/04/2022	JAL	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Dissolved Wet Chemistry									
Batch: B224083									
Blank (B224083-BLK1)									
Orthophosphate, as P	<0.002	mg/L					10/23/2022	BAK	U
LCS (B224083-BS1)									
Orthophosphate, as P			96.3	90-110			10/23/2022	BAK	
Duplicate (B224083-DUP1) Source ID: AC00258-03									
Orthophosphate, as P					0.640	10	10/23/2022	BAK	
Matrix Spike (B224083-MS1) Source ID: AC00258-03									
Orthophosphate, as P			106	90-110			10/23/2022	BAK	
Matrix Spike Dup (B224083-MSD1) Source ID: AC00258-03									
Orthophosphate, as P			108	90-110	0.411	10	10/23/2022	BAK	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B224087									
Blank (B224087-BLK1)									
Calcium	<0.046	mg/L					10/31/2022	EDM	U
Magnesium	<50	ug/L					10/31/2022	EDM	U
Phosphorus as P	<0.006	mg/L					10/31/2022	EDM	U
LCS (B224087-BS1)									
Calcium			97.0	85-115			10/31/2022	EDM	
Magnesium			97.9	85-115			10/31/2022	EDM	
Phosphorus as P			102	85-115			10/31/2022	EDM	
Duplicate (B224087-DUP1) Source ID: AC00259-01									
Calcium					1.80	20	10/31/2022	EDM	
Magnesium					2.03	20	10/31/2022	EDM	
Phosphorus as P					1.06	20	10/31/2022	EDM	
Matrix Spike (B224087-MS1) Source ID: AC00259-01									
Calcium			95.2	70-130			10/31/2022	EDM	
Magnesium			96.2	70-130			10/31/2022	EDM	
Phosphorus as P			103	70-130			10/31/2022	EDM	
Matrix Spike Dup (B224087-MSD1) Source ID: AC00259-01									
Calcium			94.4	70-130	0.556	20	10/31/2022	EDM	
Magnesium			96.3	70-130	0.0244	20	10/31/2022	EDM	
Phosphorus as P			103	70-130	0.327	20	10/31/2022	EDM	
Batch: B224114									
Blank (B224114-BLK1)									
Mercury	<0.01	ug/L					10/27/2022	SAS	U
LCS (B224114-BS1)									
Mercury			99.5	85-115			10/27/2022	SAS	
Duplicate (B224114-DUP1) Source ID: AC00258-01									
Mercury					19.1	20	10/27/2022	SAS	
Matrix Spike (B224114-MS1) Source ID: AC00258-01									
Mercury			101	70-130			10/27/2022	SAS	
Matrix Spike Dup (B224114-MSD1) Source ID: AC00258-01									
Mercury			101	70-130	0.194	20	10/27/2022	SAS	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B224220									
Blank (B224220-BLK1)									
Arsenic	<0.040	ug/L					11/09/2022	DMW	U
Cadmium	<0.025	ug/L					11/09/2022	DMW	U
Lead	<0.050	ug/L					11/09/2022	DMW	U
LCS (B224220-BS1)									
Arsenic			99.5	85-115			11/09/2022	DMW	
Cadmium			100	85-115			11/09/2022	DMW	
Lead			103	85-115			11/09/2022	DMW	
Duplicate (B224220-DUP1) Source ID: AC00258-01									
Arsenic					7.39	20	11/09/2022	DMW	
Cadmium					4.84	20	11/09/2022	DMW	
Lead					6.29	20	11/09/2022	DMW	
Matrix Spike (B224220-MS1) Source ID: AC00258-01									
Arsenic			99.1	70-130			11/09/2022	DMW	
Cadmium			97.8	70-130			11/09/2022	DMW	
Lead			98.9	70-130			11/09/2022	DMW	
Matrix Spike Dup (B224220-MSD1) Source ID: AC00258-01									
Arsenic			103	70-130	3.14	20	11/09/2022	DMW	
Cadmium			102	70-130	4.15	20	11/09/2022	DMW	
Lead			103	70-130	2.95	20	11/09/2022	DMW	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Date Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B224219									
Blank (B224219-BLK1)									
Cadmium	<0.025	ug/L					11/04/2022	DMW	U
Copper	<0.15	ug/L					11/04/2022	DMW	U
Lead	<0.050	ug/L					11/04/2022	DMW	U
Zinc	<0.78	ug/L					11/04/2022	DMW	U
LCS (B224219-BS1)									
Cadmium			98.7	85-115			11/04/2022	DMW	
Copper			99.9	85-115			11/04/2022	DMW	
Lead			99.4	85-115			11/04/2022	DMW	
Zinc			107	85-115			11/04/2022	DMW	
Duplicate (B224219-DUP1) Source ID: AC00258-01									
Cadmium					NR	10	11/04/2022	DMW	U
Copper					0.778	10	11/04/2022	DMW	
Lead					1.47	10	11/04/2022	DMW	
Zinc					0.677	10	11/04/2022	DMW	
Matrix Spike (B224219-MS1) Source ID: AC00258-01									
Cadmium			97.3	70-130			11/04/2022	DMW	
Copper			97.0	70-130			11/04/2022	DMW	
Lead			97.1	70-130			11/04/2022	DMW	
Zinc			97.5	70-130			11/04/2022	DMW	
Matrix Spike Dup (B224219-MSD1) Source ID: AC00258-01									
Cadmium			94.6	70-130	2.83	10	11/04/2022	DMW	
Copper			93.3	70-130	2.05	10	11/04/2022	DMW	
Lead			93.9	70-130	3.26	10	11/04/2022	DMW	
Zinc			90.2	70-130	1.83	10	11/04/2022	DMW	

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: 11/17/2022 14:09

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
Seed-02	The seed depletion is less than that recommended by the method.
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

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: Tammy Lightle
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6255
Fax (208) 387–6391

Purchase Order: 63061761
Project: Stormwater-PI
Sampler(s): Shannon Krentz
Tammy Lightle

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	10/22/22	10/22/22	0055	0523	221022-03-WC	SK	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	1
-02			0119	0454	221022-11-WC	SK	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	1
-03			0046	0504	221022-12-WC	SK	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	1
-04			0019	0509	221022-14-WC	SK	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	1
-05	↓	↓	0131	0521	221022-206-WC	SK	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Tam Lightle	10.22.22 / 1052	MER Magdalyn 10/22/22 1054	ACOC 258

ACOC 258

Storm Event Report for January 9, 2023

Technical Memorandum

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

Phone: 208-389-7700

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2023

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for January 9, 2023

Date: March 27, 2023

To: Tammy Lightle

Cc: Monica Lowe

From: Shannon Kronz, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer
Shannon Kronz, 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 September 30, 2022. 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) 2023 (October 1, 2022, through September 30, 2023). The following storm event report summarizes stormwater sampling results from the January 9, 2023, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2023 Phase I Stormwater Outfall Monitoring.

Table 2-1. WY 2023 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 22, 2022	G[1], C[2]	G, C[3]	G, C[2]	G, C[2]	G, C[2]
January 9, 2023	G[4]	G[4]	G[4]	G[4]	G[4]
Collected:		1G	1G	1G	1G

Notes:

C = composite sample

G = grab sample

[1] E. coli *sample qualified due to exceeded holding time.*

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

[3] *Composite samples rejected due to lack of representativeness (<50%).*

[4] *Grab sample rejected due to insufficient rainfall (<0.08 in).*

After the January 9, 2023, storm event, ACHD needs to collect two grab samples from Whitewater, Main, Americana, and AS_6 and three grab samples from Lucky for WY 2023. In addition, three composite samples need to be collected from all Phase I monitoring sites.

Section 3: Storm Event Summary

The January 9, 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 January 9, 2023, is included in Attachment A for reference.

Monday, January 09, 2023 (Set up)

- On the morning of January 09, 2023, the National Weather Service issued a forecast for widespread rain in the Boise area, starting at 0900, and continuing into 1800. Rain shadowing was expected. The chance of precipitation was 100 percent, with 0.12 inch of precipitation forecasted.
- Setup was accomplished on January 9, 2023. An expected precipitation depth of 0.11 inch was used to set trigger volumes at monitoring stations.

Monday, January 09, 2023 (Storm Event Collection)

- Light rain started at approximately 1100 and continued until 1400.
- Precipitation totals ranged between 0.05 and 0.07 inch at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrographs for each 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 9, 2023, 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 the AS_6 flowmeter. Set up and sampling information are included in Table 1. The field forms completed during set up/shutdown and sampling can be found 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 January 9, 2023, at 1130. Grab samples were submitted to the West Boise Water Quality Lab at 1457 on January 09, 2023. Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are located in Attachment D.

Composite Samples

Composite samples were collected all monitoring stations, but due to insufficient rainfall (<0.08 in), the samples were not submitted to the City of Boise Water Quality Laboratory.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the January 9, 2023, 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 3.

Table 4-1. Quality Control Samples

Sample ID	Sample Type	Parent Sample	Conclusions
230109-12-001	Field blank	Main grab	No E. coli detection was reported in the field blank.
230109-12-101	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. All program rain gauges received less than 0.08 inch of rain during the January 9 event, so the grab samples were rejected for insufficient rainfall. All other acceptance and performance criteria for non-analytical data were met for this storm event.

Section 5: Notes and Recommendations

AS_6

Because of the small precipitation amount, the AS_6 subwatershed produced limited stormwater runoff. For much of the duration of the storm, the water level in the pipe was at or below 1.5", at which the area velocity sensor is unable to measure consistent velocity readings. This resulted in a discontinuous hydrograph for the storm event.

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?	NO	NO	NO	NO	NO
Trigger volume	2895 gal	800 ft^3	3411 gal	2960 ft^3	221 ft^3
Velocity cutoff (fps)	-	-	-	-	0.02
Sampler enable condition (in)	level > 3.31	level > 1.4	level > 2.25	level > 7.0	-
Runoff start time	11:46	13:29	11:47	11:23	13:37
Grab sample collection time	13:18	14:21	12:57	13:15	13:52
Composite sample stop time	-	-	-	-	-
Runoff stop time	16:19	17:59	15:58	16:30	15:42
Volume of discharge sampled (ft^3)	-	-	-	-	-
Total runoff volume (ft^3)	1,908	1,835	2,914	45,298	170
Percent of storm flow sampled (%)	-	-	-	-	-
Composite sample duration (hrs)	-	-	-	-	-
Storm precipitation (in)	0.07	0.05	0.05	0.05/0.07	0.05/0.07
Referenced rain gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	-	-	-	-	-
Number of composite bottles filled	-	-	-	-	-
Composite sample volume (Approx.; ml)	-	-	-	-	-

Notes:

– = No data

Table 2. Field and Analytical Data Summary							
Monitoring Station	Sample Date	Sample ID Grab	Field Parameters				
			Dissolved Oxygen	pH	Conductivity	Temperature	E. coli
			mg/L	S.U.	uS/cm	C	mpn/100 mL
Lucky	1/9/2023	230109-03-WG	9.04 [2R]	6.90 [2R]	119.14 [2R]	11.77 [2R]	435.2 [2R]
Whitewater	1/9/2023	230109-11-WG	8.54 [2R]	6.86 [2R]	147.42 [2R]	10.04 [2R]	235.9 [2R]
Main	1/9/2023	230109-12-WG	11.2 [2R]	6.56 [2R]	231.0 [2R]	6.14 [2R]	172.2 [2R]
Americana	1/9/2023	230109-14-WG	9.98 [2R]	6.60 [2R]	517.1 [2R]	9.51 [2R]	2850.0 [2R]
AS_6	1/9/2023	230109-206-WG	7.66 [2R]	6.89 [2R]	200.8 [2R]	6.36 [2R]	157.6 [2R]

Notes:

– = No data.

[2R] Data rejected due to insufficient rainfall (<0.08 inch)

Table 3. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli
				mpn/100 mL
1/9/2023	230109-12-WG	230109-12-001	Field Blank	<1.0
1/9/2023	230109-12-WG	230109-12-101	Field Duplicate	69.7
Calculated parent/duplicate RPD				13%
Allowable RPD				40%

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 1/9/2023	Time: 7:08 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?)		Yes

Past 72 hr Precip	0.01”
Date and time of expected event	1/9 9:00a – 6p
Expected amount of precipitation	0.12
Percent chance of precipitation	100%
Percent chance of >0.10” over 12 hours	68%

NWS Update

I talked with Spencer from NWS this morning. Their predictions have a 70% chance of getting >0.10”, and the official forecasted amount is 0.20”. The valley is currently being rainshadowed, but this is expected to be overcome between 9a-11a at which time we should start to see some rain. The bulk of the storm is from 11a-3p and all precip is expected to taper off by 6p.

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 SW Garden City ID
Issued by: National Weather Service Boise, ID
Last Update: 3:55 am MST Jan 9, 2023

Today: Rain. High near 45. Southeast wind 8 to 18 mph. Chance of precipitation is 100%. New precipitation amounts between a tenth and quarter of an inch possible.
Tonight: A 30 percent chance of rain before 11pm. Mostly cloudy, with a low around 33. Southeast wind 5 to 7 mph becoming calm in the evening.
Tuesday: A 40 percent chance of rain after 11am. Mostly cloudy, with a high near 44. Southeast wind 5 to 8 mph.
Tuesday Night: A 40 percent chance of rain, mainly before 11pm. Mostly cloudy, with a low around 34. South wind around 5 mph becoming calm in the evening.
Wednesday: Partly sunny, with a high near 45. Calm wind becoming south southeast around 6 mph in the afternoon.
Wednesday Night: A slight chance of rain before 11pm, then a chance of rain and snow. Mostly cloudy, with a low around 36. Chance of precipitation is 30%. Little or no snow accumulation expected.
Thursday: A 20 percent chance of showers before 11am. Mostly cloudy, with a high near 47.

Thursday Night: Mostly cloudy, with a low around 34.
Friday: Mostly cloudy, with a high near 46.
Friday Night: Mostly cloudy, with a low around 36.
Saturday: A 20 percent chance of showers. Mostly cloudy, with a high near 47.
Saturday Night: A 20 percent chance of showers. Mostly cloudy, with a low around 34.
Sunday: A 30 percent chance of showers. Mostly cloudy, with a high near 45.

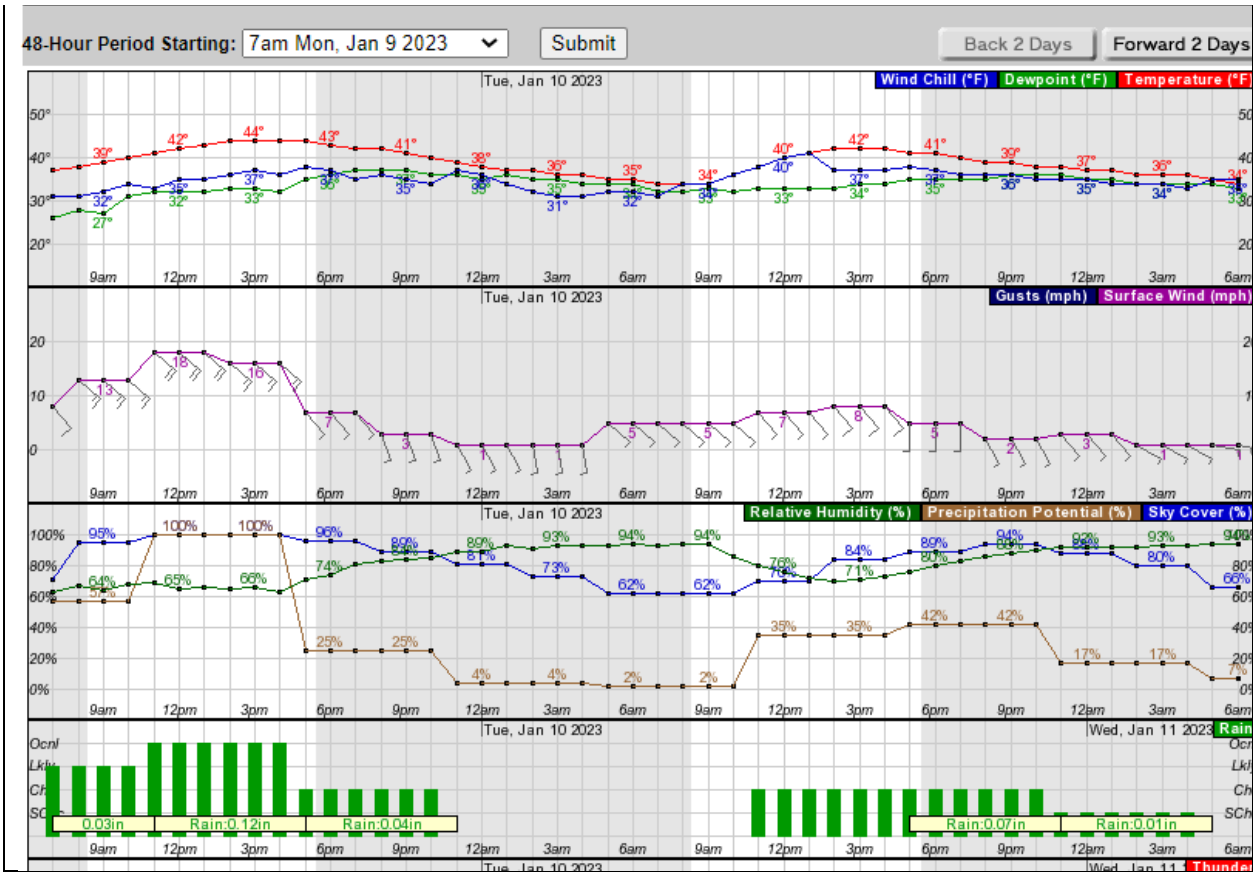
Forecast Discussion

Area Forecast Discussion
National Weather Service Boise ID
316 AM MST Mon Jan 9 2023

.SHORT TERM...Today through Wednesday night...Next upper level trough moving inland across California this morning. This system is associated with a strong atmospheric river that should reach southern Idaho this evening. A well defined warm front will reach Southeast Oregon around 12z and into Southwest Idaho by 15z ushering in the widespread precipitation. Breezy southeasterly winds in the valley could limit the onset and precipitation amounts but do expect close to a quarter of inch of rain today. The heaviest precipitation is expected across the Boise Mountains and Camas Prairie where the greatest moisture aloft and orographic lift meet this afternoon and evening. With snow levels around 4500 feet makes an ideal setup for heavy snow in the Boise Mountains and Camas Prairie. Will also see breezy easterly winds which could create blowing and drifting snow along with low visibilities for on Highway 20 and 21. Precipitation will end across Southeast Oregon by 00z tonight but continue across much of Southwest Idaho into Tuesday morning. There will be a brief break in the precipitation Tuesday afternoon followed but another moist Pacific trough for Tuesday night into Wednesday, Much of the energy and precipitation will track just south of the forecast area but showers are still expected across the southern half of the forecast area. Upper level ridge rebuilds later on Wednesday as the next Pacific Trough approaches the coast. Temperatures will remain about 5-8 degrees above normal through the period.

.LONG TERM...Thursday through Monday...Moist, southwesterly flow continues to dominate the regional pattern, ushering in periodic disturbances and moderating temperatures to around 5 degrees above normal. During their transitions, these disturbance are expected to increase the possibility for unsettled weather including light showers and breezy surface winds. The best chances begin Saturday and continue on through Monday, associated with a stronger, more organized disturbance as it rolls through. Expect snow in the mountains and higher elevations with rain likely throughout the major valleys.

Hourly Forecast


48-Hour Period Starting: 7am Mon, Jan 9 2023
Submit
Back 2 Days
Forward 2 Days
Tue, Jan 10 2023
Wind Chill (°F)
Dewpoint (°F)
Temperature (°F)
Gusts (mph)
Surface Wind (mph)
Relative Humidity (%)
Precipitation Potential (%)
Sky Cover (%)
Wed, Jan 11 2023
0.03in
Rain:0.12in
Rain:0.04in
Rain:0.07in
Rain:0.01in
9am
12pm
3pm
6pm
9pm
12am
3am
6am

Storm Event QA/QC Checklist – Phase I

STORM DATE 230109

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)	0.00	0.00	0.00	0.00	0.00	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.07	0.05	0.05	0.05/0.07	0.05/0.07	> 0.10"			X
3. Sampled amount (% of total run-off)						>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject			
4. Composite sample duration (hours)									
4. Ecoli sample holding time (hours)	3	2	3	3	2	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)						<= 24 hrs: no qualifier > 24 hrs.: reject			

D. Notes

- No composite samples were submitted from any site
- Ecoli samples are rejected due to lack of rainfall.

Reviewed by Tom Litwin **Date** 02.13.23

Approved by Monica Love **Date** 2/14/23

Updated 220718 TL

Storm Runoff Estimates and Trigger Volumes

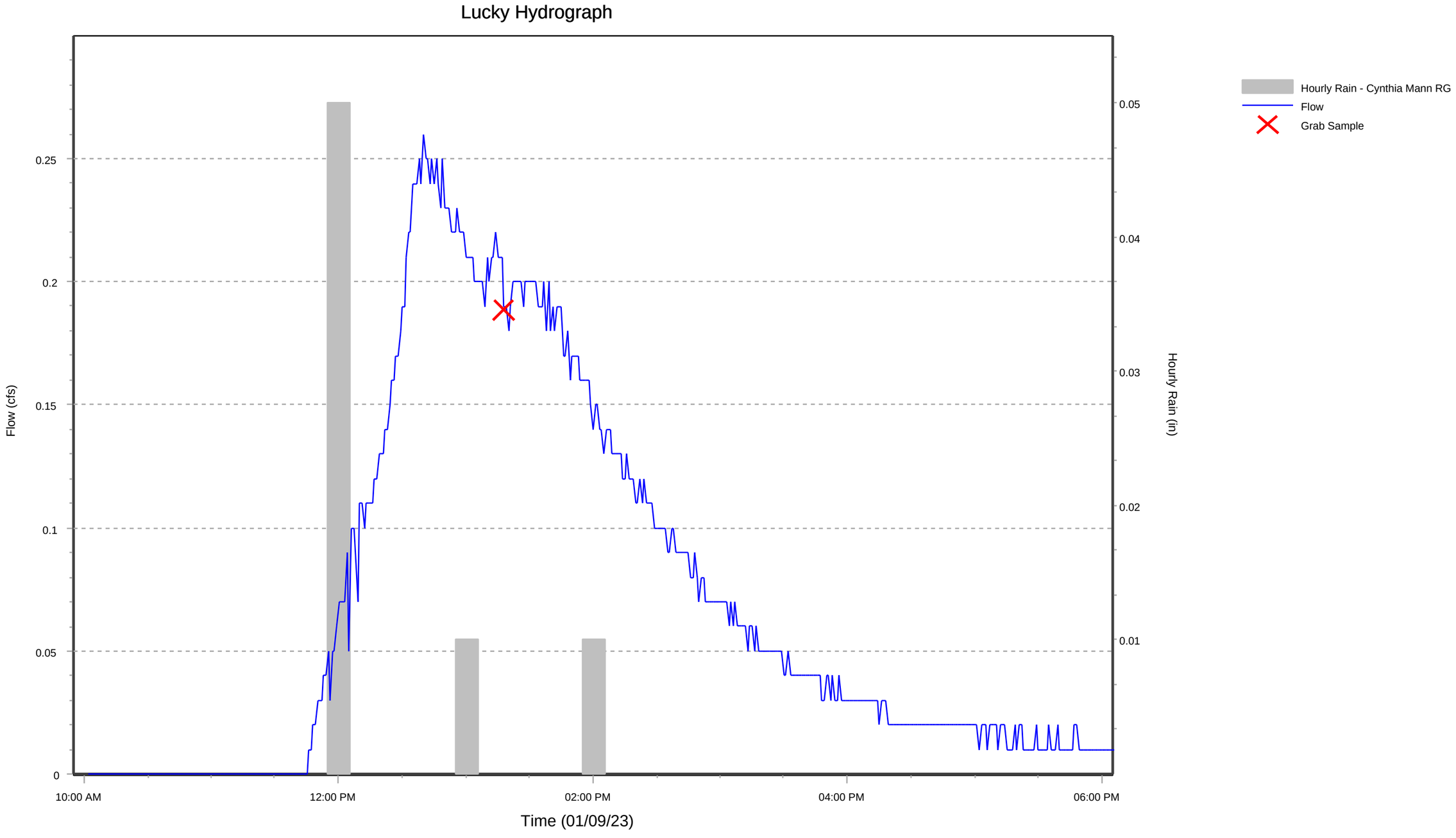
Simple Method

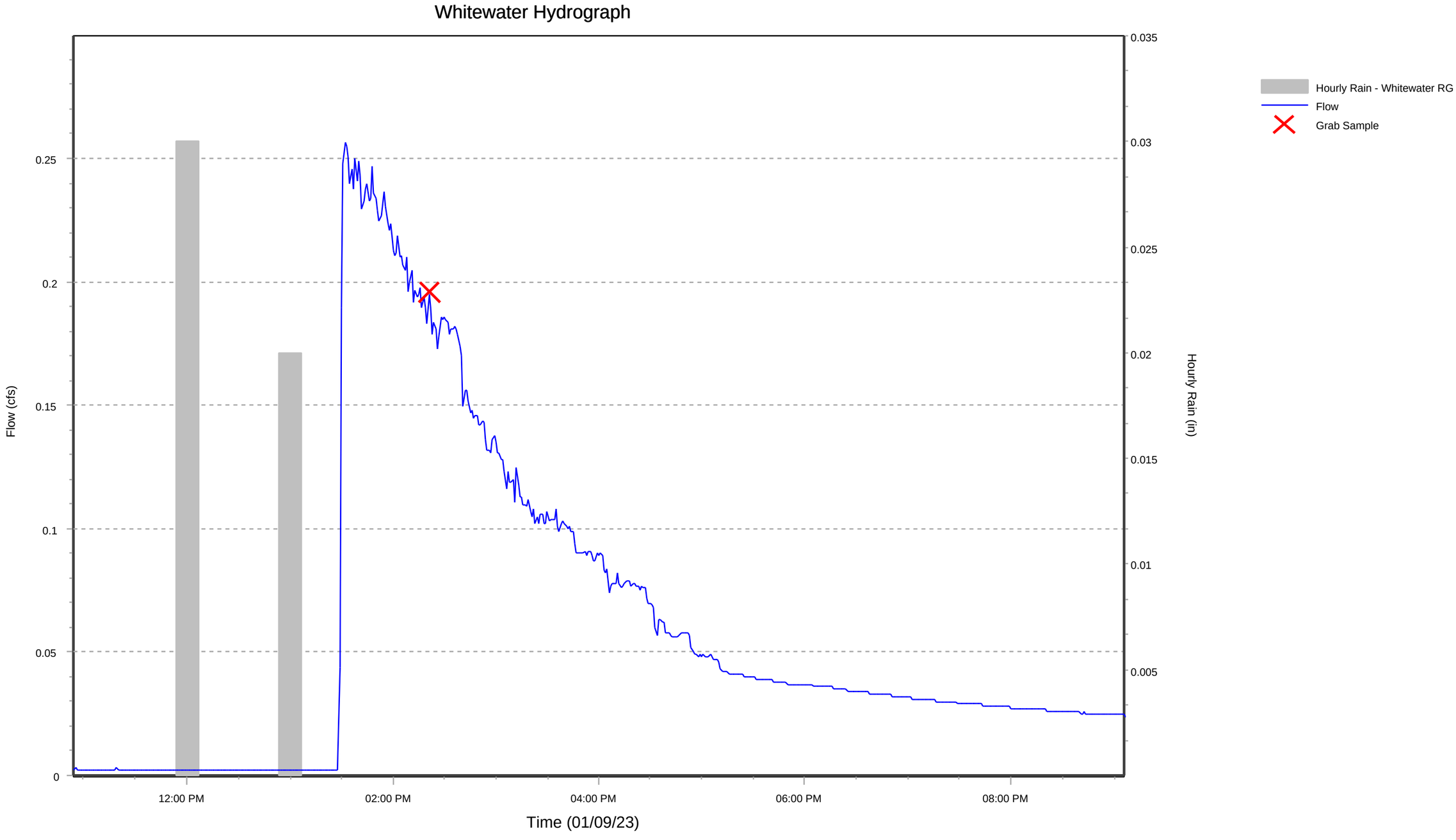
Expected Precipitation Depth =	0.11	in
Square Feet per Acre =	43560	ft^2/ac
Inches per Foot=	12	in/ft
Aliquots per Sample=	17	

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

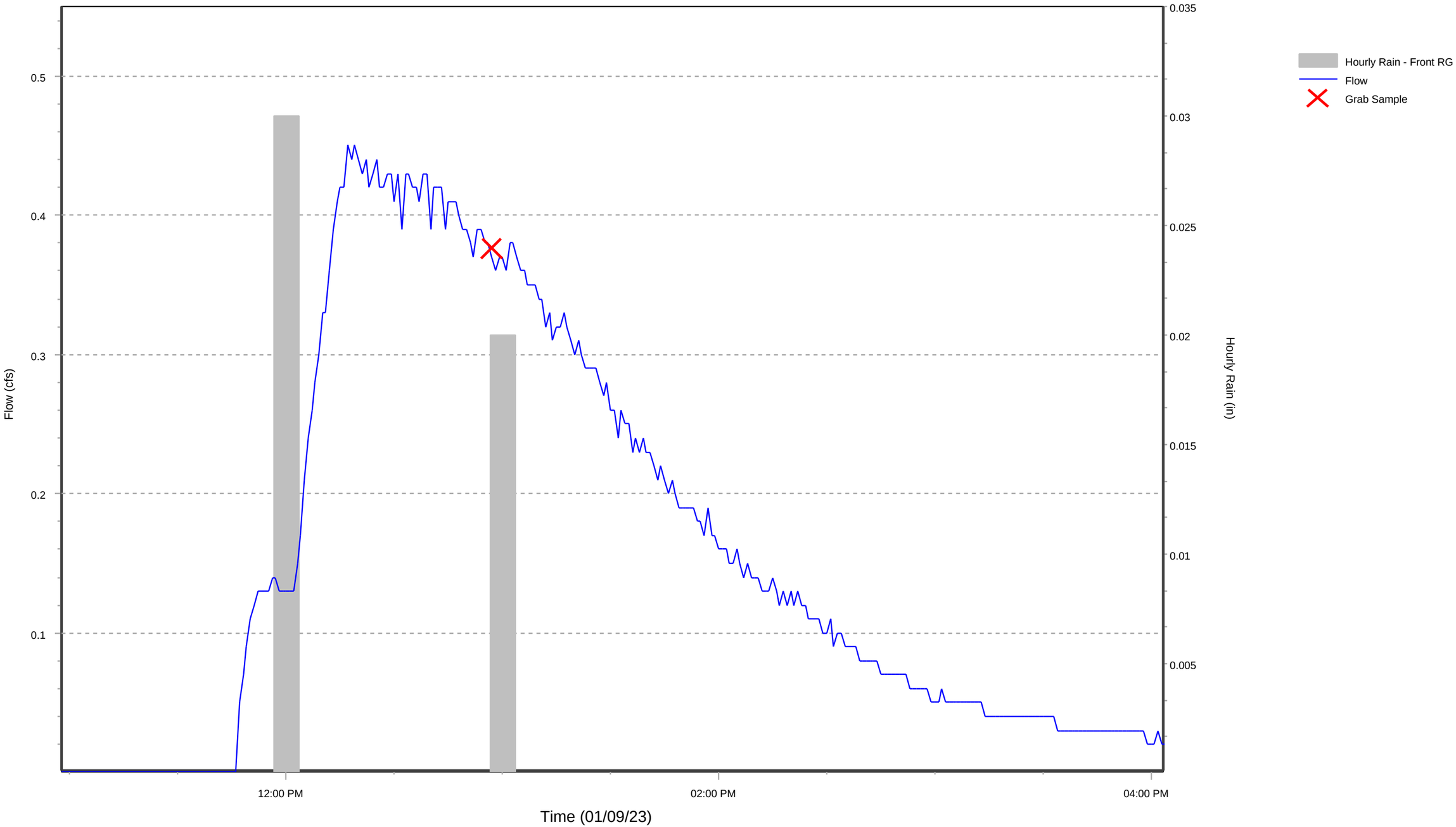
Site	Area (ac)	Using RC Based on Land Use			Using Manually-entered RC				Used in Field
		RC	Expected Vol. (ft^3)	Trigger Vol. (ft^3)	RC	Expected Vol. (ft^3)	Trigger Vol. (ft^3)	Trigger Vol. (Gal)	Trigger Vol.
Lucky #3	105	0.401	16813	**989**	0.157	6582.46	**387**	2895	2895 gal
Whitewater #11	498	0.437	86898	**5112**	0.116	23066.76	**1357**	10150	800 ft^3
Main #12	79	0.437	13785	**811**	0.246	7760.00	**456**	3411	3411 gal
Americana #14	875	0.446	155827	**9166**	0.144	50311.80	**2960**	22141	2960 ft^3
AS_6 #206	204	0.257	20935	**1231**	0.046	3755.18	**221**	1653	221 ft^3

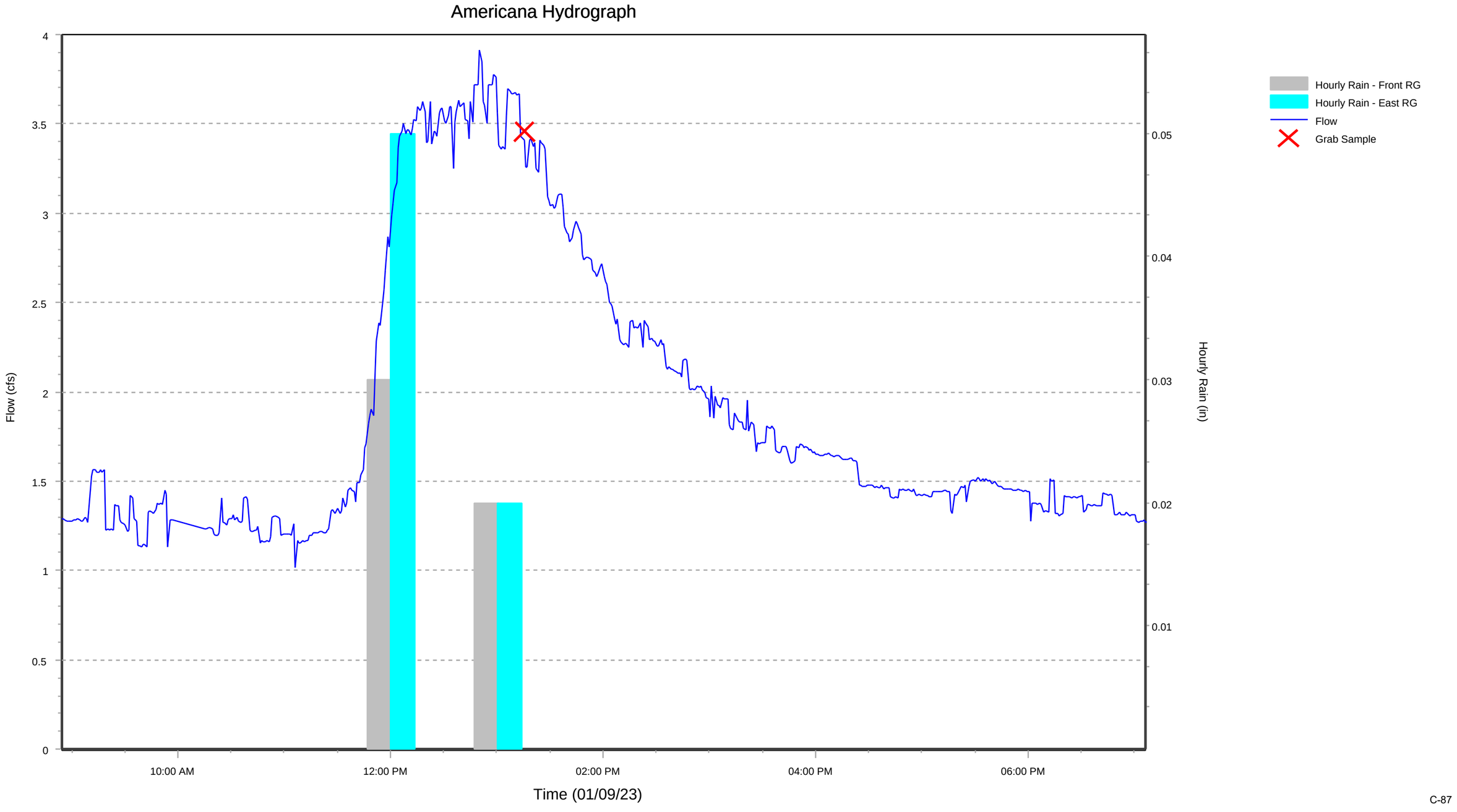
Attachment B: Storm Event Hydrographs

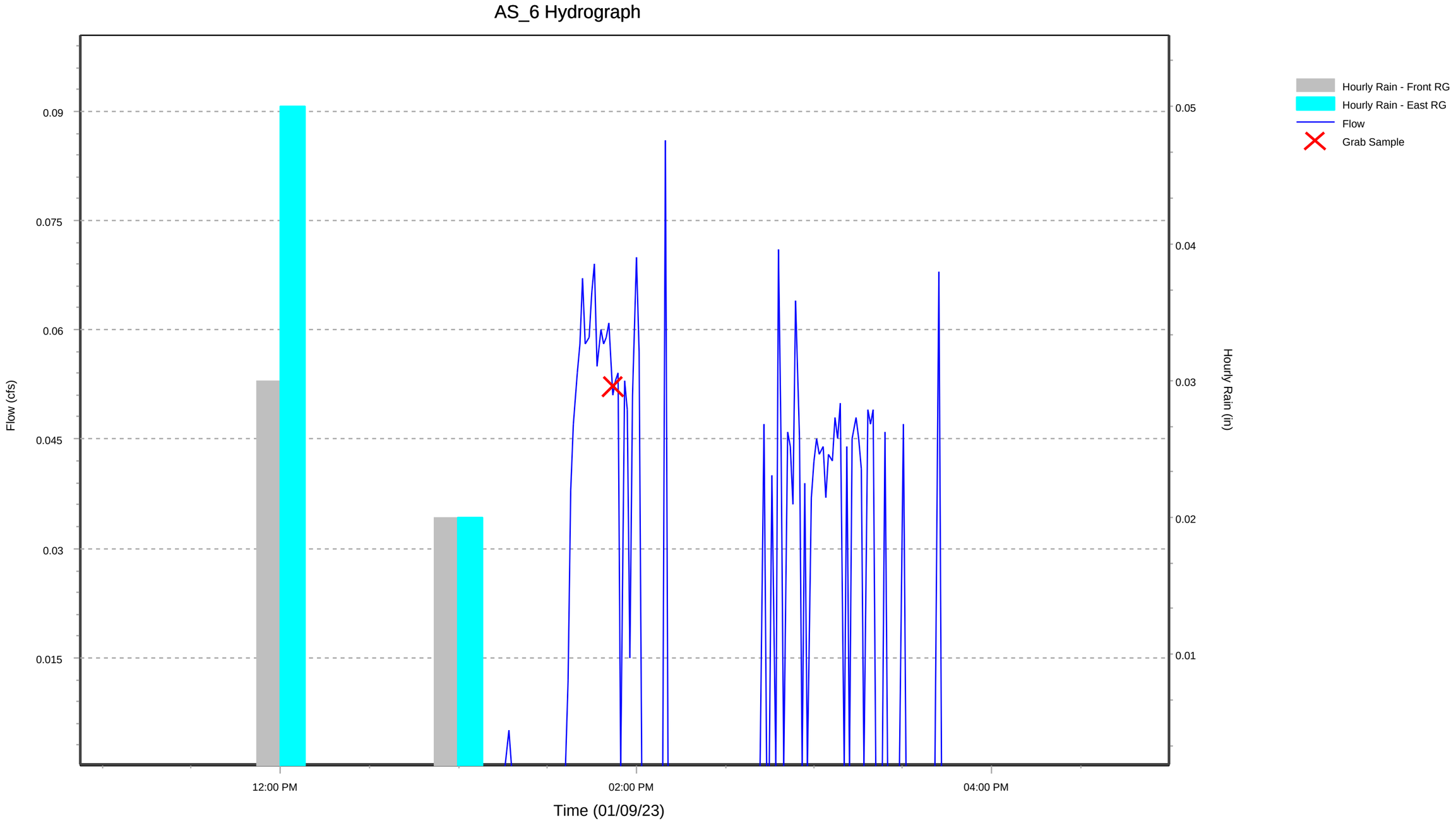

Lucky Hydrograph
Hourly Rain - Cynthia Mann RG
Flow
Grab Sample
Flow (cfs)
Hourly Rain (in)
0
0.05
0.1
0.15
0.2
0.25
0.01
0.02
0.03
0.04
0.05
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
Time (01/09/23)


Whitewater Hydrograph
Hourly Rain - Whitewater RG
Flow
Grab Sample
Flow (cfs)
Hourly Rain (in)
0
0.05
0.1
0.15
0.2
0.25
0.005
0.01
0.015
0.02
0.025
0.03
0.035
12:00 PM
02:00 PM
04:00 PM
06:00 PM
08:00 PM
Time (01/09/23)

Main Hydrograph




Americana Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (01/09/23)
0
0.5
1
1.5
2
2.5
3
3.5
4
0.01
0.02
0.03
0.04
0.05
10:00 AM
12:00 PM
02:00 PM
04:00 PM
06:00 PM
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample


AS_6 Hydrograph
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample
Flow (cfs)
0.09
0.075
0.06
0.045
0.03
0.015
Hourly Rain (in)
0.05
0.04
0.03
0.02
0.01
12:00 PM
02:00 PM
04:00 PM
Time (01/09/23)

Attachment C: Field Forms

Set Up/ Shut Down Form – HACH

STATION: Lucky

SET UP

Personnel: TLL SMK

Date/Time On-Site: 09:37 1/9/23

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0942	2.31	-130.06	-1.67	12.8

Enable Condition or Velocity Cutoff:	3.31in
Deadband:	1in
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: TLL

Date/Time On-Site: 01.10.23 / 1053

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1057	1.61	0	0	—	12.6
Downloaded to:		USB on Keychain			

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** 0

Personnel: TZL **Date/Time On-Site:** 01.10.23 1053

☐ 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	1/9 1255	Success	13		
2	1327		14		
3	1404		15		
4	1513		16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

Not enough rain - sample dumped

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: Lucky

Personnel: ZL, SMK **Date/Time On-Site:** 1257 1/9/23

Flow Meter Current Status						
Time	Level (in)	Flow ~~(cfs)~~ gpm	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1258	3.73	93.37	0.59	12.8	12:55	

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230109-03 -WG	1/9/23	13 18	☑
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	1313	11.77	9.04	6.90	119.14

Sampler Current Status	
First Subsample Date/Time	12:55
Last Subsample Date/Time	
# of Subsamples taken	1

Comments:

Set Up/ Shut Down Form – ISCO

TATION: Whitewater

SET UP

Personnel: TLL, SMK

Date/Time On-Site: 1007 1/9/23

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0812	0.37	0.00	0.11	N/A

Enable Condition:	level > 1.4"
Hysteresis:	1.0"
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 49 0812
- ☒ 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: TLL

Date/Time On-Site: 01.10.23 / 1035

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1035	0.71	0.01	0.20	—
Downloaded to:		—		

On-Site

- ☐ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 1/10 1419
- ☒ 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** Ø

Personnel: TL **Date/Time On-Site:** 01.10.23 / 1035

☐ 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	1/9 1355	Success	13		
2	" 1515	"	14		
3	" 1912	"	15		
4	1/10 0731	No Liquid Detected	16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

Not enough rain - sample dumped

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: TL, SMK **Date/Time On-Site:** 1/9/23 13:57

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
13:57	2.36	0.22	0.71			0.02

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230109-11 -WG	1/9/23	1421	☑
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	1417	10.04	8.54	6.86	147.42

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

Comments:

Set Up/ Shut Down Form – HACH

ſATION: Main

SET UP

Personnel: TLL SMK

Date/Time On-Site: 0835 1 19123

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
08:40	1.25	0	0	12.5

Enable Condition or Velocity Cutoff:	2.25 in
Deadband:	1 in
Trigger Volume:	3411 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: TLL

Date/Time On-Site: 01.10.23 / 1008

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1012	1.28	0	0	—	11.9
Downloaded to:		USB on keychain			

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** Ø

Personnel: TL **Date/Time On-Site:** 01.10.23 / 1008

☐ 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	1/9 1221	Success	13		
2	1239		14		
3	1259		15		
4	1322		16		
5	1355		17		
6	1509		18		
7	1938		19		
8	2133		20		
9	1/10 0144	Rinse Error	21		
10			22		
11			23		
12			24		

Comments:

Not enough rain – sample dumped

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: Main

Personnel: TL, KMC **Date/Time On-Site:** 01.09.23 / 1254

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1255	4.32	169.52	0.87	12.6		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230109-12 -WG	1/9/23	1257	☒
Field Duplicate *E.Coli*	230109-12 -101	↓	1258	☒
Field Blank *E.Coli*	230109-12 -001	↓	1303	☒

*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	1303	6.14	11.2	6.56	231.0

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	2, now 3!

Comments:

Grab samples were a little more clear than usual.
Strong smell of gasoline at MH.

Set Up/ Shut Down Form – ISCO

TATION: Americana

SET UP

Personnel: TLL, SMK

Date/Time On-Site: 0855 1/9/23

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0811	5.57	1.19	1.462	11.79
Enable Condition:	level > ~~6.0~~ 7.0"			
Hysteresis:	~~1.0~~ 1.5"			
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 1/9 0807
- ☒ 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: TLL

Date/Time On-Site: 01.10.23 / 0951

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
Downloaded to:	—			

On-Site

- ☒ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 1/10 1416
- ☒ 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** 6

Personnel: TZL **Date/Time On-Site:** 01.10.23 / 0951

☐ 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	1/9 1154	Success	13	1/9 1522	Success
2	1210		14	1551	
3	1224		15	1621	
4	1238		16	1654	
5	1252		17	1729	
6	1306		18	1802	
7	1320		19	1838	
8	1335		20	1916	
9	1352		21	1954	
10	1411		22	2033	
11	1433		23	2131	
12	1456		24	2310	

Comments:

RGs only recorded 0.05 - 0.07" → sample dumped & not submitted

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: TZL, KMC **Date/Time On-Site:** 01.09.23 / 1310

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1318	8.27	3.40	2.358	11.87		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230109-14 -WG	1.9.23	1315	☒
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	1320	9.51	9.98	6.60	517.1

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	6

Comments:

Sample is pretty clear.

Set Up/ Shut Down Form – HACH

TATION: AS-6

SET UP

Personnel: TLL, SMK

Date/Time On-Site: 0912 1/9/23

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0918	0	0	0	12.3

Enable Condition or Velocity Cutoff:	0.02 fps
Deadband:	N/A
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: TLL

Date/Time On-Site: 01.10.23 / 0932

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
0932	0	0	0	170	12.1
Downloaded to:		RT			

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: Bringing back sampler to replace internal desiccant

Composite Sample Collection

STATION: AS-6 **Bottle** Ø **of** Ø

Personnel: TRL **Date/Time On-Site:** 01.10.23 / 0932

☐ 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:

Not enough flow to trigger the sampler.

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: TL, KMC **Date/Time On-Site:** 01.09.23 / 1330

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1351	1.589	0.05	0.64	12.2		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230109-206 -WG	1.9.23	1352	☒
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	1358	6.36	7.66	6.89	200.8

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

Comments: light brown color (like tea)

Attachment D: Storm Event Analytical Reports

Report Date: 01/17/2023 14:34

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
AC00267-01	ACST1B	230109-03-WG	Water		01/09/2023	01/09/2023
AC00267-02	ACST1B	230109-11-WG	Water		01/09/2023	01/09/2023
AC00267-03	ACST1B	230109-12-WG	Water		01/09/2023	01/09/2023
AC00267-04	ACST1B	230109-12-101	Water		01/09/2023	01/09/2023
AC00267-05	ACST1B	230109-12-001	Water		01/09/2023	01/09/2023
AC00267-06	ACST1B	230109-14-WG	Water		01/09/2023	01/09/2023
AC00267-07	ACST1B	230109-206-WG	Water		01/09/2023	01/09/2023

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: 01/17/2023 14:34

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:	230109-03-WG
Date/Time Collected:	01/09/2023 13:18		
Lab Number:	AC00267-01	Sample Collector:	Z.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B230081	435.2	MPN/100 mL	1.0	1.0	IDEXX - Colilert	01/09/23 16:00	1/10/23 16:30	JAL	
Wet Chemistry										
Chlorine Screen	B230093	Absent				SM 4500-CL G-2000 mod	01/09/23	1/9/23 15:05	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.

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No duplication of this report is allowed, except in its entirety

Report Date: 01/17/2023 14:34

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:	230109-11-WG
Date/Time Collected:	01/09/2023 14:21		
Lab Number:	AC00267-02	Sample Collector:	Z.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B230081	235.9	MPN/100 mL	1.0	1.0	IDEXX - Colilert	01/09/23 16:00	1/10/23 16:30	JAL	
Wet Chemistry										
Chlorine Screen	B230093	Absent				SM 4500-CL G-2000 mod	01/09/23	1/9/23 15:05	LRF	

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Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230109-12-WG
Date/Time Collected:	01/09/2023 12:57		
Lab Number:	AC00267-03	Sample Collector:	T.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B230081	172.2	MPN/100 mL	1.0	1.0	IDEXX - Colilert	01/09/23 16:00	1/10/23 16:30	JAL	
Wet Chemistry										
Chlorine Screen	B230093	Absent				SM 4500-CL G-2000 mod	01/09/23	1/9/23 15:05	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.

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

Analysis Report

Location:	ACST1B	Location Description:	230109-12-101
Date/Time Collected:	01/09/2023 12:00		
Lab Number:	AC00267-04	Sample Collector:	T.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B230081	69.7	MPN/100 mL	1.0	1.0	IDEXX - Colilert	01/09/23 16:00	1/10/23 16:30	JAL	
Wet Chemistry										
Chlorine Screen	B230093	Absent				SM 4500-CL G-2000 mod	01/09/23	1/9/23 15:05	LRF	

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Water Quality Laboratory
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Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230109-12-001
Date/Time Collected:	01/09/2023 12:00		
Lab Number:	AC00267-05	Sample Collector:	T.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B230081	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	01/09/23 16:00	1/10/23 16:30	JAL	U
Wet Chemistry										
Chlorine Screen	B230093	Absent				SM 4500-CL G-2000 mod	01/09/23	1/9/23 15:09	LRF	

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

Analysis Report

Location:	ACST1B	Location Description:	230109-14-WG
Date/Time Collected:	01/09/2023 13:15		
Lab Number:	AC00267-06	Sample Collector:	T.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B230081	2850.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	01/09/23 16:00	1/10/23 16:30	JAL	D
Wet Chemistry										
Chlorine Screen	B230093	Absent				SM 4500-CL G-2000 mod	01/09/23	1/9/23 15:09	LRF	

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Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230109-206-WG
Date/Time Collected:	01/09/2023 13:52		
Lab Number:	AC00267-07	Sample Collector:	T.L
Sample Type:	Grab	Sample Matrix:	Water

Analyte Name	Batch	Result	Units	Adjusted MDL *	Method MDL	Analysis Method Reference	Prepared Time	Analysis Time	Analyst Initials	Qual
Microbiology										
E. Coli	B230081	157.6	MPN/100 mL	1.0	1.0	IDEXX - Colilert	01/09/23 16:00	1/10/23 16:30	JAL	
Wet Chemistry										
Chlorine Screen	B230093	Absent				SM 4500-CL G-2000 mod	01/09/23	1/9/23 15:09	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.

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Water Quality Laboratory
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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	Date Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B230081									
Blank (B230081-BLK1)									
E. Coli	Absent						01/10/2023	KMR	
LCS (B230081-BS1)									
E. Coli				Present			01/10/2023	KMR	
Duplicate (B230081-DUP1)	Source ID: LS01423-09								
E. Coli					Pass	128	01/10/2023	KMR	

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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

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No duplication of this report is allowed, except in its entirety

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: 63061761
Project: Stormwater-PI
Sampler(s): Tammy Lightle, Shannon Kranz, Kristen Chisholm, Zuly LaPa

Lab# ACC0267	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	01.09.23		1318		230109-03-WG	ZL	X	X												X					
-02			1421		230109-11-WG	ZL	X	X												X					
-03			1257		230109-12-WG	TZ	X	X												X					
-04			1200		230109-12-101	TZ	X	X												X					
-05			1200		230109-12-001	TZ	X	X												X					
-06			1315		230109-14-WG	TZ	X	X												X					
-07			1352		230109-206-WG	TZ	X	X												X					

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Tammy Lightle	01.09.23 1457	1-9-23 1458	

coc_wql-pi

ACC0267

WY22

Storm Event Report for March 10, 2023

Technical Memorandum

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

Phone: 208-389-7700

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2023

Project No.: 159103

Technical Memorandum

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

Date: May 17, 2023

To: Tammy Lightle

Cc: Monica Lowe

From: Shannon Kronz, Project Engineer

Prepared by: Shannon Kronz, Project Engineer

Reviewed by: Kevin White, 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 September 30, 2022. 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) 2023 (October 1, 2022, through September 30, 2023). The following storm event report summarizes stormwater sampling results from the March 10, 2023 storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2023 Phase I Stormwater Outfall Monitoring.

Table 2-1. WY 2023 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 22, 2022	G[1], C[2]	G, C[3]	G, C[2]	G, C[2]	G, C[2]
January 9, 2023	G[4]	G[4]	G[4]	G[4]	G[4]
March 10, 2023	G, C[5]	G, C[5]	G, C[5]	G[5]	G, C[5]
Collected:	1G, C[5]	2G, C[5]	2G, C[5]	2G, C[5]	2G, C[5]

Notes:

C = composite sample

G = grab sample

[1] E. coli sample qualified due to exceeded holding time.

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

[3] Composite samples rejected due to lack of representativeness (<50%).

[4] Grab samples rejected due to insufficient rainfall (<0.08 in).

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

After the March 10, 2023, storm event, ACHD still needs to collect one grab sample from Whitewater, Main, Americana, and AS_6 and two grab samples from Lucky for WY 2023. In addition, three complete composite samples need to be collected from all Phase I monitoring sites.

Section 3: Storm Event Summary

The March 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 March 9, 2023 is included in Attachment A for reference.

Thursday, March 9, 2023 (Set Up)

- On the morning of March 9, 2023, the National Weather Service issued a forecast for a rain on snow event in the Boise area. Snow was forecasted to start between 2000 and 2100 on March 9 and quickly switch to rain. The bulk of the storm was forecasted between midnight and 0600 on March 10. The chance of precipitation was 100 percent, with 0.39 inches of precipitation forecasted.
- Setup was accomplished on March 9, 2023. An expected precipitation depth of 0.30 inches was used to set trigger volumes at the monitoring stations. A runoff calculations worksheet showing how the trigger volumes were calculated is included in Attachment A.

Friday, March 10, 2023 (Storm Event)

- The Boise area experienced rainshadowing during the morning of March 10, 2023. Heavy rain started at approximately 0915 and continued until approximately 1000 on March 10.
- Precipitation totals ranged between 0.13 and 0.16 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrographs for each 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 March 9, 2023, 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 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

One, two-member team mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on March 10 at 1000. Grab samples were submitted to the West Boise Water Quality Lab (WQL) at 1224 on March 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 Lucky, Whitewater, Main, and AS_6 monitoring stations and submitted to the WQL at 1619 on March 10. A partial water quality analysis was conducted on the composite samples due to low composite sample volume. The parameters analyzed at the WQL varied between composite samples depending on the composite sample volume. Analytical results are included in Table 2. Pollutant loading estimates for the event are included in Table 3. A discussion of other composite sample collection issues is included in Section 5.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the March 10, 2023, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the AS_6 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
230310-206-001	Field blank	AS_6 grab	No *E. coli* detection was reported in the field blank.
230310-203-101	Field duplicate	AS_6 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. Acceptance and performance measures for all analytical and non-analytical criteria were met for this storm event.

Section 5: Notes

During the storm event, the Americana flowmeter did not transmit data or trigger the sampler but it did record flow data. This equipment error resulted in no subsamples collected, so a composite sample was not submitted to WQL. After the storm event, a hard reboot resolved the issue. Additional testing was performed, but the problem was unable to be replicated.

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	NO	YES
Trigger volume used in field (ft^3 or gal)	7899 gal	2185 ft^3	9313 gal	8071 ft^3	602 ft^3
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	level > 2.4	level > 1.0	level > 2.25	level > 6.30	--
Runoff start time	0922	0928	0916	0904	0932
Grab sample collection time	1112	1136	1009	1027	1043
Composite sample stop time	1122	1244	1047	--	1132
Runoff stop time	1301	1502	1225	1421	1353
Volume of discharge sampled (ft^3)	9,009	30,360	11,183	--	6,624
Total runoff volume (ft^3)	9,460	31,808	12,149	71,177	7,062
Percent of storm flow sampled (%)	95%	95%	92%	--	94%
Composite sample duration (hrs)	2.0	3.0	1.5	--	2.0
Storm precipitation (in)	0.13	0.16	0.13	0.13/0.13	0.13/0.13
Referenced rain gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	8	14	9	--	11
Number of composite bottles filled	1	1	1	--	1
Composite sample volume (Approx.; ml)	5,000	8,000	5,000	--	6,500

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	3/10/2023	230310-03-WG	11.36	7.90	95.29	5.78	1986.3	230310-03-WC	26.4	411	--	219	444	82.0	--	--	0.283	--	6.80	--	--	--	--	--	--	0.0369	--
Whitewater	3/10/2023	230310-11-WG	10.92	6.83	462.62	6.04	770.1	230310-11-WC	43.5	725	207	550	947	592	1.46	0.0678	0.309	0.166	9.06	9.6	--	0.65	--	--	55.7	0.0712	--
Main	3/10/2023	230310-12-WG	10.68	7.90	420.12	7.99	579.4	230310-12-WC	19.7	540	151	408	809	384	0.743	--	0.380	--	5.31	8.3	--	0.54	--	--	59.7	0.0581	--
Americana	3/10/2023	230310-14-WG	11.16	7.44	1282.6	6.68	547.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS_6	3/10/2023	230310-206-WG	10.84	7.53	1252.9	6.01	920.8	230310-206-WC	50.9	964	184	665	1190	565	1.7	0.218	0.284	0.181	11.5	13.6	--	0.54	--	--	66.2	0.0782	--

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	3/10/2023	262	--	0.167	--	--
Whitewater	3/10/2023	718	1.11	0.234	0.126	6.87
Main	3/10/2023	613	0.563	0.288	--	4.03
Americana	3/10/2023	--	--	--	--	--
AS_6	3/10/2023	524	0.749	0.125	0.0798	5.07

Notes:

– = No data.

Table 4. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli
				mpn/100 mL
3/10/2023	230310-206-WG	230310-206-001	Field Blank	<1.0
3/10/2023	230310-206-WG	230310-206-101	Field Duplicate	1790.0
Calculated parent/duplicate RPD				6%
Allowable RPD				40%

Attachment A: Supplemental Documents

A-1. Sampling Event Communication Form

A-2. Data Validation Checklist

A-3. Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 3/9/2023	Time: 8:01 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?)		Yes

Past 72 hr Precip	0.10”
Date and time of expected event	3/9 5pm – 3/10 5pm
Expected amount of precipitation	0.39”
Percent chance of precipitation	100%
Percent chance of >0.10” over 12 hours	96%

NWS Update

I talked with Josh at NWS this morning. He said that the storm will begin as snow but quickly switch to rain and then will remain as rain all night. We will start to see measurable precip between 8-9pm, but possibly delayed until 10pm. The bulk of the storm will be midnight-6am and all precip will be finished by noon. Totals are 0.40” for Boise and 0.50” for Meridian.

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 SW Garden City ID
Issued by: National Weather Service Boise, ID
Last Update: 3:34 am MST Mar 9, 2023

Wind Advisory

Today: Patchy fog before noon. Otherwise, mostly cloudy, with a high near 45. Southeast wind 8 to 18 mph, with gusts as high as 29 mph.
Tonight: Rain and snow. Low around 35. Breezy, with a southeast wind 18 to 22 mph, with gusts as high as 40 mph. Chance of precipitation is 100%. New snow accumulation of less than a half inch possible.
Friday: Rain. High near 46. Breezy, with a southeast wind 15 to 20 mph becoming west 7 to 12 mph in the morning. Winds could gust as high as 30 mph. Chance of precipitation is 100%. New precipitation amounts between a tenth and quarter of an inch possible.
Friday Night: A slight chance of rain and snow before midnight. Partly cloudy, with a low around 27. West wind 6 to 11 mph becoming light and variable after midnight. Winds could gust as high as 23 mph. Chance of precipitation is 20%.

Saturday: Mostly sunny, with a high near 48. East southeast wind 3 to 7 mph.
Saturday Night: Partly cloudy, with a low around 27.
Sunday: A slight chance of snow before noon, then a chance of rain. Partly sunny, with a high near 48. Chance of precipitation is 30%. Little or no snow accumulation expected.
Sunday Night: A 50 percent chance of rain. Mostly cloudy, with a low around 37.
Monday: Rain likely, mainly after noon. Mostly cloudy, with a high near 56. Chance of precipitation is 60%.
Monday Night: Rain. Low around 39. Chance of precipitation is 80%.
Tuesday: Rain likely. Mostly cloudy, with a high near 53. Chance of precipitation is 60%.
Tuesday Night: A 40 percent chance of rain. Mostly cloudy, with a low around 32.
Wednesday: A chance of rain and snow. Partly sunny, with a high near 50. Chance of precipitation is 30%.

Forecast Discussion
Area Forecast Discussion
National Weather Service Boise ID
354 AM MST Thu Mar 9 2023

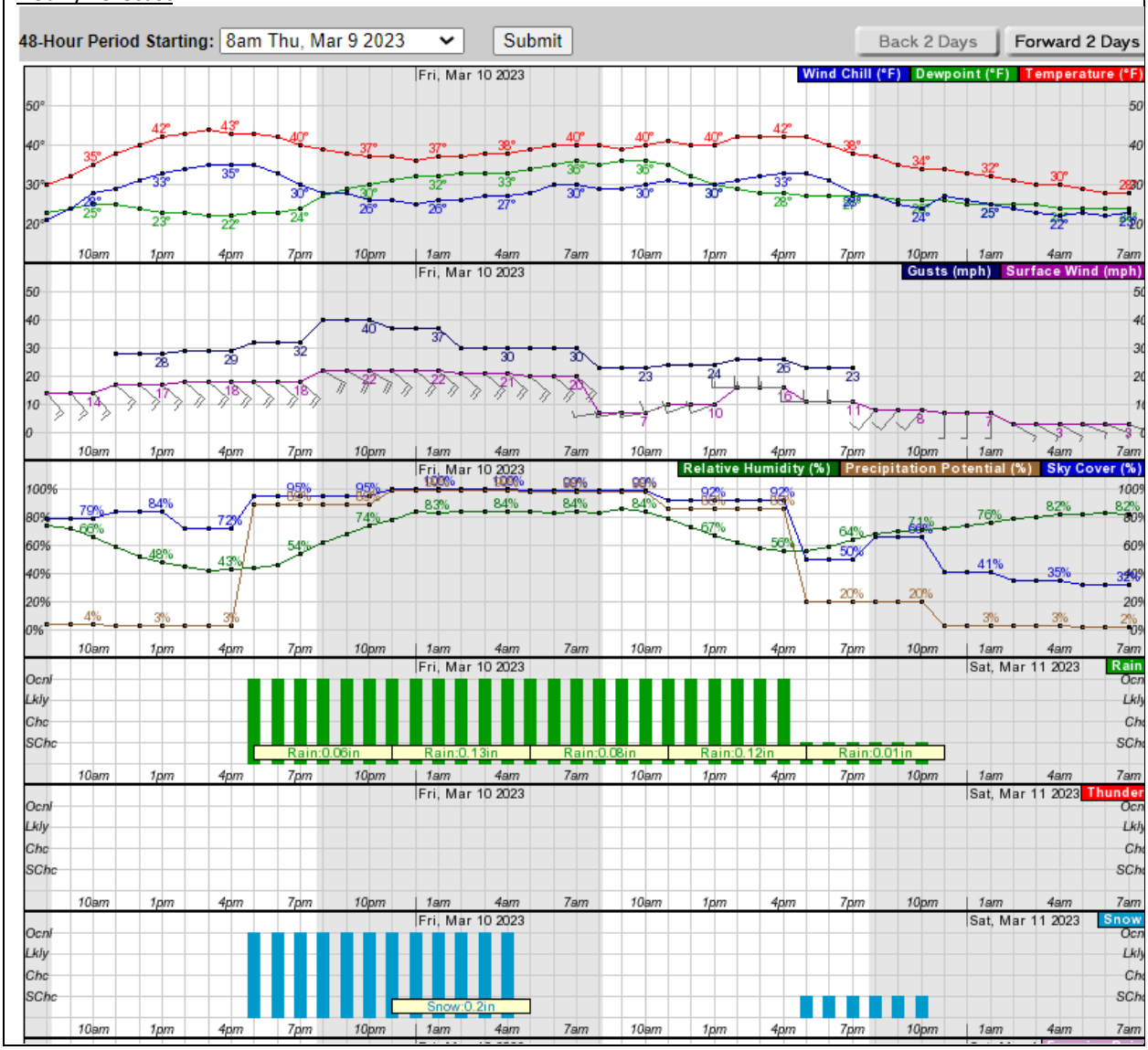
.SHORT TERM...Today through Saturday night...A strong Pacific storm with a deep moisture tap will push into the region late today. Easterly winds will increase out ahead of the storm, becoming gusty this afternoon. The gusty winds will continue overnight with higher terrain tapping into a strong southwest flow aloft. Snow and a rain/snow mix will accompany the storm as it surges inland. Snow levels will start at valley floors tonight, rising to between 4-7kft on Friday. The Snake Plain will see little accumulation as temperatures remain above freezing due to downsloping easterly winds. More sheltered valleys and sites above 4000 feet will see accumulating snow into Friday morning before a changeover to rain during the late morning. Winds will remain gusty but shift to the west behind a cold frontal passage during the day Friday. Models are faster with the timing of this front, which has resulted in cooler high temperatures for Friday. The quicker timing will also bring a sooner end to the precipitation Friday afternoon/evening. Have updated the WSW products to reflect the expected amounts/wind which has resulted in a mix of Warnings and Advisories. See the products for expected amounts. Left the western Magic Valley out of a WSW for now, but higher elevations north of Gooding/Jerome could see significant impacts from snow/wind.

The weather calms down Friday night into Saturday as the storm system exits eastward. With the front stalled south of the area, westerly flow will keep mostly dry and cool weather for Saturday. Any shower activity would be along the northern NV border. Saturday night will see the chance of showers increase along the northern NV border as another shortwave trough approaches the coast. Temperatures will remain around 10 degrees below normal.

.LONG TERM...Sunday through Thursday...Beginning Sunday, an upper low positioned along the PacNW coast will pull in the next round of Pacific moisture and precipitation from the southwest. The southwest flow aloft will generally keep snow levels above valley

floors, but allow for accumulating mountain snow to occur. **The low is forecast to track through the forecast area Monday and Tuesday which will continue the chance for precipitation.** Surface winds will be breezy at times during this period. Model guidance diverges thereafter, but is hinting at a slightly drier northwesterly flow solution as an upper ridge potentially builds along the west coast. Overall, temperatures for Sunday into next week will remain a few degrees below normal for this time of year.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE 230310

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)	0.07	0.09	0.10	0.10/0.07	0.10/0.07	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.13	0.16	0.12	0.12/0.13	0.12/0.13	> 0.10"	X		
3. Sampled amount (% of total run-off)	95	95	92	–	94	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		
4. Composite sample duration (hours)	2.0	3.0	1.5	–	2.0				
4. Ecoli sample holding time (hours)	2	2	3	3	2.5	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	21	18.5	21.5	–	20	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

- Americana comp did not collect due to equipment error. Testing in progress, but haven't been able to replicate errors.
- All submitted comps had low volume, so a full analyses was not completed.

Reviewed by Tim Little **Date** 04.27.23 **Approved by** Monica Love **Date** 5/10/23

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.

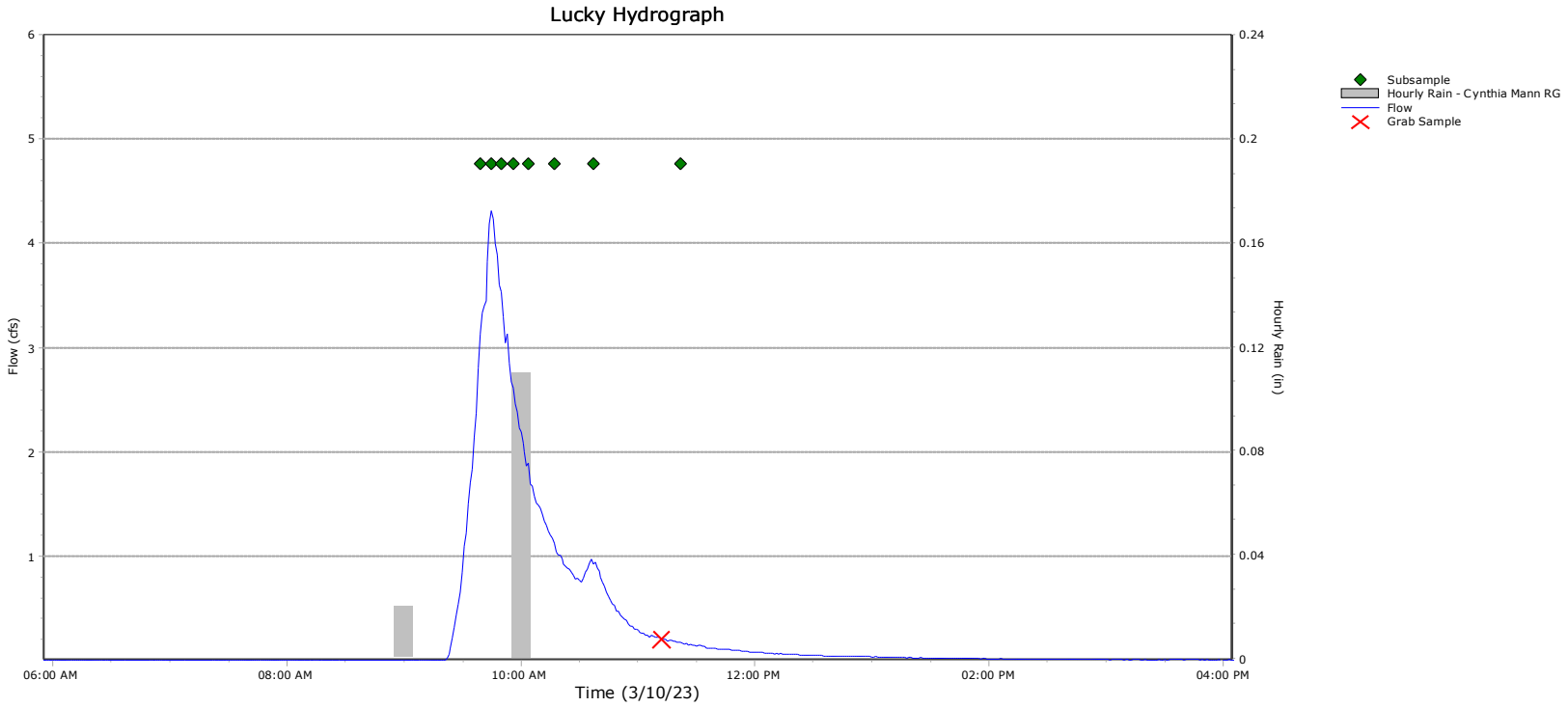
Expected Precipitation Depth = 0.30
Aliquots per Sample = 17

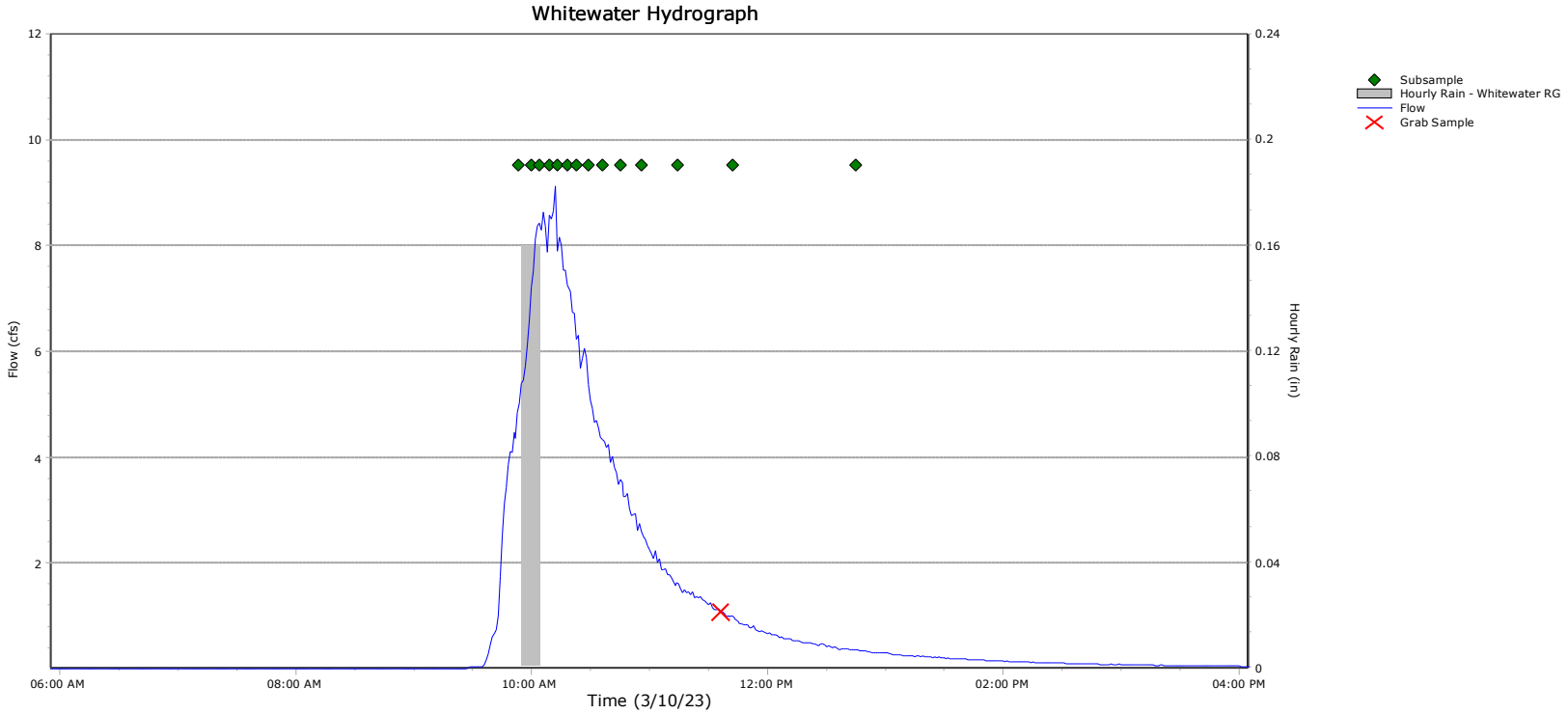
Site	Area (ac)	Using RC calculated from flow data		
		RC	Expected Vol (ft^3)	Trigger Vol (ft^3)
Lucky	105	0.157	17952.2	**1056**
Whitewater	498	0.069	37149.1	**2185**
Main	79	0.246	21163.6	**1245**
Main Alt	60	0.200	13068.0	**769**
Americana	875	0.144	137214.0	**8071**
AS_6	204	0.046	10219.2	**601**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

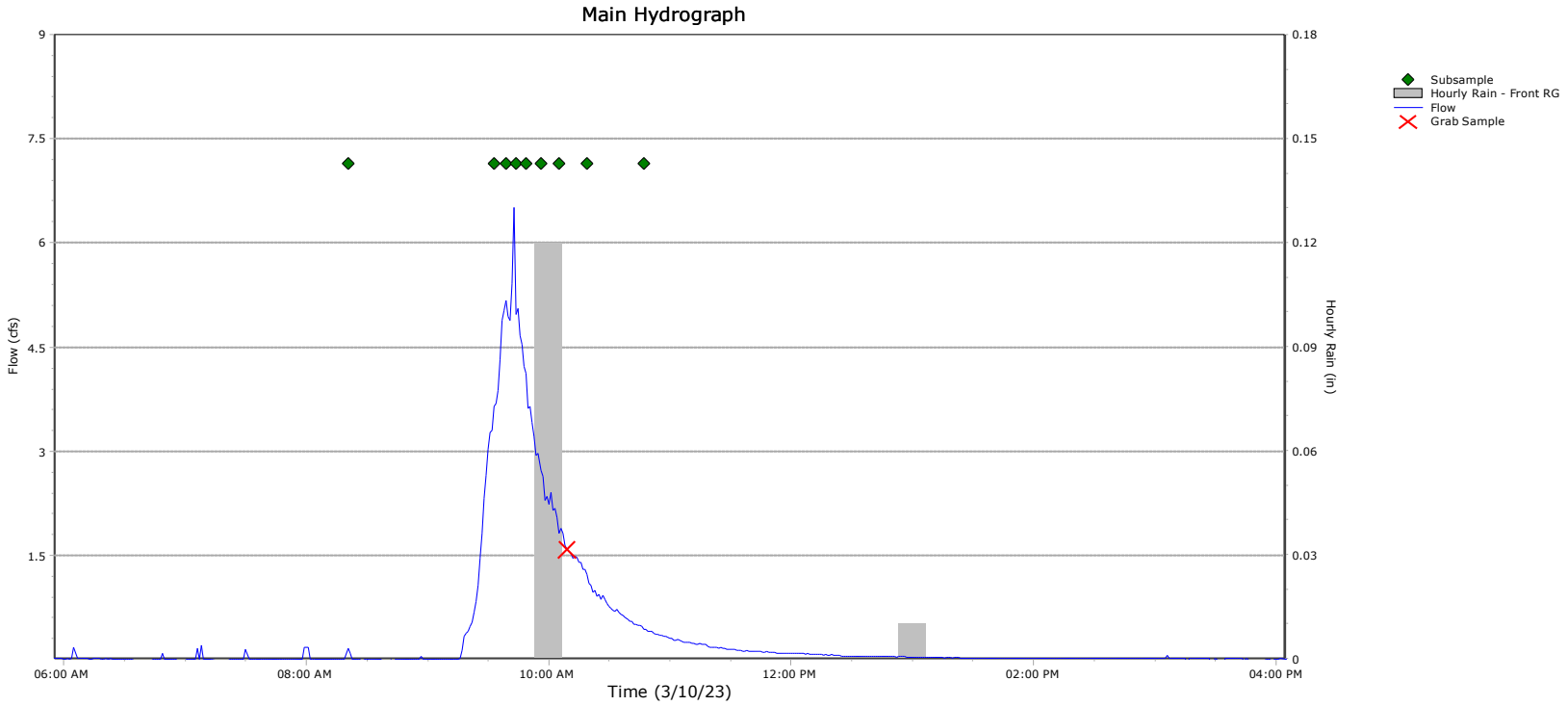
Notes:
Calculated RC = Average (precip (ft) / [volume (ft^3) x area (ft^2)])
Where precip (ft) is the measured amount from local rain guage, and volume (ft^3) is the measured discharge, and area (ft^2) is the watershed area

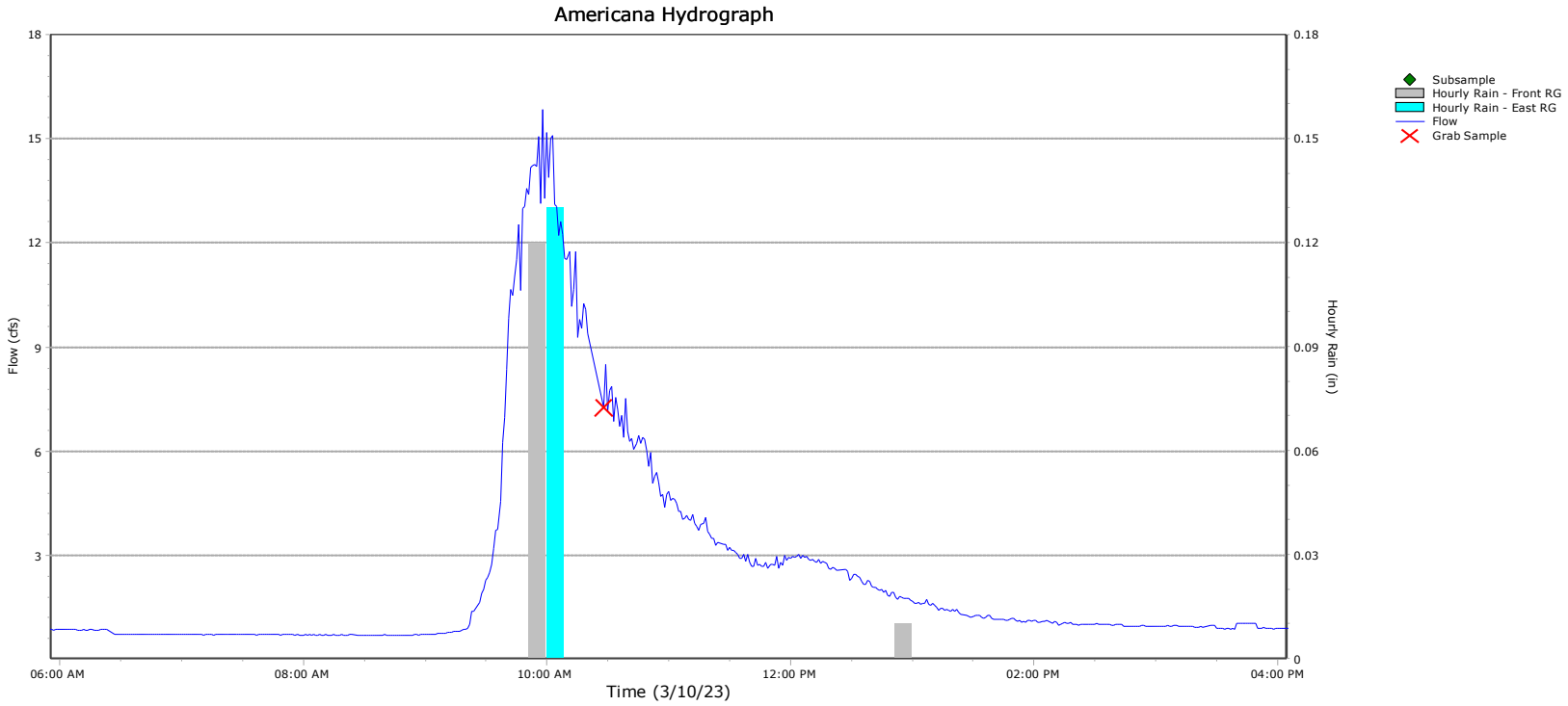
Expected volume (ft^3) = RC x expected precip (ft) x area (ft^2)

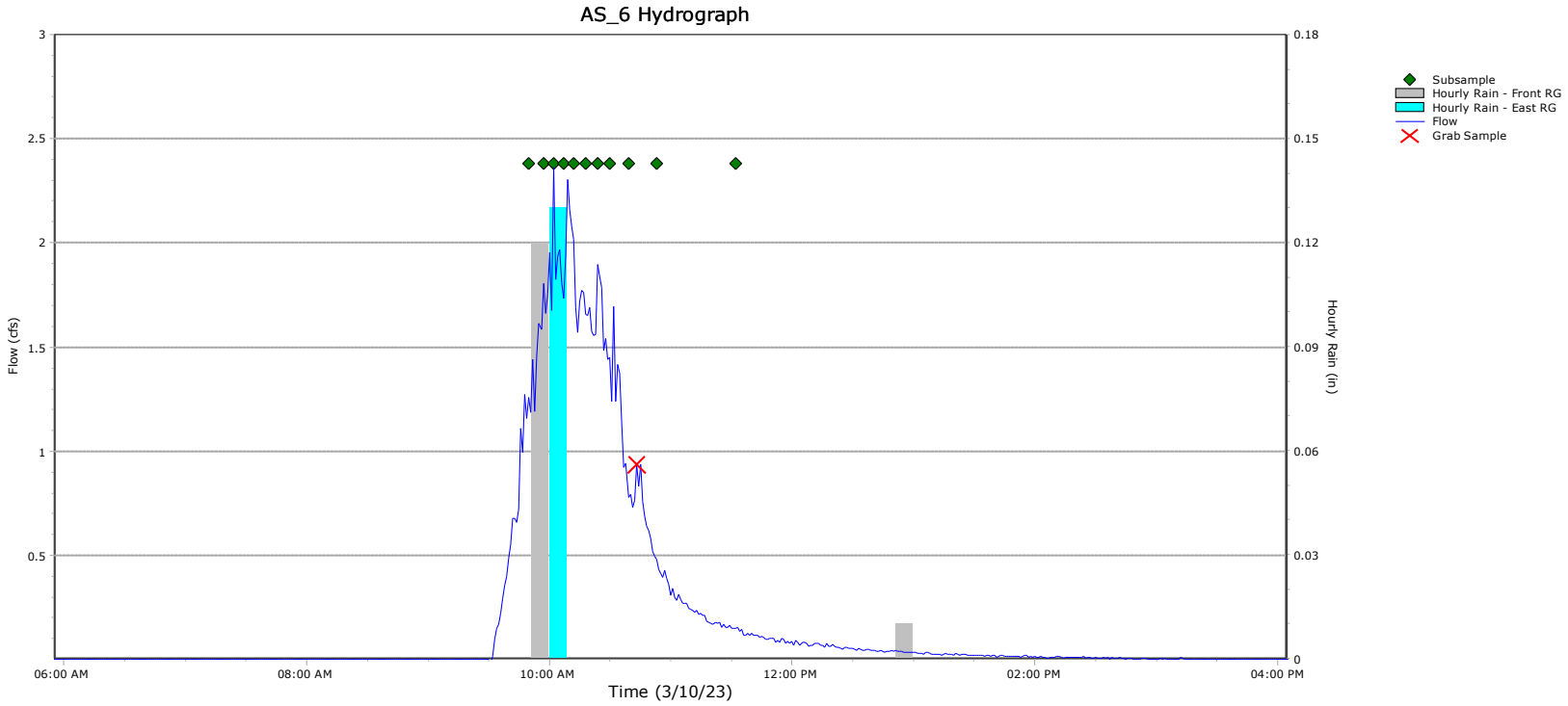
Attachment B: Storm Event Hydrographs


Lucky Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (3/10/23)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
0
1
2
3
4
5
6
0.04
0.08
0.12
0.16
0.2
0.24
Subsample
Hourly Rain - Cynthia Mann RG
Flow
Grab Sample


Whitewater Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (3/10/23)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
0
2
4
6
8
10
12
0.04
0.08
0.12
0.16
0.2
0.24
Subsample
Hourly Rain - Whitewater RG
Flow
Grab Sample


Main Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (3/10/23)
9
7.5
6
4.5
3
1.5
0.18
0.15
0.12
0.09
0.06
0.03
0
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
Subsample
Hourly Rain - Front RG
Flow
Grab Sample


Americana Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (3/10/23)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample


AS_6 Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (3/10/23)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
0
0.5
1
1.5
2
2.5
3
0.03
0.06
0.09
0.12
0.15
0.18
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample

Attachment C: Field Forms

Set Up/ Shut Down Form – HACH

TATION: Lucky

SET UP

Personnel: TLL, ~~ZZA~~ ZL

Date/Time On-Site: 03-09-2023 12:01

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
12:03	1.35	0	0	12.5

Enable Condition or Velocity Cutoff:	2.4 in.
Deadband:	1.00 in
Trigger Volume:	7599 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: TLL

Date/Time On-Site: 03.13.23 / 1053

Time	Level (in)	Flow ~~(cfs)~~ gpm	Velocity (fps)	Total (cf)	Battery (V)
1054	1.97	9.50	0.15		12.1
Downloaded to:		USB on keychain			

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: Changed clocks b/c of time change

Composite Sample Collection

STATION: FLL5 Lucky **Bottle** 1 **of** 1

Personnel: TLL, SMK **Date/Time On-Site:** 3/10/23 1505

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	230310-03 -WC
Approx Sample Volume (mL):	5000
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Brown / 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	3/10 0939	Success	13		
2	0945		14		
3	0950		15		
4	0956		16		
5	1004		17		
6	1017		18		
7	1037		19		
8	1122		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: TLL, KMC **Date/Time On-Site:** 3.10.23 1108

Flow Meter Current Status						
Time	Level (in)	Flow ~~(cfs)~~ gpm	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1110	3.80	96.87	0.60	12.6		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230310-03 -WG	3.10.23	1112	☒
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	1114	5.78	11.36	7.9	95.29

Sampler Current Status		
First Subsample Date/Time	0939	3.10.23
Last Subsample Date/Time	1037	↓
# of Subsamples taken	7	

Comments:

Set Up/ Shut Down Form – ISCO

TATION: Whitewater

SET UP

Personnel: TLL, ZL

Date/Time On-Site: 03-09-2023 12:24

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
12:24	0.13	0.03	0.04	—

Enable Condition:	1.0 in
Hysteresis:	1.0 in
Flow Pulse Interval:	2 hrs

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 12:24 CT
- ☑ 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: TLL

Date/Time On-Site: 03.13.23 / 1030

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
Downloaded to:				

On-Site

- ☐ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 3/13 0819
- ☒ 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:

Updated clock b/c of time change

Composite Sample Collection

STATION: Whitewater **Bottle** 1 **of** 1

Personnel: TLL SMK **Date/Time On-Site:** 3/10/23 1518

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	230309-11 -WC
Approx Sample Volume (mL):	8000
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	Dark 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	3/10 0952	Success	13	3/10 1141	Success
2	0959	↓	14	3/10 1244	↓
3	1003		15		
4	1008		16		
5	1012		17		
6	1017		18		
7	1022		19		
8	1028		20		
9	1035		21		
10	1044		22		
11	1055		23		
12	1113	↓	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: Whitewater

Personnel: TL, KMC **Date/Time On-Site:** 03.10.23 / 1133

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1133	4.68	1.11	1.31	N/A		0.18

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230310-11 -WG	3.10.23	1136	☒
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	1139	6.04	10.92	6.83	462.62

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	12

Comments:

Set Up/ Shut Down Form – HACH

TATION: Main

SET UP

Personnel: TLL, ZL

Date/Time On-Site: 03-09-2023 10:40

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
10:43	1.74	3.93 gpm	0.08	12.7

Enable Condition or Velocity Cutoff:	2.25
Deadband:	1.00
Trigger Volume:	9313 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: TLL

Date/Time On-Site: 03.13.23 / 0935

Time	Level (in)	Flow ~~(cfs)~~ gpm	Velocity (fps)	Total (cf)	Battery (V)
~~08~~ 0936	2.74	31.11	0.31		12.0
Downloaded to:		USB on keychain			

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: Changed time b/c of time change.

Composite Sample Collection

STATION: Main **Bottle** 1 **of** 1

Personnel: TLL SMK **Date/Time On-Site:** 1425 3/10/23

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	230310 - 12 - -WC
Approx Sample Volume (mL):	5000
Clarity (ex. Clear, Cloudy, Silty):	Dark 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	3/10 0821	Success	13		
2	0933		14		
3	0939		15		
4	0944		16		
5	0949		17		
6	0956		18		
7	1005		19		
8	1019		20		
9	1047		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: Main

Personnel: TLL, KMC **Date/Time On-Site:** 03.10.23 / 1006

Flow Meter Current Status						
Time	Level (in)	Flow ~~(cfs)~~ gpm	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1006	7.96	818	1.81	12.7		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230310-12 -WG	3/10/23	1009	☒
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	1013	7.99	10.68	7.90	420.12

Sampler Current Status	
First Subsample Date/Time	0821 03.10.23
Last Subsample Date/Time	
# of Subsamples taken	7

Comments:

Set Up/ Shut Down Form – ISCO

TATION: Americana

SET UP

Personnel: TLL, ZL

Date/Time On-Site: 03-09-2023 11:04

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
11:04	4.83	1.06	1.601	12.06

Enable Condition:	6.30 in
Hysteresis:	1.5 in
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 11:04
- ☑ 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: TLL

Date/Time On-Site: 03.13.23 / 0947

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0953	6.56	1.77	1.650	12.19
	Downloaded to:	N/A		

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

Flowlink (Refer to Flowlink Instructions, if needed)
- ☒ 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:

Flowmeter power was on when arrived on-site. Don't know why it wasn't connecting remotely.

Changed clock b/c of time change

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:

No subsamples were collected.

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: Americana

Personnel: RL, KMC **Date/Time On-Site:** 03.10.23 1023

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*	230310-14 -WG	3.10.23	1027	☒
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	1031	6.68	11.16	7.44	1282.6

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

Comments:

Flowmeter battery clip was not clipped onto battery (must have fallen off).

No flow data prior to this visit, but still collecting grab sample b/c there was definitely enough rain.

*update 3/14/23: Flow data does exist from the event. Flowmeter is working, but the problem is with transmitting data.

Set Up/ Shut Down Form – HACH

TATION: AS-6

SET UP

Personnel: TLL, ZL

Date/Time On-Site: 03-09-2023 11:33

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
11:38	0	0	0	12.4

Enable Condition or Velocity Cutoff:	0.02
Deadband:	
Trigger Volume:	602 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:

SHUT DOWN

Personnel: TLL

Date/Time On-Site: 03.13.23 / 1117

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1117	1.380	0.04	0.52	12519	12.2
Downloaded to:		R7			

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** 1

Personnel: TLL, SMK **Date/Time On-Site:** 3/10/23 1445

☑ Halt sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	230310-206 -WC
Approx Sample Volume (mL):	6500
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	3/10 0950	Success	13		
2	0957		14		
3	1002		15		
4	1007		16		
5	1012		17		
6	1018		18		
7	1024		19		
8	1030		20		
9	1039		21		
10	1053		22		
11	1132		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: AS-6

Personnel: TLL, KMC **Date/Time On-Site:** 3/10/23 1041

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1041	5.461	0.78	1.53	11.8		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230310-206 -WG	3.10.23	1043	☒
Field Duplicate *E.Coli*	230310-206 -101	"	1042	☒
Field Blank *E.Coli*	230310-206 -001	"	1047	☒

*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	1048	6.01	10.84	7.53	1252.9

Sampler Current Status		
First Subsample Date/Time	0950	3/10/23
Last Subsample Date/Time	1039	
# of Subsamples taken	~~10~~ 9	

Comments:

Attachment D: Storm Event Analytical Reports

Report Date: 03/24/2023 11:49

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
AC00273-01	ACST1B	230310-03-WG	Water		03/10/2023	03/10/2023
AC00273-02	ACST1B	230310-11-WG	Water		03/10/2023	03/10/2023
AC00273-03	ACST1B	230310-12-WG	Water		03/10/2023	03/10/2023
AC00273-04	ACST1B	230310-14-WG	Water		03/10/2023	03/10/2023
AC00273-05	ACST1B	230310-206-WG	Water		03/10/2023	03/10/2023
AC00273-06	ACST1B	230310-206-101	Water		03/10/2023	03/10/2023
AC00273-07	ACST1B	230310-206-001	Water		03/10/2023	03/10/2023

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No duplication of this report is allowed, except in its entirety

Report Date: 03/24/2023 11:49

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:	230310-03-WG
Date/Time Collected:	03/10/2023 11:12		
Lab Number:	AC00273-01	Sample Collector:	T.L
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	B230812	1986.3	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/10/23 13:15	3/11/23 13:42	GKH	
Wet Chemistry										
Chlorine Screen	B230813	Absent				SM 4500-CL G-2000 mod	03/10/23	3/10/23 12:55	MER	

* 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.

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

Analysis Report

Location:	ACST1B	Location Description:	230310-11-WG
Date/Time Collected:	03/10/2023 11:36		
Lab Number:	AC00273-02	Sample Collector:	Z.L
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	B230812	770.1	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/10/23 13:15	3/11/23 13:42	GKH	
Wet Chemistry										
Chlorine Screen	B230813	Absent				SM 4500-CL G-2000 mod	03/10/23	3/10/23 12:55	MER	

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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:	230310-12-WG
Date/Time Collected:	03/10/2023 10:09		
Lab Number:	AC00273-03	Sample Collector:	T.L
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	B230812	579.4	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/10/23 13:15	3/11/23 13:42	GKH	
Wet Chemistry										
Chlorine Screen	B230813	Absent				SM 4500-CL G-2000 mod	03/10/23	3/10/23 12:55	MER	

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

Analysis Report

Location:	ACST1B	Location Description:	230310-14-WG
Date/Time Collected:	03/10/2023 10:27		
Lab Number:	AC00273-04	Sample Collector:	T.L
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	B230812	547.5	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/10/23 13:15	3/11/23 13:42	GKH	
Wet Chemistry										
Chlorine Screen	B230813	Absent				SM 4500-CL G-2000 mod	03/10/23	3/10/23 12:55	MER	

* 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.

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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:	230310-206-WG
Date/Time Collected:	03/10/2023 10:43		
Lab Number:	AC00273-05	Sample Collector:	T.L
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	B230812	920.8	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/10/23 13:15	3/11/23 13:42	GKH	
Wet Chemistry										
Chlorine Screen	B230813	Absent				SM 4500-CL G-2000 mod	03/10/23	3/10/23 12:59	MER	

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Boise City Public Works
Water Quality Laboratory
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Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230310-206-101
Date/Time Collected:	03/10/2023 12:00		
Lab Number:	AC00273-06	Sample Collector:	T.L
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	B230812	1790.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	03/10/23 13:15	3/11/23 13:42	GKH	D
Wet Chemistry										
Chlorine Screen	B230813	Absent				SM 4500-CL G-2000 mod	03/10/23	3/10/23 12:59	MER	

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Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230310-206-001
Date/Time Collected:	03/10/2023 12:00		
Lab Number:	AC00273-07	Sample Collector:	T.L
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	B230812	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/10/23 13:15	3/11/23 13:42	GKH	U
Wet Chemistry										
Chlorine Screen	B230813	Absent				SM 4500-CL G-2000 mod	03/10/23	3/10/23 12:59	MER	

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Report Date: 03/24/2023 11:49

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: B230812									
Blank (B230812-BLK1)									
E. Coli	Absent						03/11/2023	GKH	
LCS (B230812-BS1)									
E. Coli				Present			03/11/2023	GKH	
Duplicate (B230812-DUP1)	Source ID: AC00274-01								
E. Coli					Pass	128	03/11/2023	GKH	

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Report Date: 03/24/2023 11:49

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

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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: 63061761
Project: Stormwater-PI
Sampler(s): Tammy Lightle
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	C 166 Total Containers
00273-01	3.10.23		1112		230310-03-WG	KC	X	X												X					1
-02			1136		230310-11-WG		X	X												X					1
-03			1009		230310-12-WG		X	X												X					1
-04			1027		230310-14-WG		X	X												X					1
-05			1043		230310-206-WG		X	X												X					1
-06			1200		230310-206-101		X	X												X					1
-07			1200		230310-206-001	TR	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Tammy Lightle	3.10.23 / 1224	3-10-23 1226	

coc_wql-pi

#AC00273

WY22

Report Date: 04/13/2023 08:29

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
AC00276-01	ACST1C	230310-03-WC	Water		03/10/2023	03/11/2023
AC00276-02	ACST1C	230310-11-WC	Water		03/10/2023	03/11/2023
AC00276-03	ACST1C	230310-12-WC	Water		03/10/2023	03/11/2023
AC00276-04	ACST1C	230310-206-WC	Water		03/10/2023	03/11/2023

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Report Date: 04/13/2023 08:29

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:	230310-03-WC
Date/Time Collected:	03/10/2023 09:39 - 03/10/2023 11:22		
Lab Number:	AC00276-01	Sample Collector:	T.L
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	B230915	0.283	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	03/21/23	3/21/23 11:12	ALN	
BOD5	B230821	26.4	mg/L	2.00	2.00	SM 5210 B-2011	03/11/23	3/16/23 10:21	KMR	
COD	B230820	411	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/11/23	3/11/23 11:01	MER	
TKN	B230872	6.80	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/16/23	3/17/23 9:33	ALN	
Total Dissolved Solids	B230843	82.0	mg/L	25.0	25.0	SM 2540 C-2011	03/13/23	3/15/23 8:12	ALG	
Total Suspended Solids	B230817	444	mg/L	0.900	0.900	SM 2540 D-2011	03/11/23	3/11/23 10:04	GKH	
Turbidity	B230815	219	NTU	6.0	0.3	EPA 180.1, Rev. 2.0 (1993)	03/11/23	3/11/23 9:28	JAL	D
Total Metals										
Mercury	B230941	0.0369	ug/L	0.0100	0.0100	EPA 245.1	03/23/23	3/24/23 9:56	SAS	

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Report Date: 04/13/2023 08:29

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Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1C	Location Description:	230310-11-WC
Date/Time Collected:	03/10/2023 09:52 - 03/10/2023 12:44		
Lab Number:	AC00276-02	Sample Collector:	T.L
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	B230915	0.309	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	03/21/23	3/21/23 11:33	ALN	
BOD5	B230821	43.5	mg/L	2.00	2.00	SM 5210 B-2011	03/11/23	3/16/23 10:15	KMR	
COD	B230820	725	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/11/23	3/11/23 11:01	MER	
Nitrate-Nitrite, as N	B230850	0.166	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	03/14/23	3/14/23 11:28	JAL	
TKN	B231031	9.06	mg/L	0.500	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/29/23	3/30/23 9:40	ALN	D
Total Dissolved Solids	B230843	592	mg/L	25.0	25.0	SM 2540 C-2011	03/13/23	3/15/23 8:09	ALG	
Total Suspended Solids	B230817	947	mg/L	0.900	0.900	SM 2540 D-2011	03/11/23	3/11/23 9:57	GKH	
Turbidity	B230815	550	NTU	6.0	0.3	EPA 180.1, Rev. 2.0 (1993)	03/11/23	3/11/23 9:35	JAL	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B230814	0.0678	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/11/23	3/11/23 10:52	JAL	
Total Metals										
Mercury	B230941	0.0712	ug/L	0.0100	0.0100	EPA 245.1	03/23/23	3/24/23 10:00	SAS	
Arsenic	B230890	9.6	ug/L	0.070	0.070	EPA 200.8	03/18/23	3/19/23 15:17	DMW	
Cadmium	B230890	0.65	ug/L	0.010	0.010	EPA 200.8	03/18/23	3/19/23 15:17	DMW	
Calcium	B230828	22.2	mg/L	0.0400	0.0400	EPA 200.7	03/13/23	3/13/23 18:30	EDM	
Lead	B230890	55.7	ug/L	0.10	0.010	EPA 200.8	03/18/23	3/19/23 15:26	DMW	D
Magnesium	B230828	36800	ug/L	75.0	75.0	EPA 200.7	03/13/23	3/13/23 18:30	EDM	
Phosphorus as P	B230828	1.46	mg/L	0.0100	0.0100	EPA 200.7	03/13/23	3/13/23 18:30	EDM	
Hardness	B230828	207	mg/L	0.100	0.100	SM 2340 B-2011	03/13/23	3/13/23 18:30	EDM	

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Analysis Report

Location:	ACST1C	Location Description:	230310-12-WC
Date/Time Collected:	03/10/2023 08:21 - 03/10/2023 10:47		
Lab Number:	AC00276-03	Sample Collector:	T.L
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	B230915	0.380	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	03/21/23	3/21/23 11:01	ALN	
BOD5	B230821	19.7	mg/L	2.00	2.00	SM 5210 B-2011	03/11/23	3/16/23 10:04	KMR	
COD	B230820	540	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/11/23	3/11/23 11:01	MER	
TKN	B230872	5.31	mg/L	0.100	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/16/23	3/17/23 9:34	ALN	
Total Dissolved Solids	B230843	384	mg/L	25.0	25.0	SM 2540 C-2011	03/13/23	3/15/23 8:13	ALG	
Total Suspended Solids	B230817	809	mg/L	0.900	0.900	SM 2540 D-2011	03/11/23	3/11/23 10:05	GKH	
Turbidity	B230815	408	NTU	6.0	0.3	EPA 180.1, Rev. 2.0 (1993)	03/11/23	3/11/23 9:24	JAL	D
Total Metals										
Mercury	B230941	0.0581	ug/L	0.0100	0.0100	EPA 245.1	03/23/23	3/24/23 9:50	SAS	
Arsenic	B230890	8.3	ug/L	0.070	0.070	EPA 200.8	03/18/23	3/19/23 15:19	DMW	
Cadmium	B230890	0.54	ug/L	0.010	0.010	EPA 200.8	03/18/23	3/19/23 15:19	DMW	
Calcium	B230828	19.8	mg/L	0.0400	0.0400	EPA 200.7	03/13/23	3/13/23 18:36	EDM	
Lead	B230890	59.7	ug/L	0.10	0.010	EPA 200.8	03/18/23	3/19/23 15:29	DMW	D
Magnesium	B230828	24800	ug/L	75.0	75.0	EPA 200.7	03/13/23	3/13/23 18:36	EDM	
Phosphorus as P	B230828	0.743	mg/L	0.0100	0.0100	EPA 200.7	03/13/23	3/13/23 18:36	EDM	
Hardness	B230828	151	mg/L	0.100	0.100	SM 2340 B-2011	03/13/23	3/13/23 18:36	EDM	

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Analysis Report

Location:	ACST1C	Location Description:	230310-206-WC
Date/Time Collected:	03/10/2023 09:50 - 03/10/2023 11:32		
Lab Number:	AC00276-04	Sample Collector:	T.L
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	B230915	0.284	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	03/21/23	3/21/23 11:21	ALN	
BOD5	B230821	50.9	mg/L	2.00	2.00	SM 5210 B-2011	03/11/23	3/16/23 9:56	KMR	
COD	B230820	964	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/11/23	3/11/23 11:04	MER	
Nitrate-Nitrite, as N	B230850	0.181	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	03/14/23	3/14/23 11:32	JAL	
TKN	B231031	11.5	mg/L	0.500	0.100	EPA 351.2, 10-107-06-2-M (Equivalent)	03/29/23	3/30/23 9:41	ALN	D
Total Dissolved Solids	B230843	565	mg/L	25.0	25.0	SM 2540 C-2011	03/13/23	3/15/23 8:14	ALG	
Total Suspended Solids	B230817	1190	mg/L	0.900	0.900	SM 2540 D-2011	03/11/23	3/11/23 9:59	GKH	
Turbidity	B230815	665	NTU	6.0	0.3	EPA 180.1, Rev. 2.0 (1993)	03/11/23	3/11/23 9:31	JAL	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B230814	0.218	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/11/23	3/11/23 10:57	JAL	
Total Metals										
Mercury	B230941	0.0782	ug/L	0.0100	0.0100	EPA 245.1	03/23/23	3/24/23 9:27	SAS	
Arsenic	B230890	13.6	ug/L	0.070	0.070	EPA 200.8	03/18/23	3/19/23 15:22	DMW	
Cadmium	B230890	0.54	ug/L	0.010	0.010	EPA 200.8	03/18/23	3/19/23 15:22	DMW	
Calcium	B230828	17.0	mg/L	0.0400	0.0400	EPA 200.7	03/13/23	3/13/23 18:41	EDM	
Lead	B230890	66.2	ug/L	0.10	0.010	EPA 200.8	03/18/23	3/19/23 15:31	DMW	D
Magnesium	B230828	34500	ug/L	75.0	75.0	EPA 200.7	03/13/23	3/13/23 18:41	EDM	
Phosphorus as P	B230828	1.70	mg/L	0.0100	0.0100	EPA 200.7	03/13/23	3/13/23 18:41	EDM	
Hardness	B230828	184	mg/L	0.100	0.100	SM 2340 B-2011	03/13/23	3/13/23 18:41	EDM	

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B230815									
Blank (B230815-BLK1)									
Turbidity	<0.3	NTU					03/11/2023	JAL	U
LCS (B230815-BS1)									
Turbidity			105	90-110			03/11/2023	JAL	
Duplicate (B230815-DUP1)	Source ID: AC00275-01								
Turbidity					0.861	25	03/11/2023	JAL	D
Batch: B230817									
Blank (B230817-BLK1)									
Total Suspended Solids	<0.9	mg/L					03/11/2023	GKH	U
LCS (B230817-BS1)									
Total Suspended Solids			102	90-110			03/11/2023	GKH	
Duplicate (B230817-DUP1)	Source ID: AC00276-02								
Total Suspended Solids					0.955	20	03/11/2023	GKH	
Duplicate (B230817-DUP2)	Source ID: BB02772-01								
Total Suspended Solids					17.6	20	03/11/2023	GKH	
Batch: B230820									
Blank (B230820-BLK1)									
COD	<7	mg/L					03/11/2023	MER	U
LCS (B230820-BS1)									
COD			97.3	90-110			03/11/2023	MER	
Duplicate (B230820-DUP1)	Source ID: AC00275-01								
COD					2.64	10	03/11/2023	MER	
Batch: B230821									
Blank (B230821-BLK1)									
BOD5	<2	mg/L					03/16/2023	KMR	U
LCS (B230821-BS1)									
BOD5			99.3	84.6-115.4			03/16/2023	KMR	
LCS (B230821-BS2)									
BOD5			103	84.6-115.4			03/16/2023	KMR	
Duplicate (B230821-DUP1)	Source ID: BB02771-01								
BOD5					4.65	30	03/16/2023	KMR	D
Duplicate (B230821-DUP2)	Source ID: BB02772-02								
BOD5					3.33	30	03/16/2023	KMR	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B230843									
Blank (B230843-BLK1)									
Total Dissolved Solids	<25	mg/L					03/15/2023	ALG	U
LCS (B230843-BS1)									
Total Dissolved Solids			99.7	90-110			03/15/2023	ALG	
Duplicate (B230843-DUP1) Source ID: AC00276-02									
Total Dissolved Solids					0.211	10	03/15/2023	ALG	
Batch: B230850									
Blank (B230850-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					03/14/2023	JAL	U
Blank (B230850-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					03/14/2023	JAL	U
LCS (B230850-BS1)									
Nitrate-Nitrite, as N			96.3	90-110			03/14/2023	JAL	
LCS (B230850-BS2)									
Nitrate-Nitrite, as N			95.8	90-110			03/14/2023	JAL	
Duplicate (B230850-DUP1) Source ID: AC00276-02									
Nitrate-Nitrite, as N					3.61	10	03/14/2023	JAL	
Duplicate (B230850-DUP2) Source ID: BB02757-02									
Nitrate-Nitrite, as N					23.7	10	03/14/2023	JAL	QC-02
Duplicate (B230850-DUP3) Source ID: BB02762-02									
Nitrate-Nitrite, as N					0.525	10	03/14/2023	JAL	
Duplicate (B230850-DUP4) Source ID: LS01486-02									
Nitrate-Nitrite, as N					21.0	10	03/14/2023	JAL	QC-02
Matrix Spike (B230850-MS1) Source ID: AC00276-02									
Nitrate-Nitrite, as N			98.8	90-110			03/14/2023	JAL	
Matrix Spike (B230850-MS2) Source ID: BB02757-02									
Nitrate-Nitrite, as N			101	90-110			03/14/2023	JAL	
Matrix Spike (B230850-MS3) Source ID: BB02762-02									
Nitrate-Nitrite, as N			99.3	90-110			03/14/2023	JAL	
Matrix Spike (B230850-MS4) Source ID: LS01486-02									
Nitrate-Nitrite, as N			100	90-110			03/14/2023	JAL	
Matrix Spike Dup (B230850-MSD1) Source ID: AC00276-02									
Nitrate-Nitrite, as N			99.6	90-110	0.679	10	03/14/2023	JAL	
Matrix Spike Dup (B230850-MSD2) Source ID: BB02757-02									
Nitrate-Nitrite, as N			98.9	90-110	1.61	10	03/14/2023	JAL	
Matrix Spike Dup (B230850-MSD3) Source ID: BB02762-02									
Nitrate-Nitrite, as N			97.0	90-110	2.14	10	03/14/2023	JAL	
Matrix Spike Dup (B230850-MSD4) Source ID: LS01486-02									
Nitrate-Nitrite, as N			100	90-110	0.199	10	03/14/2023	JAL	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B230872									
Blank (B230872-BLK1)									
TKN	<0.1	mg/L					03/17/2023	ALN	U
LCS (B230872-BS1)									
TKN			97.4	80-120			03/17/2023	ALN	
Duplicate (B230872-DUP1) Source ID: AC00275-01									
TKN					4.27	20	03/17/2023	ALN	
Duplicate (B230872-DUP2) Source ID: BB02761-02									
TKN					3.67	20	03/17/2023	ALN	D
Matrix Spike (B230872-MS1) Source ID: AC00275-01									
TKN			101	80-120			03/17/2023	ALN	
Matrix Spike (B230872-MS2) Source ID: BB02761-02									
TKN			94.3	80-120			03/17/2023	ALN	D
Matrix Spike Dup (B230872-MSD1) Source ID: AC00275-01									
TKN			89.6	80-120	7.33	20	03/17/2023	ALN	
Matrix Spike Dup (B230872-MSD2) Source ID: BB02761-02									
TKN			97.0	80-120	0.823	20	03/17/2023	ALN	D
Batch: B230915									
Blank (B230915-BLK1)									
Ammonia, as N	<0.035	mg/L					03/21/2023	ALN	U
LCS (B230915-BS1)									
Ammonia, as N			103	90-110			03/21/2023	ALN	
LCS (B230915-BS2)									
Ammonia, as N			102	90-110			03/21/2023	ALN	
Duplicate (B230915-DUP1) Source ID: AC00275-01									
Ammonia, as N					6.44	10	03/21/2023	ALN	
Duplicate (B230915-DUP2) Source ID: BB02773-01									
Ammonia, as N					0.591	10	03/21/2023	ALN	
Matrix Spike (B230915-MS1) Source ID: AC00275-01									
Ammonia, as N			104	80-120			03/21/2023	ALN	
Matrix Spike (B230915-MS2) Source ID: BB02773-01									
Ammonia, as N			105	80-120			03/21/2023	ALN	
Matrix Spike Dup (B230915-MSD1) Source ID: AC00275-01									
Ammonia, as N			105	80-120	0.972	10	03/21/2023	ALN	
Matrix Spike Dup (B230915-MSD2) Source ID: BB02773-01									
Ammonia, as N			105	80-120	0.0485	10	03/21/2023	ALN	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B231031									
Blank (B231031-BLK1)									
TKN	<0.1	mg/L					03/30/2023	ALN	U
Blank (B231031-BLK2)									
TKN	<0.1	mg/L					03/30/2023	ALN	U
LCS (B231031-BS1)									
TKN			98.0	80-120			03/30/2023	ALN	
LCS (B231031-BS2)									
TKN			98.5	80-120			03/30/2023	ALN	
Duplicate (B231031-DUP1) Source ID: BB02783-01									
TKN					6.57	20	03/30/2023	ALN	D
Duplicate (B231031-DUP2) Source ID: LS01498-05									
TKN					0.198	20	03/30/2023	ALN	D
Duplicate (B231031-DUP3) Source ID: WB02406-08									
TKN					0.380	20	03/30/2023	ALN	D
Matrix Spike (B231031-MS1) Source ID: BB02783-01									
TKN			85.7	80-120			03/30/2023	ALN	D
Matrix Spike (B231031-MS2) Source ID: LS01498-05									
TKN			98.6	80-120			03/30/2023	ALN	D
Matrix Spike (B231031-MS3) Source ID: WB02406-08									
TKN			95.7	80-120			03/30/2023	ALN	D
Matrix Spike Dup (B231031-MSD1) Source ID: BB02783-01									
TKN			84.2	80-120	0.508	20	03/30/2023	ALN	D
Matrix Spike Dup (B231031-MSD2) Source ID: LS01498-05									
TKN			101	80-120	1.16	20	03/30/2023	ALN	D
Matrix Spike Dup (B231031-MSD3) Source ID: WB02406-08									
TKN			95.6	80-120	0.0424	20	03/30/2023	ALN	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Wet Chemistry									
Batch: B230814									
Blank (B230814-BLK1)									
Orthophosphate, as P	<0.003	mg/L					03/11/2023	JAL	U
LCS (B230814-BS1)									
Orthophosphate, as P			94.5	90-110			03/11/2023	JAL	
Duplicate (B230814-DUP1) Source ID: AC00276-02									
Orthophosphate, as P					0.515	10	03/11/2023	JAL	
Matrix Spike (B230814-MS1) Source ID: AC00276-02									
Orthophosphate, as P			101	90-110			03/11/2023	JAL	
Matrix Spike Dup (B230814-MSD1) Source ID: AC00276-02									
Orthophosphate, as P			101	90-110	0.0855	10	03/11/2023	JAL	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B230828									
Blank (B230828-BLK1)									
Calcium	<0.04	mg/L					03/13/2023	EDM	U
Magnesium	<75	ug/L					03/13/2023	EDM	U
Phosphorus as P	<0.01	mg/L					03/13/2023	EDM	U
LCS (B230828-BS1)									
Calcium			98.2	85-115			03/13/2023	EDM	
Magnesium			98.9	85-115			03/13/2023	EDM	
Phosphorus as P			102	85-115			03/13/2023	EDM	
Duplicate (B230828-DUP1) Source ID: AC00276-04									
Calcium					0.747	20	03/13/2023	EDM	
Magnesium					0.146	20	03/13/2023	EDM	
Phosphorus as P					0.403	20	03/13/2023	EDM	
Matrix Spike (B230828-MS1) Source ID: AC00276-04									
Calcium			98.7	70-130			03/13/2023	EDM	
Magnesium			101	70-130			03/13/2023	EDM	
Phosphorus as P			100	70-130			03/13/2023	EDM	
Matrix Spike Dup (B230828-MSD1) Source ID: AC00276-04									
Calcium			88.6	70-130	4.40	20	03/13/2023	EDM	
Magnesium			84.0	70-130	4.57	20	03/13/2023	EDM	
Phosphorus as P			83.0	70-130	6.56	20	03/13/2023	EDM	
Batch: B230890									
Blank (B230890-BLK1)									
Arsenic	<0.070	ug/L					03/19/2023	DMW	U
Cadmium	<0.010	ug/L					03/19/2023	DMW	U
Lead	<0.010	ug/L					03/19/2023	DMW	U
LCS (B230890-BS1)									
Arsenic			96.5	85-115			03/19/2023	DMW	
Cadmium			98.9	85-115			03/19/2023	DMW	
Lead			99.7	85-115			03/19/2023	DMW	
Duplicate (B230890-DUP1) Source ID: ME00239-02									
Arsenic					1.58	20	03/19/2023	DMW	
Cadmium					NR	20	03/19/2023	DMW	U
Lead					5.11	20	03/19/2023	DMW	
Matrix Spike (B230890-MS1) Source ID: ME00239-02									
Arsenic			98.5	70-130			03/19/2023	DMW	
Cadmium			96.9	70-130			03/19/2023	DMW	
Lead			95.3	70-130			03/19/2023	DMW	
Matrix Spike Dup (B230890-MSD1) Source ID: ME00239-02									
Arsenic			97.8	70-130	0.647	20	03/19/2023	DMW	
Cadmium			96.6	70-130	0.352	20	03/19/2023	DMW	
Lead			94.6	70-130	0.738	20	03/19/2023	DMW	

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

Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B230941									
Blank (B230941-BLK1)									
Mercury	<0.01	ug/L					03/24/2023	SAS	U
LCS (B230941-BS1)									
Mercury			101	85-115			03/24/2023	SAS	
Duplicate (B230941-DUP1) Source ID: AC00276-04									
Mercury					8.14	20	03/24/2023	SAS	
Matrix Spike (B230941-MS1) Source ID: AC00276-04									
Mercury			99.8	70-130			03/24/2023	SAS	
Matrix Spike Dup (B230941-MSD1) Source ID: AC00276-04									
Mercury			123	70-130	8.66	20	03/24/2023	SAS	

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Report Date: 04/13/2023 08:29

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

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: Tammy Lightle
3775 Adams Street
Garden City, Idaho 83714–6418
Tel. (208) 387–6255
Fax (208) 387–6391

Purchase Order: 63061761
Project: Stormwater-PI
Sampler(s): Tammy Lightle
Shannon Krantz

C-180

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
C00276-01	3/10/23	3/10/23	0939	1122	230310-03-WC	TL	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-02	"	"	0952	1244	230310-11-WC	"	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-03	"	"	0821	~~1044~~ 1047 TL	230310-12-WC	"	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-04	"	"	0950	1132	230310-206-WC	"	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)
Tammy Lightle	3.10.23 / 1619	Scott Snow 3/11/23 0700

Comments/Special Instructions:

If sample volume is not sufficient for all analyses, please drop dissolved metals first.

If still not enough volume, drop total metals.

= dropped from COC

#AC00276

AC00276

Storm Event Report for March 29, 2023

Technical Memorandum

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

Phone: 208-389-7700

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2023

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for March 29, 2023

Date: May 25, 2023

To: Tammy Lightle

Cc: Monica Lowe

From: Shannon Kronz, Project Engineer

Prepared by: Zuly Lapa, Project Engineer

Reviewed by: Kevin White, Project Manager
Shannon Kronz, Project Engineer

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 September 30, 2022. 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) 2023 (October 1, 2022, through September 30, 2023). The following storm event report summarizes stormwater sampling results from the March 29, 2023, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2023 Phase I Stormwater Outfall Monitoring.

Table 2-1. WY 2023 Samples Collected

Date	Lucky	Whitewater	Main	Americana	AS_6
October 22, 2022	G[1], C[2]	G, C[3]	G, C[2]	G, C[2]	G, C[2]
January 9, 2023	G[4]	G[4]	G[4]	G[4]	G[4]
March 10, 2023	G, C[5]	G, C[5]	G, C[5]	G[5]	G, C[5]
March 29, 2023	G[6], C[5,6]	G[6], C[5,6]	G[6], C[6]	G, C	G, C[5]
Collected:	1G, 1C[5]	2G, 1C[5]	2G, 1C[5]	3G, 1C	3G, 1C[5]

Notes:

C = composite sample

G = grab sample

[1] E. coli sample qualified due to exceeded holding time.

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

[3] Composite samples rejected due to lack of representativeness (<50%).

[4] Grab samples rejected due to insufficient rainfall (<0.08 inches).

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

[6] Sample qualified due to insufficient rainfall (0.09 – 0.10 inches)

After the March 29, 2023, storm event, ACHD still needs to collect two grab samples from Lucky and one grab sample from Whitewater and Main for WY 2023. In addition, three complete composite samples need to be collected from Lucky, Whitewater, Main, and AS_6 and two composite samples need to be collected from Americana.

Section 3: Storm Event Summary

The March 29, 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 March 28, 2023, is included in Attachment A for reference.

Tuesday, March 28, 2023 (Set Up)

- On the morning of March 28, 2023, the National Weather Service issued a forecast for widespread rain in the Boise area, starting March 29 at 0300 - 1000. Rain shadowing was expected on March 28, but not during the forecasted storm. The chance of precipitation was 70 percent, with 0.15 inches of precipitation forecasted.
- Setup was accomplished on March 28, 2023. 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.

Wednesday, March 29, 2023 (Storm Event)

- Moderate rain started at approximately 0715 and continued until 1100.
- Precipitation totals ranged between 0.09 and 0.12 inches at local rain gauges.

Flow measurements and precipitation data are listed in Table 1 along with a sampling summary. Hydrographs for each 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 March 28, 2023, 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 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 teams mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on March 29 at 0900. Grab samples were submitted to the West Boise Water Quality Lab at 1042 on March 29. Results for grab samples, including field parameter and analytical data, are included in Table 2. Laboratory analytical reports are located in Attachment D.

Composite Samples

Composite samples were collected at Lucky, Whitewater, Main, Americana, and AS_6 monitoring stations and submitted to the West Boise Water Quality Lab at 1446 on March 29. The Lucky, Whitewater, and AS_6 composite samples did not have sufficient volume to analyze all parameters, but a partial water quality analysis was performed for each composite sample. A complete water quality analysis was completed on the Americana and Main composite samples. Analytical results are shown on Table 2. Pollutant loading estimates for the event are detailed in Table 3.

Section 4: Quality Assurance/Quality Control

A summary of quality control samples collected during the March 29, 2023 storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Lucky 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
230310-03-001	Field blank	Lucky grab	No *E. coli* detection was reported in the field blank.
230310-03-101	Field duplicate	Lucky 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. The samples collected at Lucky, Whitewater, and Main during the March 29 event were qualified due to insufficient rainfall (0.09 - 0.10 inches). The samples collected at Americana and AS_6 were accepted because the average rainfall for the Front and East rain gauges averaged greater than 0.10 inches. All other acceptance and performance measures for all analytical and non-analytical criteria were met for this storm event.

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 used in the field (ft^3 or gal)	2,895 gal	800 ft^3	3,411 gal	2,960 ft^3	221 ft^3
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	level > 2.6	level > 2.5	level > 2.4	level > 6.7	--
Runoff start time	0739	0914	0722	0746	0856
Grab sample collection time	0919	1001	0905	0921	0940
Composite sample stop time	1228	1244	1118	1320	1215
Runoff stop time	1422	1545	1250	1331	1405
Volume of discharge sampled (ft^3)	1,330	4,959	3,774	53,671	1,478
Total runoff volume (ft^3)	1,414	6,111	3,981	54,701	1,592
Percent of storm flow sampled (%)	94%	81%	95%	98%	93%
Composite sample duration (hrs)	5.0	3.5	4.0	5.5	3.0
Storm Precipitation (in)	0.09	0.10	0.09	0.09/0.12	0.09/0.12
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	3	6	9	18	7
Number of composite bottles filled	1	1	1	1	1
Composite sample volume (Approx.; ml)	2,000	2,750	5,750	10,250	4,250

Notes:

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	3/29/2023	230329-03-WG	5.90 [3J]	7.30 [3J]	222.85 [3J]	10.99 [3J]	222.4 [3J]	230329-03-WC	--	--	34.5 [3J]	--	--	--	0.314 [3J]	0.104 [3J]	--	0.546 [3J]	--	1.9 [3J]	0.012 [3J]	0.026 [3J]	2.5 [3J]	0.096 [3J]	0.72 [3J]	--	12.2 [3J]
Whitewater	3/29/2023	230329-11-WG	7.70 [3J]	7.43 [3J]	134.99 [3J]	8.65 [3J]	10.7 [3J]	230329-11-WC	8.04 [3J]	69.0 [3J]	56.6 [3J]	48.7 [3J]	--	--	0.273 [3J]	0.0993 [3J]	0.366 [3J]	0.373 [3J]	1.28 [3J]	1.8 [3J]	0.017 [3J]	0.045 [3J]	3.9 [3J]	0.25 [3J]	3.2 [3J]	<0.0100 [3J]	29.4 [3J]
Main	3/29/2023	230329-12-WG	10.10 [3J]	7.93 [3J]	209.7 [3J]	7.74 [3J]	52.8 [3J]	230329-12-WC	12.1 [3J]	105 [3J]	44.7 [3J]	77.7 [3J]	54.0 [3J]	170 [3J]	0.209 [3J]	0.0869 [3J]	0.929 [3J]	0.671 [3J]	1.85 [3J]	2.1 [3J]	0.020 [3J]	0.081 [3J]	5.7 [3J]	0.089 [3J]	5.7 [3J]	0.0187 [3J]	33.4 [3J]
Americana	3/29/2023	230329-14-WG	10.42 [3J]	7.67 [3J]	481.7 [3J]	7.65 [3J]	218.7 [3J]	230329-14-WC	9.64 [3J]	62 [3J]	133 [3J]	45.8 [3J]	38.6 [3J]	318 [3J]	0.205 [3J]	0.0914 [3J]	0.633 [3J]	1.08 [3J]	1.9 [3J]	3.6 [3J]	0.023 [3J]	0.065 [3J]	3.4 [3J]	0.08 [3J]	3.6 [3J]	0.03 [3J]	20.5 [3J]
AS_6	3/29/2023	230329-206-WG	9.41 [3J]	7.85 [3J]	247.3 [3J]	5.75 [3J]	1046.2 [3J]	230329-206-WC	21.4 [3J]	145 [3J]	123 [3J]	69.4 [3J]	--	354 [3J]	0.528 [3J]	0.266 [3J]	0.600 [3J]	0.387 [3J]	2.84 [3J]	3.2 [3J]	0.028 [3J]	0.099 [3J]	4.8 [3J]	0.22 [3J]	6.5 [3J]	0.0181 [3J]	23.9 [3J]

Notes:

– = No data.

[3J] Data qualifed due to insufficient rainfall (0.09 - 0.10 inches)

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	3/29/2023	--	0.0277 [3J]	--	0.0482 [3J]	--
Whitewater	3/29/2023	--	0.0678 [3J]	0.0909 [3J]	0.0927 [3J]	0.318 [3J]
Main	3/29/2023	13.4 [3J]	0.0519 [3J]	0.231 [3J]	0.167 [3J]	0.460 [3J]
Americana	3/29/2023	132 [3J]	0.700 [3J]	2.16 [3J]	3.69 [3J]	6.49 [3J]
AS_6	3/29/2023	--	0.0524 [3J]	0.0596 [3J]	0.0384 [3J]	0.282 [3J]

Notes:

– = No data.

[3J] Data qualifed due to insufficient rainfall (0.09 - 0.10 inches)

Table 4. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli
				mpn/100 mL
3/29/2023	230329-03-WG	230329-03-001	Field Blank	<1.0
3/29/2023	230329-03-WG	230329-03-101	Field Duplicate	313.0
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: 3/28/2023	Time: 7:40 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?)		Yes

Past 72 hr Precip	0.00”
Date and time of expected event	3/29 3am
Expected amount of precipitation	0.14
Percent chance of precipitation	70%
Percent chance of >0.10” over 12 hours	25%

NWS Update

I spoke with Dave from NWS – he said that we are currently being rainshadowed so we won’t see much measurable precip during the daytime hours today. The rainshadowing is expected to be overcome tonight, and we should see measurable precip starting between 3am and 6am. The bulk of the storm is looking like 4am-10am, and should be done by noon tomorrow. The models differ on the amount of precip because some show the system breaking up while others don’t. Their official forecast is 0.15”.

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: Boise ID
Issued by: National Weather Service Boise, ID
Last Update: 3:44 am MDT Mar 28, 2023

Today: Snow likely before noon, then a chance of rain. Cloudy, with a high near 53. Breezy, with an east southeast wind around 21 mph, with gusts as high as 30 mph. Chance of precipitation is 60%. Little or no snow accumulation expected.
Tonight: Rain likely, mainly after midnight. Cloudy, with a low around 36. Breezy, with an east wind 17 to 22 mph decreasing to 5 to 10 mph after midnight. Chance of precipitation is 60%.
Wednesday: Rain likely, mainly before noon. Cloudy, with a high near 49. Calm wind becoming west northwest 5 to 7 mph in the afternoon. Chance of precipitation is 70%.
Wednesday Night: A 30 percent chance of rain, mainly after midnight. Mostly cloudy, with a low around 34. Northwest wind 5 to 8 mph becoming calm in the evening.

Thursday: A chance of rain and snow before noon, then a chance of rain. Mostly cloudy, with a high near 51. West northwest wind 5 to 10 mph increasing to 11 to 16 mph in the afternoon. Chance of precipitation is 40%. Little or no snow accumulation expected.
Thursday Night: Mostly cloudy, with a low around 34.
Friday: Partly sunny, with a high near 54.
Friday Night: A 30 percent chance of showers after midnight. Mostly cloudy, with a low around 39.
Saturday: Showers. High near 52. Chance of precipitation is 80%.
Saturday Night: Showers, mainly before midnight. Low around 36. Chance of precipitation is 80%.
Sunday: Rain and snow showers likely. Mostly cloudy, with a high near 49. Chance of precipitation is 60%.
Sunday Night: A chance of rain and snow showers. Mostly cloudy, with a low around 32. Chance of precipitation is 50%.
Monday: A 40 percent chance of snow showers. Partly sunny, with a high near 48.

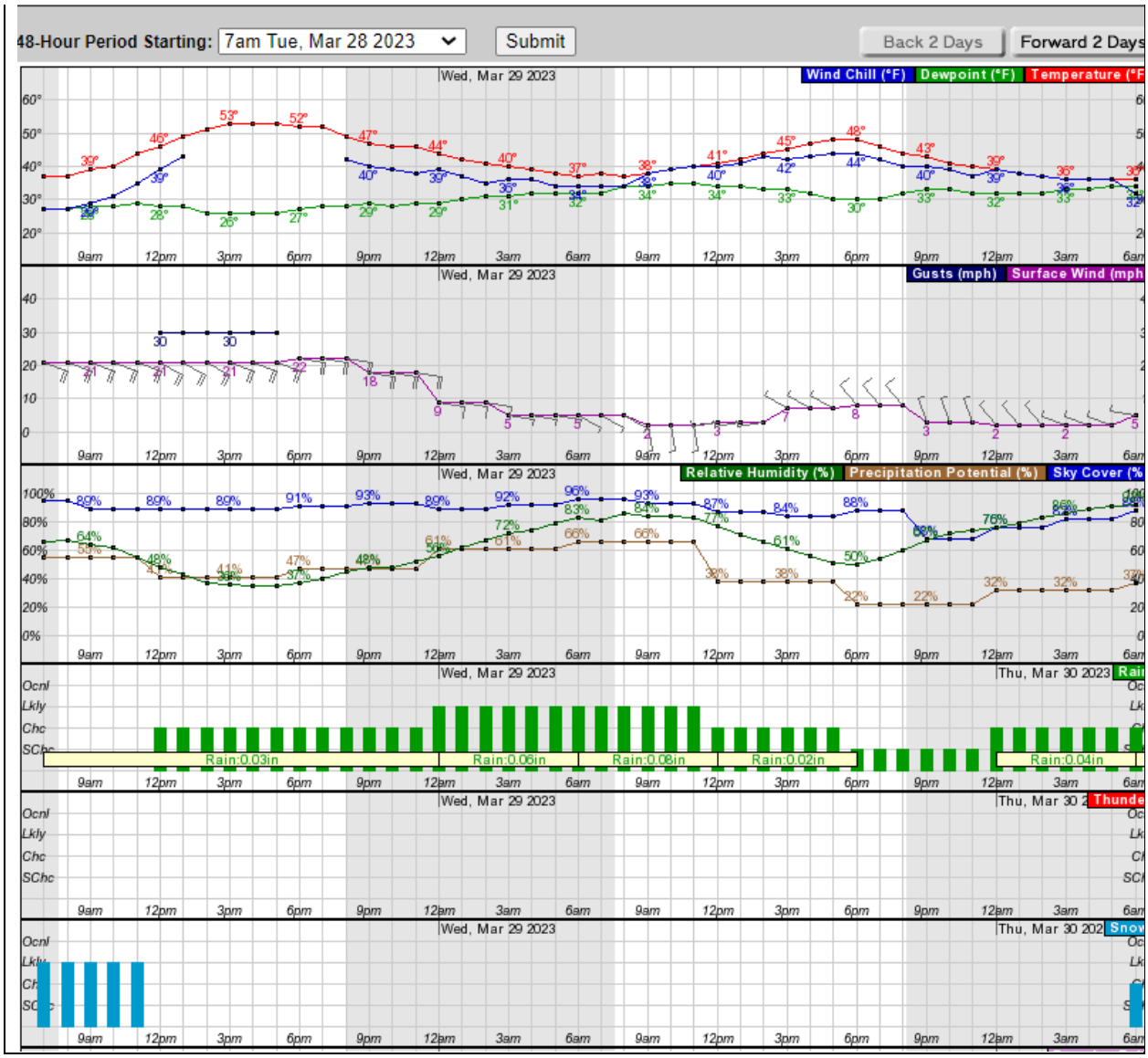
Forecast Discussion
Area Forecast Discussion
National Weather Service Boise ID
330 AM MDT Tue Mar 28 2023

.SHORT TERM...Today through Thursday night...A powerful storm system currently off the Oregon coast will bring periods of rain, snow, and gusty winds to our area through Thursday. A warm front will stall across northern portions of our area today as the low pressure center moves south. The heaviest precipitation today, mainly in the form of snow, will occur across northern Harney and Malheur counties as well as the higher elevations of Baker County, where a Winter Storm Warning remains in effect until 11 PM PDT this evening. Gusty winds will also result in blowing and drifting of snow. In Idaho, light snow will fall across the mountains today while the Snake Basin sees little to no precipitation due to downsloping off of the Owyhees. Gusty east to southeast winds will continue, strongest southeast of Boise and near the Nevada border where gusts to near 45 mph are possible this afternoon. Late this afternoon and evening, **a cold front will move west to east through eastern Oregon producing a final burst of moderate to heavy snow before shifting into western Idaho late this evening through Wednesday morning. The front will produce widespread precipitation in all areas,** with snow above 3500-4000 feet MSL. Winds will decrease and shift to the northwest behind the front. The upper level low will split with the northern portion tracking through our area Wednesday night and Thursday. Moisture will wrap around the low as it moves overhead, with the focus of precipitation across our northern and eastern zones. Snow levels will briefly drop to 2500-3000 feet Thursday morning, with light snow accumulations possible in the Snake Basin mainly southeast of Boise and in the Magic Valley. Northwest winds will increase and become gusty on Thursday as the low center moves to our east. Through Thursday, storm total snow accumulations of 3-6 inches in mountain valleys and 6-12 inches in higher mountains are expected.

.LONG TERM...Friday through Tuesday...Friday will be the driest day of the extended period due a transitory weak high pressure aloft.

However, residual moisture with an exiting trough will lead to chance of snow showers in central Idaho, but any accumulations will be light. Temperatures will be around 5 degrees below normal. **Models, including ensembles, are in excellent agreement that widespread precipitation will spread back into the region over the weekend as the next trough approaches the Pacific Northwest**. Snow levels will rise to around 4000 to 5000 feet on Saturday, lowering to 3000 to 4000 feet on Sunday as the trough moves further inland. Significant snowfall accumulations are expected in the mountains, with several inches in the mountain valleys and a foot or more on the peaks. Windy conditions will develop on Saturday as well. Temperatures will lower to around 10 degrees below normal by Sunday. Snow levels will fall to valley floors by Monday afternoon as the trough axis swings through the region. Snow showers will bring additional light accumulations to the mountains with minor accumulations in the valleys Monday through Tuesday. Temperatures will be 10 to 15 degrees below normal.

Hourly Forecast


48-Hour Period Starting: 7am Tue, Mar 28 2023
Submit
Back 2 Days
Forward 2 Days
Wed, Mar 29 2023
Wind Chill (°F)
Dewpoint (°F)
Temperature (°F
Gusts (mph)
Surface Wind (mph
Relative Humidity (%)
Precipitation Potential (%)
Sky Cover (%
Thu, Mar 30 2023
Ocnl
Lkly
Chc
SChc
Rain:0.03in
Rain:0.06in
Rain:0.08in
Rain:0.02in
Rain:0.04in
Thunde
Snow
9am
12pm
3pm
6pm
9pm
12am
3am
6am

Storm Event QA/QC Checklist – Phase I

STORM DATE 230329

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	0.00	0.00	0.00/0.00	0.00/0.00	< 0.11" in 72 hrs	X		
2. Precipitation (inches)	0.09	0.10	0.09	0.09/0.12	0.09/0.12	> 0.10"	X	X	
3. Sampled amount (% of total run-off)	94	81	95	98	93	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		
4. Composite sample duration (hours)	5.0	3.5	4.0	5.5	3.0				
4. Ecoli sample holding time (hours)	3	2	3	2.5	2.5	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject	X		
5. Filtering of samples for dissolved parameter analysis (hours)	2.5	2	4	0.5	4	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

- Lucky, Whitewater, and Main are qualified due to rainfall amount.
- Americana and Main: all parameters analyzed.
- Lucky - BOD, COD, TSS, TDS, TKN, Total Hg, Turbidity, Ammonia were NOT analyzed.
- Whitewater - TSS, TDS were NOT analyzed.
- AS-6 - TSS was NOT analyzed.

Reviewed by Jen Gille **Date** 05.01.23 **Approved by** Monica Love **Date** 5/3/23

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**

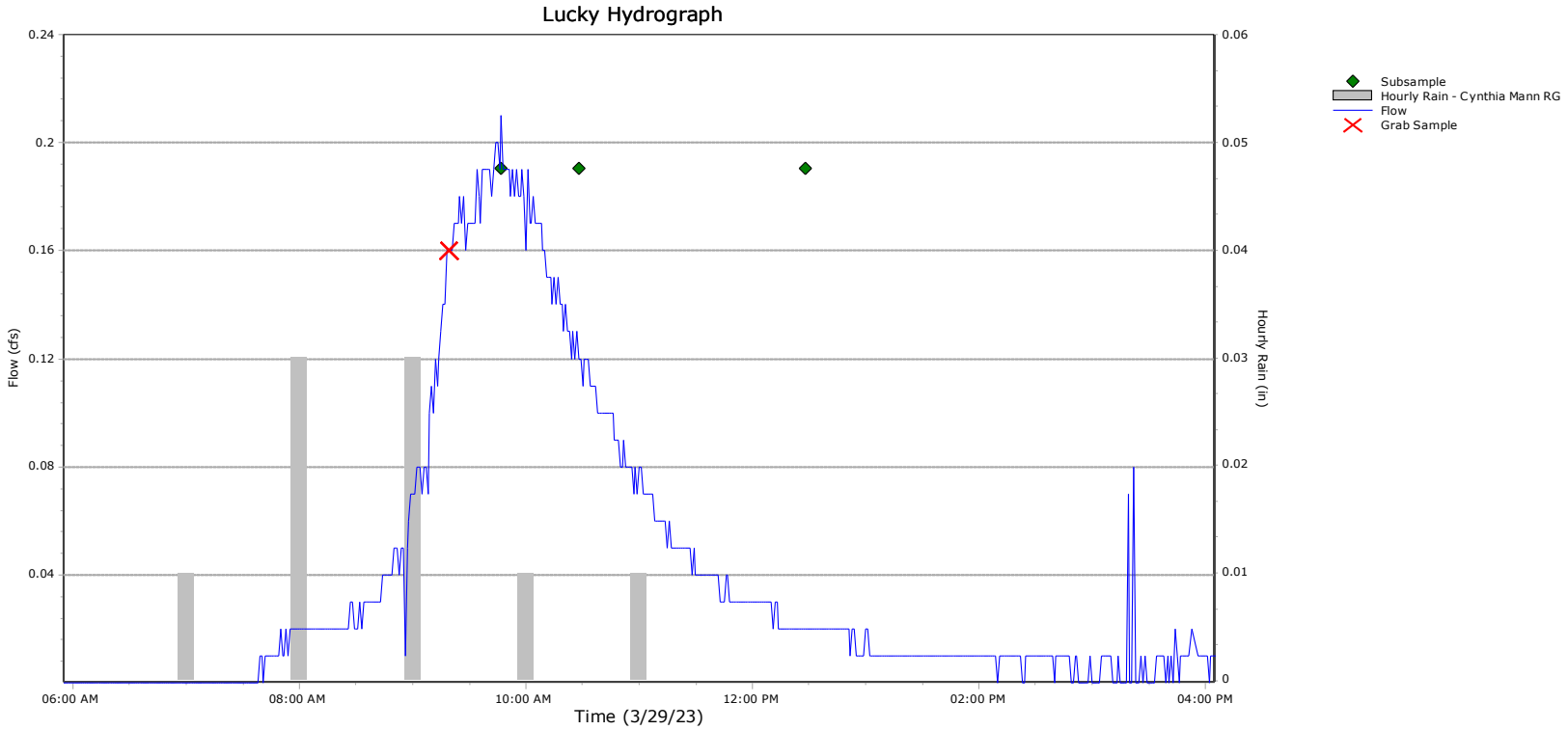
Notes:

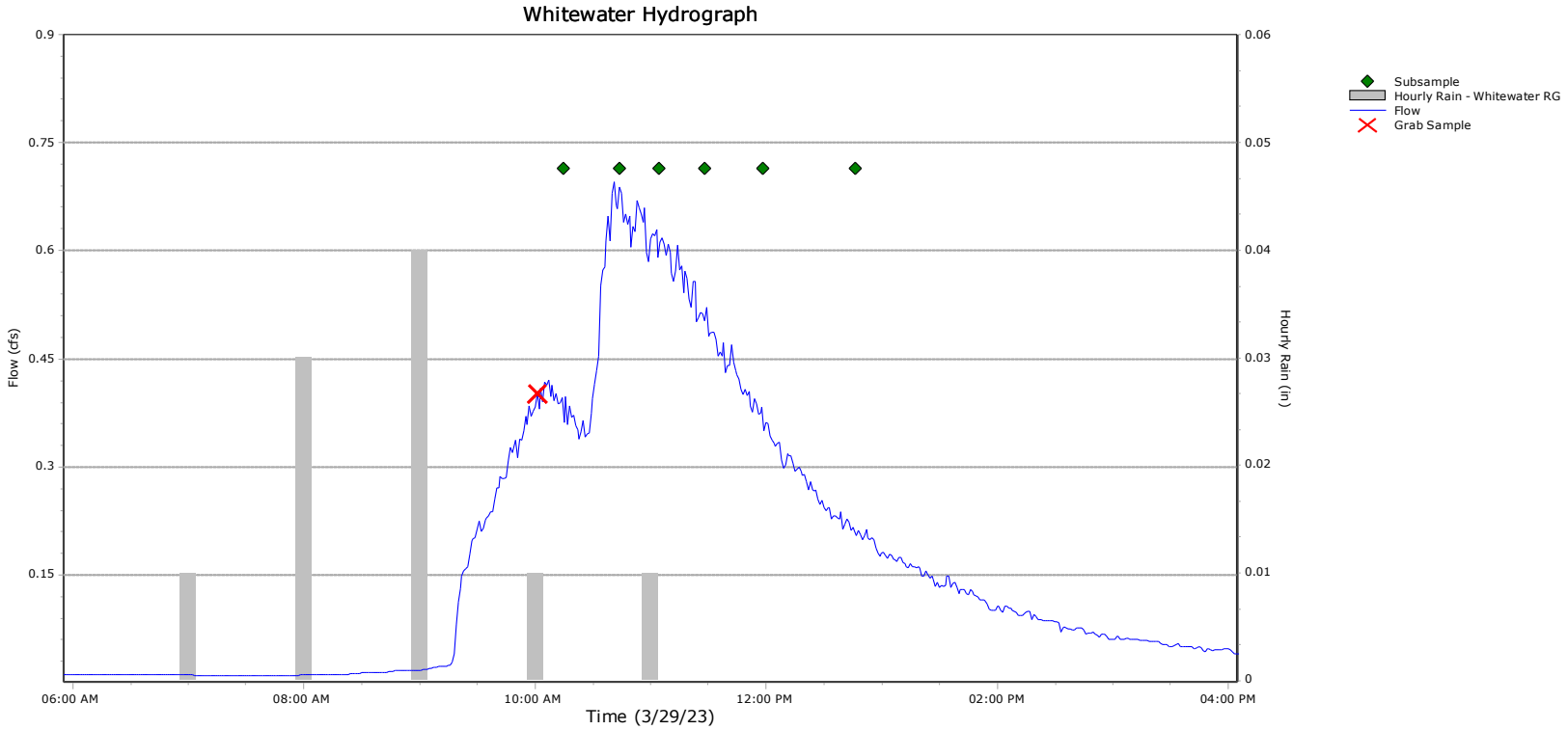
Calculated RC = Average (precip (ft) / [volume (ft^3) x area (ft^2)])

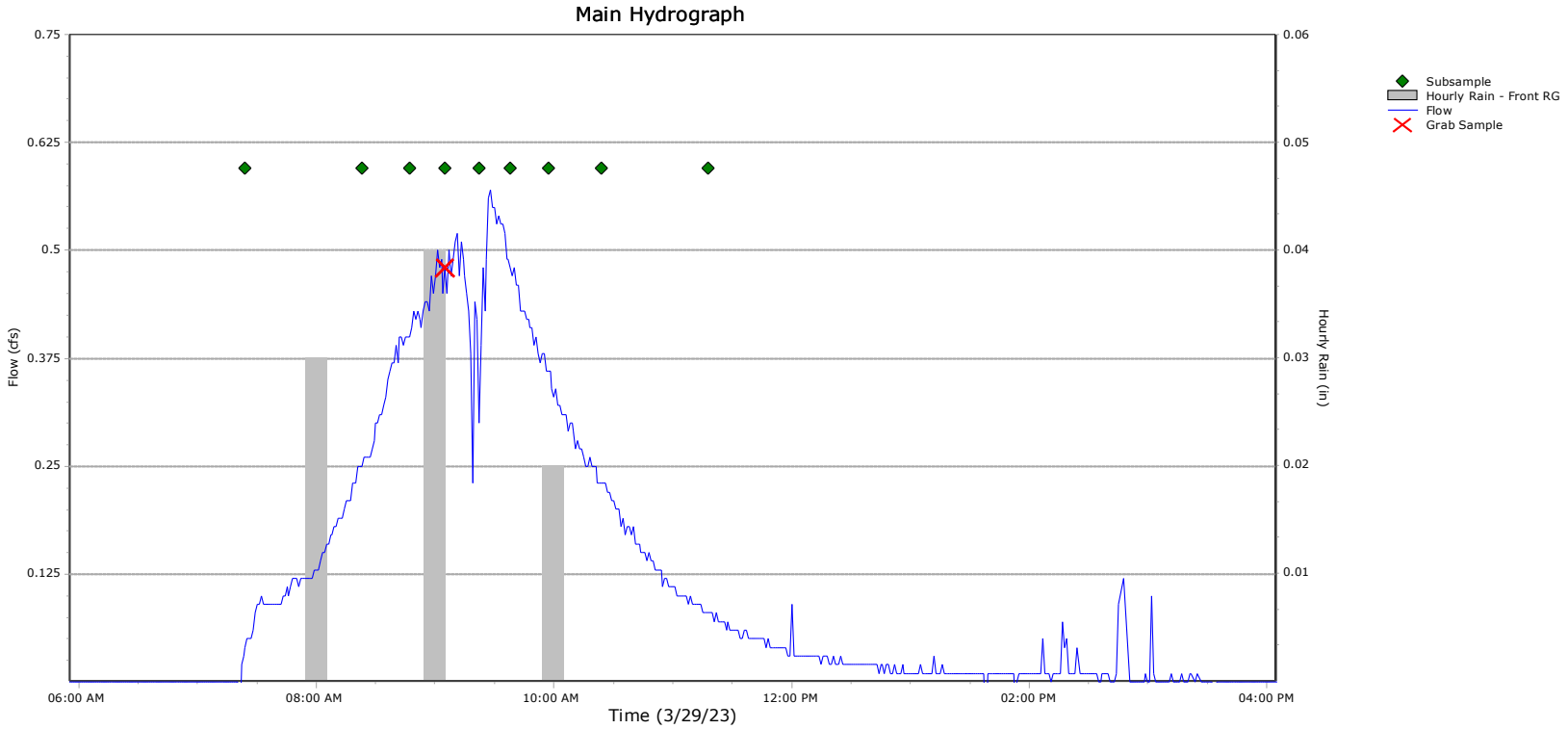
Where precip (ft) is the measured amount from local rain guage, and volume (ft^3) is the measured discharge, and area (ft^2) is the watershed area

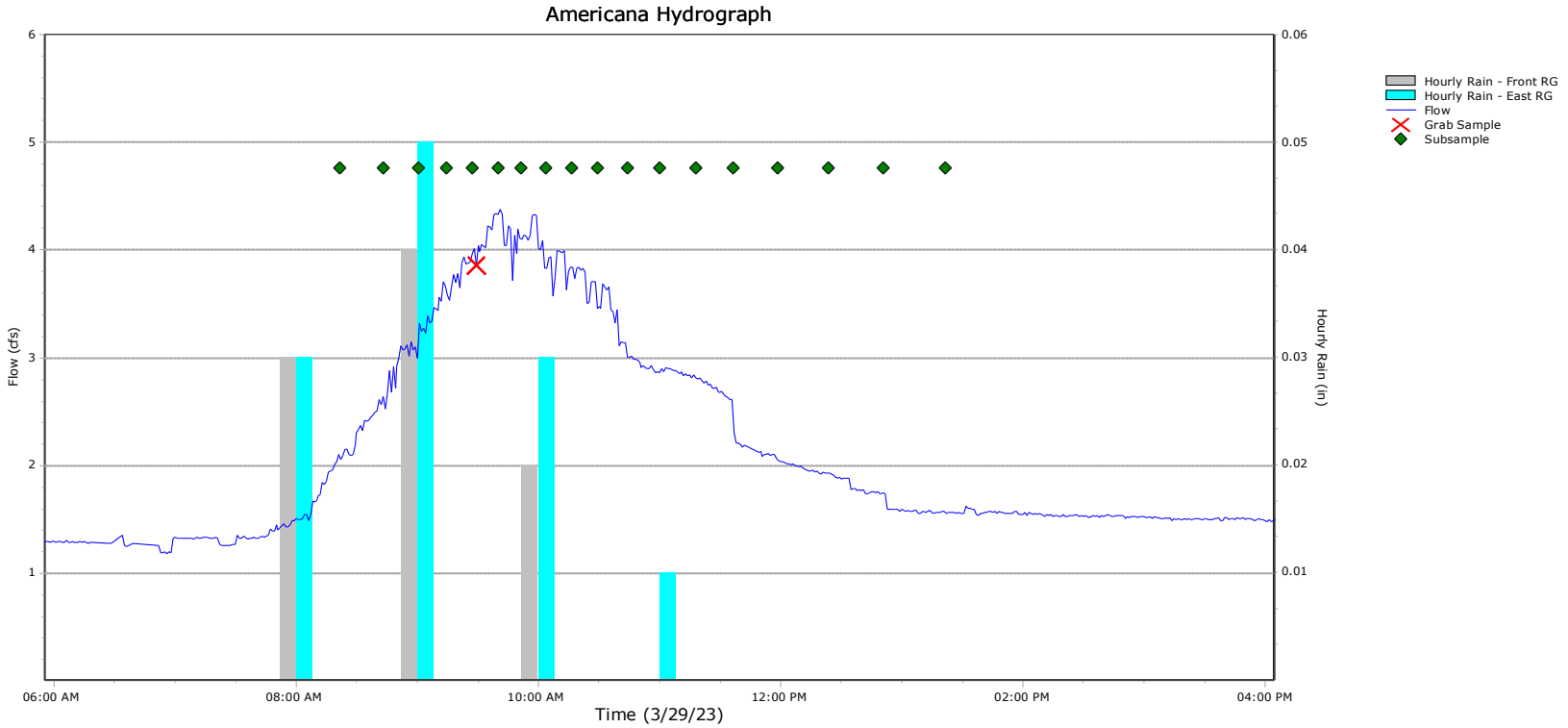
Expected volume (ft^3) = RC x expected precip (ft) x area (ft^2)

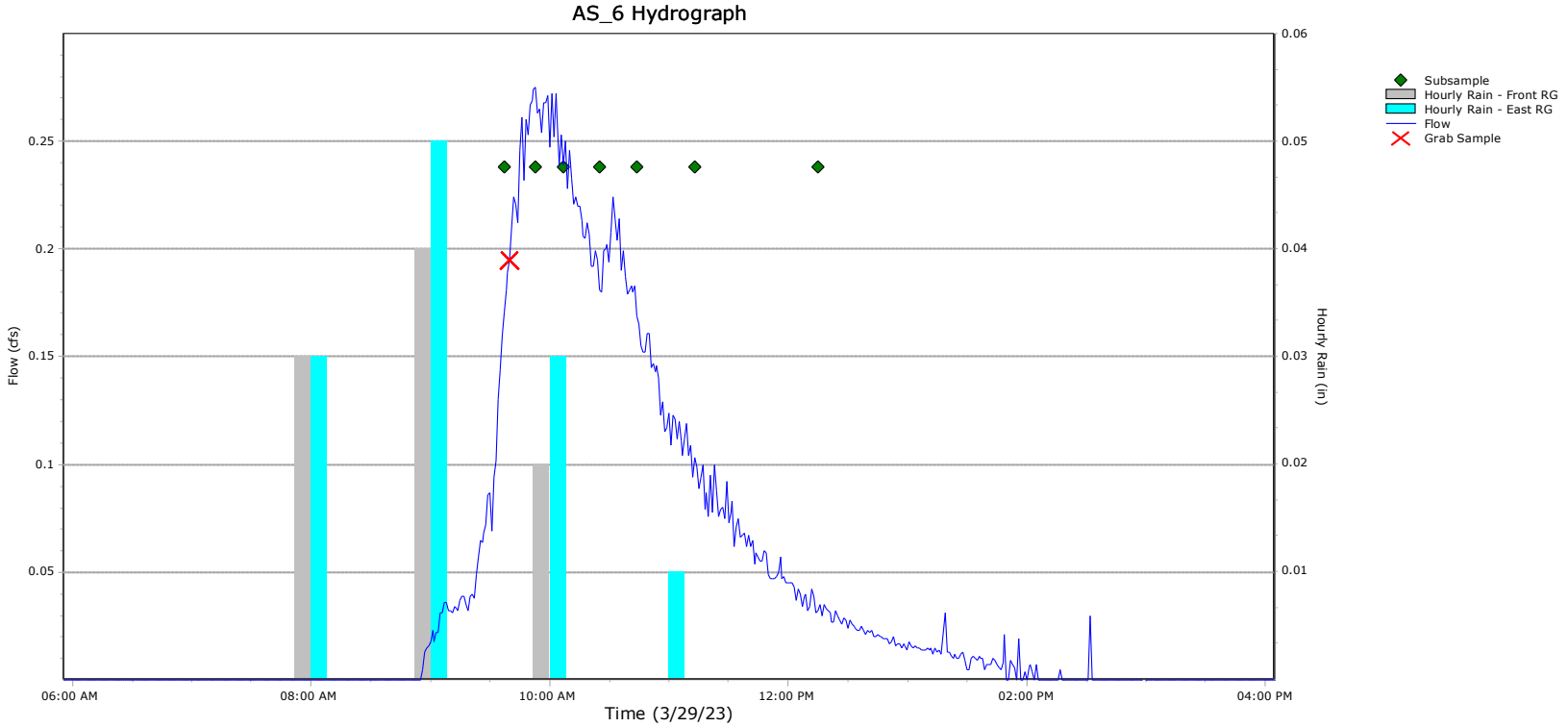
Attachment B: Storm Event Hydrographs


Lucky Hydrograph
0.24
0.2
0.16
0.12
0.08
0.04
Flow (cfs)
0.06
0.05
0.04
0.03
0.02
0.01
0
Hourly Rain (in)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
Time (3/29/23)
Subsample
Hourly Rain - Cynthia Mann RG
Flow
Grab Sample


Whitewater Hydrograph
0.9
0.75
0.6
0.45
0.3
0.15
Flow (cfs)
0.06
0.05
0.04
0.03
0.02
0.01
0
Hourly Rain (in)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
Time (3/29/23)
Subsample
Hourly Rain - Whitewater RG
Flow
Grab Sample


Main Hydrograph
0.75
0.625
0.5
0.375
0.25
0.125
Flow (cfs)
0.06
0.05
0.04
0.03
0.02
0.01
Hourly Rain (in)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
Time (3/29/23)
Subsample
Hourly Rain - Front RG
Flow
Grab Sample


Americana Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (3/29/23)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
1
2
3
4
5
6
0.01
0.02
0.03
0.04
0.05
0.06
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample
Subsample


AS_6 Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (3/29/23)
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
04:00 PM
0.25
0.2
0.15
0.1
0.05
0.06
0.05
0.04
0.03
0.02
0.01
Subsample
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Grab Sample

Attachment C: Field Forms

Set Up/ Shut Down Form – HACH

TATION: Lucky

SET UP

Personnel: Tammy / Chad

Date/Time On-Site: 3/28/23 1117

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1119	1.6	0	0	12.9

Enable Condition or Velocity Cutoff:	2.6"
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: TL

Date/Time On-Site: 4/3/23 1303

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

Downloaded to:	USB on keychain

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: Tammy Chad **Date/Time On-Site:** 3/29 1417

☐ Halt sampler program		
☐ Put lid on sample bottle; label sample bottle		
Sample ID:	230329-03	-WC
Approx Sample Volume (mL):	2000	
Clarity (ex. Clear, Cloudy, Silty):	Clear, 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	3/29 0947	Success	13		
2	1028		14		
3	1228		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

Grab Sample Data Form

STATION: Lucky

Personnel: CRS SMK **Date/Time On-Site:** 3/29/23

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
922	3.33	76.19 gpm	.57	12.6	3/29 752	✓

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230329-03 -WG	3/29/23	0919	☑
Field Duplicate *E.Coli*	230329-03 -101	3/29/23	0919	☑
Field Blank *E.Coli*	230329-03 -001	3/29/23	0919	☑

*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	931	10.99	5.90	7.30	22285

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

Comments:

Set Up/ Shut Down Form – ISCO

TATION: Whitewater

SET UP

Personnel: TL / Chad

Date/Time On-Site: 3/28/23 1142

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0938	0.91	0.02	0.24	N/A
1144	0.86	0.02	0.23	NA

Enable Condition:	level > 2.5"
Hysteresis:	1.0"
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 3/28 0938
- ☒ 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

- ☒ Replace flowmeter battery
- ☐ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 4/3 0943
- ☒ 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: White Waters **Bottle** 1 **of** 1

Personnel: Tammy Chad **Date/Time On-Site:** 1403

☐ Halt sampler program			
☐ Put lid on sample bottle; label sample bottle			
Sample ID:	230329-11	-WC	
Approx Sample Volume (mL):	7750		
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	329 1013	Success	13		
2	329 1042		14		
3	329 1102		15		
4	329 1126		16		
5	329 1156		17		
6	329 1244		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

Grab Sample Data Form

STATION: Whitewater

Personnel: SMK CRS **Date/Time On-Site:** 3/29/23 0950

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0952	2.68	.31	.83	NA	3/29 0900	.09

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230329-11 -WG	~~TODT~~ 3/29	1001	☑
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	1001	8.65	7.70	7.43	134.99

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

Comments:

Set Up/ Shut Down Form – HACH

STATION: Main

SET UP

Personnel: Tammy / Chad

Date/Time On-Site: 3/28/23 10:14

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1016	1.38	0	0	12.8

Enable Condition or Velocity Cutoff:	2.4
Deadband:	1.0
Trigger Volume:	3411 G

- ☑ 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: Tammy ~~Chad~~

Date/Time On-Site: ~~3/28/23~~ 4/3/23

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1121	1.30	0	0		11.9
Downloaded to:		USB on Keychain			

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
Personnel: Tammy / Chad

Bottle 1 **of** 1
Date/Time On-Site: 1340

☑ Halt sampler program	
☐ Put lid on sample bottle; label sample bottle	
Sample ID:	230329-12- -WC
Approx Sample Volume (mL):	5750
Clarity (ex. Clear, Cloudy, Silty):	Cloudy
Color (ex. Clear, Gray, Tan, Brown, Black):	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	3/28 ~~1143~~ ~~3/28~~	0 ml - Rinse Error	13		
2	3/29 0724	Success	14		
3	0823		15		
4	0847		16		
5	0905		17		
6	0922		18		
7	0938		19		
8	0957		20		
9	1024		21		
10	1118		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

Grab Sample Data Form

STATION: Main

Personnel: TL, KRF **Date/Time On-Site:** 3.29.23

Flow Meter Current Status						
Time	Level (in)	Flow ~~(cfs)~~ SPM	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0907	4.76	200.81	0.89	12.9		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230329-12 -WG	3.29.23	0905	☒
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	0911	7.74	10.10	7.93	209.7

Sampler Current Status	
First Subsample Date/Time	0724
Last Subsample Date/Time	0905
# of Subsamples taken	5

Comments: one subsample attempted last night — but did not collect any liquid

Set Up/ Shut Down Form – ISCO

STATION: Americana

SET UP

Personnel: Tammy / Chad

Date/Time On-Site: 3/28/23 1035

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0943	5.78	1.26	1.464	11.42
1034	5.68	1.18 ~~1.508~~	1.508	12.22

Enable Condition:	Level > ~~6.8~~ 6.7"
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 3/28 0943
- ☒ 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: TL

Date/Time On-Site: 4/3/23 1135

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1131	6.51	1.76	1.676	11.76
	Downloaded to:	NA		

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

Flowlink (Refer to Flowlink Instructions, if needed)
- ☒ Direct or Remote; Date/time 4/3 0953
- ☒ 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: Need to return to replace dessiccant.

Composite Sample Collection

STATION: Amoco Cadiz **Bottle** 1 **of** 1

Personnel: Jimmy Chad **Date/Time On-Site:** 1351

☑ Halt sampler program			
☐ Put lid on sample bottle; label sample bottle			
Sample ID:	230229-14	-WC	
Approx Sample Volume (mL):	10250		
Clarity (ex. Clear, Cloudy, Silty):	Brown black		
Color (ex. Clear, Gray, Tan, Brown, Black):	Cloudy		
QA/QC Sample ID:	—	-103	(Time: 1200)

Subsample Information

Trigger #	Date/Time	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	3/29 0820	Success	13	1117	Success
2	0842		14	1135	
3	0900		15	1158	
4	0913		16	1223	
5	0927		17	1250	
6	0939		18	1320	
7	0950		19		
8	1003		20		
9	1015		21		
10	1028		22		
11	1043		23		
12	1059		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: TL, KRF **Date/Time On-Site:** 03.29.23 / 0918

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0922	8.61	3.93	2.534	12.03		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230329-14 -WG	3.29.23	0921	☑
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	0926	7.65	10.42	7.67	481.7

Sampler Current Status	
First Subsample Date/Time	
Last Subsample Date/Time	
# of Subsamples taken	4

Comments:

Grab Sample Data Form

STATION: AS-6

Personnel: TZL, KRF **Date/Time On-Site:** 03.29.23 / 0936

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0936	2.421	0.16	1.00	11.8		

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230329-206 -WG	3.29.23	0940	☒
Field Duplicate *E.Coli*	230329-206 -101	↓	0941	☒
Field Blank *E.Coli*	230329-206 -001	↓	0945	☒

*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	0947	5.75	9.41	7.85	247.3

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

Comments: No subsamples yet - 200 cf so far

* 1 sample taken as we left

• The QC samples were discarded b/c this was the alternate site & the samples were not needed.

Set Up/ Shut Down Form – HACH

TATION: AB-6

SET UP

Personnel: Tammy/Chad

Date/Time On-Site: 3/28/23 1053

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1055	0	0	0	12.2

Enable Condition or Velocity Cutoff:	.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: TLL

Date/Time On-Site: 04.03.23 / 1401

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1401	0	0	0	92976	11.6
	Downloaded to:	R7			

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** 1

Personnel: TL **Date/Time On-Site:** 3.29.23 / 1309

☐ Halt sampler program			
☐ Put lid on sample bottle; label sample bottle			
Sample ID:	230329-206	-WC	
Approx Sample Volume (mL):	4250 mL		
Clarity (ex. Clear, Cloudy, Silty):	Silty-ish		
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	3/29 0937	Success	13		
2	0953		14		
3	1007		15		
4	1025		16		
5	1044		17		
6	1113		18		
7	1215		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

Attachment D: Storm Event Analytical Reports

Report Date: 04/05/2023 11:55

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
AC00278-01	ACST1B	230329-03-WG	Water		03/29/2023	03/29/2023
AC00278-02	ACST1B	230329-03-101	Water		03/29/2023	03/29/2023
AC00278-03	ACST1B	230329-03-001	Water		03/29/2023	03/29/2023
AC00278-04	ACST1B	230329-11-WG	Water		03/29/2023	03/29/2023
AC00278-05	ACST1B	230329-12-WG	Water		03/29/2023	03/29/2023
AC00278-06	ACST1B	230329-14-WG	Water		03/29/2023	03/29/2023
AC00278-07	ACST1B	230329-206-WG	Water		03/29/2023	03/29/2023

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Report Date: 04/05/2023 11:55

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:	230329-03-WG
Date/Time Collected:	03/29/2023 09:19		
Lab Number:	AC00278-01	Sample Collector:	T.L
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	B231040	222.4	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/29/23 12:06	3/30/23 13:05	RKT	
Wet Chemistry										
Chlorine Screen	B231041	Absent				SM 4500-CL G-2000 mod	03/29/23	3/29/23 11:23	NTS	

* 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.

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11818 Joplin Road
Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230329-03-101
Date/Time Collected:	03/29/2023 12:00		
Lab Number:	AC00278-02	Sample Collector:	T.L
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	B231040	313.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/29/23 12:06	3/30/23 13:05	RKT	
Wet Chemistry										
Chlorine Screen	B231041	Absent				SM 4500-CL G-2000 mod	03/29/23	3/29/23 11:23	NTS	

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Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1B	Location Description:	230329-03-001
Date/Time Collected:	03/29/2023 12:00		
Lab Number:	AC00278-03	Sample Collector:	T.L
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	B231040	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/29/23 12:06	3/30/23 13:05	RKT	U
Wet Chemistry										
Chlorine Screen	B231041	Absent				SM 4500-CL G-2000 mod	03/29/23	3/29/23 11:23	NTS	

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Water Quality Laboratory
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Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230329-11-WG
Date/Time Collected:	03/29/2023 10:01		
Lab Number:	AC00278-04	Sample Collector:	T.L
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	B231040	10.7	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/29/23 12:06	3/30/23 13:05	RKT	
Wet Chemistry										
Chlorine Screen	B231041	Absent				SM 4500-CL G-2000 mod	03/29/23	3/29/23 11:21	NTS	

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Boise, Idaho 83714-1076
Telephone (208) 608-7240
Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230329-12-WG
Date/Time Collected:	03/29/2023 09:05		
Lab Number:	AC00278-05	Sample Collector:	T.L
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	B231040	52.8	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/29/23 12:06	3/30/23 13:05	RKT	
Wet Chemistry										
Chlorine Screen	B231041	Absent				SM 4500-CL G-2000 mod	03/29/23	3/29/23 11:23	NTS	

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Analysis Report

Location:	ACST1B	Location Description:	230329-14-WG
Date/Time Collected:	03/29/2023 09:21		
Lab Number:	AC00278-06	Sample Collector:	T.L
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	B231040	218.7	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/29/23 12:06	3/30/23 13:05	RKT	
Wet Chemistry										
Chlorine Screen	B231041	Absent				SM 4500-CL G-2000 mod	03/29/23	3/29/23 11:23	NTS	

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Boise, Idaho 83714-1076
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Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230329-206-WG
Date/Time Collected:	03/29/2023 09:40		
Lab Number:	AC00278-07	Sample Collector:	T.L
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	B231040	1046.2	MPN/100 mL	1.0	1.0	IDEXX - Colilert	03/29/23 12:06	3/30/23 13:05	RKT	
Wet Chemistry										
Chlorine Screen	B231041	Absent				SM 4500-CL G-2000 mod	03/29/23	3/29/23 11:23	NTS	

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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: B231040									
Blank (B231040-BLK1)									
E. Coli	Absent						03/30/2023	RKT	
LCS (B231040-BS1)									
E. Coli				Present			03/30/2023	RKT	
Duplicate (B231040-DUP1)	Source ID: AC00278-04								
E. Coli					Pass	128	03/30/2023	RKT	

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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

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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: 63061761
Project: Stormwater-PI
Sampler(s): Tammy Lightle
Kit Fairburn
Chad Schwead
Shannon Kranz

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	C-231 Total Containers
AC00278-01	3.29.23		0919		230329-03-WG	CS	X	X												X					1
-02			1200		230329-03-101	CS	X	X												X					1
-03			1200		230329-03-001	CS	X	X												X					1
-04			1001		230329-11-WG	CS	X	X												X					1
-05			0905		230329-12-WG	TL	X	X												X					1
-06			0921		230329-14-WG	TL	X	X												X					1
-07			0940		230329-206-WG	TL	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
[signature]	03.29.23 / 1042	KMR 3-29-23	1044
			AC00278

AC00278

Report Date: 04/27/2023 11:45

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
AC00279-01	ACST1C	230329-03-WC	Water		03/29/2023	03/29/2023
AC00279-02	ACST1C	230329-11-WC	Water		03/29/2023	03/29/2023
AC00279-03	ACST1C	230329-12-WC	Water		03/29/2023	03/29/2023
AC00279-04	ACST1C	230329-14-WC	Water		03/29/2023	03/29/2023
AC00279-05	ACST1C	230329-206-WC	Water		03/29/2023	03/29/2023

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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:	230329-03-WC
Date/Time Collected:	03/29/2023 09:47 - 03/29/2023 12:28		
Lab Number:	AC00279-01	Sample Collector:	T.L
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										
Nitrate-Nitrite, as N	B231073	0.546	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	03/31/23	3/31/23 10:51	LRF	
Dissolved Wet Chemistry										
Orthophosphate, as P	B231058	0.104	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/30/23	3/30/23 10:20	ALN	
Total Metals										
Arsenic	B231187	1.9	ug/L	0.070	0.070	EPA 200.8	04/09/23	4/13/23 11:56	DMW	
Cadmium	B231187	0.026	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 11:56	DMW	
Calcium	B231083	10.4	mg/L	0.0400	0.0400	EPA 200.7	04/03/23	4/4/23 12:07	AMO	
Lead	B231187	0.72	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 11:56	DMW	
Magnesium	B231083	2070	ug/L	75.0	75.0	EPA 200.7	04/03/23	4/4/23 12:07	AMO	
Phosphorus as P	B231083	0.314	mg/L	0.0100	0.0100	EPA 200.7	04/03/23	4/4/23 12:07	AMO	
Hardness	B231083	34.5	mg/L	0.100	0.100	SM 2340 B-2011	04/03/23	4/4/23 12:07	AMO	
Dissolved Metals										
Cadmium	B231091	0.012	ug/L	0.010	0.010	EPA 200.8	04/02/23	4/2/23 17:07	DMW	
Copper	B231091	2.5	ug/L	0.15	0.15	EPA 200.8	04/02/23	4/2/23 17:07	DMW	
Lead	B231091	0.096	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/02/23	4/2/23 17:07	DMW	
Zinc	B231091	12.2	ug/L	0.50	0.50	EPA 200.8	04/02/23	4/2/23 17:07	DMW	

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Report Date: 04/27/2023 11:45

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:	230329-11-WC
Date/Time Collected:	03/29/2023 10:12 - 03/29/2023 12:44		
Lab Number:	AC00279-02	Sample Collector:	T.L
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	B231192	0.366	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	04/08/23	4/8/23 12:35	GKH	
BOD5	B231059	8.04	mg/L	2.00	2.00	SM 5210 B-2011	03/30/23	4/4/23 9:28	NTS	
COD	B231047	69.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/30/23	3/30/23 9:52	GKH	
Nitrate-Nitrite, as N	B231073	0.373	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	03/31/23	3/31/23 10:56	LRF	
TKN	B231093	1.28	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	04/03/23	4/4/23 9:10	ALN	
Turbidity	B231063	48.7	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	03/30/23	3/30/23 11:49	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B231058	0.0993	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/30/23	3/30/23 10:25	ALN	
Total Metals										
Mercury	B231122	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	04/05/23	4/6/23 8:02	SAS	U
Arsenic	B231187	1.8	ug/L	0.070	0.070	EPA 200.8	04/09/23	4/13/23 11:58	DMW	
Cadmium	B231187	0.045	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 11:58	DMW	
Calcium	B231083	10.3	mg/L	0.0400	0.0400	EPA 200.7	04/03/23	4/4/23 12:13	AMO	
Lead	B231187	3.2	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 11:58	DMW	
Magnesium	B231083	7490	ug/L	75.0	75.0	EPA 200.7	04/03/23	4/4/23 12:13	AMO	
Phosphorus as P	B231083	0.273	mg/L	0.0100	0.0100	EPA 200.7	04/03/23	4/4/23 12:13	AMO	
Hardness	B231083	56.6	mg/L	0.100	0.100	SM 2340 B-2011	04/03/23	4/4/23 12:13	AMO	
Dissolved Metals										
Cadmium	B231091	0.017	ug/L	0.010	0.010	EPA 200.8	04/02/23	4/2/23 17:09	DMW	
Copper	B231091	3.9	ug/L	0.15	0.15	EPA 200.8	04/02/23	4/2/23 17:09	DMW	
Lead	B231091	0.25	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/02/23	4/2/23 17:09	DMW	
Zinc	B231091	29.4	ug/L	0.50	0.50	EPA 200.8	04/02/23	4/2/23 17:09	DMW	

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Report Date: 04/27/2023 11:45

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1C	Location Description:	230329-12-WC
Date/Time Collected:	03/29/2023 07:24 - 03/29/2023 11:18		
Lab Number:	AC00279-03	Sample Collector:	T.L
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	B231192	0.929	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	04/08/23	4/8/23 12:18	GKH	M-06
BOD5	B231059	12.1	mg/L	2.00	2.00	SM 5210 B-2011	03/30/23	4/4/23 9:18	NTS	
COD	B231047	105	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/30/23	3/30/23 10:00	GKH	
Nitrate-Nitrite, as N	B231073	0.671	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	03/31/23	3/31/23 10:57	LRF	
TKN	B231093	1.85	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	04/03/23	4/4/23 9:11	ALN	
Total Dissolved Solids	B231062	170	mg/L	25.0	25.0	SM 2540 C-2011	03/30/23	4/1/23 8:07	GKH	
Total Suspended Solids	B231061	54.0	mg/L	0.900	0.900	SM 2540 D-2011	03/30/23	3/30/23 10:41	ALG	
Turbidity	B231063	77.7	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	03/30/23	3/30/23 11:23	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B231058	0.0869	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/30/23	3/30/23 10:26	ALN	
Total Metals										
Mercury	B231122	0.0187	ug/L	0.0100	0.0100	EPA 245.1	04/05/23	4/6/23 8:05	SAS	
Arsenic	B231187	2.1	ug/L	0.070	0.070	EPA 200.8	04/09/23	4/13/23 12:00	DMW	
Cadmium	B231187	0.081	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 12:00	DMW	
Calcium	B231083	8.57	mg/L	0.0400	0.0400	EPA 200.7	04/03/23	4/4/23 12:19	AMO	
Lead	B231187	5.7	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 12:00	DMW	
Magnesium	B231083	5650	ug/L	75.0	75.0	EPA 200.7	04/03/23	4/4/23 12:19	AMO	
Phosphorus as P	B231083	0.209	mg/L	0.0100	0.0100	EPA 200.7	04/03/23	4/4/23 12:19	AMO	
Hardness	B231083	44.7	mg/L	0.100	0.100	SM 2340 B-2011	04/03/23	4/4/23 12:19	AMO	
Dissolved Metals										
Cadmium	B231091	0.020	ug/L	0.010	0.010	EPA 200.8	04/02/23	4/2/23 17:12	DMW	
Copper	B231091	5.7	ug/L	0.15	0.15	EPA 200.8	04/02/23	4/2/23 17:12	DMW	
Lead	B231091	0.089	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/02/23	4/2/23 17:12	DMW	
Zinc	B231091	33.4	ug/L	0.50	0.50	EPA 200.8	04/02/23	4/2/23 17:12	DMW	

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

Location:	ACST1C	Location Description:	230329-14-WC
Date/Time Collected:	03/29/2023 08:20 - 03/29/2023 13:20		
Lab Number:	AC00279-04	Sample Collector:	T.L
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	B231192	0.633	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	04/08/23	4/8/23 12:42	GKH	
BOD5	B231059	9.64	mg/L	2.00	2.00	SM 5210 B-2011	03/30/23	4/4/23 9:14	NTS	
COD	B231047	62.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/30/23	3/30/23 10:00	GKH	
Nitrate-Nitrite, as N	B231073	1.08	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	03/31/23	3/31/23 10:58	LRF	
TKN	B231093	1.90	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	04/03/23	4/4/23 9:13	ALN	
Total Dissolved Solids	B231062	318	mg/L	25.0	25.0	SM 2540 C-2011	03/30/23	4/1/23 8:08	GKH	
Total Suspended Solids	B231061	38.6	mg/L	0.900	0.900	SM 2540 D-2011	03/30/23	3/30/23 10:40	ALG	
Turbidity	B231063	45.8	NTU	3.0	0.3	EPA 180.1, Rev. 2.0 (1993)	03/30/23	3/30/23 11:59	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B231058	0.0914	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/30/23	3/30/23 10:27	ALN	
Total Metals										
Mercury	B231227	0.0300	ug/L	0.0100	0.0100	EPA 245.1	04/11/23	4/12/23 7:53	SAS	
Arsenic	B231187	3.6	ug/L	0.070	0.070	EPA 200.8	04/09/23	4/13/23 12:03	DMW	
Cadmium	B231187	0.065	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 12:03	DMW	
Calcium	B231083	36.6	mg/L	0.0400	0.0400	EPA 200.7	04/03/23	4/4/23 12:30	AMO	
Lead	B231187	3.6	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 12:03	DMW	
Magnesium	B231083	10100	ug/L	75.0	75.0	EPA 200.7	04/03/23	4/4/23 12:30	AMO	
Phosphorus as P	B231083	0.205	mg/L	0.0100	0.0100	EPA 200.7	04/03/23	4/4/23 12:30	AMO	
Hardness	B231083	133	mg/L	0.100	0.100	SM 2340 B-2011	04/03/23	4/4/23 12:30	AMO	
Dissolved Metals										
Cadmium	B231091	0.023	ug/L	0.010	0.010	EPA 200.8	04/02/23	4/2/23 17:14	DMW	
Copper	B231091	3.4	ug/L	0.15	0.15	EPA 200.8	04/02/23	4/2/23 17:14	DMW	
Lead	B231091	0.080	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/02/23	4/2/23 17:14	DMW	
Zinc	B231091	20.5	ug/L	0.50	0.50	EPA 200.8	04/02/23	4/2/23 17:14	DMW	

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Report Date: 04/27/2023 11:45

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

Location:	ACST1C	Location Description:	230329-206-WC
Date/Time Collected:	03/29/2023 09:37 - 03/29/2023 12:15		
Lab Number:	AC00279-05	Sample Collector:	T.L
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	B231192	0.600	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	04/08/23	4/8/23 12:30	GKH	
BOD5	B231059	21.4	mg/L	2.00	2.00	SM 5210 B-2011	03/30/23	4/4/23 9:06	NTS	
COD	B231047	145	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	03/30/23	3/30/23 9:51	GKH	
Nitrate-Nitrite, as N	B231073	0.387	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	03/31/23	3/31/23 11:00	LRF	
TKN	B231093	2.84	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	04/03/23	4/4/23 9:18	ALN	
Total Dissolved Solids	B231062	354	mg/L	25.0	25.0	SM 2540 C-2011	03/30/23	4/1/23 8:08	GKH	
Turbidity	B231063	69.4	NTU	3.0	0.3	EPA 180.1, Rev. 2.0 (1993)	03/30/23	3/30/23 11:33	KMR	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B231058	0.266	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	03/30/23	3/30/23 10:29	ALN	M-06
Total Metals										
Mercury	B231122	0.0181	ug/L	0.0100	0.0100	EPA 245.1	04/05/23	4/6/23 8:15	SAS	
Arsenic	B231187	3.2	ug/L	0.070	0.070	EPA 200.8	04/09/23	4/13/23 12:13	DMW	
Cadmium	B231187	0.099	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 12:13	DMW	
Calcium	B231083	11.3	mg/L	0.0400	0.0400	EPA 200.7	04/03/23	4/4/23 12:24	AMO	
Lead	B231187	6.5	ug/L	0.010	0.010	EPA 200.8	04/09/23	4/13/23 12:13	DMW	
Magnesium	B231083	22900	ug/L	75.0	75.0	EPA 200.7	04/03/23	4/4/23 12:24	AMO	
Phosphorus as P	B231083	0.528	mg/L	0.0100	0.0100	EPA 200.7	04/03/23	4/4/23 12:24	AMO	
Hardness	B231083	123	mg/L	0.100	0.100	SM 2340 B-2011	04/03/23	4/4/23 12:24	AMO	
Dissolved Metals										
Cadmium	B231091	0.028	ug/L	0.010	0.010	EPA 200.8	04/02/23	4/2/23 17:24	DMW	
Copper	B231091	4.8	ug/L	0.15	0.15	EPA 200.8	04/02/23	4/2/23 17:24	DMW	
Lead	B231091	0.22	ug/L	9.00E-3	9.00E-3	EPA 200.8	04/02/23	4/2/23 17:24	DMW	
Zinc	B231091	23.9	ug/L	0.50	0.50	EPA 200.8	04/02/23	4/2/23 17:24	DMW	

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Water Quality Laboratory
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Boise, Idaho 83714-1076
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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B231047									
Blank (B231047-BLK1)									
COD	<7	mg/L					03/30/2023	GKH	U
LCS (B231047-BS1)									
COD			96.0	90-110			03/30/2023	GKH	
Duplicate (B231047-DUP1)	Source ID: AC00279-02								
COD					0.00	10	03/30/2023	GKH	
Batch: B231059									
Blank (B231059-BLK1)									
BOD5	<2	mg/L					04/04/2023	NTS	U
LCS (B231059-BS1)									
BOD5			92.9	84.6-115.4			04/04/2023	NTS	
LCS (B231059-BS2)									
BOD5			96.4	84.6-115.4			04/04/2023	NTS	
Duplicate (B231059-DUP1)	Source ID: BB02811-01								
BOD5					0.614	30	04/04/2023	NTS	D
Duplicate (B231059-DUP2)	Source ID: BB02813-01								
BOD5					0.662	30	04/04/2023	NTS	D
Batch: B231061									
Blank (B231061-BLK1)									
Total Suspended Solids	<0.9	mg/L					03/30/2023	ALG	U
LCS (B231061-BS1)									
Total Suspended Solids			100	90-110			03/30/2023	ALG	
Duplicate (B231061-DUP1)	Source ID: BB02815-02								
Total Suspended Solids					1.71	20	03/30/2023	ALG	
Duplicate (B231061-DUP2)	Source ID: BB02816-01								
Total Suspended Solids					1.82	20	03/30/2023	ALG	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B231062									
Blank (B231062-BLK1)									
Total Dissolved Solids	<25	mg/L					04/01/2023	GKH	U
LCS (B231062-BS1)									
Total Dissolved Solids			97.3	90-110			04/01/2023	GKH	
Duplicate (B231062-DUP1) Source ID: AC00279-03									
Total Dissolved Solids					2.47	10	04/01/2023	GKH	
Batch: B231063									
Blank (B231063-BLK1)									
Turbidity	<0.3	NTU					03/30/2023	KMR	U
LCS (B231063-BS1)									
Turbidity			101	90-110			03/30/2023	KMR	
Duplicate (B231063-DUP1) Source ID: AC00279-04									
Turbidity					0.653	25	03/30/2023	KMR	D
Batch: B231073									
Blank (B231073-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					03/31/2023	LRF	U
Blank (B231073-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					03/31/2023	LRF	U
LCS (B231073-BS1)									
Nitrate-Nitrite, as N			103	90-110			03/31/2023	LRF	
LCS (B231073-BS2)									
Nitrate-Nitrite, as N			102	90-110			03/31/2023	LRF	
Duplicate (B231073-DUP1) Source ID: AC00279-01									
Nitrate-Nitrite, as N					1.26	10	03/31/2023	LRF	
Duplicate (B231073-DUP2) Source ID: BB02786-02									
Nitrate-Nitrite, as N					26.5	10	03/31/2023	LRF	QC-02
Duplicate (B231073-DUP3) Source ID: WB02406-06									
Nitrate-Nitrite, as N					NR	10	03/31/2023	LRF	
Matrix Spike (B231073-MS1) Source ID: AC00279-01									
Nitrate-Nitrite, as N			104	90-110			03/31/2023	LRF	
Matrix Spike (B231073-MS2) Source ID: BB02786-02									
Nitrate-Nitrite, as N			104	90-110			03/31/2023	LRF	
Matrix Spike (B231073-MS3) Source ID: WB02406-06									
Nitrate-Nitrite, as N			108	90-110			03/31/2023	LRF	
Matrix Spike Dup (B231073-MSD1) Source ID: AC00279-01									
Nitrate-Nitrite, as N			101	90-110	1.89	10	03/31/2023	LRF	
Matrix Spike Dup (B231073-MSD2) Source ID: BB02786-02									
Nitrate-Nitrite, as N			102	90-110	1.97	10	03/31/2023	LRF	
Matrix Spike Dup (B231073-MSD3) Source ID: WB02406-06									
Nitrate-Nitrite, as N			109	90-110	0.454	10	03/31/2023	LRF	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B231093									
Blank (B231093-BLK1)									
TKN	<0.2	mg/L					04/04/2023	ALN	U
LCS (B231093-BS1)									
TKN			97.5	80-120			04/04/2023	ALN	
Duplicate (B231093-DUP1) Source ID: AC00279-04									
TKN					15.5	20	04/04/2023	ALN	
Duplicate (B231093-DUP2) Source ID: BB02815-01									
TKN					18.4	20	04/04/2023	ALN	D
Matrix Spike (B231093-MS1) Source ID: AC00279-04									
TKN			84.5	80-120			04/04/2023	ALN	
Matrix Spike (B231093-MS2) Source ID: BB02815-01									
TKN			92.0	80-120			04/04/2023	ALN	D
Matrix Spike (B231093-MS4) Source ID: EP00191-01									
TKN			94.1	80-120			04/04/2023	ALN	
Matrix Spike (B231093-MS5) Source ID: EP00192-01									
TKN			104	80-120			04/04/2023	ALN	D
Matrix Spike (B231093-MS6) Source ID: EP00193-01									
TKN			95.8	80-120			04/04/2023	ALN	D
Matrix Spike (B231093-MS7) Source ID: EP00194-01									
TKN			105	80-120			04/04/2023	ALN	D
Matrix Spike (B231093-MS8) Source ID: EP00197-01									
TKN			96.5	80-120			04/04/2023	ALN	D
Matrix Spike Dup (B231093-MSD1) Source ID: AC00279-04									
TKN			94.7	80-120	7.93	20	04/04/2023	ALN	
Matrix Spike Dup (B231093-MSD2) Source ID: BB02815-01									
TKN			109	80-120	6.27	20	04/04/2023	ALN	D
Batch: B231192									
Blank (B231192-BLK1)									
Ammonia, as N	<0.035	mg/L					04/08/2023	GKH	U
LCS (B231192-BS1)									
Ammonia, as N			105	90-110			04/08/2023	GKH	
Duplicate (B231192-DUP1) Source ID: BB02815-02									
Ammonia, as N					1.35	10	04/08/2023	GKH	D
Matrix Spike (B231192-MS1) Source ID: BB02815-02									
Ammonia, as N			103	80-120			04/08/2023	GKH	D
Matrix Spike Dup (B231192-MSD1) Source ID: BB02815-02									
Ammonia, as N			102	80-120	0.532	10	04/08/2023	GKH	D

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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: B231058									
Blank (B231058-BLK1)									
Orthophosphate, as P	<0.003	mg/L					03/30/2023	ALN	U
LCS (B231058-BS1)									
Orthophosphate, as P			90.9	90-110			03/30/2023	ALN	
Duplicate (B231058-DUP1) Source ID: AC00279-01									
Orthophosphate, as P					4.81	10	03/30/2023	ALN	
Duplicate (B231058-DUP2) Source ID: WB02406-05									
Orthophosphate, as P					0.818	10	03/30/2023	ALN	D
Matrix Spike (B231058-MS1) Source ID: AC00279-01									
Orthophosphate, as P			98.9	90-110			03/30/2023	ALN	
Matrix Spike (B231058-MS2) Source ID: WB02406-05									
Orthophosphate, as P			102	90-110			03/30/2023	ALN	D
Matrix Spike Dup (B231058-MSD1) Source ID: AC00279-01									
Orthophosphate, as P			99.5	90-110	0.269	10	03/30/2023	ALN	
Matrix Spike Dup (B231058-MSD2) Source ID: WB02406-05									
Orthophosphate, as P			102	90-110	0.127	10	03/30/2023	ALN	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B231083									
Blank (B231083-BLK1)									
Calcium	<0.04	mg/L					04/04/2023	AMO	U
Magnesium	<75	ug/L					04/04/2023	AMO	U
Phosphorus as P	<0.01	mg/L					04/04/2023	AMO	U
LCS (B231083-BS1)									
Calcium			102	85-115			04/04/2023	AMO	
Magnesium			105	85-115			04/04/2023	AMO	
Phosphorus as P			114	85-115			04/04/2023	AMO	
Duplicate (B231083-DUP1) Source ID: AC00279-04									
Calcium					0.218	20	04/04/2023	AMO	
Magnesium					1.66	20	04/04/2023	AMO	
Phosphorus as P					0.770	20	04/04/2023	AMO	
Matrix Spike (B231083-MS1) Source ID: AC00279-04									
Calcium			97.4	70-130			04/04/2023	AMO	
Magnesium			102	70-130			04/04/2023	AMO	
Phosphorus as P			111	70-130			04/04/2023	AMO	
Matrix Spike Dup (B231083-MSD1) Source ID: AC00279-04									
Calcium			97.9	70-130	0.212	20	04/04/2023	AMO	
Magnesium			103	70-130	0.912	20	04/04/2023	AMO	
Phosphorus as P			114	70-130	1.97	20	04/04/2023	AMO	
Batch: B231122									
Blank (B231122-BLK1)									
Mercury	<0.01	ug/L					04/06/2023	SAS	U
LCS (B231122-BS1)									
Mercury			103	85-115			04/06/2023	SAS	
Duplicate (B231122-DUP1) Source ID: EP00196-01									
Mercury					NR	20	04/06/2023	SAS	U
Duplicate (B231122-DUP2) Source ID: EP00197-01									
Mercury					8.84	20	04/06/2023	SAS	
Matrix Spike (B231122-MS1) Source ID: EP00196-01									
Mercury			101	70-130			04/06/2023	SAS	
Matrix Spike (B231122-MS2) Source ID: EP00197-01									
Mercury			96.2	70-130			04/06/2023	SAS	
Matrix Spike Dup (B231122-MSD1) Source ID: EP00196-01									
Mercury			95.5	70-130	5.14	20	04/06/2023	SAS	
Matrix Spike Dup (B231122-MSD2) Source ID: EP00197-01									
Mercury			95.9	70-130	0.285	20	04/06/2023	SAS	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B231187									
Blank (B231187-BLK1)									
Arsenic	<0.070	ug/L					04/13/2023	DMW	U
Cadmium	<0.010	ug/L					04/13/2023	DMW	U
Lead	<0.010	ug/L					04/13/2023	DMW	U
LCS (B231187-BS1)									
Arsenic			94.3	85-115			04/13/2023	DMW	
Cadmium			95.0	85-115			04/13/2023	DMW	
Lead			96.9	85-115			04/13/2023	DMW	
Duplicate (B231187-DUP1) Source ID: AC00279-04									
Arsenic					2.93	20	04/13/2023	DMW	
Cadmium					3.07	20	04/13/2023	DMW	
Lead					2.61	20	04/13/2023	DMW	
Matrix Spike (B231187-MS1) Source ID: AC00279-04									
Arsenic			95.5	70-130			04/13/2023	DMW	
Cadmium			95.1	70-130			04/13/2023	DMW	
Lead			93.8	70-130			04/13/2023	DMW	
Matrix Spike Dup (B231187-MSD1) Source ID: AC00279-04									
Arsenic			96.1	70-130	0.433	20	04/13/2023	DMW	
Cadmium			95.4	70-130	0.320	20	04/13/2023	DMW	
Lead			94.6	70-130	0.592	20	04/13/2023	DMW	
Batch: B231227									
Blank (B231227-BLK1)									
Mercury	<0.01	ug/L					04/12/2023	SAS	U
LCS (B231227-BS1)									
Mercury			105	85-115			04/12/2023	SAS	
Duplicate (B231227-DUP1) Source ID: AC00279-04									
Mercury					2.97	20	04/12/2023	SAS	
Duplicate (B231227-DUP2) Source ID: LS01515-05									
Mercury					11.5	20	04/12/2023	SAS	
Matrix Spike (B231227-MS1) Source ID: AC00279-04									
Mercury			94.0	70-130			04/12/2023	SAS	
Matrix Spike (B231227-MS2) Source ID: LS01515-05									
Mercury			95.4	70-130			04/12/2023	SAS	
Matrix Spike Dup (B231227-MSD1) Source ID: AC00279-04									
Mercury			102	70-130	6.38	20	04/12/2023	SAS	
Matrix Spike Dup (B231227-MSD2) Source ID: LS01515-05									
Mercury			95.8	70-130	0.342	20	04/12/2023	SAS	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B231091									
Blank (B231091-BLK1)									
Cadmium	<0.010	ug/L					04/02/2023	DMW	U
Copper	<0.15	ug/L					04/02/2023	DMW	U
Lead	<0.0090	ug/L					04/02/2023	DMW	U
Zinc	<0.50	ug/L					04/02/2023	DMW	U
LCS (B231091-BS1)									
Cadmium			101	85-115			04/02/2023	DMW	
Copper			103	85-115			04/02/2023	DMW	
Lead			103	85-115			04/02/2023	DMW	
Zinc			104	85-115			04/02/2023	DMW	
Duplicate (B231091-DUP1) Source ID: AC00279-04									
Cadmium					1.39	10	04/02/2023	DMW	
Copper					0.818	10	04/02/2023	DMW	
Lead					26.6	10	04/02/2023	DMW	QC-02
Zinc					0.912	10	04/02/2023	DMW	
Matrix Spike (B231091-MS1) Source ID: AC00279-04									
Cadmium			90.3	70-130			04/02/2023	DMW	
Copper			89.5	70-130			04/02/2023	DMW	
Lead			88.8	70-130			04/02/2023	DMW	
Zinc			91.4	70-130			04/02/2023	DMW	
Matrix Spike Dup (B231091-MSD1) Source ID: AC00279-04									
Cadmium			91.5	70-130	1.28	10	04/02/2023	DMW	
Copper			88.1	70-130	1.18	10	04/02/2023	DMW	
Lead			88.6	70-130	0.156	10	04/02/2023	DMW	
Zinc			90.2	70-130	0.738	10	04/02/2023	DMW	

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Report Date: 04/27/2023 11:45

Boise City Public Works
Water Quality Laboratory
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Fax (208) 608-7319

Notes and Definitions

Item	Definition
D	Data reported from a dilution
M-06	The reported result has been confirmed by reanalysis.
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

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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: 63061761
Project: Stormwater-PI
Sampler(s): Tammy Lightle
Chad Schwend

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
C00279-01	3/29/23		0947	1228	230329-03-WC	TL	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-02			1012	1244	230329-11-WC					X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-03			0724	1118	230329-12-WC					X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-04			0820	1320	230329-14-WC					X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-05			0937	1215	230329-200-WC					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:
Tammy Lightle	03.29.23 / 1443	KMR 3-29-23 1446	Please prioritize the dissolved analytes. AC00279

AC00279

Storm Event Report for May 5, 2023

Technical Memorandum

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

Phone: 208-389-7700

Prepared for: Ada County Highway District

Project Title: NPDES Phase I Stormwater Support WY 2023

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for May 5, 2023

Date: July 28, 2023

To: Tammy Lightle

Cc: Monica Lowe

From: Zuly Lapa, Project Engineer

Prepared by: Zuly Lapa, EIT, Project Engineer

Reviewed by: Melissa Jannusch, PE, Project Manager

Kevin White, PE, Project Engineer

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 September 30, 2022. 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. Two alternate monitoring sites, Main Alternate (Main Alt) and Americana Alternate (Americana Alt), may be used when high river flows surcharge the Main and Americana storm drainpipes. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2023 (October 1, 2022, through September 30, 2023). The following storm event report summarizes stormwater sampling results from the May 5, 2023, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2023 Phase I Stormwater Outfall Monitoring.

Table 2-1. WY 2023 Samples Collected

Date	Lucky	Whitewater	Main	Main Alt	Americana	Americana Alt	AS_6
October 22, 2022	G[1], C[2]	G, C[3]	G, C[2]	--	G, C[2]	--	G, C[2]
January 9, 2023	G[4]	G[4]	G[4]	--	G[4]	--	G[4]
March 10, 2023	G, C[5]	G, C[5]	G, C[5]	--	G	--	G, C[5]
March 29, 2023	G[6], C[5,6]	G[6], C[5,6]	G[6], C[6]	--	G, C	--	G, C[5]
May 5, 2023	--	--	--	--	--	--	C
Collected:	1G, 1C[5c]	2G, 1C[5]	2G, 1C[5]	--	3G, 1C	--	3G, 1C
Still needed:	2G, 3C	1G, 3C	1G, 3C		2C		3C

Notes:

– = no samples taken

C = composite sample

G = grab sample

[1] E. coli sample qualified due to exceeded holding time.

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

[3] Composite samples rejected due to lack of representativeness (<50%).

[4] Grab samples rejected due to insufficient rainfall (<0.08 inches).

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

[6] Sample qualified due to insufficient rainfall (0.09 – 0.10 inches).

After the May 5, 2023, storm event, ACHD still needs to collect two grab samples from Lucky and one grab sample from Whitewater and Main for WY 2023. In addition, three complete composite samples need to be

collected from Lucky, Whitewater, and Main and two composite samples need to be collected from Americana and AS_6 or from the corresponding alternate sites.

Section 3: Storm Event Summary

The May 5, 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 May 4, 2023, is included in Attachment A for reference.

Thursday, May 4, 2023 (Set Up)

- On the morning of May 4, 2023, the National Weather Service issued a forecast for widespread rain in the Boise area, starting May 4 at 1400 and ending on May 5 at 1800. The chance of precipitation was 70 to 90 percent, with 0.10 to 0.25 inches of precipitation forecasted.
- Setup was accomplished on May 4, 2023. 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.

Wednesday, May 5, 2023 (Storm Event)

- Moderate rain first started at approximately May 5 at 1800 and ended at 1900 and again on May 6 at approximately 0500 and ended at 0900.
- Precipitation totals ranged between 0.16 and 0.23 inches at local rain gauges.

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

3.2 Sampling Summary

Lucky, Whitewater, Main Alt, and AS_6 monitoring stations were set up on May 4, 2023, to collect flow-proportional composite samples during the storm. Sampler enable conditions were programed into the Lucky, Whitewater, and Main Alt 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.

Composite Samples

A composite sample was collected at the AS_6 monitoring station and submitted to the West Boise Water Quality Lab at 0930 on May 6. The volume of the AS_6 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. A discussion of other composite sample collection issues is included in Section 5. Laboratory analytical reports are included in Attachment D.

Section 4: Quality Assurance/Quality Control

No quality control samples were collected during the May 5, 2023, storm event.

Data quality objectives for this storm were evaluated and tracked using the data validation review checklist included in Attachment A. The acceptance and performance criteria for analytical and non-analytical criteria were met for this storm event.

Section 5: Notes

Americana Alternate

The primary Americana site was subject to surcharge conditions. Equipment could not be installed at the alternate site because of unsafe flow conditions. Due to these circumstances, the Americana monitoring station was not targeted for composites during this event.

Main Alternate

Due to the surcharge conditions at the primary Main site, the main composite sample was attempted at the alternative site (Main Alt). At the Main Alt monitoring station, a level enable condition of >1.5" was used. During the storm event, the peak of the hydrograph was 1.5". The sampler enabled, however there was not enough flow to trigger a subsample.

Whitewater

At the Whitewater monitoring station, a level enable condition of >7.5" was used. During the storm event, the level in the pipe never exceeded 3.9", therefore the sampler did not enable, and no subsamples were triggered.

Lucky

The composite sample at the Lucky monitoring station only triggered six times, resulting in low sample volume. The sample was not submitted to the laboratory.

AS_6

During the storm event, the AS_6 composite sampler identified a “Distributor Error” message between 0625 and 0703 on May 6, 2023. After the event, the AS_6 sampler was tested but the error could not be recreated. It is unclear why the error message appeared. For this storm event, the “Distributor Error” did not affect the total composite sample volume as the error volume equaled the total received sample volume. Technical support will be contacted to analyze the equipment error and provide potential implications to the current sampling setup procedures.

Data Tables

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main Alt	Americana	AS_6
Grab samples collected and submitted?	NO	NO	NO	NO	NO
Composite samples collected and submitted?	NO	NO	NO	NO	YES
Trigger volume (gal or ft^3)	3,949 gal	1,093 ft^3	384 ft^3	--	301 ft^3
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	level > 2.65	level > 7.5	level > 1.5	--	--
Runoff start time	--	--	--	--	1819 [1]
Grab sample collection time	--	--	--	--	--
Composite sample stop time	--	--	--	--	0703 [1]
Runoff stop time	--	--	--	--	0859 [1]
Volume of discharge sampled (ft^3)	--	--	--	--	4,203
Total runoff volume (ft^3)	--	--	--	--	5,347
Percent of storm flow sampled (%)	--	--	--	--	79
Composite sample duration (hrs)	--	--	--	--	5
Storm Precipitation (in)	0.16	0.16	0.17	--	0.17/0.23
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	--	--	--	--	14 [2]
Number of composite bottles filled	--	--	--	--	1
Composite sample volume (Approx.; ml)	--	--	--	--	8,000

Notes:

[1] Runoff start time was on 5/5/2023. Composite sample stop time and runoff stop time were on 5/6/2023.

[2] Four sampler messages had a "Distributor Error" message, but it appears those samples were successful based on the total composite sample volume.

– 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	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Whitewater	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Main Alt	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Americana	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AS_6	5/5/2023	--	--	--	--	--	--	230505-206-WC	74.9	298	42.0	88.0	204	163	1.51	0.927	1.33	0.310	5.23	3.5	0.022	0.14	15.7	0.72	10.6	0.0182	54.5

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	-	-	-	-	-	-
Whitewater	-	-	-	-	-	-
Main Alt	-	-	-	-	-	-
Americana	-	-	-	-	-	-
AS_6	5/5/2023	68.1	0.504	0.444	0.103	1.745

Notes:

– = No data.

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 5/4/2023	Time: 7:42 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?)		Yes

Past 72 hr Precip	0.00”
Date and time of expected event	5/4 2pm – 5/5 6pm
Expected amount of precipitation	0.10” – 0.25” Thurs night, 0.25” – 0.5” Friday
Percent chance of precipitation	70% - 90%
Percent chance of >0.10” over 12 hours	41% Thurs, 80% Friday

NWS Update

I spoke with Joel at NWS this morning. Not much has changed in the forecast since yesterday. We have a chance of isolated thunderstorms starting at 2pm today. The chance for steady, widespread rain increases early Friday morning (after midnight) with daytime totals adding up to around 0.30”. The strongest chances are after 5am. Models are in good agreement with no chance of rainshadowing due to the convective nature of this system.

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: Boise ID
Issued by: National Weather Service Boise, ID
Last Update: 3:13 am MDT May 4, 2023

Today: Scattered showers and thunderstorms after noon. Some of the storms could produce gusty winds and heavy rain. Mostly cloudy, with a high near 77. East wind around 7 mph. Chance of precipitation is 30%.
Tonight: Showers likely and possibly a thunderstorm. Some of the storms could produce gusty winds and heavy rain. Mostly cloudy, with a low around 50. Southeast wind 7 to 10 mph. Chance of precipitation is 70%.
Friday: Showers. Steady temperature around 51. Southeast wind 7 to 13 mph becoming southwest in the afternoon. Winds could gust as high as 23 mph. Chance of precipitation is 90%. New precipitation amounts between a quarter and half of an inch possible.
Friday Night: Showers likely, mainly before midnight. Cloudy, with a low around 44. Southwest wind around 5 mph becoming calm after midnight. Chance of precipitation is 70%.
Saturday: A 40 percent chance of showers, mainly after noon. Mostly cloudy, with a high near 61. Light and variable wind.
Saturday Night: A 40 percent chance of showers. Mostly cloudy, with a low around 44.

Sunday: A chance of showers, with thunderstorms also possible after noon. Partly sunny, with a high near 62. Chance of precipitation is 40%.
Sunday Night: A 30 percent chance of showers. Mostly cloudy, with a low around 44.
Monday: A chance of showers, with thunderstorms also possible after noon. Partly sunny, with a high near 62. Chance of precipitation is 50%.
Monday Night: A 40 percent chance of showers, mainly before midnight. Mostly cloudy, with a low around 43.
Tuesday: A 30 percent chance of showers. Partly sunny, with a high near 63.
Tuesday Night: A 20 percent chance of showers. Mostly cloudy, with a low around 46.
Wednesday: A 30 percent chance of showers. Partly sunny, with a high near 67.

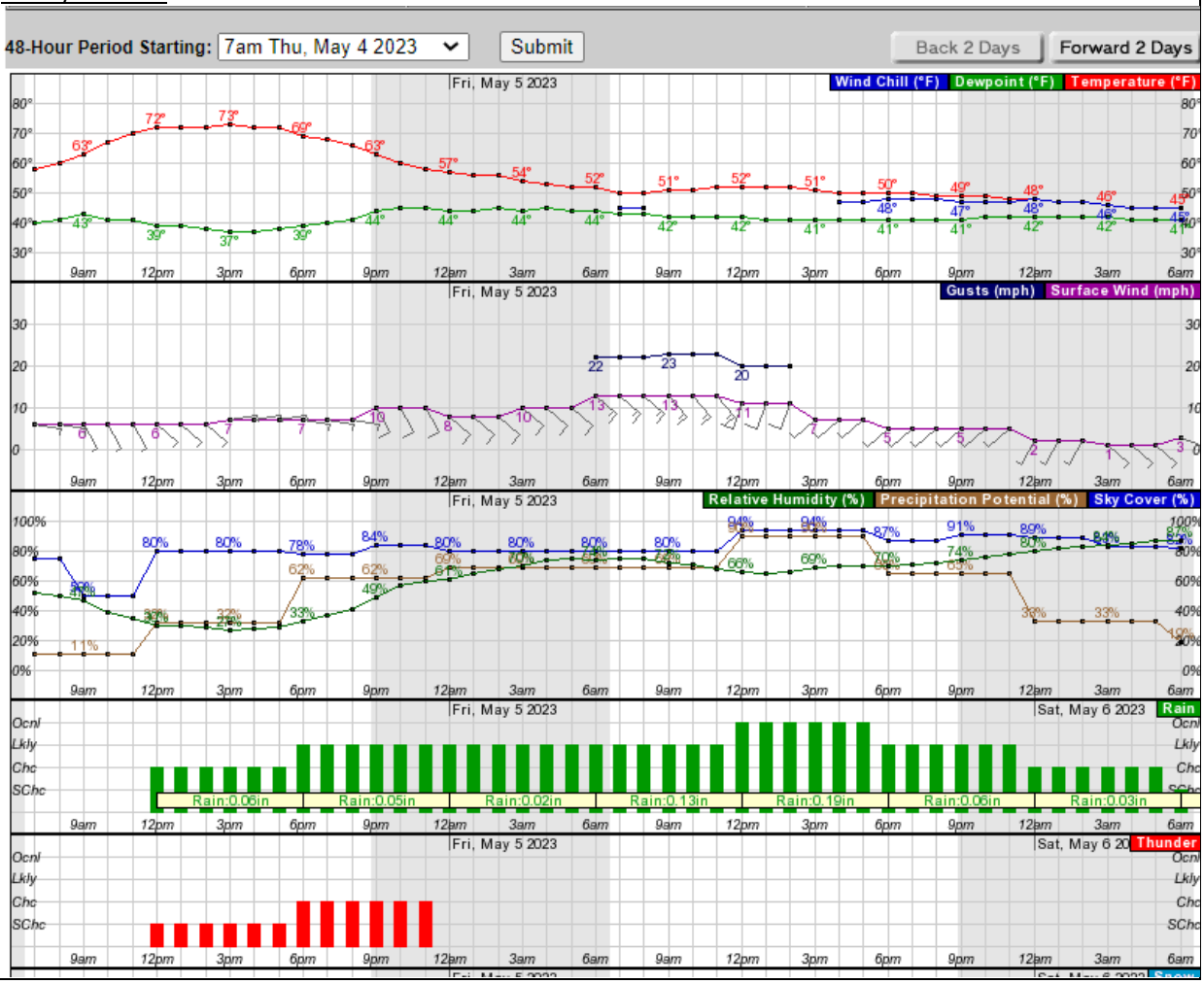
Forecast Discussion
Area Forecast Discussion
National Weather Service Boise ID
355 AM MDT Thu May 4 2023

.SHORT TERM...Today through Saturday night...Upper level trough over central CA, is moving inland and elongating along the Great Basin with multiple shortwaves embedded in the flow. Showers have developed across NV and have move northward overnight. Showers and thunderstorms will increase in coverage on this afternoon, with locally heavy rains and gusty winds. Isolated storms have the potential of 0.50-1.00"/hr rainfall rates, as precipitable water values near the 80th percentile. By Friday the center trough will move across southeast OR and southwest ID, bringing widespread showers and isolated thunderstorms, and significant precipitation. These rainfall rates, along with recent snowmelt, looks to continue the concern for hydrologic impacts across the region through the weekend. **Ensembles show a 50-80 percent chance of exceeding 0.50" precipitation across most of the region and a 20-40 percent chance of exceeding 1.00" during a 48 hour period through mid Saturday.** However, the Magic Valley will see the least amount of precipitation with this system with only a 10-20 percent chance of exceeding 0.50". It should be noted high resolution guidance shows locally higher precipitation amounts of up to 2-3 inches across eastern OR and the central ID mountains, depending on where the heavier showers line up. As the center of the trough moves overhead on Friday morning, snow levels briefly lower to around 4500-5500ft (MSL) across eastern OR and 5500-6500ft across southwest Idaho. Snow levels quickly rise on Friday afternoon to 6000-7000ft with the heating of the day. A secondary shortwave brings another round of showers on Saturday.

.LONG TERM...Sunday through Thursday...Southwest flow will strengthen aloft ahead of the next cold front to arrive late Sunday/early Monday. A chance of showers are forecast on Sunday with below normal temperatures. Then, showers and winds will increase on Monday as the trough pivots northeastward through the Pacific Northwest. Instability also increases on Monday, which will yield a chance (20%) of thunderstorms to develop Monday afternoon. This trough will not be as moist as the aforementioned activity, but will continue to add to the river and stream flood concerns across the forecast area. Temperatures will remain colder than normal for

Monday and Tuesday, allowing snow levels to linger around 5500-6500 ft MSL. Shower activity will continue into Tuesday as the trough begins to exit the area. Thereafter, the forecast becomes uncertain as guidance diverges for Wednesday and Thursday, but is currently trending toward a warmer and drier solution by late in the week.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE 230505

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)					0.03/0.08	< 0.11" in 72 hrs	X		
2. Precipitation (inches)					0.17/0.23	> 0.10"	X		
3. Sampled amount (% of total run-off)					79	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	X		
4. Composite sample duration (hours)					5				
4. Ecoli sample holding time (hours)					N/A	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject			
5. Filtering of samples for dissolved parameter analysis (hours)					3	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

Composite from AS-6 was the only sample submitted to the lab.

Reviewed by Tamara Gillette **Date** 06.05.23

Approved by Monica L Love **Date** 6/5/23

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**

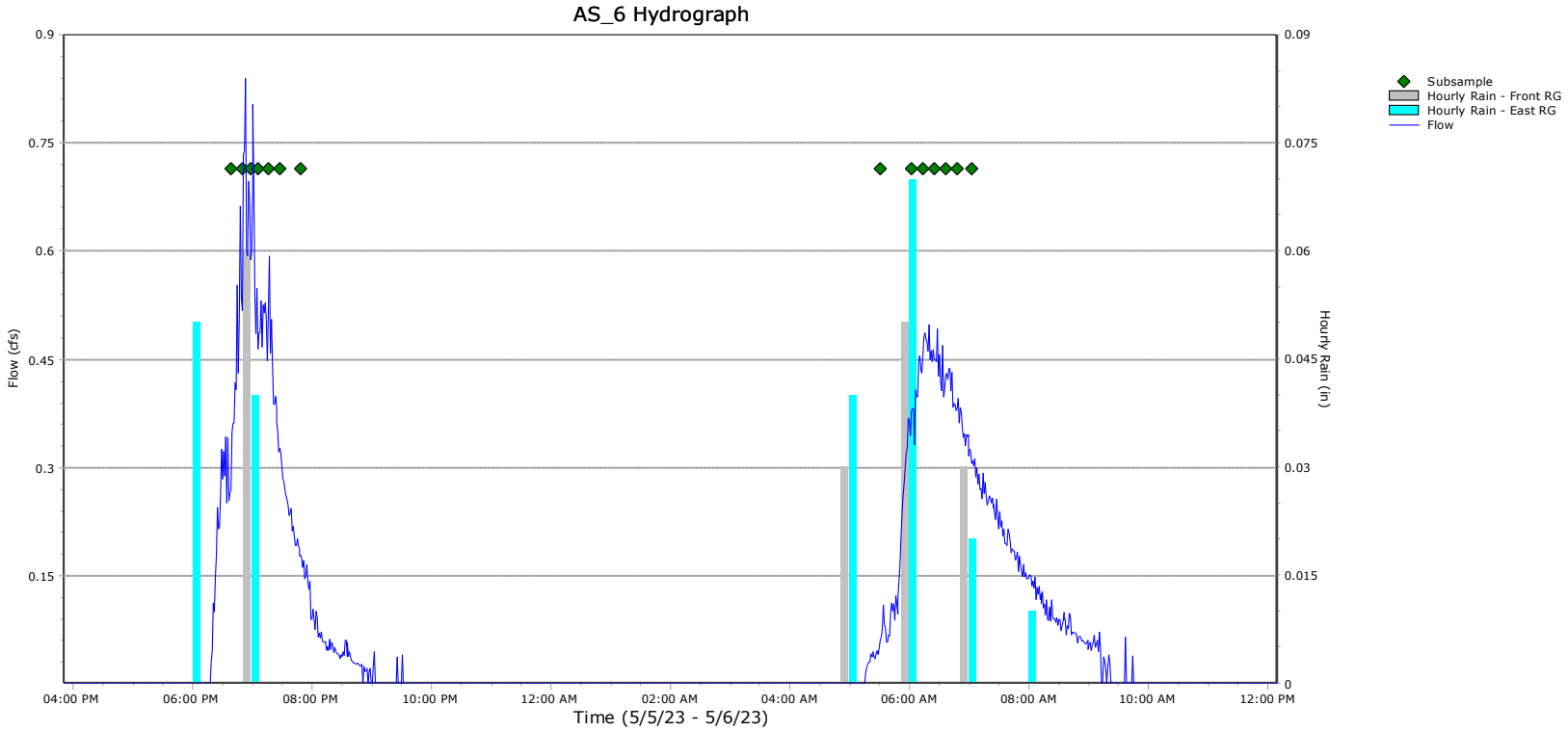
Notes:

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


AS_6 Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (5/5/23 - 5/6/23)
0.9
0.75
0.6
0.45
0.3
0.15
0.09
0.075
0.06
0.045
0.03
0.015
0
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
Hourly Rain - East RG
Flow

Attachment C: Field Forms

Set Up/ Shut Down Form – HACH

TATION: Lucky

SET UP

Personnel: TLL, SMK

Date/Time On-Site: 5/4/23 0922

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
5/4 0924	1.64	0	0	12.8

Enable Condition or Velocity Cutoff:	2.65 in
Deadband:	1 in
Trigger Volume:	3949 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: TLL

Date/Time On-Site: 05.08.23 / 1058

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

Downloaded to:	Keychain 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
Personnel: TL

Bottle 1 **of** 6
Date/Time On-Site: 05.08.23 / 1058

☐ 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	5/5 1929	Success	13		
2	5/6 0510		14		
3	0547		15		
4	0606		16		
5	0630		17		
6	0709		18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Comments:

Sample was dumped - nothing submitted to the lab.

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

TATION: Whitewater

SET UP

Personnel: TLL, SMK

Date/Time On-Site: 5/4/23 0945

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0950	4.10	0.46	0.66	—

Enable Condition:	level > 7.5"
Hysteresis:	4"
Flow Pulse Interval:	1093

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 5/4 0822
- ☒ 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: TLL

Date/Time On-Site: 05.08.23 / 1119

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
Downloaded to:				

On-Site

- ☒ Replace flowmeter battery
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote: Date/time 05.08.23 / 1247
- ☒ 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** Ø

Personnel: TLL **Date/Time On-Site:** 05.08.23 / 1149

☐ 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:

level never got high enough to enable sampler –
no subsamples collected

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

TATION: Main Alt.

SET UP

Personnel: TLL, SMK

Date/Time On-Site: 5/4/23 10:41

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1052	-0.41	0	0	13.1

Enable Condition:	1.5 in
Hysteresis:	1.5 in
Flow Pulse Interval:	384 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 5/4 1041
- ☒ 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: TLL

Date/Time On-Site: 05.08.23 / 1155

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

Downloaded to:	R6

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

Flowlink (Refer to Flowlink Instructions, if needed)
- ☒ 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:

Composite Sample Collection

STATION: _____ **Bottle** _____ **of** 6

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:

Sampler enabled, but not enough flow to trigger any subsamples

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

ΓATION: AS-6

SET UP

Personnel: TLL SMK

Date/Time On-Site: 5/4/23 10:05

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1014	0	0	0	12.6

Enable Condition or Velocity Cutoff:	~~0.2~~ 0.02
Deadband:	—
Trigger Volume:	301 kf

- [x] Install batteries on flowmeter and sampler
- [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] Verify all cable and tubing connections
- [x] Check date and time on flowmeter and sampler
- [x] Set flowmeter program and sampler program parameters
- [x] Set logging interval to 1 minute
- [x] Start flowmeter program and sampler program
- [x] Verify running

Comments:

SHUT DOWN

Personnel: TL

Date/Time On-Site: 05.08.23 /1136

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1140	0	0	0	15166	12.1
Downloaded to:		RG			

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

Comments:

Composite Sample Collection

STATION: AS-6 **Bottle** 1 **of** 1

Personnel: TL, ZL **Date/Time On-Site:** 5/6/23 0840

☒ Halt sampler program	
☒ Put lid on sample bottle; label sample bottle	
Sample ID:	230505-206 -WC
Approx Sample Volume (mL):	8000 mL
Clarity (ex. Clear, Cloudy, Silty):	Clear
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	5/5 1839	Success	13	5/6 0648	Distributer Error
2	1850	"	14	" 0703	"
3	1858	"	15		
4	1906	"	16		
5	1916	"	17		
6	1928	"	18		
7	1949	"	19		
8	5/6 0531	"	20		
9	0602	"	21		
10	0614	"	22		
11	0625	Distributer Error	23		
12	0636	"	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
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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: 05/30/2023 14:31

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
AC00281-01	ACST1C	230505-206-WC	Water		05/06/2023	05/06/2023

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: 05/30/2023 14:31

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:	230505-206-WC
Date/Time Collected:	05/05/2023 18:39 - 05/06/2023 07:03		
Lab Number:	AC00281-01	Sample Collector:	T.L
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	B231698	1.33	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	05/15/23	5/15/23 10:03	ALN	
BOD5	B231588	74.9	mg/L	2.00	2.00	SM 5210 B-2016	05/07/23	5/12/23 10:03	SMC	
COD	B231583	298	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	05/07/23	5/7/23 12:24	RKT	
Nitrate-Nitrite, as N	B231636	0.310	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	05/10/23	5/10/23 11:35	JAL	
TKN	B231604	5.23	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	05/08/23	5/9/23 11:07	JAL	
Total Dissolved Solids	B231605	163	mg/L	25.0	25.0	SM 2540 C-2015	05/08/23	5/10/23 9:02	RKT	
Total Suspended Solids	B231579	204	mg/L	0.900	0.900	SM 2540 D-2015	05/06/23	5/6/23 12:05	MEC	
Turbidity	B231589	88.0	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	05/07/23	5/7/23 15:21	BAK	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B231587	0.927	mg/L	0.0120	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	05/07/23	5/7/23 12:31	BAK	D
Total Metals										
Mercury	B231625	0.0182	ug/L	0.0100	0.0100	EPA 245.1	05/10/23	5/11/23 8:12	SAS	
Arsenic	B231576	3.5	ug/L	0.070	0.070	EPA 200.8	05/07/23	5/12/23 16:21	DMW	
Cadmium	B231576	0.14	ug/L	0.010	0.010	EPA 200.8	05/07/23	5/12/23 16:21	DMW	
Calcium	B231647	9.90	mg/L	0.0400	0.0400	EPA 200.7	05/11/23	5/15/23 11:34	AMO	
Lead	B231576	10.6	ug/L	0.010	0.010	EPA 200.8	05/07/23	5/12/23 16:21	DMW	
Magnesium	B231647	4200	ug/L	75.0	75.0	EPA 200.7	05/11/23	5/15/23 11:34	AMO	
Phosphorus as P	B231647	1.51	mg/L	0.0100	0.0100	EPA 200.7	05/11/23	5/15/23 11:34	AMO	
Hardness	B231647	42.0	mg/L	0.100	0.100	SM 2340 B-2011	05/11/23	5/15/23 11:34	AMO	
Dissolved Metals										
Cadmium	B231686	0.022	ug/L	0.010	0.010	EPA 200.8	05/13/23	5/13/23 14:28	DMW	
Copper	B231686	15.7	ug/L	0.15	0.15	EPA 200.8	05/13/23	5/13/23 14:28	DMW	
Lead	B231686	0.72	ug/L	9.00E-3	9.00E-3	EPA 200.8	05/13/23	5/13/23 14:28	DMW	
Zinc	B231686	54.5	ug/L	0.50	0.50	EPA 200.8	05/13/23	5/13/23 14:28	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.

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B231579									
Blank (B231579-BLK1)									
Total Suspended Solids	<0.9	mg/L					05/06/2023	MEC	U
LCS (B231579-BS1)									
Total Suspended Solids			99.4	90-110			05/06/2023	MEC	
Duplicate (B231579-DUP1)	Source ID: BB02892-02								
Total Suspended Solids					2.95	20	05/06/2023	MEC	
Batch: B231583									
Blank (B231583-BLK1)									
COD	<7	mg/L					05/07/2023	RKT	U
LCS (B231583-BS1)									
COD			103	90-110			05/07/2023	RKT	
Duplicate (B231583-DUP1)	Source ID: AC00281-01								
COD					0.336	10	05/07/2023	RKT	
Batch: B231588									
Blank (B231588-BLK1)									
BOD5	<2	mg/L					05/12/2023	SMC	U
LCS (B231588-BS1)									
BOD5			107	84.6-115.4			05/12/2023	SMC	
LCS (B231588-BS2)									
BOD5			104	84.6-115.4			05/12/2023	SMC	
Duplicate (B231588-DUP1)	Source ID: BB02893-02								
BOD5					1.20	30	05/12/2023	SMC	D
Batch: B231589									
Blank (B231589-BLK1)									
Turbidity	<0.3	NTU					05/07/2023	BAK	U
LCS (B231589-BS1)									
Turbidity			100	90-110			05/07/2023	BAK	
Duplicate (B231589-DUP1)	Source ID: AC00281-01								
Turbidity					0.456	25	05/07/2023	BAK	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B231604									
Blank (B231604-BLK1)									
TKN	<0.2	mg/L					05/09/2023	JAL	U
Blank (B231604-BLK2)									
TKN	<0.2	mg/L					05/09/2023	JAL	U
LCS (B231604-BS1)									
TKN			98.2	80-120			05/09/2023	JAL	
LCS (B231604-BS2)									
TKN			90.4	80-120			05/09/2023	JAL	
Duplicate (B231604-DUP1) Source ID: BB02875-02									
TKN					14.5	20	05/09/2023	JAL	D
Duplicate (B231604-DUP2) Source ID: ST00020-01									
TKN					0.310	20	05/09/2023	JAL	D
Duplicate (B231604-DUP3) Source ID: WB02458-06									
TKN					0.423	20	05/09/2023	JAL	D
Matrix Spike (B231604-MS1) Source ID: BB02875-02									
TKN			100	80-120			05/09/2023	JAL	D
Matrix Spike (B231604-MS2) Source ID: ST00020-01									
TKN			98.6	80-120			05/09/2023	JAL	D
Matrix Spike (B231604-MS3) Source ID: WB02458-06									
TKN			107	80-120			05/09/2023	JAL	D
Matrix Spike (B231604-MS4) Source ID: EP00209-01									
TKN			95.5	80-120			05/09/2023	JAL	
Matrix Spike (B231604-MS5) Source ID: EP00210-01									
TKN			96.3	80-120			05/09/2023	JAL	
Matrix Spike (B231604-MS6) Source ID: EP00211-01									
TKN			108	80-120			05/09/2023	JAL	
Matrix Spike Dup (B231604-MSD1) Source ID: BB02875-02									
TKN			93.1	80-120	2.51	20	05/09/2023	JAL	D
Matrix Spike Dup (B231604-MSD2) Source ID: ST00020-01									
TKN			104	80-120	1.87	20	05/09/2023	JAL	D
Matrix Spike Dup (B231604-MSD3) Source ID: WB02458-06									
TKN			108	80-120	0.717	20	05/09/2023	JAL	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B231605									
Blank (B231605-BLK1)									
Total Dissolved Solids	<25	mg/L					05/09/2023	RKT	U
LCS (B231605-BS1)									
Total Dissolved Solids			103	90-110			05/09/2023	RKT	
Duplicate (B231605-DUP1) Source ID: AC00281-01									
Total Dissolved Solids					0.306	10	05/10/2023	RKT	
Batch: B231636									
Blank (B231636-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					05/10/2023	JAL	U
Blank (B231636-BLK2)									
Nitrate-Nitrite, as N	<0.025	mg/L					05/10/2023	JAL	U
LCS (B231636-BS1)									
Nitrate-Nitrite, as N			96.6	90-110			05/10/2023	JAL	
LCS (B231636-BS2)									
Nitrate-Nitrite, as N			101	90-110			05/10/2023	JAL	
Duplicate (B231636-DUP1) Source ID: BB02897-01									
Nitrate-Nitrite, as N					0.604	10	05/10/2023	JAL	
Duplicate (B231636-DUP2) Source ID: EP00200-02									
Nitrate-Nitrite, as N					NR	10	05/10/2023	JAL	U
Duplicate (B231636-DUP3) Source ID: WB02488-06									
Nitrate-Nitrite, as N					2.50	10	05/10/2023	JAL	
Matrix Spike (B231636-MS1) Source ID: BB02897-01									
Nitrate-Nitrite, as N			98.4	90-110			05/10/2023	JAL	
Matrix Spike (B231636-MS2) Source ID: EP00200-02									
Nitrate-Nitrite, as N			98.8	90-110			05/10/2023	JAL	
Matrix Spike (B231636-MS3) Source ID: WB02488-06									
Nitrate-Nitrite, as N			103	90-110			05/10/2023	JAL	
Matrix Spike Dup (B231636-MSD1) Source ID: BB02897-01									
Nitrate-Nitrite, as N			98.1	90-110	0.277	10	05/10/2023	JAL	
Matrix Spike Dup (B231636-MSD2) Source ID: EP00200-02									
Nitrate-Nitrite, as N			100	90-110	1.61	10	05/10/2023	JAL	
Matrix Spike Dup (B231636-MSD3) Source ID: WB02488-06									
Nitrate-Nitrite, as N			101	90-110	0.737	10	05/10/2023	JAL	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B231698									
Blank (B231698-BLK1)									
Ammonia, as N	<0.035	mg/L					05/15/2023	ALN	U
LCS (B231698-BS1)									
Ammonia, as N			99.3	90-110			05/15/2023	ALN	
Duplicate (B231698-DUP1) Source ID: BB02887-01									
Ammonia, as N					1.69	10	05/15/2023	ALN	
Duplicate (B231698-DUP2) Source ID: BB02892-03									
Ammonia, as N					1.10	10	05/15/2023	ALN	
Matrix Spike (B231698-MS1) Source ID: BB02887-01									
Ammonia, as N			100	80-120			05/15/2023	ALN	
Matrix Spike (B231698-MS2) Source ID: BB02892-03									
Ammonia, as N			102	80-120			05/15/2023	ALN	
Matrix Spike (B231698-MS3) Source ID: EP00212-01									
Ammonia, as N			101	80-120			05/15/2023	ALN	
Matrix Spike (B231698-MS4) Source ID: EP00213-01									
Ammonia, as N			106	80-120			05/15/2023	ALN	
Matrix Spike (B231698-MS5) Source ID: EP00214-01									
Ammonia, as N			103	80-120			05/15/2023	ALN	
Matrix Spike Dup (B231698-MSD1) Source ID: BB02887-01									
Ammonia, as N			101	80-120	0.936	10	05/15/2023	ALN	
Matrix Spike Dup (B231698-MSD2) Source ID: BB02892-03									
Ammonia, as N			103	80-120	0.299	10	05/15/2023	ALN	
Dissolved Wet Chemistry									
Batch: B231587									
Blank (B231587-BLK1)									
Orthophosphate, as P	<0.003	mg/L					05/07/2023	BAK	U
LCS (B231587-BS1)									
Orthophosphate, as P			98.0	90-110			05/07/2023	BAK	
Duplicate (B231587-DUP1) Source ID: AC00281-01									
Orthophosphate, as P					0.737	10	05/07/2023	BAK	D
Matrix Spike (B231587-MS1) Source ID: AC00281-01									
Orthophosphate, as P			99.6	90-110			05/07/2023	BAK	D
Matrix Spike Dup (B231587-MSD1) Source ID: AC00281-01									
Orthophosphate, as P			100	90-110	0.259	10	05/07/2023	BAK	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B231576									
Blank (B231576-BLK1)									
Arsenic	<0.070	ug/L					05/12/2023	DMW	U
Cadmium	<0.010	ug/L					05/12/2023	DMW	U
Lead	<0.010	ug/L					05/12/2023	DMW	U
LCS (B231576-BS1)									
Arsenic			98.5	85-115			05/12/2023	DMW	
Cadmium			99.1	85-115			05/12/2023	DMW	
Lead			99.9	85-115			05/12/2023	DMW	
Duplicate (B231576-DUP1) Source ID: NP00054-06									
Arsenic					0.973	20	05/12/2023	DMW	
Cadmium					10.6	20	05/12/2023	DMW	
Lead					0.567	20	05/12/2023	DMW	
Matrix Spike (B231576-MS1) Source ID: NP00054-06									
Arsenic			102	70-130			05/12/2023	DMW	
Cadmium			100	70-130			05/12/2023	DMW	
Lead			97.6	70-130			05/12/2023	DMW	
Matrix Spike Dup (B231576-MSD1) Source ID: NP00054-06									
Arsenic			97.9	70-130	2.54	20	05/12/2023	DMW	
Cadmium			98.5	70-130	1.58	20	05/12/2023	DMW	
Lead			96.3	70-130	1.25	20	05/12/2023	DMW	
Batch: B231625									
Blank (B231625-BLK1)									
Mercury	<0.01	ug/L					05/11/2023	SAS	U
LCS (B231625-BS1)									
Mercury			97.7	85-115			05/11/2023	SAS	
Duplicate (B231625-DUP1) Source ID: BB02888-03									
Mercury					NR	20	05/11/2023	SAS	U
Matrix Spike (B231625-MS1) Source ID: BB02888-03									
Mercury			104	70-130			05/11/2023	SAS	
Matrix Spike Dup (B231625-MSD1) Source ID: BB02888-03									
Mercury			101	70-130	3.43	20	05/11/2023	SAS	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B231647									
Blank (B231647-BLK1)									
Calcium	<0.04	mg/L					05/15/2023	AMO	U
Magnesium	<75	ug/L					05/15/2023	AMO	U
Phosphorus as P	<0.01	mg/L					05/15/2023	AMO	U
LCS (B231647-BS1)									
Calcium			99.7	85-115			05/15/2023	AMO	
Magnesium			101	85-115			05/15/2023	AMO	
Phosphorus as P			104	85-115			05/15/2023	AMO	
Duplicate (B231647-DUP1) Source ID: AC00281-01									
Calcium					0.244	20	05/15/2023	AMO	
Magnesium					0.436	20	05/15/2023	AMO	
Phosphorus as P					1.66	20	05/15/2023	AMO	
Duplicate (B231647-DUP2) Source ID: WB02488-10									
Calcium					1.36	20	05/15/2023	AMO	
Magnesium					0.350	20	05/15/2023	AMO	
Phosphorus as P					2.30	20	05/15/2023	AMO	
Matrix Spike (B231647-MS1) Source ID: AC00281-01									
Calcium			99.9	70-130			05/15/2023	AMO	
Magnesium			102	70-130			05/15/2023	AMO	
Phosphorus as P			105	70-130			05/15/2023	AMO	
Matrix Spike (B231647-MS2) Source ID: WB02488-10									
Calcium			104	70-130			05/15/2023	AMO	
Magnesium			103	70-130			05/15/2023	AMO	
Phosphorus as P			113	70-130			05/15/2023	AMO	
Matrix Spike Dup (B231647-MSD1) Source ID: AC00281-01									
Calcium			98.4	70-130	1.05	20	05/15/2023	AMO	
Magnesium			101	70-130	0.401	20	05/15/2023	AMO	
Phosphorus as P			106	70-130	0.244	20	05/15/2023	AMO	
Matrix Spike Dup (B231647-MSD2) Source ID: WB02488-10									
Calcium			98.0	70-130	2.47	20	05/15/2023	AMO	
Magnesium			102	70-130	0.567	20	05/15/2023	AMO	
Phosphorus as P			113	70-130	0.135	20	05/15/2023	AMO	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Dissolved Metals									
Batch: B231686									
Blank (B231686-BLK1)									
Cadmium	<0.010	ug/L					05/13/2023	DMW	U
Copper	<0.15	ug/L					05/13/2023	DMW	U
Lead	<0.0090	ug/L					05/13/2023	DMW	U
Zinc	<0.50	ug/L					05/13/2023	DMW	U
LCS (B231686-BS1)									
Cadmium			98.1	85-115			05/13/2023	DMW	
Copper			96.1	85-115			05/13/2023	DMW	
Lead			96.8	85-115			05/13/2023	DMW	
Zinc			104	85-115			05/13/2023	DMW	
Duplicate (B231686-DUP1) Source ID: ES00248-07									
Cadmium					NR	10	05/13/2023	DMW	U
Copper					0.740	10	05/13/2023	DMW	
Lead					6.29	10	05/13/2023	DMW	
Zinc					3.44	10	05/13/2023	DMW	
Matrix Spike (B231686-MS1) Source ID: ES00248-07									
Cadmium			98.2	70-130			05/13/2023	DMW	
Copper			95.4	70-130			05/13/2023	DMW	
Lead			95.8	70-130			05/13/2023	DMW	
Zinc			101	70-130			05/13/2023	DMW	
Matrix Spike Dup (B231686-MSD1) Source ID: ES00248-07									
Cadmium			93.9	70-130	4.46	10	05/13/2023	DMW	
Copper			91.1	70-130	4.41	10	05/13/2023	DMW	
Lead			92.3	70-130	3.80	10	05/13/2023	DMW	
Zinc			94.2	70-130	7.11	10	05/13/2023	DMW	

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Report Date: 05/30/2023 14:31

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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

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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: 63061761
Project: Stormwater-PI
Sampler(s): Tammy Lightle
Zuly Lapa

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	C-284 Total Containers
C00281-01	5/5/23	5/6/23	1839	0703	230505-206-WC	TL	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:
Tammy Lightle	5/16/23 0930	[signature] 5/6/23 1000	# AC00281

AC00281

ACHD Sample Filtration, Splitting, and Compositing for Metals

C-286

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
Lims#: ACC02981-01 Location: ACSTIC Sample Date: 5-6-23 Sample ID: 230505-206-WC	Split Date: 5-6-23 Start Split: 1017 Start Filter: 1017 Comp Time: N/A Analyst: DMW/DKT	Filter: ☒Voss ☒0.45µm ☐1.0µm ☒5.0µm ☒Other: 10.0µm	Coll Jug: Certified, No Sticker Comp Jug: N/A SSA2 SS Tubing: CC000039-40 SS Helper: 1 Stir Bar: CC000040-46 Connector: CC000035-63 CC000040-06	☒Teflon Total ☒TKN ☒Teflon Diss (F) ☒NH_3 ☒Hg CVAA ☒NO_x (F) ☒BOD ☒ortho-P (F) ☒TSS ☒Turb ☒TDS ☐_____ ☒COD ☐_____	(3) High capacity 0.45µm VOSS filte (2) 5.0µm VOSS filters (2) 10.0µm VOSS filters Dirty Sample
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 ☐_____	
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 ☐_____	

ACHD Sample Filtration, Splitting, and Compositing for Metals

C-287

Sample	Split/Filter Info	Filter Used	Bottle/Lid Lots	Bottles Split	Comments
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 ☐_____	
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 ☐_____	

Storm Event Report for August 21, 2023

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 2023

Project No.: 159103

Technical Memorandum

Subject: ACHD Phase I Storm Event Report for August 21, 2023

Date: October 30, 2023

To: Monica Lowe

Cc: 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 September 30, 2022. 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. Two alternate monitoring sites, Main Alternate (Main Alt) and Americana Alternate (Americana Alt), may be used when high river flows surcharge the Main and Americana storm drainpipes. At each site, a minimum of three composite and three grab samples will be collected during Water Year (WY) 2023 (October 1, 2022, through September 30, 2023). The following storm event report summarizes stormwater sampling results from the August 21, 2023, storm event.

Section 2: Project Status

Table 2-1 is a summary of the sample types collected to date for WY 2023 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 2023 Samples Collected

Date	Lucky	Whitewater	Main	Main Alt	Americana	Americana Alt	AS_6
October 22, 2022	G[1], C[2]	G, C[3]	G, C[2]	--	G, C[2]	--	G, C[2]
January 9, 2023	G[4]	G[4]	G[4]	--	G[4]	--	G[4]
March 10, 2023	G, C[5]	G, C[5]	G, C[5]	--	G	--	G, C[5]
March 29, 2023	G[6], C[5,6]	G[6], C[5,6]	G[6], C[6]	--	G, C	--	G, C[5]
May 5, 2023	--	--	--	--	--	--	C
August 21, 2023	G, C	G[7], C	G[7], C[3]	--	C	--	C
Unqualified Samples:	2G, 1C	2G, 1C	2G	--	3G, 2C	--	3G, 2C
Samples Remaining:	1G, 2C	1G, 2C	1G, 3C	--	1C	--	1C

Notes:

-- = no samples taken

C = composite sample

G = grab sample

[1] E. coli sample qualified due to exceeded holding time.

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

[3] Composite samples rejected due to lack of representativeness (<50%).

[4] Grab samples rejected due to insufficient rainfall (<0.08 inches).

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

[6] Sample qualified due to insufficient rainfall (0.09 – 0.10 inches).

[7] Grab sample rejected due to collecting grab sample after composite sampling duration.

Section 3: Storm Event Summary

The August 21, 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 August 19, 2023, is included in Attachment A for reference.

Saturday, August 19, 2023 (Sampling Event Communication)

- On the morning of August 19, the National Weather Service issued a forecast for widespread rain in the Boise area, starting August 20 at 1200 and ending at 1800. The chance of precipitation was 60 to 80 percent, with 0.15 to 0.25 inches of precipitation forecasted.
- Second storm wave expected on August 21.

Sunday, August 20, 2023 (Set Up)

- Via a phone call, the National Weather Service forecasted the event for August 21 at 0400 and ending at 1100.
- Setup was accomplished on August 20. An expected precipitation depth of 0.25 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, August 21, 2023 (Storm Event)

- Moderate rain first started at approximately August 21 at 0216 and ended at 1736.
- Precipitation totals ranged between 0.16 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 August 21, 2023, 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 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

One, two-member team mobilized to collect stormwater runoff grab samples and verify operation of the automatic sampling equipment on August 21 at 0900. Grab samples were submitted to the West Boise Water Quality Lab (WQL) at 1300 on August 21. 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, Americana and AS_6 monitoring station and submitted to the West Boise Water Quality Lab at 1615 on August 21, 2023. The volume of the Lucky, Whitewater, Main, Americana and AS_6 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

A summary of quality control samples collected during the August 21, 2023, storm event is presented below in Table 4-1. A field blank and a field duplicate were collected from the Lucky 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
230821-03-001	Field blank	Lucky grab	No *E. coli* detection was reported in the field blank.
230821-03-101	Field duplicate	Lucky 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. The grab samples are ideally collected during the first two hours of flow, or at a minimum during the time of composite sample collection. The grab samples collected at Main and Whitewater are rejected since they were collected after sampling composite duration.

An accepted composite sample represents at least 75 percent of the total discharge or at least 6 hours of the storm duration. The composite samples collected at Main are rejected since it was collected over a duration of 1.5 hours of the storm and due to the erratic flow measurements, the flow duration could not be accurately calculated. Additionally, based on rainfall duration measured at the nearest rain gauge (Front), the Main composite sample represent <50 percent of the calculated flow.

All other acceptance and performance measured for analytical and non-analytical criteria were met for this storm event.

Section 5: Notes and Recommendations

Whitewater

Sampling staff were unable to manually remove the manhole cover at the Whitewater monitoring site after numerous attempts. Ultimately, a backhoe was deployed to the site to remove the cover and collect grab samples. Post-storm review determined grab samples were collected after composite sample duration. Maintenance staff determined the manhole cover was defective and has replaced the cover.

Main

At the Main monitoring site, there were sudden high flow spikes between 0500 and 0600. Flow levels reached to about 67 cubic feet per second. In general, the flow readings were erratic and did not align with precipitation data. The EPA runoff calculation was performed to estimate the total event runoff and sampled runoff values based on impervious surface of the drainage basin (see Figure 1 for EPA's runoff calculation equation). Based on the estimated values, approximately 36% of the total storm runoff was sampled therefore the main composite samples are rejected. Upon arrival to the Main monitoring site, field staff noticed the sampling bottle was already full and confirmed that the 24 subsamples were taken. Field staff did not replace the composite bottle to continue taking composite samples.

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 1: EPA Runoff Calculation

ISCO Signature Flowmeters

The Whitewater and Americana flowmeter equipment, ISCO Signature, did not allow for remote connection or on-site connection. Staff attempted to connect at various times but had no success. Staff manually programmed the flowmeter equipment for trigger volume and enable depth/hysteresis. There were no errors recorded at the time of sampling or shutting down. ACHD is working with ISCO equipment IT to resolve the connectivity issues. Until the issue is resolved, the impacted ISCO Signature equipment may require direct manual set-up and not be available for remote access.

Data Tables

Table 1. Sampling and Flow Summary					
	Lucky	Whitewater	Main	Americana	AS_6
Grab samples collected and submitted?	YES	YES	YES	NO	NO
Composite samples collected and submitted?	YES	YES	YES	YES	YES
Trigger volume (gal or ft^3)	6,582.8 gal	1,821 ft^3	7,757.3 gal	6,726 ft^3	501 ft^3
Velocity cutoff (fps)	--	--	--	--	0.02
Sampler enable condition (in)	level > 2.72	level > 1.30	level > 1.77	level > 4.91	level > 1.00
Runoff start time	0353	0225	0216	0337	0356
Grab sample collection time	0900	1319	1055	--	--
Composite sample stop time	1309	1225	0525	1314	1042
Runoff stop time	1524	1645	1516	1736	1400
Volume of Discharge Sampled (ft^3)	15,738	35,921	59672[1]	123,419	6,498
Estimated Runoff Sampled (in)	--	--	0.059[1]	--	--
Total runoff volume (ft^3)	17,528	39,950	62474[1]	146,090	7,338
Estimated Total Runoff (in)	--	--	0.16[1]	--	--
Percent of storm flow sampled (%)	83%	90%	36% [1]	84%	89%
Composite sample duration (hrs)	9.5	7.5	1.5	9	6
Storm Precipitation (in)	0.3	0.37	0.33	0.33/0.37	0.33/0.37
Referenced Rain Gauge	Cynthia Mann	Whitewater	Front	Front/East	Front/East
Sampler messages (counts): Success	18	21	24	22	14
Number of composite bottles filled	2	1	1	1	1
Composite sample volume (Approx.; ml)	8,800	11,750	16,250	12,500	8,000

Notes:

[1] At the Main monitoring site, the volume of discharge sampled and total runoff volume were erratic and does not align with the precipitation data. The EPA runoff calculation was performed to estimate the total event runoff and sampled runoff values based on impervious surface of the drainage basin to obtain the percent of storm flow sampled.

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	8/21/2023	230821-03-WG	7.17	7.29	62.65	20.65	20,140	230821-03-WC	16.9	85.0	23.1	21.6	26.6	79.2	0.439	0.214	0.211	0.410	5.28	1.2	0.014	0.034	4.7	0.086	0.68	<0.0100	48.5
Whitewater	8/21/2023	230821-11-WG	5.22 [3R]	7.15 [3R]	130.88 [3R]	23.15 [3R]	27,550 [3R]	230821-11-WC	107	323	52.3	118	152	229	1.06	0.605	0.611	0.725	4.10	5.0	0.017	0.13	10.2	0.25	7.3	0.0195	48.6
Main	8/21/2023	230821-12-WG	7.07 [3R]	6.86 [3R]	95.3 [3R]	22.21 [3R]	9,850 [3R]	230821-12-WC	46.1 [1R]	222 [1R]	46.3 [1R]	79.9 [1R]	197 [1R]	166 [1R]	0.558 [1R]	0.222 [1R]	1.36 [1R]	0.817 [1R]	2.14 [1R]	3.8 [1R]	0.057 [1R]	0.2 [1R]	13.7 [1R]	0.38 [1R]	13.8 [1R]	0.0446 [1R]	112 [1R]
Americana	8/21/2023	--	--	--	--	--	--	230821-14-WC	67.7	213	57.7	57.1	80.0	184	0.625	0.355	0.676	0.758	3.41	3.6	0.023	0.13	9.0	0.22	5.6	0.0118	62.5
AS_6	8/21/2023	--	--	--	--	--	--	230821-206-WC	309	875	55.5	83.5	136	420	2.54	1.47	0.529	0.417	8.40	3.8	0.040	0.12	18.3	0.61	6.7	0.0237	99.1

Notes:

– = No data.

[1R] Data rejected due to lack of representativeness (<50%).

[3R] Data rejected due to collecting sample after composite sampling duration.

Table 3. Event Pollutant Loading Estimates in Pounds						
Monitoring Station	Event Date	TSS	Total Phosphorus	Ammonia as N	Nitrate + Nitrite as N	TKN
Lucky	8/21/2023	29.1	0.480	0.231	0.449	5.78
Whitewater	8/21/2023	379	2.64	1.52	1.81	10.2
Main	8/21/2023	768 [1R]	2.18 [1R]	5.30 [1R]	3.19 [1R]	8.34 [1R]
Americana	8/21/2023	729	5.70	6.16	6.91	31.1
AS_6	8/21/2023	62.3	1.16	0.242	0.191	3.85

Notes:

[1R] Data rejected due to lack of representativeness (<50%). Runoff volumes used in pollutant loading calculation appear to be inaccurate.

Table 4. QC Sample Summary				
Date	Parent Sample	Sample ID	Type	E. coli
				mpn/100 mL
8/21/2023	230821-03-WG	230821-03-001	Field Blank	<1.0
8/21/2023	230821-03-WG	230821-03-101	Field Duplicate	4,730.0
Calculated parent/duplicate RPD				11%
Allowable RPD				40%

Attachment A: Supplemental Documents

Sampling Event Communication Form

Data Validation Checklist

Runoff Calculation Worksheet

SAMPLING EVENT COMMUNICATION FORM

Date: 8/19/2023	Time: 1:22 PM	Initials: KC
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	8/20 Sunday 12pm – 6pm
Expected amount of precipitation	0.15” – 0.25”
Percent chance of precipitation	80%
Percent chance of >0.10” over 12 hours	60%

NWS Update

I spoke with Spencer from the NWS who says there is a 60% chance of getting more than 0.10” Sunday afternoon into the evening. The models are predicting 0.15” in the afternoon and up to 0.25” into the evening. The chance of precipitation drops between 6pm and midnight tomorrow to 40% between the first storm and the second wave expected on Monday.

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: Boise ID
Issued by: National Weather Service Boise, ID
Last Update: 10:16 am MDT Aug 19, 2023

Hydrologic Outlook
Flood Watch

This Afternoon: Isolated showers and thunderstorms. Widespread haze. Mostly sunny and hot, with a high near 93. South southwest wind 5 to 7 mph. Chance of precipitation is 20%.
Tonight: Isolated showers and thunderstorms after midnight. Mostly cloudy, with a low around 71. Light and variable wind becoming east 5 to 8 mph after midnight. Chance of precipitation is 20%.
Sunday: Showers likely, then showers and possibly a thunderstorm after noon. Some of the storms could produce heavy rain. Temperature falling to around 65 by 5pm. East southeast wind 9 to 17 mph. **Chance of precipitation is 80%. New rainfall amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.**

Sunday Night: Showers and possibly a thunderstorm. Some of the storms could produce heavy rain. Low around 59. Northeast wind around 5 mph becoming calm in the evening. Chance of precipitation is 80%. New rainfall amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.
Monday: Showers, with thunderstorms also possible after noon. Some of the storms could produce heavy rain. High near 75. Light southeast wind becoming south 10 to 15 mph in the morning. Chance of precipitation is 90%. New rainfall amounts between a half and three quarters of an inch possible.
Monday Night: Showers likely and possibly a thunderstorm before midnight, then a chance of showers. Some of the storms could produce heavy rain. Mostly cloudy, with a low around 65. Chance of precipitation is 70%. New precipitation amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.
Tuesday: A chance of showers, with thunderstorms also possible after noon. Some of the storms could produce heavy rain. Partly sunny, with a high near 82. Chance of precipitation is 50%.
Tuesday Night: A chance of showers and thunderstorms before midnight, then a slight chance of showers. Some of the storms could produce heavy rain. Partly cloudy, with a low around 61. Chance of precipitation is 30%.
Wednesday: A 20 percent chance of showers. Mostly sunny, with a high near 82.
Wednesday Night: Mostly clear, with a low around 62.
Thursday: Sunny, with a high near 88.
Thursday Night: Mostly clear, with a low around 63.
Friday: A 20 percent chance of showers. Sunny, with a high near 87.

Forecast Discussion

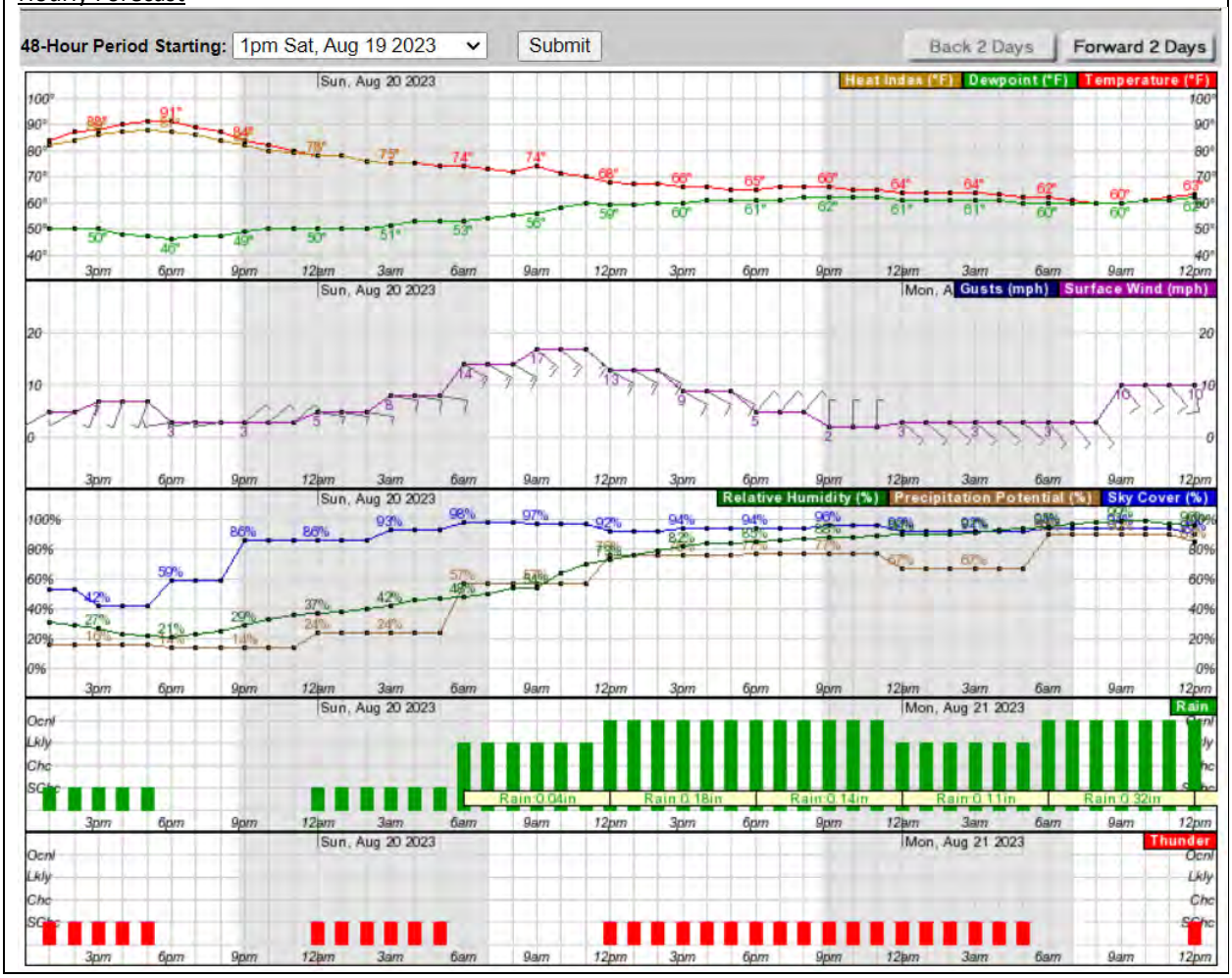
Area Forecast Discussion...UPDATED
National Weather Service Boise ID
1151 AM MDT Sat Aug 19 2023

Included Hydrology segment

.DISCUSSION...Forecast is on track for a record-setting rain event Sunday through Tuesday as remains of Hurricane Hilary track northward, from Baja California today, to southern California Sunday, western NV Sunday night, and right through our CWA Monday. The only comparable event in recent history occurred Sep 10-11, 1976, when tropical storm Kathleen brought intense rain to our CWA. But before Hilary`s moisture gets here a weaker monsoon moisture surge, already over northeast NV, will bring showers and thunderstorms to our CWA this afternoon and evening mainly on the Idaho side, although instability for thunderstorms will be greater in southeast Oregon. After that, a stronger monsoon surge from the south will come in Sunday with widespread rain but only a slight chance of thunderstorms. That surge will include the first moisture from Hilary, resulting in locally heavy rain especially on the Idaho side. Rain will begin in the Snake Basin 6 to 9 AM MDT Sunday and spread northward through the day. Eastern Oregon will have relatively less rain especially in Harney County. The main moisture from Hilary will come in around sunrise Monday and will be much wetter than the monsoon surge on Sunday. Rain totals of 1 to 3 inches are expected, with rainfall rates up to 3 inches/hour during the heaviest downpours. Dew point temperatures may reach 70 degrees in the western Treasure valleys, among the highest dew points on record. The axis of heaviest rain will be along the OR/ID border Monday, then nne-ward through Valley County/ID Monday evening. Meanwhile, the

center of circulation of Hilary will still be evident near Winnemucca/ NV at 8 AM MDT Monday, and move to Ontario/OR 6 PM MDT Monday. With that track, southeast/east winds will increase to 25 to 35 mph in south-central Idaho Monday, and we are considering a wind advisory for it, although that area should have less rain than areas to the west. Current forecast is in good shape for now. Any refinements will be made in the afternoon package. The Flood Watch for all areas Sunday morning through Monday evening looks good at this time.

Hourly Forecast



Storm Event QA/QC Checklist – Phase I

STORM DATE 230821

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)	0.30	0.37	0.33	0.33 / 0.37	0.33 / 0.37	> 0.10"	X		
3. Sampled amount (% of total run-off)	83%	90%	<50%	84%	89%	>= 75% or >= 6 hrs: no qualifier >= 50% and <75%: qualify < 50%: reject	ALL but MAIN		
4. Composite sample duration (hours)	9.5	7.5	1.5	9	6				X
4. Ecoli sample holding time (hours)	5	2	3	—	—	<=8 hrs: no qualifier >8 and <=16 hrs.: qualify >16 hrs.: reject			MAIN + WW — SAMPLE TIME
5. Filtering of samples for dissolved parameter analysis (hours)	3.5	3	10	2.5	5.5	<= 24 hrs: no qualifier > 24 hrs.: reject	X		

D. Notes

- Main + whitewater grabs rejected – collected after composite duration
- Main comp rejected — only 1.5 hour sampling duration + erratic flow measurements

Reviewed by [signature] **Date** 10/13/2023 **Approved by** Monica O Love **Date** 10/13/23

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 = 0.25
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	14960.1	**880**
Whitewater	498	0.069	30957.5	**1821**
Main	79	0.246	17636.4	**1037**
Main Alt	60	0.200	10890.0	**641**
Americana	875	0.144	114345.0	**6726**
AS_6	204	0.046	8516.0	**501**
State	34	0.160	4936.8	**290**

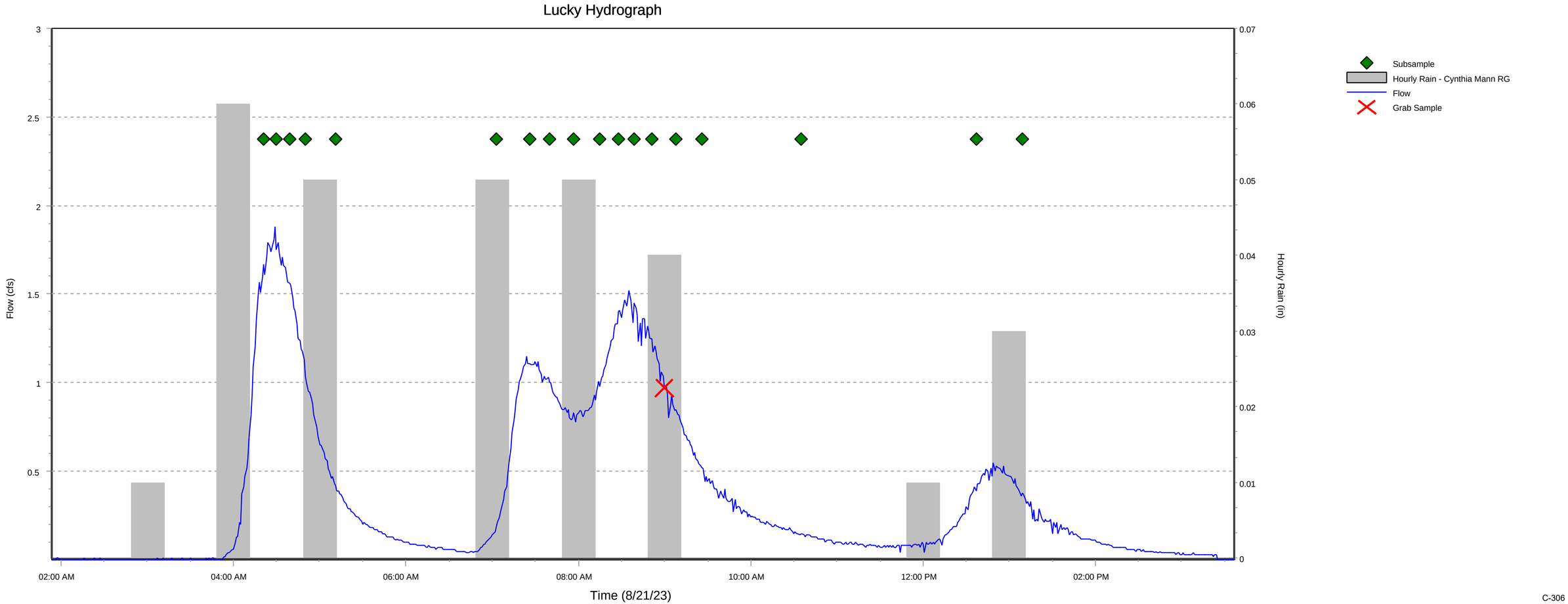
Notes:

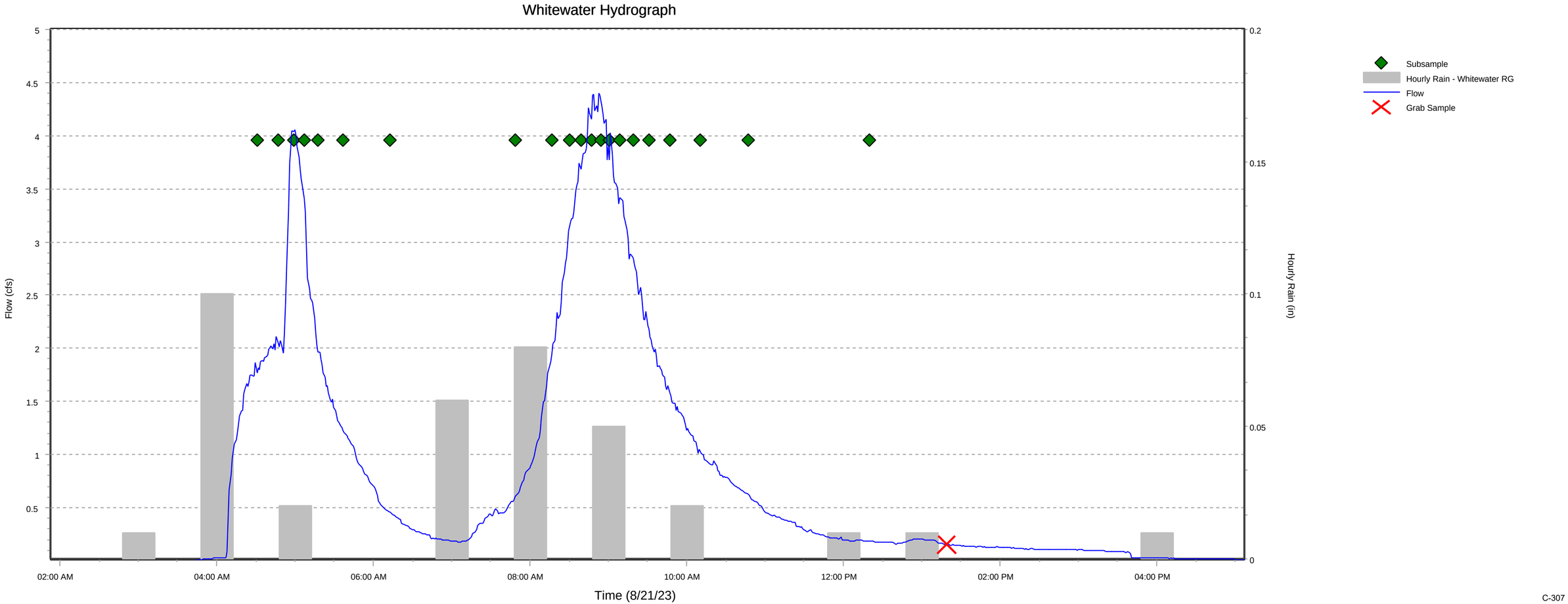
Calculated RC = Average (precip (ft) / [volume (ft^3) x area (ft^2)])

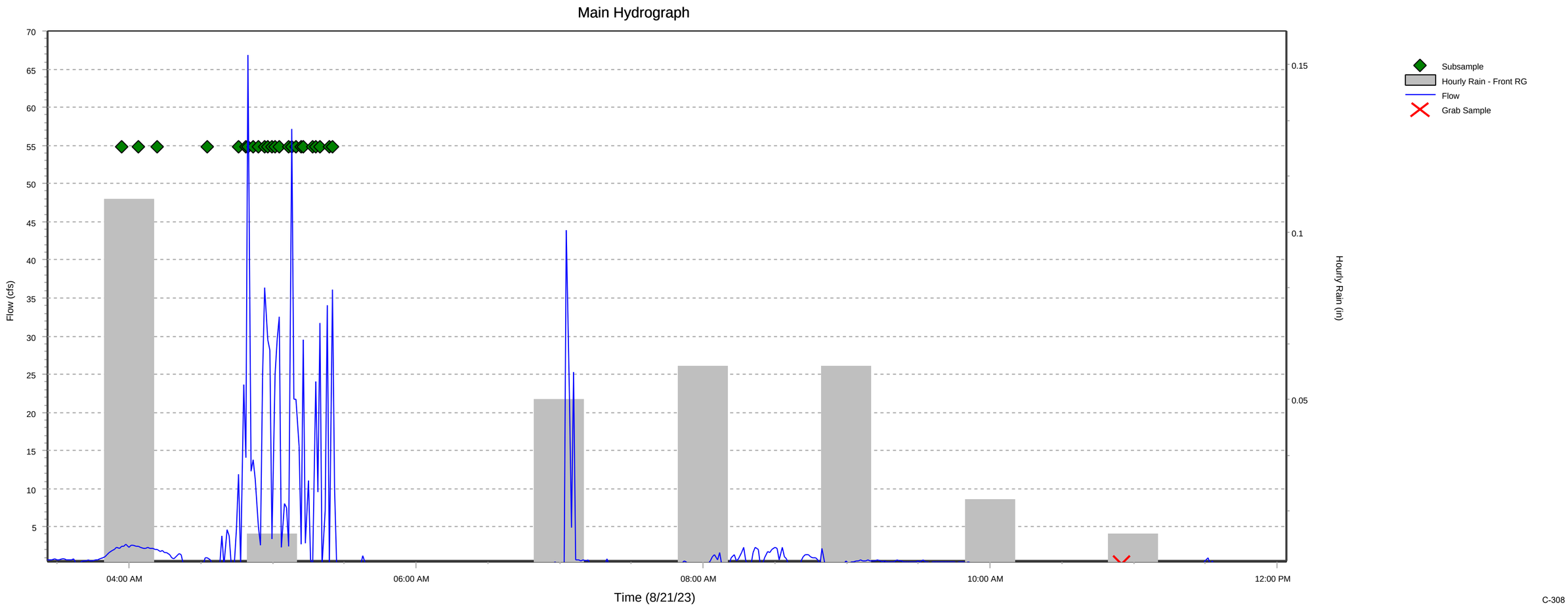
Where precip (ft) is the measured amount from local rain guage, and volume (ft^3) is the measured discharge, and area (ft^2) is the watershed area

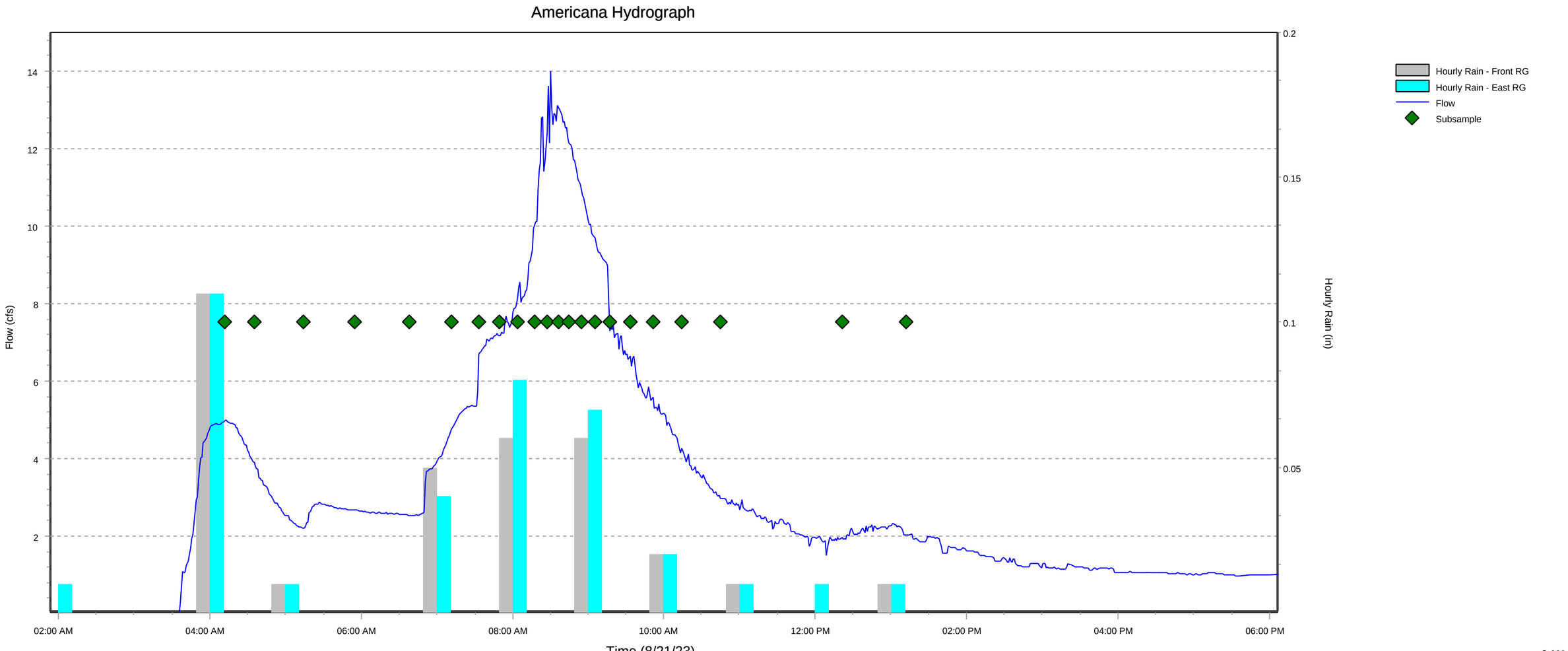
Expected volume (ft^3) = RC x expected precip (ft) x area (ft^2)

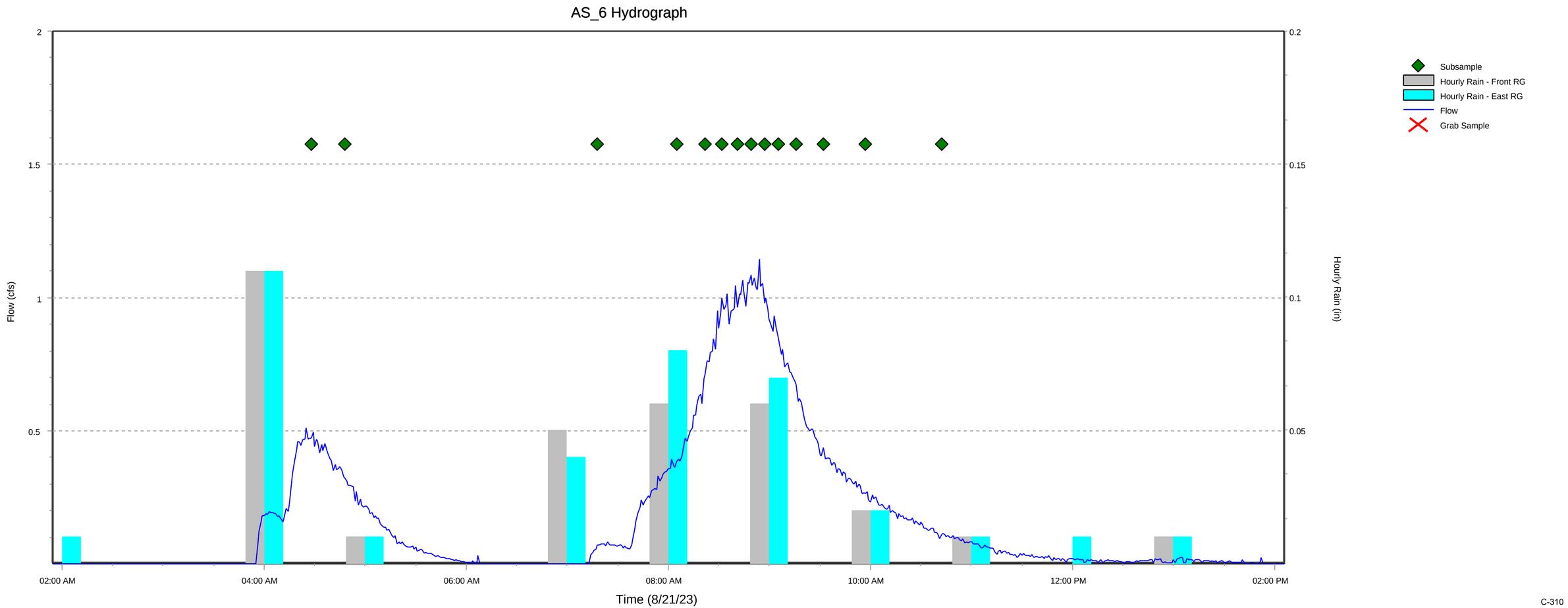
Attachment B: Storm Event Hydrographs


Lucky Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (8/21/23)
3
2.5
2
1.5
1
0.5
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
02:00 AM
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
02:00 PM
Subsample
Hourly Rain - Cynthia Mann RG
Flow
Grab Sample


Whitewater Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (8/21/23)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0.2
0.15
0.1
0.05
0
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
Flow (cfs)
70
65
60
55
50
45
40
35
30
25
20
15
10
5
Hourly Rain (in)
0.15
0.1
0.05
04:00 AM
06:00 AM
08:00 AM
10:00 AM
12:00 PM
Time (8/21/23)
Subsample
Hourly Rain - Front RG
Flow
Grab Sample


Americana Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (8/21/23)
Hourly Rain - Front RG
Hourly Rain - East RG
Flow
Subsample
14
12
10
8
6
4
2
0.2
0.15
0.1
0.05
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


AS_6 Hydrograph
Flow (cfs)
Hourly Rain (in)
Time (8/21/23)
2
1.5
1
0.5
0.2
0.15
0.1
0.05
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

Set Up/ Shut Down Form – HACH

STATION: Lucky

SET UP

Personnel: KC, ZL

Date/Time On-Site: 08/20 0621

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0623	1.72	5.39	0.11	13.4

Enable Condition or Velocity Cutoff:	2.72"
Deadband:	1.00"
Trigger Volume:	880 cf / 6582.86 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

Date/Time On-Site: 8/22/23 1315

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1315	—	—	—	—	13.2

Downloaded to:	USB01

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: Not giving any measurements for level, flow, velocity, ~~ext~~ or total (cf).

Composite Sample Collection

STATION: Lucky
Personnel: HDS ZL

Bottle 1 **of** 2
Date/Time On-Site: 08/21/23 0911

☐ Halt sampler program		
☐ Put lid on sample bottle; label sample bottle		
Sample ID:	230821-03	-WC
Approx Sample Volume (mL):	3000	
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 08/21/23	Error Message/ Subsample Result	Trigger #	Date/Time	Error Message/ Subsample Result
1	0421	Success	13	0851	Success
2	0430		14	0905	
3	0439		15	0926	
4	0450		16		
5	0511		17		
6	0703		18		
7	0726		19		
8	0740		20		
9	0757		21		
10	0815		22		
11	0828		23		
12	0839		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: 0936

- ☑ 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: Lucky
Personnel: KC, ZL

Bottle 2 **of** 2
Date/Time On-Site: 08/21/23 1524

☑ Halt Sampler program	
☑ Put lid on sample bottle; label sample bottle	
Sample ID:	230821 – 03 – -WC
Approx Sample Volume (mL):	800mL
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	08/21/23 1035	Success	13		
2	1237	↓	14		
3	1309		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	☐ 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:** _____
	☐ 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: _____ **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:	**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:** _____
	☐ 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: HRJ **Date/Time On-Site:** 08/21/23 0846

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0854	7.22	5.4162	1.33	12.9	08/21/23	8.60
		9pm			0427	

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230821-03 -WG	08/21/23	0900	☒
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	0906	20.65	7.17	7.29	62.65

Sampler Current Status	
First Subsample Date/Time	08/21/23 0421
Last Subsample Date/Time	08/21/23 0905
# of Subsamples taken	14

Comments:

Set Up/ Shut Down Form – ISCO

STATION: whitewater

SET UP

Personnel: KC, ZL

Date/Time On-Site: 06/20/2023 0736

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0736	0.30	0.00	0.11	—

Enable Condition:	1.30
Hysteresis:	1"
Flow Pulse Interval:	~~15~~ 1821

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 08/20/23 13:24
- ☑ 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:

signature fail to connect ~~[illegible]~~ remotely.
KC & ZL directly change parameters on sensor.

SHUT DOWN

Personnel: KC

Date/Time On-Site: 8/22/23 1155

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1255	0.43	~~0.46~~ 0.0	0.17	—
	Downloaded to:	Flowlink - Remote download		

On-Site

- NA ~~☐ Replace flowmeter battery~~
- ☒ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☒ Direct or Remote; Date/time 8/23/23 1233
- ☒ 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** 1

Personnel: HSR, ZL **Date/Time On-Site:** 08/21/23 1021

☐ Halt sampler program		
☐ Put lid on sample bottle; label sample bottle		
Sample ID:	230821 – 11	-WC
Approx Sample Volume (mL):	11750	
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	08-21-23 0436	Success	13	0859	Success
2	0452		14	0906	
3	0504		15	0914	
4	0512		16	0924	
5	0523		17	0936	
6	0542		18	0952	
7	0618		19	1015	
8	0754		20	1020	
9	0822		21	1225	
10	0835		22		
11	0844		23		
12	0852		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: Whitewater

Personnel: HES, ZL, KC **Date/Time On-Site:** 08/21/23 1003

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
0956	4.18	1.37	1.92	—	08/21/23 0500	0.00

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230821 - 11 -WG	08/21/23	1319	☒
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	1323	23.15	5.22	7.15	130.88

Sampler Current Status	
First Subsample Date/Time	08/21/23 0436
Last Subsample Date/Time	08/21/23 1020
# of Subsamples taken	20

Comments:

Set Up/ Shut Down Form – HACH

TATION: Main

SET UP

Personnel: KC, ZL

Date/Time On-Site: 08/20/2023 0800

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0800	0.77	0.00	0.00	12.7

Enable Condition or Velocity Cutoff:	1.77"
Deadband:	1"
Trigger Volume:	[redacted]

1037cf / 7757.30gal
(updated rainfall amount to 0.25")

- ☑ 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

Date/Time On-Site: 8/22/23 1241

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1241	0.76	0	0		12.1
Downloaded to:	USB01				

If flow monitoring is complete:	If continuing to monitor flow:
☒ Halt program on flowmeter	☐ Replace flowmeter battery
☒ Download flowmeter data	KC ☒ 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
Personnel: HES, ZL

Bottle 1 **of** 4
Date/Time On-Site: 08/21/23 12:57

☐ Halt sampler program		
☐ Put lid on sample bottle; label sample bottle		
Sample ID:	230821 - 12	-WC
Approx Sample Volume (mL):	16250	
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	08/21/23 0357	Success	13	0501	Success
2	0404		14	0503	
3	0412		15	0507	
4	0433		16	0508	
5	0446		17	0510	
6	0449		18	0512	
7	0450		19	0513	
8	0452		20	0517	
9	0454		21	0518	
10	0457		22	0520	
11	0458		23	0524	
12	0500		24	0525	

Comments:

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: Main

Personnel: HRJ / ZL **Date/Time On-Site:** 08/21/23 1049

Flow Meter Current Status						
Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)	Flow Start (date/time)	Rainfall (in)
1049	2.51	46.80 (gpm)	0.41	12.3	08/21/23 0523	2.64in

Grab Information				
	Sample ID	Date	Time	Labeled?
Site *E.Coli*	230821 – 12 -WG	08/21/23	1055	☒
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	1053	22.21	7.07	6.86	95.30

Sampler Current Status	
First Subsample Date/Time	08/21/23 0357
Last Subsample Date/Time	08/21/23 0525
# of Subsamples taken	24

Comments:

Set Up/ Shut Down Form – ISCO

STATION: Americana

SET UP

Personnel: KC, ZL

Date/Time On-Site: 8/20/23 8:30

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
830	3.91	0	0	12.37

Enable Condition:	4.91"
Hysteresis:	1.0"
Flow Pulse Interval:	6726 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 08/20/23 1210
- ☑ 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:

ZL-check measurement timeout ISCO

can't login remotely. couldn't retrieve data.

SHUT DOWN

Personnel: KC

Date/Time On-Site: 8/22/23 1110

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
1111	4.14	0.91	1.731	12.15
	Downloaded to:	Remote download		

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

Flowlink (Refer to Flowlink Instructions, if needed)
- ☑ Direct or Remote; Date/time 8/22/23 1012
- ☑ 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, ZL **Date/Time On-Site:** 08/21/23 1351

☐ Halt sampler program		
☐ Put lid on sample bottle; label sample bottle		
Sample ID:	230821-14	-WC
Approx Sample Volume (mL):	12500mL	
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	08/21/23 0413	Success	13	0846	
2	0437		14	0856	
3	0516		15	0907	
4	0557		16	0919	
5	0640		17	0935	
6	0713		18	0953	
7	0735		19	1016	
8	0751		20	1047	
9	0806		21	1128	skipped
10	0819		22	1223	Success
11	0829		23	1314	
12	0838		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

STATION: AS-6

SET UP

Personnel: KC, ZL

Date/Time On-Site: 08/20/2023 0852

Time	Level (in)	Flow (cfs)	Velocity (fps)	Battery (V)
0851	0.00	0.00	0.00	12.8

Enable Condition or Velocity Cutoff:	1"
Deadband:	1"
Trigger Volume:	501cf

- ☑ 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

Date/Time On-Site: 8/22/23 1150

Time	Level (in)	Flow (cfs)	Velocity (fps)	Total (cf)	Battery (V)
1150	0	0	0	7338	12.0
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:

Composite Sample Collection

STATION: AS-6 **Bottle** 1 **of** 1

Personnel: HJ ZL **Date/Time On-Site:** 08/21/23 11:46

☐ Halt sampler program		
☐ Put lid on sample bottle; label sample bottle		
Sample ID:	230821-206	-WC
Approx Sample Volume (mL):	8000 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	08/21/23 0428	Success	13	0957	↓
2	0448	↓	14	1042	↓
3	0718	↓	15		
4	0805	↓	16		
5	0822	↓	17		
6	0832	↓	18		
7	0841	↓	19		
8	0849	↓	20		
9	0857	↓	21		
10	0905	↓	22		
11	0916	↓	23		
12	0932	↓	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: 08/31/2023 13:31

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
AC00311-01	ACST1B	230821-03-WG	Water		08/21/2023	08/21/2023
AC00311-02	ACST1B	230821-03-001	Water		08/21/2023	08/21/2023
AC00311-03	ACST1B	230821-03-101	Water		08/21/2023	08/21/2023
AC00311-04	ACST1B	23082112-WG	Water		08/21/2023	08/21/2023

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No duplication of this report is allowed, except in its entirety

Report Date: 08/31/2023 13:31

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:	230821-03-WG
Date/Time Collected:	08/21/2023 09:00		
Lab Number:	AC00311-01	Sample Collector:	MMJ
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	B233199	20140	MPN/100 mL	100.0	1.0	IDEXX - Colilert	08/21/23 13:57	8/22/23 14:05	ASE	D
Wet Chemistry										
Chlorine Screen	B233207	Absent				SM 4500-CL G-2000 mod	08/21/23	8/21/23 13:13	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.

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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:	230821-03-001
Date/Time Collected:	08/21/2023 12:00		
Lab Number:	AC00311-02	Sample Collector:	HRJ
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	B233199	<1.0	MPN/100 mL	1.0	1.0	IDEXX - Colilert	08/21/23 13:57	8/22/23 14:05	ASE	U
Wet Chemistry										
Chlorine Screen	B233207	Absent				SM 4500-CL G-2000 mod	08/21/23	8/21/23 13:13	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.

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Fax (208) 608-7319

Analysis Report

Location:	ACST1B	Location Description:	230821-03-101
Date/Time Collected:	08/21/2023 12:00		
Lab Number:	AC00311-03	Sample Collector:	HRJ
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	B233199	4730.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	08/21/23 13:57	8/22/23 14:05	ASE	D
Wet Chemistry										
Chlorine Screen	B233207	Absent				SM 4500-CL G-2000 mod	08/21/23	8/21/23 13:13	ASE	

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Water Quality Laboratory
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Boise, Idaho 83714-1076
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Analysis Report

Location:	ACST1B	Location Description:	23082112-WG
Date/Time Collected:	08/21/2023 10:55		
Lab Number:	AC00311-04	Sample Collector:	HRJ
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	B233199	9850.0	MPN/100 mL	100.0	1.0	IDEXX - Colilert	08/21/23 13:57	8/22/23 14:05	ASE	D
Wet Chemistry										
Chlorine Screen	B233207	Absent				SM 4500-CL G-2000 mod	08/21/23	8/21/23 13:13	ASE	

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B233199									
Blank (B233199-BLK1)									
E. Coli	Absent						08/22/2023	ASE	
LCS (B233199-BS1)									
E. Coli				Present			08/22/2023	ASE	
Duplicate (B233199-DUP1)	Source ID: WB02658-06								
E. Coli					Pass	128	08/22/2023	ASE	
Duplicate (B233199-DUP3)	Source ID: AC00311-03								
E. Coli					Pass	128	08/22/2023	ASE	

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Water Quality Laboratory
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Boise, Idaho 83714-1076
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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

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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: 63061761
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Melissa Jannusen

Lab# AC00311	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	C-335 Total Containers
-01	8/21/23	—	0900	—	230821-03-WG	MMJ	X	X												X					1
-02	8/21/23	—	~~0922~~ 1200	—	23082-03-001	HRJ	X	X												X					1
-03	8/21/23	—	~~0925~~ 1200	—	230821-03-101	HRJ	X	X												X					1
-04	8/21/23	—	1055	—	230821-12-WG	HRJ	X	X												X					1

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	8/21/23 1259	8-21-23 1300	

AC00311

Report Date: 09/12/2023 13:20

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
AC00312-01	ACST1B	230821-11-WG	Water		08/21/2023	08/21/2023
AC00312-02	ACST1C	230821-12-WC	Water		08/21/2023	08/21/2023
AC00312-03	ACST1C	230821-11-WC	Water		08/21/2023	08/21/2023
AC00312-04	ACST1C	230821-14-WC	Water		08/21/2023	08/21/2023

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Report Date: 09/12/2023 13:20

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:	230821-11-WG
Date/Time Collected:	08/21/2023 13:19		
Lab Number:	AC00312-01	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	B233199	27550	MPN/100 mL	100.0	1.0	IDEXX - Colilert	08/21/23 15:18	8/22/23 15:18	ASE	D
Wet Chemistry										
Chlorine Screen	B233211	Absent				SM 4500-CL G-2000 mod	08/21/23	8/21/23 15:11	ASE	

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Report Date: 09/12/2023 13:20

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

Analysis Report

Location:	ACST1C	Location Description:	230821-12-WC
Date/Time Collected:	08/21/2023 03:57 - 08/21/2023 05:25		
Lab Number:	AC00312-02	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	B233228	1.36	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	08/23/23	8/23/23 10:52	ALN	
BOD5	B233221	46.1	mg/L	2.00	2.00	SM 5210 B-2016	08/22/23	8/27/23 11:14	ASE	
COD	B233214	222	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	08/22/23	8/22/23 11:03	KMR	
Nitrate-Nitrite, as N	B233219	0.817	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	08/22/23	8/22/23 11:28	JAL	
TKN	B233245	2.14	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	08/24/23	8/25/23 9:29	ALN	
Total Dissolved Solids	B233224	166	mg/L	20.0	20.0	SM 2540 C-2015	08/22/23	8/23/23 17:22	BAK	
Total Suspended Solids	B233220	197	mg/L	0.900	0.900	SM 2540 D-2015	08/22/23	8/22/23 9:38	RKT	
Turbidity	B233218	79.9	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	08/22/23	8/22/23 12:17	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B233213	0.222	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	08/22/23	8/22/23 8:29	ALN	
Total Metals										
Mercury	B233306	0.0446	ug/L	0.0100	0.0100	EPA 245.1	08/29/23	8/30/23 8:58	SAS	
Arsenic	B233274	3.8	ug/L	0.070	0.070	EPA 200.8	08/25/23	8/30/23 13:02	DMW	
Cadmium	B233274	0.20	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:02	DMW	
Calcium	B233226	13.8	mg/L	0.0400	0.0400	EPA 200.7	08/22/23	8/23/23 17:16	EDM	
Lead	B233274	13.8	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:02	DMW	
Magnesium	B233226	2890	ug/L	80.0	80.0	EPA 200.7	08/22/23	8/23/23 17:16	EDM	
Phosphorus as P	B233226	0.558	mg/L	0.0120	0.0120	EPA 200.7	08/22/23	8/23/23 17:16	EDM	
Hardness	B233226	46.3	mg/L	0.100	0.100	SM 2340 B-2011	08/22/23	8/23/23 17:16	EDM	
Dissolved Metals										
Cadmium	B233273	0.057	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/25/23 13:47	DMW	
Copper	B233273	13.7	ug/L	0.15	0.15	EPA 200.8	08/25/23	8/25/23 13:47	DMW	
Lead	B233273	0.38	ug/L	9.00E-3	9.00E-3	EPA 200.8	08/25/23	8/25/23 13:47	DMW	
Zinc	B233273	112	ug/L	0.50	0.50	EPA 200.8	08/25/23	8/25/23 13:47	DMW	

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

Location:	ACST1C	Location Description:	230821-11-WC
Date/Time Collected:	08/21/2023 04:36 - 08/21/2023 12:25		
Lab Number:	AC00312-03	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	B233228	0.611	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	08/23/23	8/23/23 11:11	ALN	
BOD5	B233221	107	mg/L	2.00	2.00	SM 5210 B-2016	08/22/23	8/27/23 11:06	ASE	
COD	B233214	323	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	08/22/23	8/22/23 11:03	KMR	
Nitrate-Nitrite, as N	B233219	0.725	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	08/22/23	8/22/23 11:33	JAL	
TKN	B233245	4.10	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	08/24/23	8/25/23 9:34	ALN	
Total Dissolved Solids	B233224	229	mg/L	20.0	20.0	SM 2540 C-2015	08/22/23	8/23/23 17:25	BAK	
Total Suspended Solids	B233220	152	mg/L	0.900	0.900	SM 2540 D-2015	08/22/23	8/22/23 9:39	RKT	
Turbidity	B233218	118	NTU	3.0	0.3	EPA 180.1, Rev. 2.0 (1993)	08/22/23	8/22/23 12:40	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B233213	0.605	mg/L	6.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	08/22/23	8/22/23 8:36	ALN	D
Total Metals										
Mercury	B233306	0.0195	ug/L	0.0100	0.0100	EPA 245.1	08/29/23	8/30/23 9:02	SAS	
Arsenic	B233274	5.0	ug/L	0.070	0.070	EPA 200.8	08/25/23	8/30/23 13:05	DMW	
Cadmium	B233274	0.13	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:05	DMW	
Calcium	B233226	15.3	mg/L	0.0400	0.0400	EPA 200.7	08/22/23	8/23/23 17:34	EDM	
Lead	B233274	7.3	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:05	DMW	
Magnesium	B233226	3430	ug/L	80.0	80.0	EPA 200.7	08/22/23	8/23/23 17:34	EDM	
Phosphorus as P	B233226	1.06	mg/L	0.0120	0.0120	EPA 200.7	08/22/23	8/23/23 17:34	EDM	
Hardness	B233226	52.3	mg/L	0.100	0.100	SM 2340 B-2011	08/22/23	8/23/23 17:34	EDM	
Dissolved Metals										
Cadmium	B233273	0.017	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/25/23 13:50	DMW	
Copper	B233273	10.2	ug/L	0.15	0.15	EPA 200.8	08/25/23	8/25/23 13:50	DMW	
Lead	B233273	0.25	ug/L	9.00E-3	9.00E-3	EPA 200.8	08/25/23	8/25/23 13:50	DMW	
Zinc	B233273	48.6	ug/L	0.50	0.50	EPA 200.8	08/25/23	8/25/23 13:50	DMW	

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Analysis Report

Location:	ACST1C	Location Description:	230821-14-WC
Date/Time Collected:	08/21/2023 04:13 - 08/21/2023 13:14		
Lab Number:	AC00312-04	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	B233228	0.676	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	08/23/23	8/23/23 11:15	ALN	
BOD5	B233221	67.7	mg/L	2.00	2.00	SM 5210 B-2016	08/22/23	8/27/23 10:58	ASE	
COD	B233214	213	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	08/22/23	8/22/23 11:03	KMR	
Nitrate-Nitrite, as N	B233219	0.758	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	08/22/23	8/22/23 11:34	JAL	
TKN	B233245	3.41	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	08/24/23	8/25/23 9:36	ALN	
Total Dissolved Solids	B233224	184	mg/L	20.0	20.0	SM 2540 C-2015	08/22/23	8/23/23 17:26	BAK	
Total Suspended Solids	B233220	80.0	mg/L	0.900	0.900	SM 2540 D-2015	08/22/23	8/22/23 10:05	RKT	
Turbidity	B233218	57.1	NTU	3.0	0.3	EPA 180.1, Rev. 2.0 (1993)	08/22/23	8/22/23 13:07	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B233213	0.355	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	08/22/23	8/22/23 8:32	ALN	
Total Metals										
Mercury	B233306	0.0118	ug/L	0.0100	0.0100	EPA 245.1	08/29/23	8/30/23 9:05	SAS	
Arsenic	B233274	3.6	ug/L	0.070	0.070	EPA 200.8	08/25/23	8/30/23 13:07	DMW	
Cadmium	B233274	0.13	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:07	DMW	
Calcium	B233226	17.8	mg/L	0.0400	0.0400	EPA 200.7	08/22/23	8/23/23 17:14	EDM	
Lead	B233274	5.6	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:07	DMW	
Magnesium	B233226	3220	ug/L	80.0	80.0	EPA 200.7	08/22/23	8/23/23 17:14	EDM	
Phosphorus as P	B233226	0.625	mg/L	0.0120	0.0120	EPA 200.7	08/22/23	8/23/23 17:14	EDM	
Hardness	B233226	57.7	mg/L	0.100	0.100	SM 2340 B-2011	08/22/23	8/23/23 17:14	EDM	
Dissolved Metals										
Cadmium	B233273	0.023	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/25/23 13:52	DMW	
Copper	B233273	9.0	ug/L	0.15	0.15	EPA 200.8	08/25/23	8/25/23 13:52	DMW	
Lead	B233273	0.22	ug/L	9.00E-3	9.00E-3	EPA 200.8	08/25/23	8/25/23 13:52	DMW	
Zinc	B233273	62.5	ug/L	0.50	0.50	EPA 200.8	08/25/23	8/25/23 13:52	DMW	

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Microbiology									
Batch: B233199									
Blank (B233199-BLK1)									
E. Coli	Absent						08/22/2023	ASE	
LCS (B233199-BS1)									
E. Coli				Present			08/22/2023	ASE	
Duplicate (B233199-DUP1) Source ID: WB02658-06									
E. Coli					Pass	128	08/22/2023	ASE	
Duplicate (B233199-DUP3) Source ID: AC00311-03									
E. Coli					Pass	128	08/22/2023	ASE	
Wet Chemistry									
Batch: B233214									
Blank (B233214-BLK1)									
COD	<7	mg/L					08/22/2023	KMR	U
LCS (B233214-BS1)									
COD			101	90-110			08/22/2023	KMR	
Duplicate (B233214-DUP1) Source ID: AC00314-01									
COD					3.55	10	08/22/2023	KMR	
Batch: B233218									
Blank (B233218-BLK1)									
Turbidity	<0.3	NTU					08/22/2023	LRF	U
LCS (B233218-BS1)									
Turbidity			100	90-110			08/22/2023	LRF	
Duplicate (B233218-DUP1) Source ID: AC00312-02									
Turbidity					2.80	25	08/22/2023	LRF	D
Batch: B233219									
Blank (B233219-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					08/22/2023	JAL	U
LCS (B233219-BS1)									
Nitrate-Nitrite, as N			100	90-110			08/22/2023	JAL	
Duplicate (B233219-DUP1) Source ID: AC00312-02									
Nitrate-Nitrite, as N					0.270	10	08/22/2023	JAL	
Duplicate (B233219-DUP2) Source ID: BB03161-01									
Nitrate-Nitrite, as N					NR	10	08/22/2023	JAL	U
Matrix Spike (B233219-MS1) Source ID: AC00312-02									
Nitrate-Nitrite, as N			99.1	90-110			08/22/2023	JAL	
Matrix Spike (B233219-MS2) Source ID: BB03161-01									
Nitrate-Nitrite, as N			104	90-110			08/22/2023	JAL	
Matrix Spike Dup (B233219-MSD1) Source ID: AC00312-02									
Nitrate-Nitrite, as N			100	90-110	0.484	10	08/22/2023	JAL	
Matrix Spike Dup (B233219-MSD2) Source ID: BB03161-01									
Nitrate-Nitrite, as N			104	90-110	0.210	10	08/22/2023	JAL	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B233220									
Blank (B233220-BLK1)									
Total Suspended Solids	<0.9	mg/L					08/22/2023	RKT	U
LCS (B233220-BS1)									
Total Suspended Solids			97.4	90-110			08/22/2023	RKT	
Duplicate (B233220-DUP1) Source ID: BB03167-01									
Total Suspended Solids					0.0807	20	08/22/2023	RKT	
Batch: B233221									
Blank (B233221-BLK1)									
BOD5	<2	mg/L					08/27/2023	ASE	U
LCS (B233221-BS2)									
BOD5			102	84.6-115.4			08/27/2023	ASE	
Duplicate (B233221-DUP1) Source ID: BB03166-01									
BOD5					0.436	30	08/27/2023	ASE	D
Batch: B233224									
Blank (B233224-BLK1)									
Total Dissolved Solids	<20	mg/L					08/23/2023	BAK	U
LCS (B233224-BS1)									
Total Dissolved Solids			93.6	90-110			08/23/2023	BAK	
Duplicate (B233224-DUP1) Source ID: AC00312-02									
Total Dissolved Solids					3.99	10	08/23/2023	BAK	
Batch: B233228									
Blank (B233228-BLK1)									
Ammonia, as N	<0.035	mg/L					08/23/2023	ALN	U
LCS (B233228-BS1)									
Ammonia, as N			100	90-110			08/23/2023	ALN	
LCS (B233228-BS2)									
Ammonia, as N			107	90-110			08/23/2023	ALN	
Duplicate (B233228-DUP1) Source ID: AC00312-02									
Ammonia, as N					8.19	10	08/23/2023	ALN	
Duplicate (B233228-DUP2) Source ID: BB03157-01									
Ammonia, as N					0.605	10	08/23/2023	ALN	D
Matrix Spike (B233228-MS1) Source ID: AC00312-02									
Ammonia, as N			107	80-120			08/23/2023	ALN	
Matrix Spike (B233228-MS2) Source ID: BB03157-01									
Ammonia, as N			99.3	80-120			08/23/2023	ALN	D
Matrix Spike Dup (B233228-MSD1) Source ID: AC00312-02									
Ammonia, as N			108	80-120	0.685	10	08/23/2023	ALN	
Matrix Spike Dup (B233228-MSD2) Source ID: BB03157-01									
Ammonia, as N			102	80-120	1.51	10	08/23/2023	ALN	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B233245									
Blank (B233245-BLK1)									
TKN	<0.2	mg/L					08/25/2023	ALN	U
Blank (B233245-BLK2)									
TKN	<0.2	mg/L					08/25/2023	ALN	U
Blank (B233245-BLK3)									
TKN	<0.2	mg/L					08/25/2023	ALN	U
LCS (B233245-BS1)									
TKN			97.8	80-120			08/25/2023	ALN	
LCS (B233245-BS2)									
TKN			97.3	80-120			08/25/2023	ALN	
LCS (B233245-BS3)									
TKN			94.1	80-120			08/25/2023	ALN	
Duplicate (B233245-DUP1) Source ID: AC00312-02									
TKN					3.40	20	08/25/2023	ALN	
Duplicate (B233245-DUP2) Source ID: BB03127-01RE1									
TKN					5.57	20	08/25/2023	ALN	D
Duplicate (B233245-DUP3) Source ID: BB03146-01									
TKN					4.80	20	08/25/2023	ALN	D
Duplicate (B233245-DUP4) Source ID: LS01650-02									
TKN					6.72	20	08/25/2023	ALN	D
Duplicate (B233245-DUP5) Source ID: WB02662-06									
TKN					6.89	20	08/25/2023	ALN	D
Matrix Spike (B233245-MS1) Source ID: AC00312-02									
TKN			108	80-120			08/25/2023	ALN	
Matrix Spike (B233245-MS2) Source ID: BB03127-01RE1									
TKN			113	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS3) Source ID: BB03146-01									
TKN			93.8	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS4) Source ID: LS01650-02									
TKN			102	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS5) Source ID: WB02662-06									
TKN			101	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS6) Source ID: EP00258-01									
TKN			102	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS7) Source ID: EP00258-02									
TKN			102	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS8) Source ID: EP00259-01									
TKN			95.5	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS9) Source ID: EP00260-01									
TKN			96.5	80-120			08/25/2023	ALN	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B233245 (Continued)									
Matrix Spike Dup (B233245-MSD1) Source ID: AC00312-02									
TKN			91.0	80-120	11.7	20	08/25/2023	ALN	
Matrix Spike Dup (B233245-MSD2) Source ID: BB03127-01RE1									
TKN			99.2	80-120	6.01	20	08/25/2023	ALN	D
Matrix Spike Dup (B233245-MSD3) Source ID: BB03146-01									
TKN			103	80-120	3.11	20	08/25/2023	ALN	D
Matrix Spike Dup (B233245-MSD4) Source ID: LS01650-02									
TKN			115	80-120	4.76	20	08/25/2023	ALN	D
Matrix Spike Dup (B233245-MSD5) Source ID: WB02662-06									
TKN			107	80-120	2.48	20	08/25/2023	ALN	D
Dissolved Wet Chemistry									
Batch: B233213									
Blank (B233213-BLK1)									
Orthophosphate, as P	<0.003	mg/L					08/22/2023	ALN	U
LCS (B233213-BS1)									
Orthophosphate, as P			95.2	90-110			08/22/2023	ALN	
Duplicate (B233213-DUP1) Source ID: AC00312-04									
Orthophosphate, as P					0.608	10	08/22/2023	ALN	
Matrix Spike (B233213-MS1) Source ID: AC00312-04									
Orthophosphate, as P			95.2	90-110			08/22/2023	ALN	
Matrix Spike Dup (B233213-MSD1) Source ID: AC00312-04									
Orthophosphate, as P			98.5	90-110	0.712	10	08/22/2023	ALN	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B233226									
Blank (B233226-BLK1)									
Calcium	<0.04	mg/L					08/23/2023	EDM	U
Magnesium	<80	ug/L					08/23/2023	EDM	U
Phosphorus as P	<0.012	mg/L					08/23/2023	EDM	U
LCS (B233226-BS1)									
Calcium			102	85-115			08/23/2023	EDM	
Magnesium			102	85-115			08/23/2023	EDM	
Phosphorus as P			101	85-115			08/23/2023	EDM	
Duplicate (B233226-DUP1) Source ID: AC00312-02									
Calcium					2.09	20	08/23/2023	EDM	
Magnesium					0.316	20	08/23/2023	EDM	
Phosphorus as P					1.76	20	08/23/2023	EDM	
Matrix Spike (B233226-MS1) Source ID: AC00312-02									
Calcium			102	70-130			08/23/2023	EDM	
Magnesium			102	70-130			08/23/2023	EDM	
Phosphorus as P			102	70-130			08/23/2023	EDM	
Matrix Spike Dup (B233226-MSD1) Source ID: AC00312-02									
Calcium			102	70-130	0.0723	20	08/23/2023	EDM	
Magnesium			103	70-130	0.458	20	08/23/2023	EDM	
Phosphorus as P			102	70-130	0.0565	20	08/23/2023	EDM	
Batch: B233274									
Blank (B233274-BLK1)									
Arsenic	<0.070	ug/L					08/30/2023	DMW	U
Cadmium	<0.010	ug/L					08/30/2023	DMW	U
Lead	<0.010	ug/L					08/30/2023	DMW	U
LCS (B233274-BS1)									
Arsenic			93.2	85-115			08/30/2023	DMW	
Cadmium			95.2	85-115			08/30/2023	DMW	
Lead			97.1	85-115			08/30/2023	DMW	
Duplicate (B233274-DUP1) Source ID: AC00312-04									
Arsenic					2.77	20	08/30/2023	DMW	
Cadmium					4.51	20	08/30/2023	DMW	
Lead					0.880	20	08/30/2023	DMW	
Matrix Spike (B233274-MS1) Source ID: AC00312-04									
Arsenic			93.4	70-130			08/30/2023	DMW	
Cadmium			98.5	70-130			08/30/2023	DMW	
Lead			93.6	70-130			08/30/2023	DMW	
Matrix Spike Dup (B233274-MSD1) Source ID: AC00312-04									
Arsenic			91.3	70-130	1.62	20	08/30/2023	DMW	
Cadmium			98.0	70-130	0.562	20	08/30/2023	DMW	
Lead			94.3	70-130	0.482	20	08/30/2023	DMW	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B233306									
Blank (B233306-BLK1)									
Mercury	<0.01	ug/L					08/30/2023	SAS	U
LCS (B233306-BS1)									
Mercury			100	85-115			08/30/2023	SAS	
Duplicate (B233306-DUP1) Source ID: AC00313-02									
Mercury					NR	20	08/30/2023	SAS	U
Duplicate (B233306-DUP2) Source ID: EP00260-02									
Mercury					NR	20	08/30/2023	SAS	U
Matrix Spike (B233306-MS1) Source ID: AC00313-02									
Mercury			111	70-130			08/30/2023	SAS	
Matrix Spike (B233306-MS2) Source ID: EP00260-02									
Mercury			101	70-130			08/30/2023	SAS	
Matrix Spike Dup (B233306-MSD1) Source ID: AC00313-02									
Mercury			109	70-130	1.02	20	08/30/2023	SAS	
Matrix Spike Dup (B233306-MSD2) Source ID: EP00260-02									
Mercury			99.6	70-130	1.65	20	08/30/2023	SAS	
Dissolved Metals									
Batch: B233273									
Blank (B233273-BLK1)									
Cadmium	<0.010	ug/L					08/25/2023	DMW	U
Copper	<0.15	ug/L					08/25/2023	DMW	U
Lead	<0.0090	ug/L					08/25/2023	DMW	U
Zinc	<0.50	ug/L					08/25/2023	DMW	U
LCS (B233273-BS1)									
Cadmium			95.6	85-115			08/25/2023	DMW	
Copper			95.1	85-115			08/25/2023	DMW	
Lead			96.3	85-115			08/25/2023	DMW	
Zinc			95.4	85-115			08/25/2023	DMW	
Duplicate (B233273-DUP1) Source ID: AC00312-04									
Cadmium					14.3	10	08/25/2023	DMW	QC-02
Copper					0.140	10	08/25/2023	DMW	
Lead					1.53	10	08/25/2023	DMW	
Zinc					0.176	10	08/25/2023	DMW	
Matrix Spike (B233273-MS1) Source ID: AC00312-04									
Cadmium			93.6	70-130			08/25/2023	DMW	
Copper			89.0	70-130			08/25/2023	DMW	
Lead			91.7	70-130			08/25/2023	DMW	
Zinc			87.6	70-130			08/25/2023	DMW	
Matrix Spike Dup (B233273-MSD1) Source ID: AC00312-04									
Cadmium			95.6	70-130	2.08	10	08/25/2023	DMW	
Copper			90.2	70-130	0.711	10	08/25/2023	DMW	
Lead			93.3	70-130	1.77	10	08/25/2023	DMW	
Zinc			88.3	70-130	0.227	10	08/25/2023	DMW	

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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

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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: 63061761
Project: Stormwater-PI
Sampler(s): Kristin Chisholm
Tuly Lapa

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	C-348 Total Containers
C00312-01	8/21/23		1319		230821-11-WG	KC	X	X												X					1
-02	8/21/23	8/21/23	0357	0525	230821-12-WC	KC	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-03	8/21/23	8/21/23	0936	1225	230821-11-WC	KC	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
-04	8/21/23	8/21/23	0413	1314	230821-14-WC	KC			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:
Kristin Chisholm	8/21/23 1436	[signature] 1437	
[signature]	8/21/23 1510	[signature] 1510	

PI – AC00312

AC00312

Report Date: 09/12/2023 13:20

Boise City Public Works
Water Quality Laboratory
11818 Joplin Road
Boise, Idaho 83714-1076
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Samples in this Report

Lab ID	Sample	Sample Description	Matrix	Qualifiers	Date Sampled	Date Received
AC00313-01	ACST1C	230821-206-WC	Water		08/21/2023	08/21/2023
AC00313-02	ACST1C	230821-03-WC	Water		08/21/2023	08/21/2023

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Analysis Report

Location:	ACST1C	Location Description:	230821-206-WC
Date/Time Collected:	08/21/2023 04:28 - 08/21/2023 10:42		
Lab Number:	AC00313-01	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	B233228	0.529	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	08/23/23	8/23/23 11:20	ALN	
BOD5	B233221	309	mg/L	2.00	2.00	SM 5210 B-2016	08/22/23	8/27/23 10:50	ASE	
COD	B233214	875	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	08/22/23	8/22/23 11:03	KMR	
Nitrate-Nitrite, as N	B233219	0.417	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	08/22/23	8/22/23 11:35	JAL	
TKN	B233245	8.40	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	08/24/23	8/25/23 9:37	ALN	
Total Dissolved Solids	B233224	420	mg/L	20.0	20.0	SM 2540 C-2015	08/22/23	8/24/23 10:37	BAK	
Total Suspended Solids	B233220	136	mg/L	0.900	0.900	SM 2540 D-2015	08/22/23	8/22/23 9:37	RKT	
Turbidity	B233218	83.5	NTU	3.0	0.3	EPA 180.1, Rev. 2.0 (1993)	08/22/23	8/22/23 12:32	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B233213	1.47	mg/L	0.0300	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	08/22/23	8/22/23 8:44	ALN	D
Total Metals										
Mercury	B233306	0.0237	ug/L	0.0100	0.0100	EPA 245.1	08/29/23	8/30/23 9:09	SAS	
Arsenic	B233274	3.8	ug/L	0.070	0.070	EPA 200.8	08/25/23	8/30/23 13:17	DMW	
Cadmium	B233274	0.12	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:17	DMW	
Calcium	B233226	15100	ug/L	40.0	40.0	EPA 200.7	08/22/23	8/23/23 17:36	EDM	
Lead	B233274	6.7	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:17	DMW	
Magnesium	B233226	4340	ug/L	80.0	80.0	EPA 200.7	08/22/23	8/23/23 17:36	EDM	
Phosphorus as P	B233226	2.54	mg/L	0.0120	0.0120	EPA 200.7	08/22/23	8/23/23 17:36	EDM	
Hardness	B233226	55.5	mg/L	0.100	0.100	SM 2340 B-2011	08/22/23	8/23/23 17:36	EDM	
Dissolved Metals										
Cadmium	B233273	0.040	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/25/23 14:02	DMW	
Copper	B233273	18.3	ug/L	0.15	0.15	EPA 200.8	08/25/23	8/25/23 14:02	DMW	
Lead	B233273	0.61	ug/L	9.00E-3	9.00E-3	EPA 200.8	08/25/23	8/25/23 14:02	DMW	
Zinc	B233273	99.1	ug/L	0.50	0.50	EPA 200.8	08/25/23	8/25/23 14:02	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.

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Analysis Report

Location:	ACST1C	Location Description:	230821-03-WC
Date/Time Collected:	08/21/2023 04:21 - 08/21/2023 13:09		
Lab Number:	AC00313-02	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	B233228	0.211	mg/L	0.0350	0.0350	SM 4500-NH3 D-2011	08/23/23	8/23/23 11:25	ALN	
BOD5	B233221	16.9	mg/L	2.00	2.00	SM 5210 B-2016	08/22/23	8/27/23 10:42	ASE	
COD	B233214	85.0	mg/L	7.00	7.00	HH 8000, Standard Method 5220 D	08/22/23	8/22/23 11:03	KMR	
Nitrate-Nitrite, as N	B233219	0.410	mg/L	0.0250	0.0250	EPA 353.2, Rev. 2.0 (1993)	08/22/23	8/22/23 11:36	JAL	
TKN	B233245	5.28	mg/L	0.200	0.200	EPA 351.2, 10-107-06-2-M (Equivalent)	08/24/23	8/25/23 9:38	ALN	
Total Dissolved Solids	B233224	79.2	mg/L	20.0	20.0	SM 2540 C-2015	08/22/23	8/23/23 17:28	BAK	
Total Suspended Solids	B233220	26.6	mg/L	0.900	0.900	SM 2540 D-2015	08/22/23	8/22/23 10:06	RKT	
Turbidity	B233218	21.6	NTU	1.2	0.3	EPA 180.1, Rev. 2.0 (1993)	08/22/23	8/22/23 12:56	LRF	D
Dissolved Wet Chemistry										
Orthophosphate, as P	B233213	0.214	mg/L	3.00E-3	3.00E-3	EPA 365.1, Rev. 2.0 (1993)	08/22/23	8/22/23 8:39	ALN	
Total Metals										
Mercury	B233306	<0.0100	ug/L	0.0100	0.0100	EPA 245.1	08/29/23	8/30/23 8:05	SAS	U
Arsenic	B233274	1.2	ug/L	0.070	0.070	EPA 200.8	08/25/23	8/30/23 13:19	DMW	
Cadmium	B233274	0.034	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:19	DMW	
Calcium	B233226	7.55	mg/L	0.0400	0.0400	EPA 200.7	08/22/23	8/23/23 17:09	EDM	
Lead	B233274	0.68	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/30/23 13:19	DMW	
Magnesium	B233226	1040	ug/L	80.0	80.0	EPA 200.7	08/22/23	8/23/23 17:09	EDM	
Phosphorus as P	B233226	0.439	mg/L	0.0120	0.0120	EPA 200.7	08/22/23	8/23/23 17:09	EDM	
Hardness	B233226	23.1	mg/L	0.100	0.100	SM 2340 B-2011	08/22/23	8/23/23 17:09	EDM	
Dissolved Metals										
Cadmium	B233273	0.014	ug/L	0.010	0.010	EPA 200.8	08/25/23	8/25/23 14:04	DMW	
Copper	B233273	4.7	ug/L	0.15	0.15	EPA 200.8	08/25/23	8/25/23 14:04	DMW	
Lead	B233273	0.086	ug/L	9.00E-3	9.00E-3	EPA 200.8	08/25/23	8/25/23 14:04	DMW	
Zinc	B233273	48.5	ug/L	0.50	0.50	EPA 200.8	08/25/23	8/25/23 14:04	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.

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Quality Control Report

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry									
Batch: B233214									
Blank (B233214-BLK1)									
COD	<7	mg/L					08/22/2023	KMR	U
LCS (B233214-BS1)									
COD			101	90-110			08/22/2023	KMR	
Duplicate (B233214-DUP1) Source ID: AC00314-01									
COD					3.55	10	08/22/2023	KMR	
Batch: B233218									
Blank (B233218-BLK1)									
Turbidity	<0.3	NTU					08/22/2023	LRF	U
LCS (B233218-BS1)									
Turbidity			100	90-110			08/22/2023	LRF	
Duplicate (B233218-DUP1) Source ID: AC00312-02									
Turbidity					2.80	25	08/22/2023	LRF	D
Batch: B233219									
Blank (B233219-BLK1)									
Nitrate-Nitrite, as N	<0.025	mg/L					08/22/2023	JAL	U
LCS (B233219-BS1)									
Nitrate-Nitrite, as N			100	90-110			08/22/2023	JAL	
Duplicate (B233219-DUP1) Source ID: AC00312-02									
Nitrate-Nitrite, as N					0.270	10	08/22/2023	JAL	
Duplicate (B233219-DUP2) Source ID: BB03161-01									
Nitrate-Nitrite, as N					NR	10	08/22/2023	JAL	U
Matrix Spike (B233219-MS1) Source ID: AC00312-02									
Nitrate-Nitrite, as N			99.1	90-110			08/22/2023	JAL	
Matrix Spike (B233219-MS2) Source ID: BB03161-01									
Nitrate-Nitrite, as N			104	90-110			08/22/2023	JAL	
Matrix Spike Dup (B233219-MSD1) Source ID: AC00312-02									
Nitrate-Nitrite, as N			100	90-110	0.484	10	08/22/2023	JAL	
Matrix Spike Dup (B233219-MSD2) Source ID: BB03161-01									
Nitrate-Nitrite, as N			104	90-110	0.210	10	08/22/2023	JAL	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B233220									
Blank (B233220-BLK1)									
Total Suspended Solids	<0.9	mg/L					08/22/2023	RKT	U
LCS (B233220-BS1)									
Total Suspended Solids			97.4	90-110			08/22/2023	RKT	
Duplicate (B233220-DUP1) Source ID: BB03167-01									
Total Suspended Solids					0.0807	20	08/22/2023	RKT	
Batch: B233221									
Blank (B233221-BLK1)									
BOD5	<2	mg/L					08/27/2023	ASE	U
LCS (B233221-BS2)									
BOD5			102	84.6-115.4			08/27/2023	ASE	
Duplicate (B233221-DUP1) Source ID: BB03166-01									
BOD5					0.436	30	08/27/2023	ASE	D
Batch: B233224									
Blank (B233224-BLK1)									
Total Dissolved Solids	<20	mg/L					08/23/2023	BAK	U
LCS (B233224-BS1)									
Total Dissolved Solids			93.6	90-110			08/23/2023	BAK	
Duplicate (B233224-DUP1) Source ID: AC00312-02									
Total Dissolved Solids					3.99	10	08/23/2023	BAK	
Batch: B233228									
Blank (B233228-BLK1)									
Ammonia, as N	<0.035	mg/L					08/23/2023	ALN	U
LCS (B233228-BS1)									
Ammonia, as N			100	90-110			08/23/2023	ALN	
LCS (B233228-BS2)									
Ammonia, as N			107	90-110			08/23/2023	ALN	
Duplicate (B233228-DUP1) Source ID: AC00312-02									
Ammonia, as N					8.19	10	08/23/2023	ALN	
Duplicate (B233228-DUP2) Source ID: BB03157-01									
Ammonia, as N					0.605	10	08/23/2023	ALN	D
Matrix Spike (B233228-MS1) Source ID: AC00312-02									
Ammonia, as N			107	80-120			08/23/2023	ALN	
Matrix Spike (B233228-MS2) Source ID: BB03157-01									
Ammonia, as N			99.3	80-120			08/23/2023	ALN	D
Matrix Spike Dup (B233228-MSD1) Source ID: AC00312-02									
Ammonia, as N			108	80-120	0.685	10	08/23/2023	ALN	
Matrix Spike Dup (B233228-MSD2) Source ID: BB03157-01									
Ammonia, as N			102	80-120	1.51	10	08/23/2023	ALN	D

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Wet Chemistry (Continued)									
Batch: B233245									
Blank (B233245-BLK1)									
TKN	<0.2	mg/L					08/25/2023	ALN	U
Blank (B233245-BLK2)									
TKN	<0.2	mg/L					08/25/2023	ALN	U
Blank (B233245-BLK3)									
TKN	<0.2	mg/L					08/25/2023	ALN	U
LCS (B233245-BS1)									
TKN			97.8	80-120			08/25/2023	ALN	
LCS (B233245-BS2)									
TKN			97.3	80-120			08/25/2023	ALN	
LCS (B233245-BS3)									
TKN			94.1	80-120			08/25/2023	ALN	
Duplicate (B233245-DUP1) Source ID: AC00312-02									
TKN					3.40	20	08/25/2023	ALN	
Duplicate (B233245-DUP2) Source ID: BB03127-01RE1									
TKN					5.57	20	08/25/2023	ALN	D
Duplicate (B233245-DUP3) Source ID: BB03146-01									
TKN					4.80	20	08/25/2023	ALN	D
Duplicate (B233245-DUP4) Source ID: LS01650-02									
TKN					6.72	20	08/25/2023	ALN	D
Duplicate (B233245-DUP5) Source ID: WB02662-06									
TKN					6.89	20	08/25/2023	ALN	D
Matrix Spike (B233245-MS1) Source ID: AC00312-02									
TKN			108	80-120			08/25/2023	ALN	
Matrix Spike (B233245-MS2) Source ID: BB03127-01RE1									
TKN			113	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS3) Source ID: BB03146-01									
TKN			93.8	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS4) Source ID: LS01650-02									
TKN			102	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS5) Source ID: WB02662-06									
TKN			101	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS6) Source ID: EP00258-01									
TKN			102	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS7) Source ID: EP00258-02									
TKN			102	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS8) Source ID: EP00259-01									
TKN			95.5	80-120			08/25/2023	ALN	D
Matrix Spike (B233245-MS9) Source ID: EP00260-01									
TKN			96.5	80-120			08/25/2023	ALN	

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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: B233245 (Continued)									
Matrix Spike Dup (B233245-MSD1) Source ID: AC00312-02									
TKN			91.0	80-120	11.7	20	08/25/2023	ALN	
Matrix Spike Dup (B233245-MSD2) Source ID: BB03127-01RE1									
TKN			99.2	80-120	6.01	20	08/25/2023	ALN	D
Matrix Spike Dup (B233245-MSD3) Source ID: BB03146-01									
TKN			103	80-120	3.11	20	08/25/2023	ALN	D
Matrix Spike Dup (B233245-MSD4) Source ID: LS01650-02									
TKN			115	80-120	4.76	20	08/25/2023	ALN	D
Matrix Spike Dup (B233245-MSD5) Source ID: WB02662-06									
TKN			107	80-120	2.48	20	08/25/2023	ALN	D
Dissolved Wet Chemistry									
Batch: B233213									
Blank (B233213-BLK1)									
Orthophosphate, as P	<0.003	mg/L					08/22/2023	ALN	U
LCS (B233213-BS1)									
Orthophosphate, as P			95.2	90-110			08/22/2023	ALN	
Duplicate (B233213-DUP1) Source ID: AC00312-04									
Orthophosphate, as P					0.608	10	08/22/2023	ALN	
Matrix Spike (B233213-MS1) Source ID: AC00312-04									
Orthophosphate, as P			95.2	90-110			08/22/2023	ALN	
Matrix Spike Dup (B233213-MSD1) Source ID: AC00312-04									
Orthophosphate, as P			98.5	90-110	0.712	10	08/22/2023	ALN	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals									
Batch: B233226									
Blank (B233226-BLK1)									
Calcium	<0.04	mg/L					08/23/2023	EDM	U
Magnesium	<80	ug/L					08/23/2023	EDM	U
Phosphorus as P	<0.012	mg/L					08/23/2023	EDM	U
LCS (B233226-BS1)									
Calcium			102	85-115			08/23/2023	EDM	
Magnesium			102	85-115			08/23/2023	EDM	
Phosphorus as P			101	85-115			08/23/2023	EDM	
Duplicate (B233226-DUP1) Source ID: AC00312-02									
Calcium					2.09	20	08/23/2023	EDM	
Magnesium					0.316	20	08/23/2023	EDM	
Phosphorus as P					1.76	20	08/23/2023	EDM	
Matrix Spike (B233226-MS1) Source ID: AC00312-02									
Calcium			102	70-130			08/23/2023	EDM	
Magnesium			102	70-130			08/23/2023	EDM	
Phosphorus as P			102	70-130			08/23/2023	EDM	
Matrix Spike Dup (B233226-MSD1) Source ID: AC00312-02									
Calcium			102	70-130	0.0723	20	08/23/2023	EDM	
Magnesium			103	70-130	0.458	20	08/23/2023	EDM	
Phosphorus as P			102	70-130	0.0565	20	08/23/2023	EDM	
Batch: B233274									
Blank (B233274-BLK1)									
Arsenic	<0.070	ug/L					08/30/2023	DMW	U
Cadmium	<0.010	ug/L					08/30/2023	DMW	U
Lead	<0.010	ug/L					08/30/2023	DMW	U
LCS (B233274-BS1)									
Arsenic			93.2	85-115			08/30/2023	DMW	
Cadmium			95.2	85-115			08/30/2023	DMW	
Lead			97.1	85-115			08/30/2023	DMW	
Duplicate (B233274-DUP1) Source ID: AC00312-04									
Arsenic					2.77	20	08/30/2023	DMW	
Cadmium					4.51	20	08/30/2023	DMW	
Lead					0.880	20	08/30/2023	DMW	
Matrix Spike (B233274-MS1) Source ID: AC00312-04									
Arsenic			93.4	70-130			08/30/2023	DMW	
Cadmium			98.5	70-130			08/30/2023	DMW	
Lead			93.6	70-130			08/30/2023	DMW	
Matrix Spike Dup (B233274-MSD1) Source ID: AC00312-04									
Arsenic			91.3	70-130	1.62	20	08/30/2023	DMW	
Cadmium			98.0	70-130	0.562	20	08/30/2023	DMW	
Lead			94.3	70-130	0.482	20	08/30/2023	DMW	

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Quality Control Report
(Continued)

Analyte Name	Method Blank	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Analyzed	Analyst Initials	Qualifier
Total Metals (Continued)									
Batch: B233306									
Blank (B233306-BLK1)									
Mercury	<0.01	ug/L					08/30/2023	SAS	U
LCS (B233306-BS1)									
Mercury			100	85-115			08/30/2023	SAS	
Duplicate (B233306-DUP1) Source ID: AC00313-02									
Mercury					NR	20	08/30/2023	SAS	U
Duplicate (B233306-DUP2) Source ID: EP00260-02									
Mercury					NR	20	08/30/2023	SAS	U
Matrix Spike (B233306-MS1) Source ID: AC00313-02									
Mercury			111	70-130			08/30/2023	SAS	
Matrix Spike (B233306-MS2) Source ID: EP00260-02									
Mercury			101	70-130			08/30/2023	SAS	
Matrix Spike Dup (B233306-MSD1) Source ID: AC00313-02									
Mercury			109	70-130	1.02	20	08/30/2023	SAS	
Matrix Spike Dup (B233306-MSD2) Source ID: EP00260-02									
Mercury			99.6	70-130	1.65	20	08/30/2023	SAS	
Dissolved Metals									
Batch: B233273									
Blank (B233273-BLK1)									
Cadmium	<0.010	ug/L					08/25/2023	DMW	U
Copper	<0.15	ug/L					08/25/2023	DMW	U
Lead	<0.0090	ug/L					08/25/2023	DMW	U
Zinc	<0.50	ug/L					08/25/2023	DMW	U
LCS (B233273-BS1)									
Cadmium			95.6	85-115			08/25/2023	DMW	
Copper			95.1	85-115			08/25/2023	DMW	
Lead			96.3	85-115			08/25/2023	DMW	
Zinc			95.4	85-115			08/25/2023	DMW	
Duplicate (B233273-DUP1) Source ID: AC00312-04									
Cadmium					14.3	10	08/25/2023	DMW	QC-02
Copper					0.140	10	08/25/2023	DMW	
Lead					1.53	10	08/25/2023	DMW	
Zinc					0.176	10	08/25/2023	DMW	
Matrix Spike (B233273-MS1) Source ID: AC00312-04									
Cadmium			93.6	70-130			08/25/2023	DMW	
Copper			89.0	70-130			08/25/2023	DMW	
Lead			91.7	70-130			08/25/2023	DMW	
Zinc			87.6	70-130			08/25/2023	DMW	
Matrix Spike Dup (B233273-MSD1) Source ID: AC00312-04									
Cadmium			95.6	70-130	2.08	10	08/25/2023	DMW	
Copper			90.2	70-130	0.711	10	08/25/2023	DMW	
Lead			93.3	70-130	1.77	10	08/25/2023	DMW	
Zinc			88.3	70-130	0.227	10	08/25/2023	DMW	

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Report Date: 09/12/2023 13:20

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
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

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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: 63061761
Project: Stormwater-PI
Sampler(s): Kristen Chisholm
Zuly Lapa

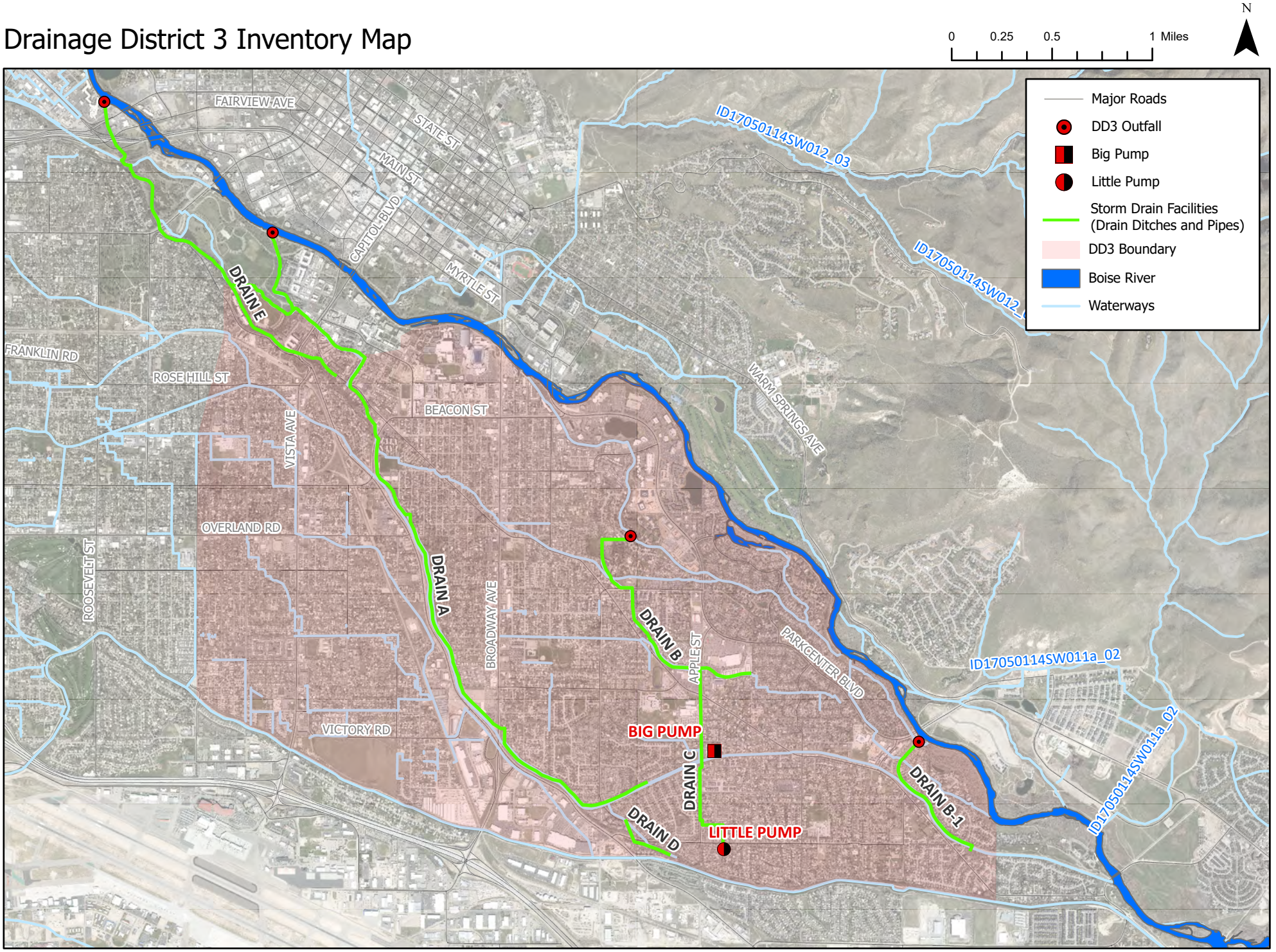
Lab#	Begin Date	End Date	Begin Time	End Time	Sample Identification	Sampler Initials	Matrix: Water	Type: Grab	Type: Composite	BOD_5 - SM 5210 B	COD - Hach 8000	TSS - SM 2540 D	TDS - SM 2540 C	TKN - EPA 351.2	TP - EPA 200.7	Orthophosphate - EPA 365.1	Total As, Cd, Pb - EPA 200.8	Diss. Cd Cu, Pb, Zn - EPA 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	C-359 Total Containers
C00313-01	08/21/23	08/21/23	0428	1042	230821-206-WC		X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	1
↓ -02	08/21/23	08/21/23	0421	~~1042~~ 1309	230821-03-WC		X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	2
	~~08/21/23~~	~~08/21/23~~	~~0900~~		~~230821-03-WC~~		~~X~~	~~X~~																	+

Relinquished by (sign)	Date & Time Transferred	Received by (sign)	Comments/Special Instructions:
Kristen Chisholm	8/21/23 4:14	[signature] 8/21/23 1615	

DLE - AM - ARM313

Attachment D
MS4 Map and Outfall Inventory

Drainage District 3 Inventory Map



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

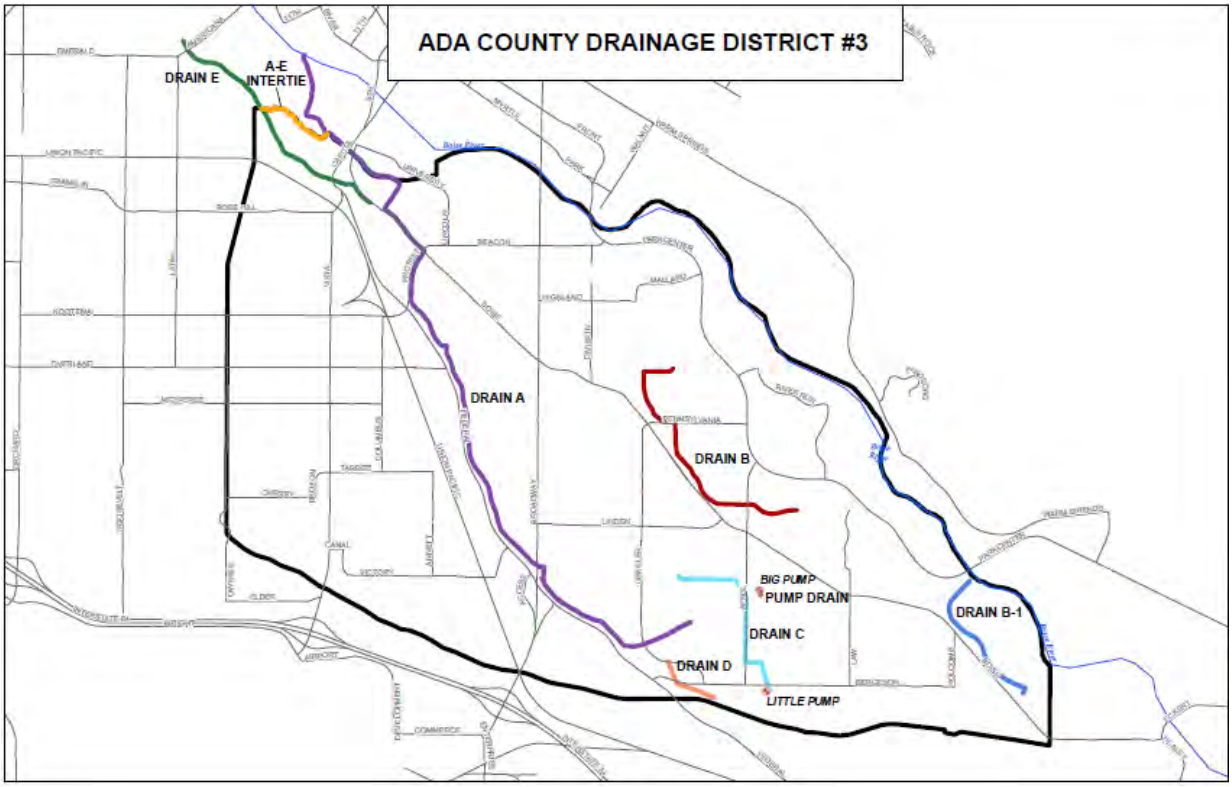
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BOISE CITY PUBLIC WORKS = 384-3900
GARDEN CITY PUBLIC WORKS = 375-3194
NAMPA & MERIDIAN IRRIGATION DIST. = 466-7861
BOISE PROJECT BOARD OF CONTROL = 344-1141
SOUTH BOISE MUTUAL IRRIGATION CO. = 344-3062
DRAINAGE DISTRICT #2 = 342-4591
DRAINAGE DISTRICT #4 = 342-4591
SOUTH BOISE WATER CO. = 761-6450

PROJECT COORDINATED FOR ADA COUNTY DRAINAGE DISTRICT #3 BY

Quadrant Consulting Inc.

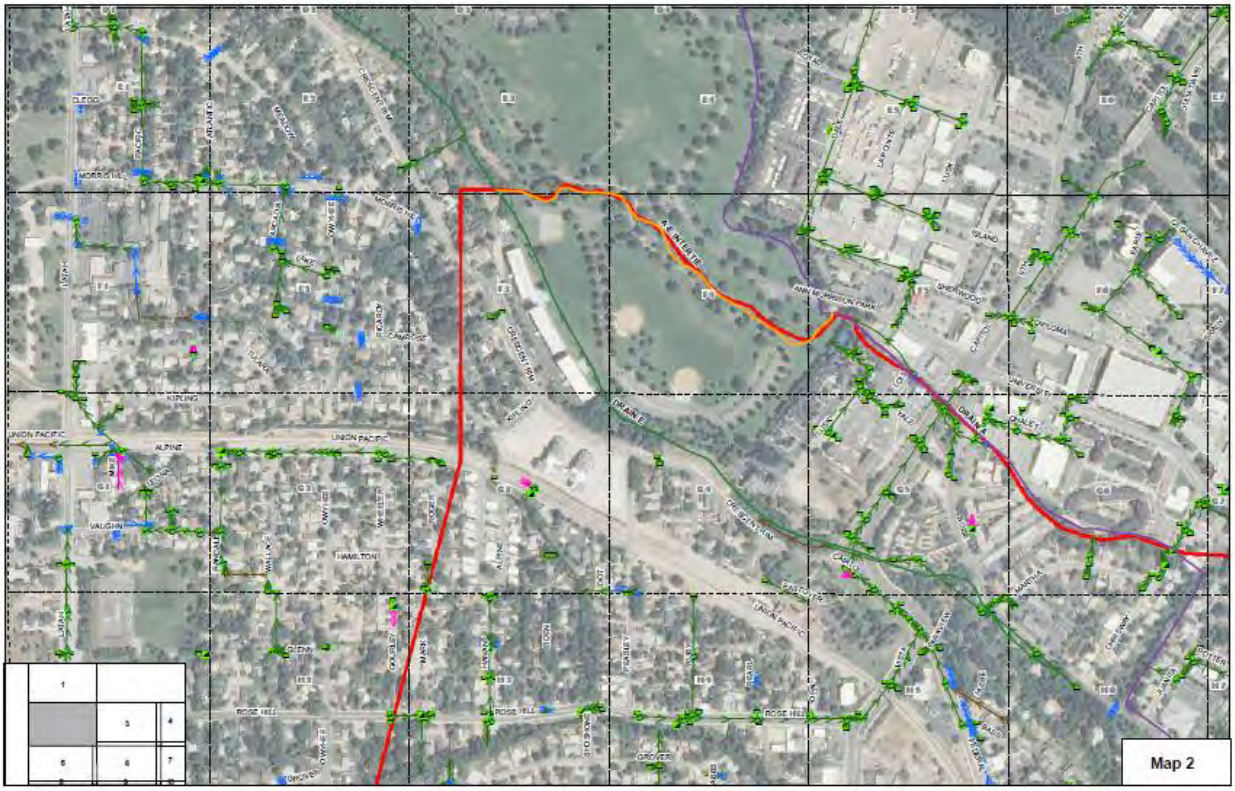
MAPBOOK DEVELOPED BY MILLENNIUM SCIENCE & ENGINEERING GIS & NATURAL RESOURCES DEPT.

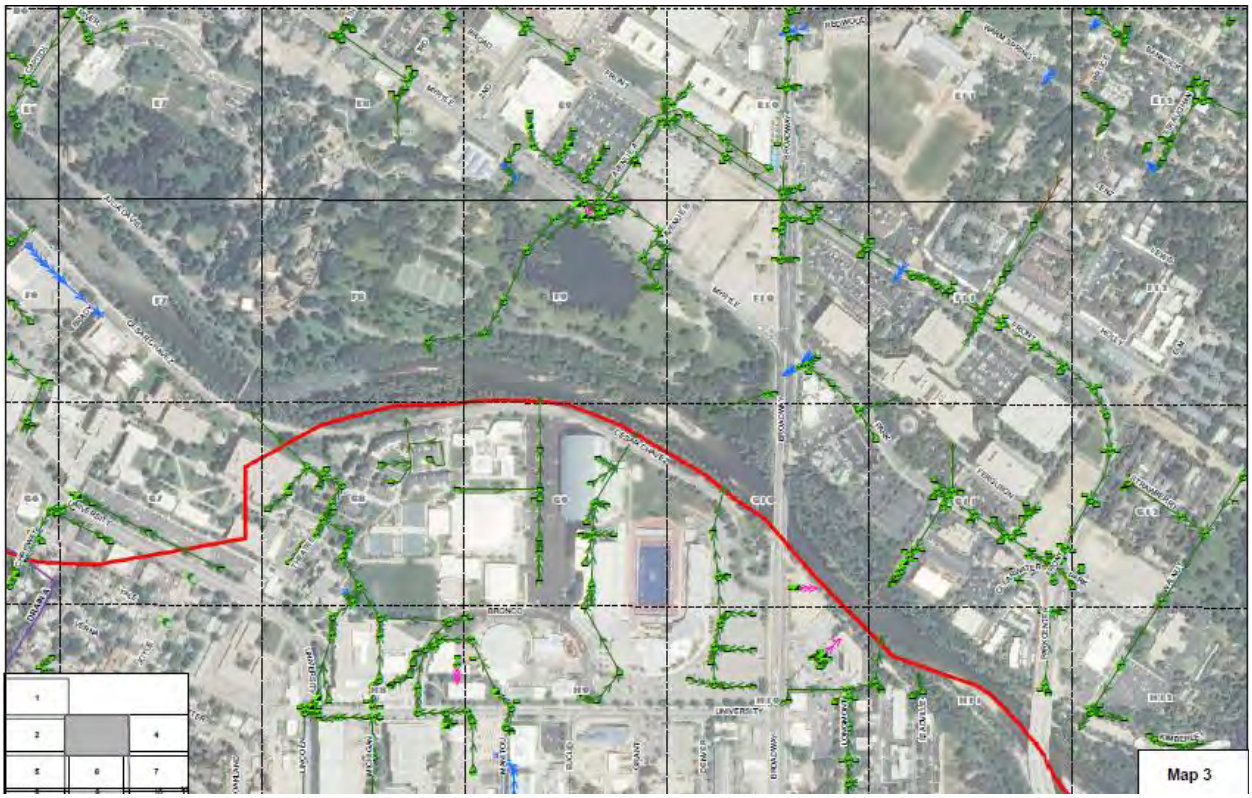
MSE Millennium Science & Engineering

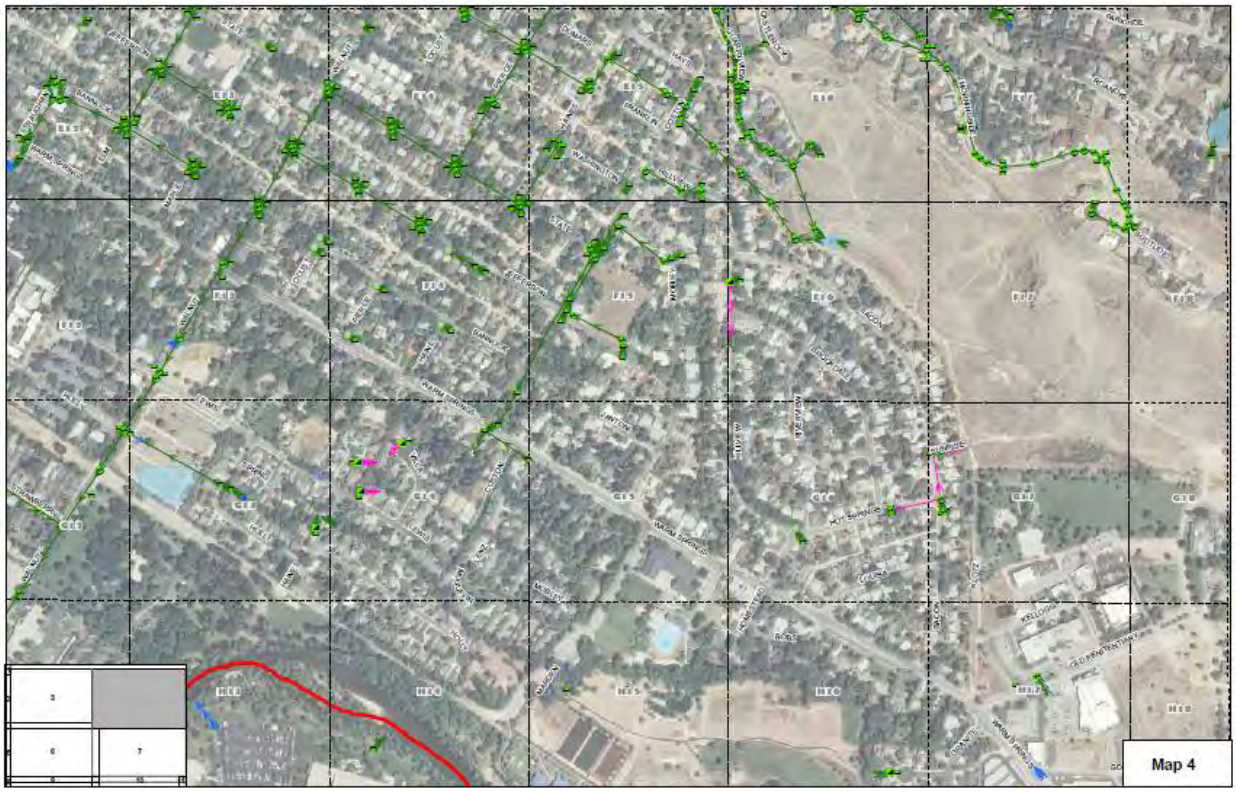


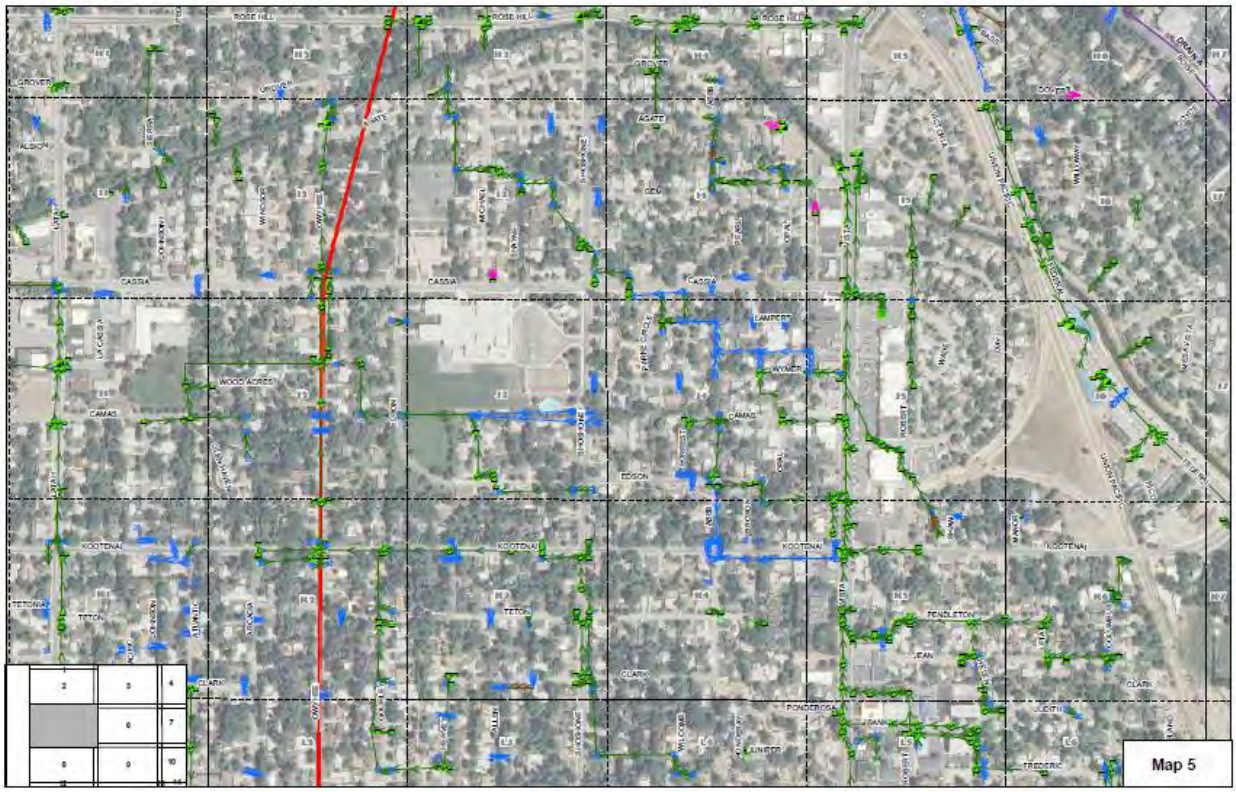


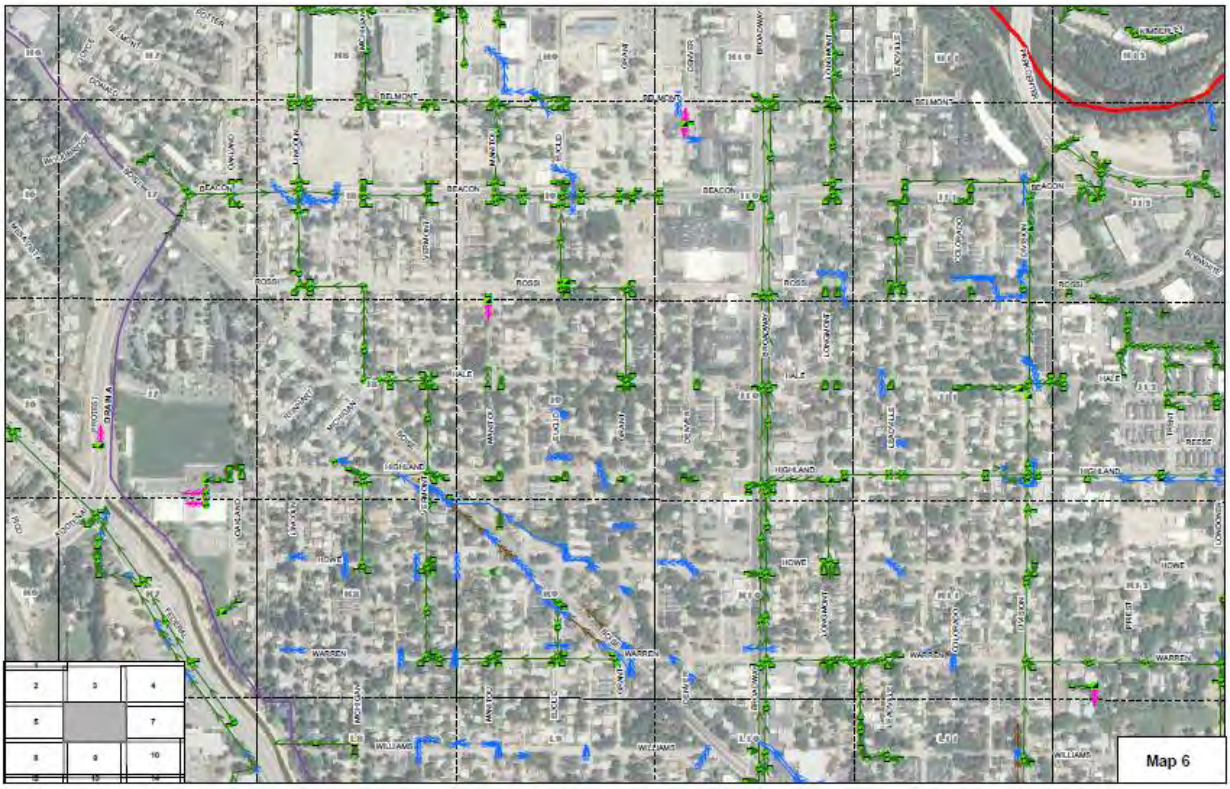

Map 1

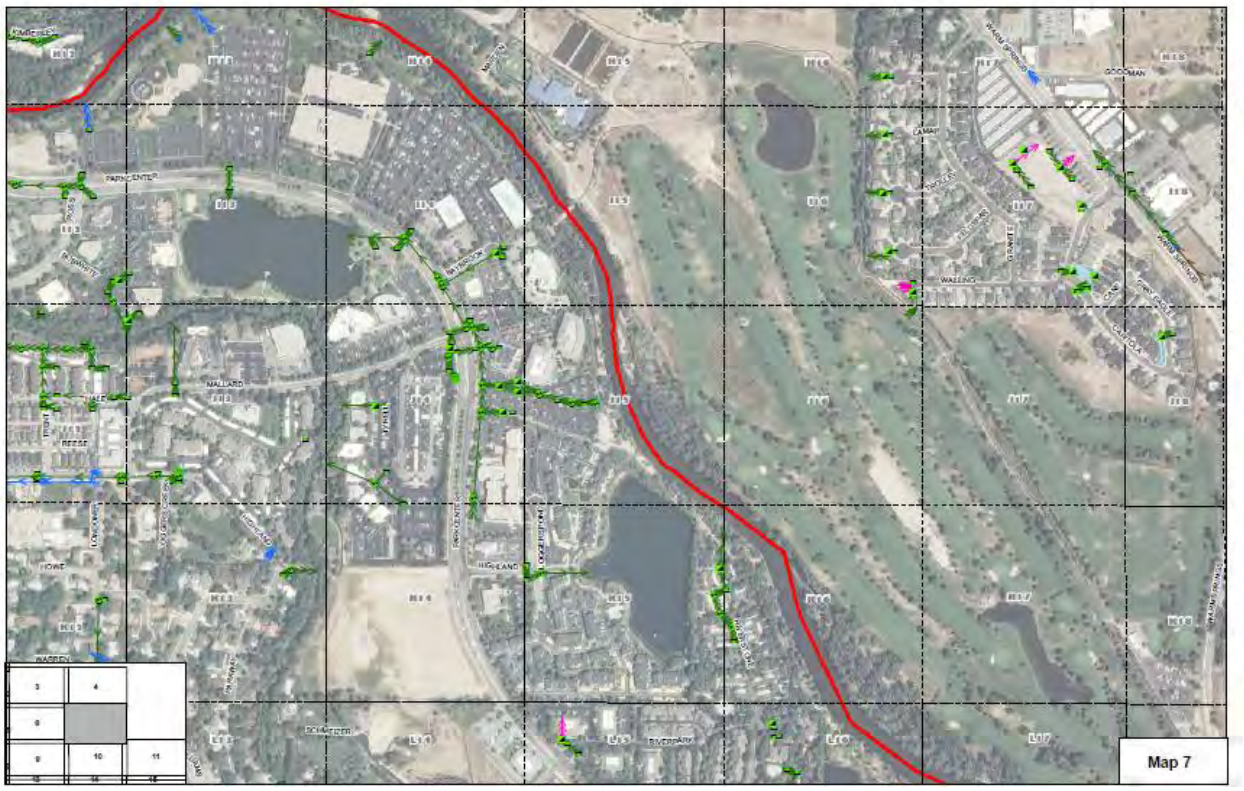

Map 2

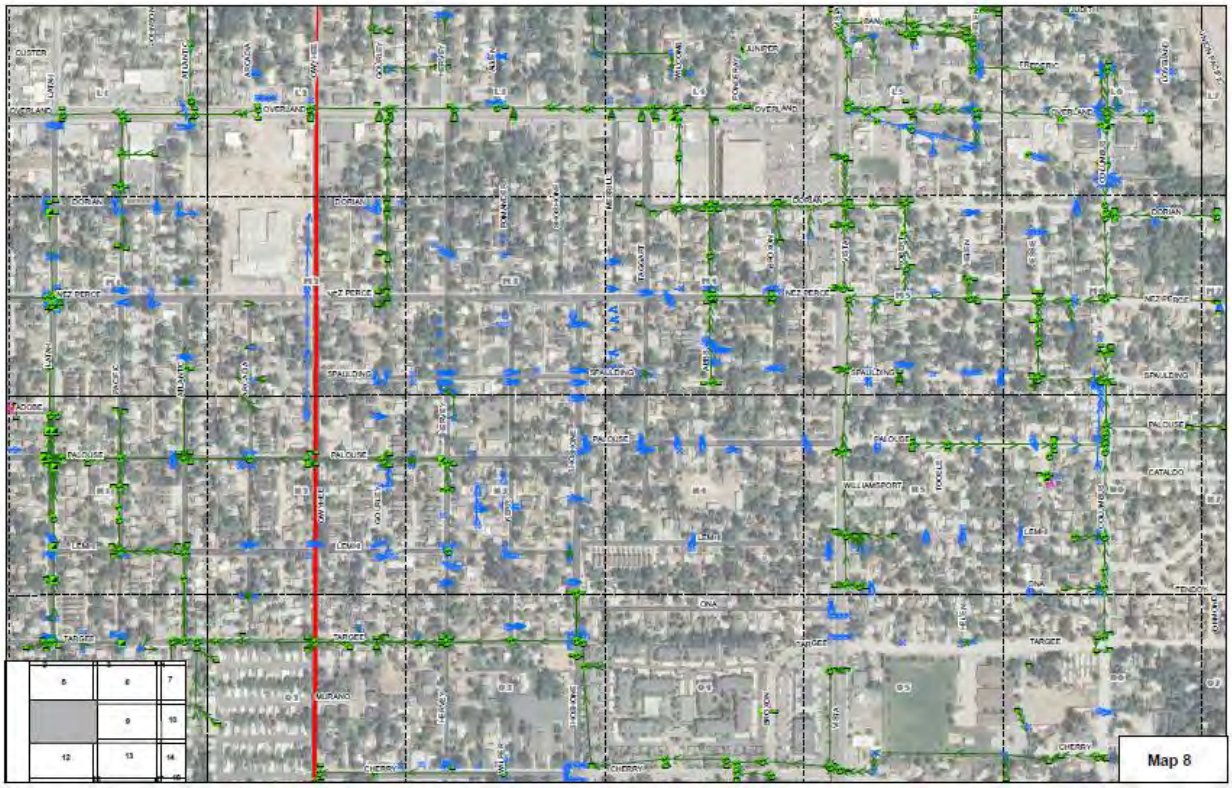

Map 3

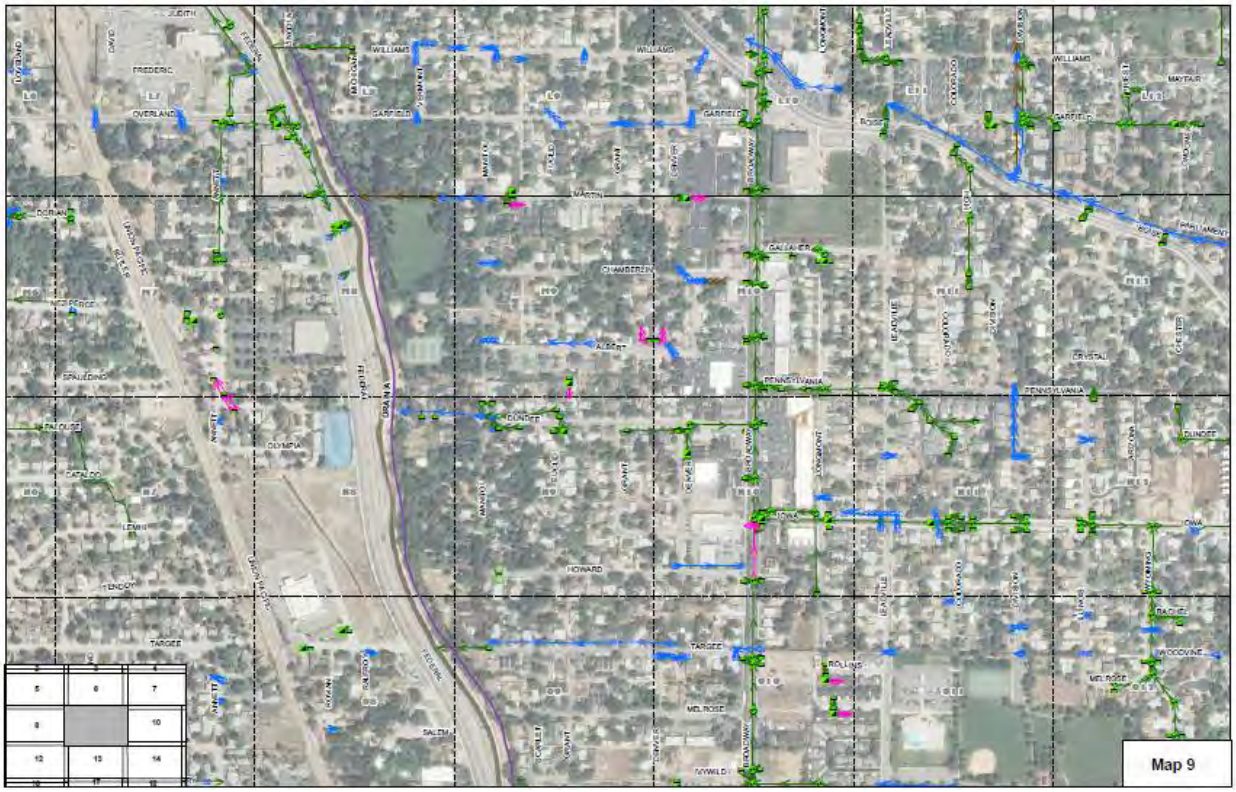

Map 4

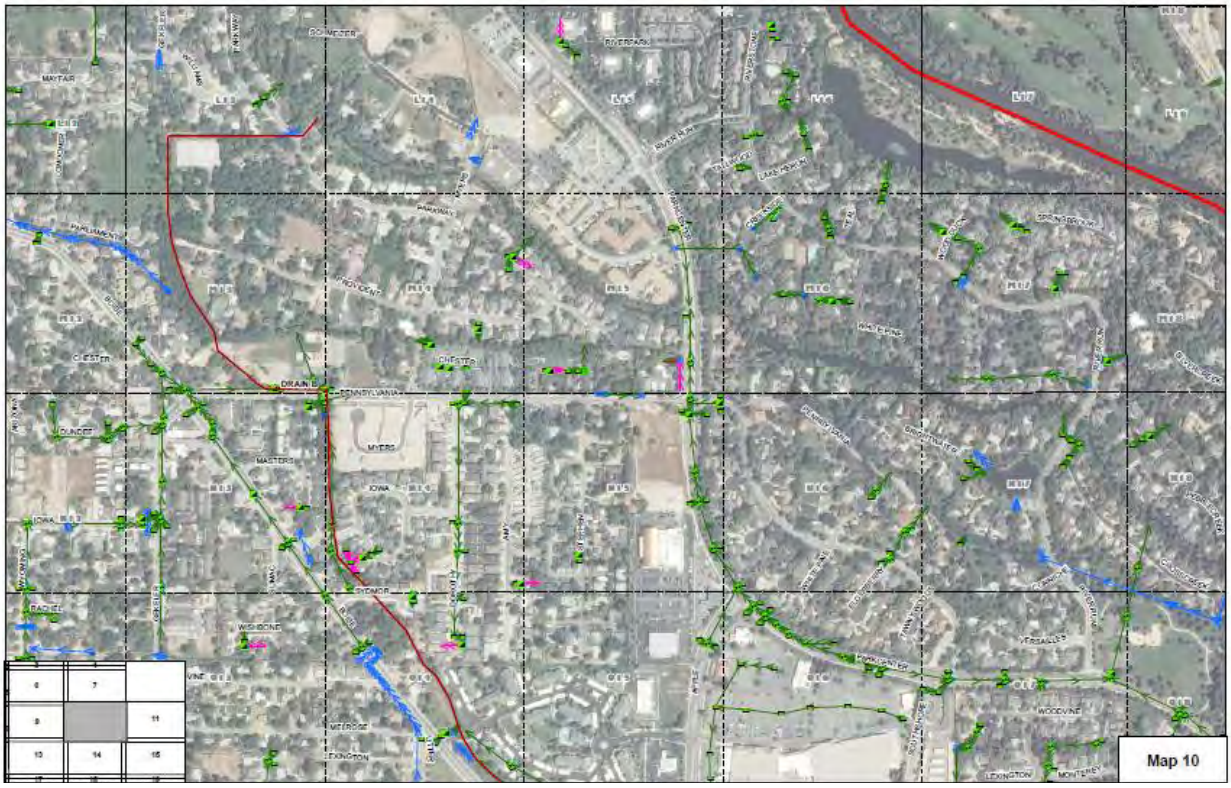

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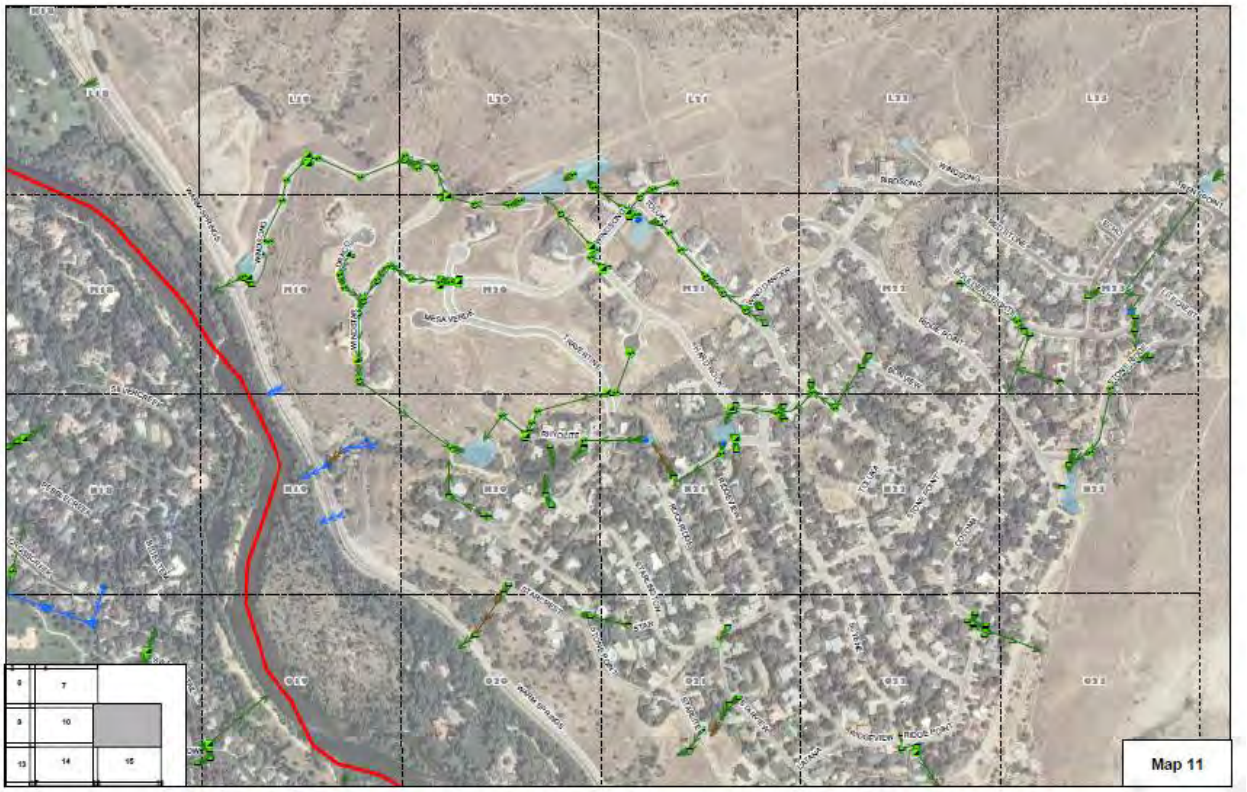

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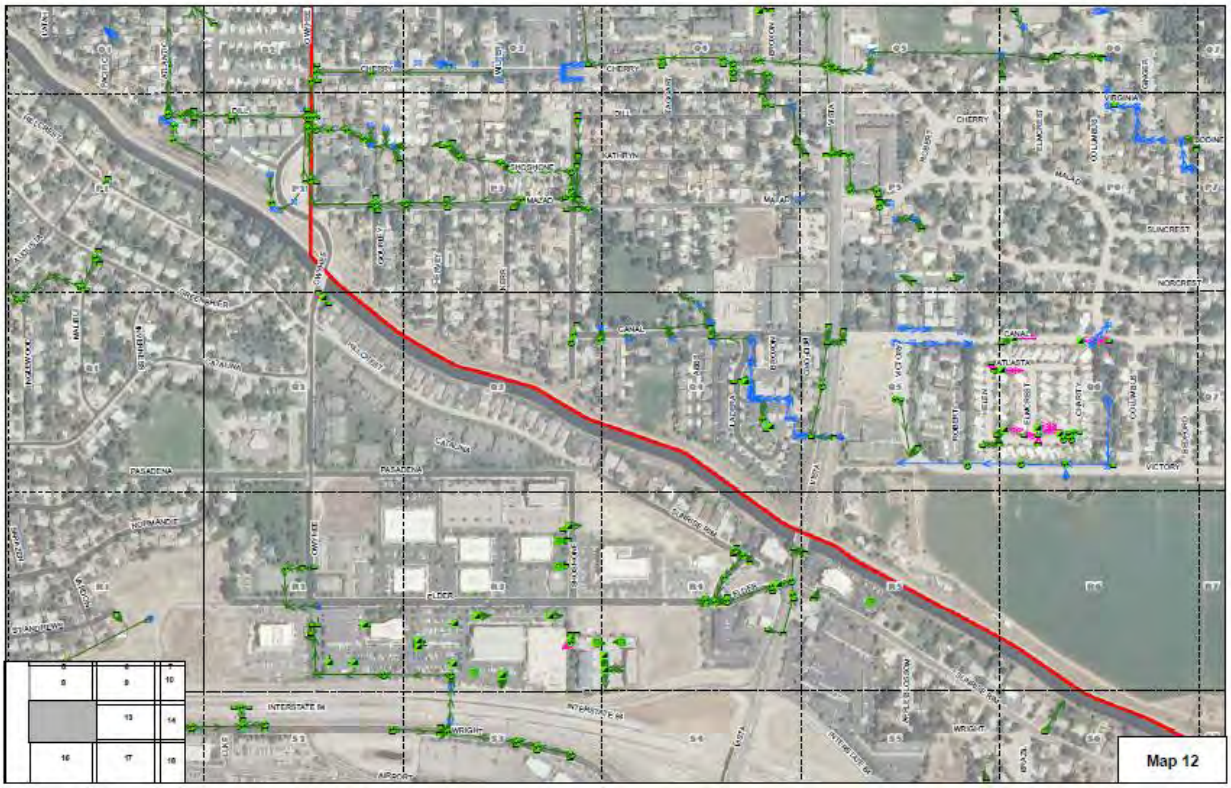

Map 7


Map 8

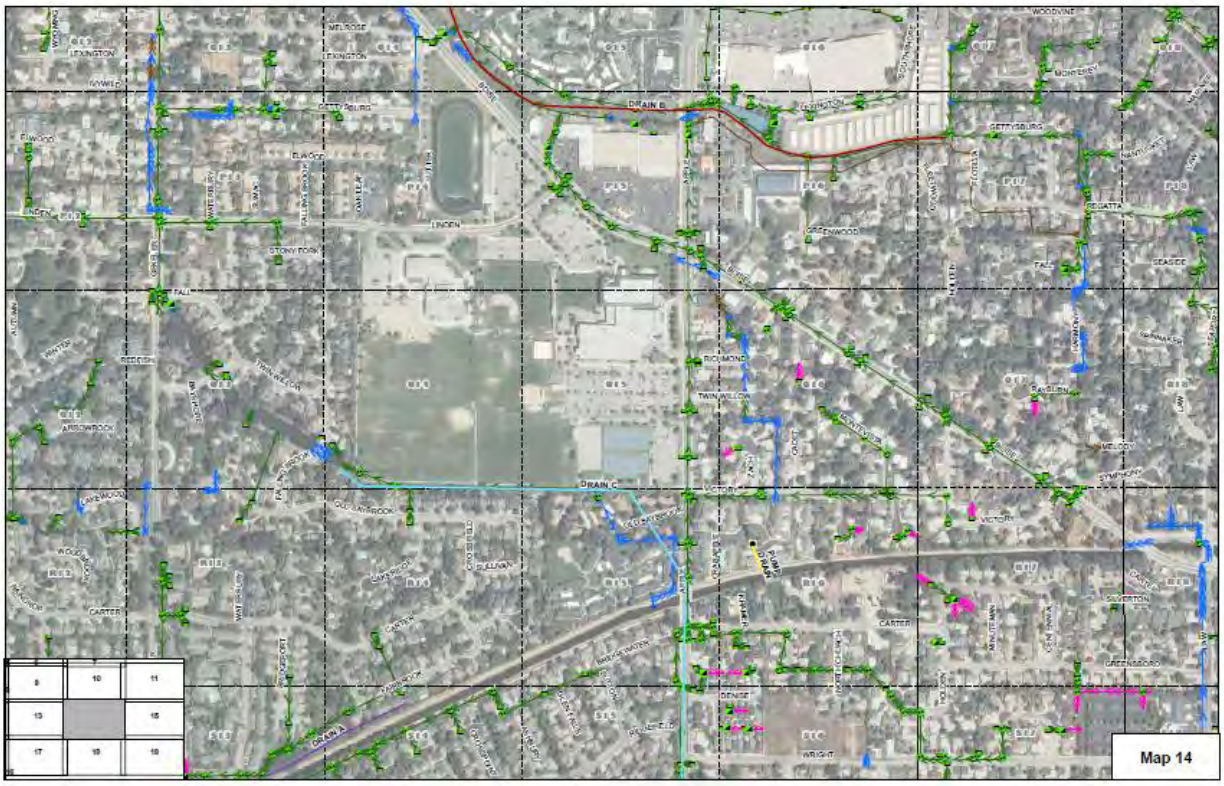

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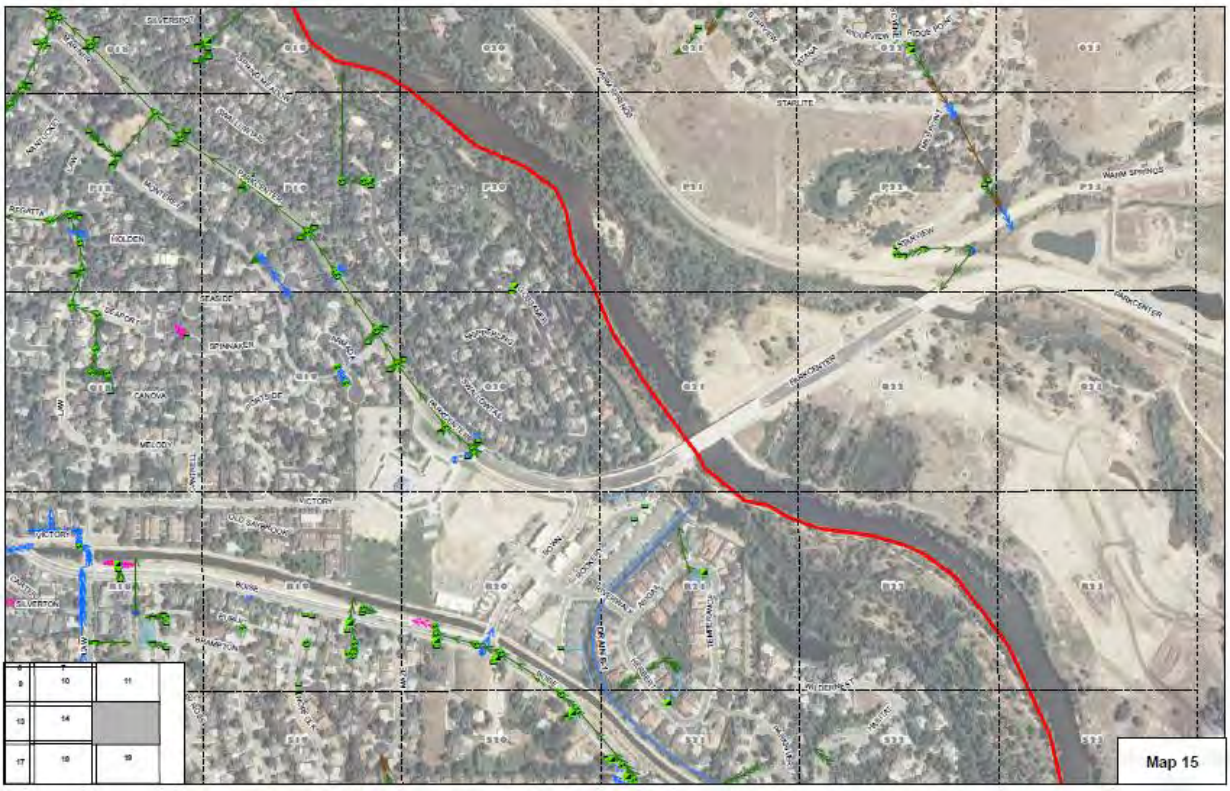

Map 10


Map 11


Map 12

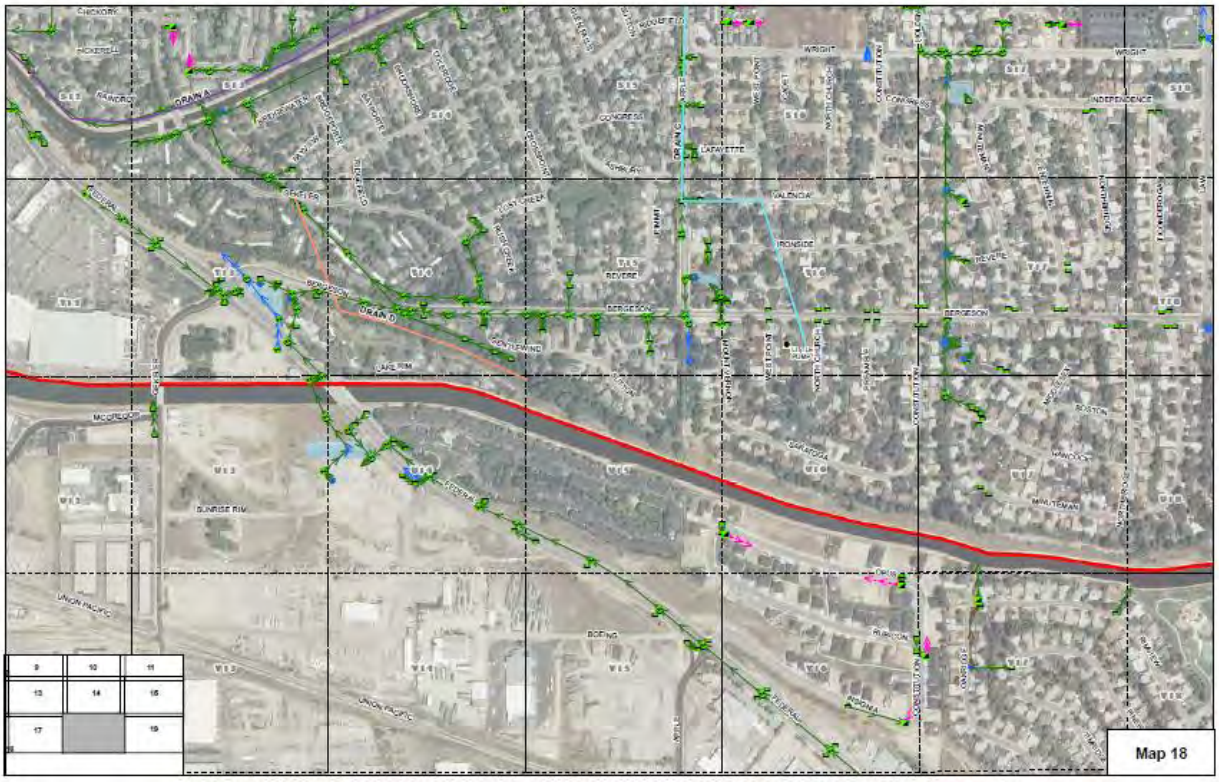

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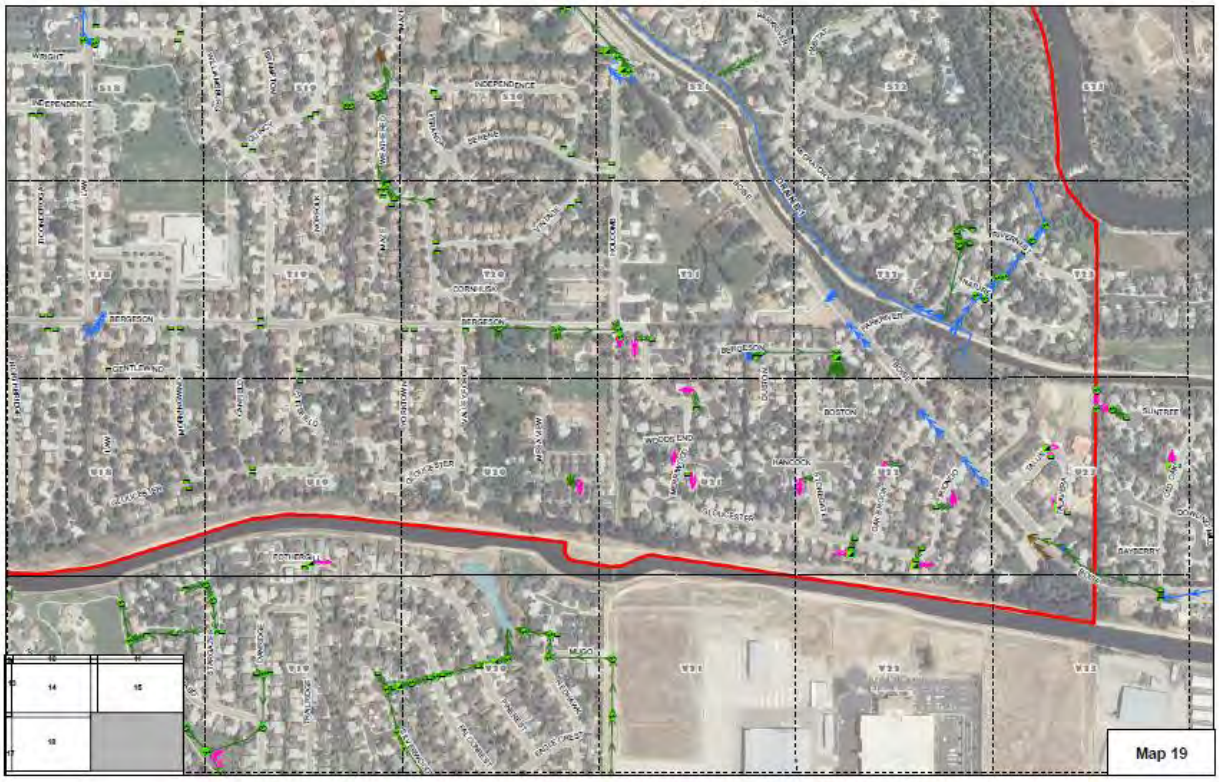

Map 14


Map 15


WRIGHT
RICKENBACKER
INTERSTATE 94
AIRPORT
ROBINSON
COMMERCE
Map 16


WRIGHT
BENNETT
ALEXANDRA
DUNROSS RIM
INTERSTATE 94
DIAMOND
COMMERCE
TRANSPORT
UNION PACIFIC
BOEING
Map 17


Map 18


Map 19

Attachment E
2023 DD3 Dry Weather Testing

Outfall Inspection Summary

Outfall Name: Drain E

Receiving Waters: Boise River	**Pipe Type:** Open ditch, unlined **Pipe Size:** 17 feet			**Lat:** 43.62044 **Long:** -116.23296	
Date: 7/18/2023 **Personnel:** KC, PG	**Comments:** Samples were taken approximately 250 feet upstream from the Boise River. The presence of detergents exceeds benchmark values.				
Structural Condition	Good				
Sedimentation	Rocky bottom				
Staining	None				
Odor	None				
Vegetation	Typical				
Floatables (Not Trash)	None				
Trash Observed	None	**Trash Rank**	--	**Trash Source**	--
Flow	Yes	**Amount**	Substantial	**Flow Rate(cfs)**	See flow rate data

Flow Rate Data:

	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6
Velocity (ft/s)	1.83	2.82	3.1	3.11	3.1	1.78
Depth (ft)	0.8	1.6	1.8	1.6	1.2	0.3

Results:

Temp (C)	DO (mg/L)	pH (S.U.)	Cond (uS/cm)	Chlorine	Copper	Phenols	Turbidity (NTU)
14.25	8.73	8.01	58.57	<0.01	<0.01	<0.01	2.66

E.Coli (MPN)	TSS (mg/L)	ORP (mg/L)	Total P (mg/L)	Detergents (mg/L)
29.2	3.63	0.0103	0.0181	0.01

Illicit Discharge?	Unlikely



Photo 1: Cross section where measurements and samples were collected.

Attachment F
CSDC Enforcement Response Policy

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 MAY 2022)

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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
SWQS	Stormwater Quality Specialist

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 40-1451(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 a Stormwater Quality Specialist (SWQS).

As a part of the CSDC Program, a SWQS 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 SWQS 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 a SWQS 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.

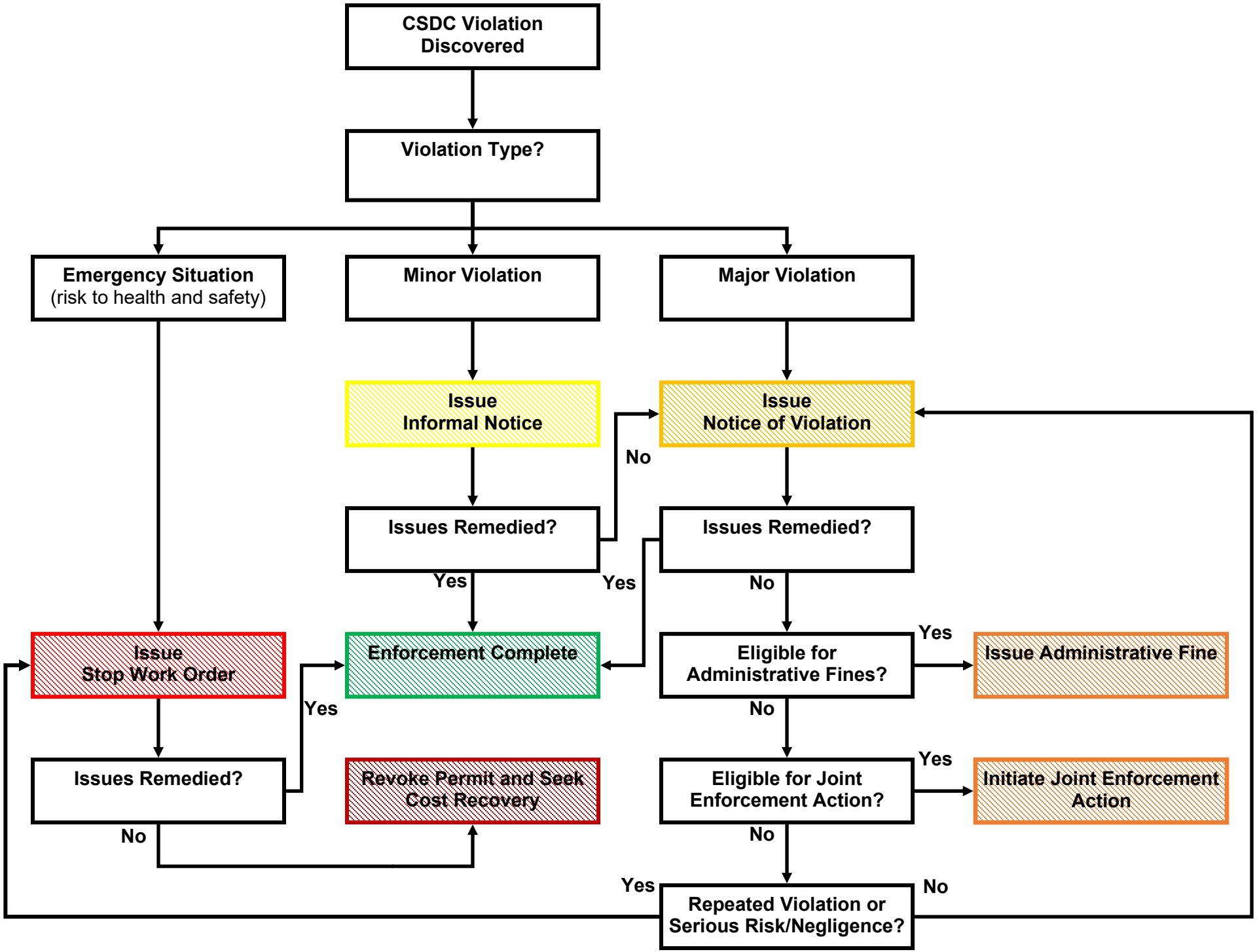
- **City of Eagle**
  Ordinance No. 4-1-4 – General Nuisance; Procedures and Penalties
  https://codelibrary.amlegal.com/codes/eagleid/latest/eagle_id/0-0-0-1193
- **City of Meridian**
  Ordinance (Chapter 2, 4-2-1) - Public Health and Safety, Nuisances
  https://library.municode.com/id/meridian/codes/code_of_ordinances?nodeId=TIT4PUHESA_CH2NU
- **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
Issue Stop Work Order
Enforcement Complete
Eligible for Administrative Fines?
Yes
Issue Administrative Fine
Yes
No
Issues Remedied?
Revoke Permit and Seek Cost Recovery
Eligible for Joint Enforcement Action?
Yes
Initiate Joint Enforcement Action
No
No
Yes
Repeated Violation or Serious Risk/Negligence?
Yes
No

APPENDIX B – NOTICE OF VIOLATION

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

Ada County Highway District

FACT SHEET: NOTICE OF VIOLATION

Construction Site Discharge Control Program

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.



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

Attachment F. 1
Construction Site Runoff Control

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 2. 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 2023, 947 total ESC permits were issued. The permits consisted of 783 ESC general permits and 164 site-specific permits that required preconstruction site ESC plan review. This is the lowest number of permits issued in 10 years, showing that construction activity has decreased in Boise for 2023. 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	6	21.56	$1,444
Medium	159	249.09	$43,158
Low	782	189.89	$64,208
Total	947	460.54	$108,810

Construction Site Inspection and Enforcement

In FY2023 a total of 10,623 construction site inspections were conducted with 89.5% pass rate (no corrective actions required). Table 3 provides FY2023 statistics on inspection types completed categorized by the inspection result.

There were 146 targeted enforcement inspections completed to ensure sites are brought back into compliance after being notified there is a corrective action required or violation occurring. FY2023 included $3,153 in fines spread amongst 32 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 civil

penalties assessed due to repeat violations. Table 4 summarizes enforcement fines issued from 2018 to 2023.

TABLE 3: EROSION AND SEDIMENT CONTROL INSPECTIONS– PERMIT YEAR 2

Inspection Type	Pass/ Completed	Corrections Required	Significant Violation	Not Ready/Partial	Total	Pass Rate
General Inspections	8,568	919	46	0	9,533	89.8%
Site Preparation	130	20	0	6	156	83.3%
Site Final	721	5	0	23	749	96.2%
Complaint Inspection/ Investigation	14	40	2	0	56	25%
BMP Violation	29	18	14	0	61	47.5%
Tracking Control	12	12	5	0	29	41.4%
Conference	31	0	0	0	31	100%
Random	2	2	1	0	5	40%
Temp. Occupancy Permit extension	3	0	0	0	3	100%
All Inspections	9,510	1,016	68	29	10,623	89.5%

TABLE 4: ENFORCEMENT FINES 2018-2023

Fiscal Year	Number of sites fined/cited	Total Fine Amount
2018	12	$1,172.50
2019	41	$3,371.31
2020	37	$2,517.50
2022	24	$2,126.25
2023	32	$3,153.00

Enforcement Response Policy

The written escalating enforcement response policy (ERP) can be found in the SWMP.

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 2, 36 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.

Attachment G
Erosion and Sediment Control Plan Reviews and Site Inspection Map

Table 1. ESC Inspections Performed & Notice of Violations Issued
October 1, 2022 – September 30, 2023

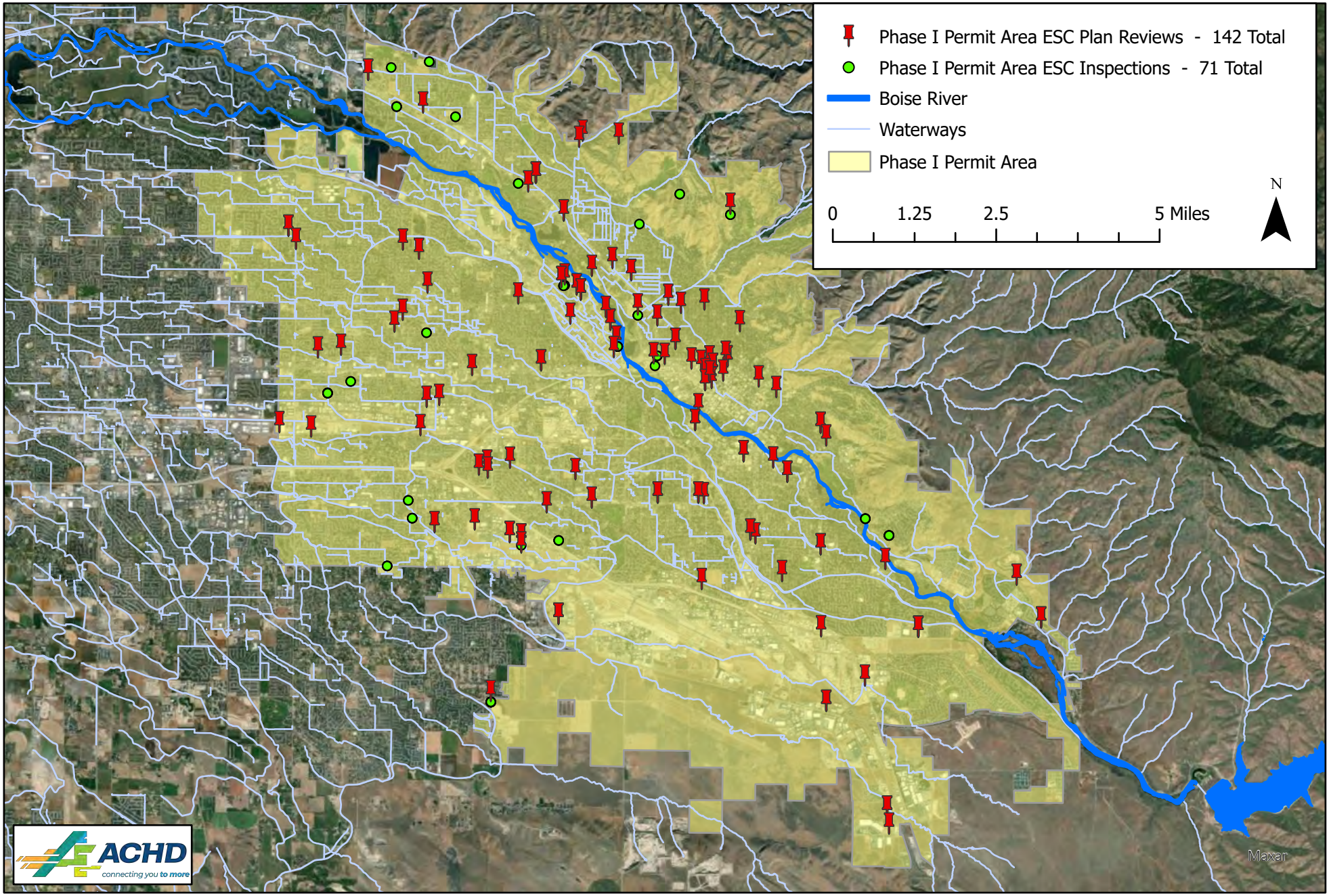
ACTIVITY	TOTAL
ESC Inspections[1]	71
Capital Project SWPPP[2] Inspections	64
Notice of Violations Issued	0

[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, 2022 – September 30, 2023

MONTH	SITE SPECIFIC PLANS REVIEWED	SITE SPECIFIC PLANS WITH DEFICIENCIES	ESC INSPECTIONS COMPLETED	NOTICE OF VIOLOATIONS ISSUED
October	6	2	10	0
November	5	1	4	0
December	13	3	5	0
January	9	2	9	0
February	9	1	10	0
March	10	1	8	0
April	20	3	2	0
May	11	1	4	0
June	16	2	3	0
July	12	1	3	0
August	19	3	8	0
September	12	1	5	0
Total	**142**	**21**	**71**	**0**

Erosion and Sediment Control (ESC) Plan Review and Site Inspections
October 1, 2022 - September 30, 2023



Attachment H
ACHD Vegetated Basins, Bioretention Swales, and GIS Program Activities

Table 1. Phase I ACHD-Owned Vegetated Basins and Bioretention Swales 2022 – 2023

#	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 Way	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 Boulevard	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

Table 2. Phase I ACHD Basin Improvement Projects 2022 - 2023

#	FACILITY NAME AND LOCATION	IMPROVEMENT	DESCRIPTION
1	Basin 327 (E. Boise Ave & S. Betsy Ross Way)	Plant Installation (2-gal)	Increase basin's resiliency, plant diversity, vegetation stability, and aesthetics. (Shrubs and Forbs)
		Irrigation System	Installed a temporary irrigation system to improve plant establishment.
2	Basin 1338 (W. Glendale St & N. Stilson Rd)	Plant Installation (2-gal)	Increase basin's resiliency, plant diversity, vegetation stability, and aesthetics. (Shrubs and Forbs)
3	Basin 1339 (W. Alameda St. & N. Veterans Memorial Parkway)	Plant Installation (2-gal)	Increase basin's resiliency, plant diversity, vegetation stability, and aesthetics. (Shrubs and Forbs)

Table 3. GSI Projects Designed or Constructed 2022 - 2023

#	PROJECT NAME	GSI TYPE	GSI COUNT	DESIGNED	CONSTRUCTION COMPLETE	AREA TREATED (ACRES)
1	State Street Improvement A	Bioretention Curb Extension	8	2020	In Progress	0.5
2	Reed Street Realignment	Bioretention Swales	5	2022	In Progress	0.19
3	11th St Bikeway & Streetscape	Permeable Pavers	6	2021	In Progress	0.48
4	12th & Idaho	Stormwater Tree Cell	2	2022	In Progress	0.34
5	28th St. Extension	Stormwater Tree Cell	4	2022	In Progress	0.66
6	6th & Grove Bldg.	Stormwater Tree Cell	1	2020	2022	0.19
7	Boise Fire Station NO. 5	Stormwater Tree Cell	2	2023	In Progress	0.09
8	Capital Student Housing	Stormwater Tree Cell	4	2022	In Progress	1.04
9	Fulton Street Improvement	Stormwater Tree Cell	10	2022	In Progress	1.26
10	Linen Blocks	Stormwater Tree Cell	24	2022	In Progress	3.17
11	Lusk St. Apts.	Stormwater Tree Cell	1	2022	In Progress	0.12
12	Old Boise Blocks	Stormwater Tree Cell	8	2022	In Progress	0.63
13	Saratoga Apartments	Stormwater Tree Cell	4	2022	In Progress	0.82
14	St. Luke's	Stormwater Tree Cell	1	2018	In Progress	0.14
15	11th St Bikeway & Streetscape	Stormwater Tree Cell	13	2022	In Progress	1.79

Table 4. Phase I ACHD GSI Program Updates 2022 - 2023

GSI PROGRAM AREA	GSI PROGRAM ACTIVITY	DESCRIPTION
Planning and Design	GSI Designs	Evaluating GSI BMP designs and making design adjustments per project to improve stormwater management. Future work will include design specification updates to policy 8200.
	Integrated Five Year Work Plan	Updated the integrated five year work plan to include standalone GSI projects to more effectively provide offsite stormwater mitigation for future projects, retrofit existing GSIs, and improve water quality.
	Rapid Implementation Plan	Developed and piloted the rapid implementation plan to improve our ability to prioritize smaller retrofit projects and complete the design and construction within one year.
Construction	Capital Project Bid Process	Updated the capital project bid process for basins and swales to allow for more accurate bids and accountability during the 1-year Plant Establishment Period.
	Project Inspector Training	Project Inspector(s) training on new basin design requirements and top soil evaluation and approval.
Facility Maintenance	Stormwater Vegetation Management Contract	Expanded maintenance tasks and altered maintenance timing to improve plant health, aesthetics, and functional capability of GSIs.
	Stormwater Tree Cells Maintenance Plan	Pilot - new stormwater tree cell maintenance plan.
	Permeable Paving Maintenance Plan	Developing maintenance methods and frequency for maintaining permeable paving.
Inventory	Permeable Paving Inventory	Locating and mapping all ACHD maintained permeable paving structures.
	Permeable Paving Inspections	Developed and piloted permeable paving standard inspection and rain event inspection.
	Offsite Mitigation Tracking	Evaluating and updating the offsite stormwater mitigation tracking system.
Implementation	Species Selection - Lowland Areas	Evaluated species success rates of 2-gal plants in lower areas of wet basins to improve vegetation establishment in future vegetated GSIs.

Attachment I
Industrial and Commercial Discharge Facility Inspection Reports

Industrial and Commercial Facility Inspection Summary and Follow-up Action
ACHD Phase I Permit Area, Idaho
October 1, 2022 – September 30, 2023

#	FACILITY	ADDRESS	MS4 CONNECTION (YES/NO)	RECEIVING WATER	SIC CODE	INSPECTION DATE	FOLLOW-UP ACTIONS
1	Bronco Motors	2646 W. Main St., Boise, ID 83714	Yes	Boise River	5511	9/7/2023	
2	Integra Information Technologies	1081 Exchange St., Boise, ID 83702	No		3861	8/31/2023	
3	Nashua Homes	5200 Federal Way, Boise, ID 83716	No		2451	9/7/2023	
4	OrePac Building Products	5500 Federal Way, Boise, ID 83716	No		2431	8/17/2023	
5	Dowdy's Automotive	1645 W Grove St, Boise, ID 83702	Yes	Boise River	7538	7/28/2023	Move used oil bin indoors or provide secondary containment. Clean oil from pavement around used oil bin. Immediately clean any spill for absorbent.
6	Big Sids Auto Sales	9775 Fairview Ave, Boise, ID 83704	Yes	Finch Lateral	5521	8/10/2003	Move liquid storage indoors or provide secondary containment. In outdoor areas, do not store vehicles, vehicle parts, or any other object that has the potential to leak grease, oil, or other hazardous substances.
7	Boise Auto Choice	5300 W Fairview Ave, Boise, ID 83706	Yes	Davis Drain	5521	8/10/2023	
8	Sinclair Products Terminal	321 N Curtis Rd, Boise, ID 83705	No		5171	8/17/2023	
9	Auto Zone	4111 W Overland Rd, Boise, ID, 83705	Yes	Ridenbaugh Ditch	5013	7/27/2023	
10	Metro Express Car Wash	3003 W State St, Boise, ID, 83702	No		7542	7/21/2023	
11	Rich's Auto Care	3505 W Overland Rd, Boise, ID 83705	Yes	Ridenbaugh Ditch	7538	8/15/2023	Install secondary containment around liquid storage barrels. Immediately stop washing engines, motors, or any dirty equipment outside. Do not store outdoors any vehicles, vehicle parts, or any other objects that have the potential to leak grease, oil, or other hazardous substances . Keep surfaces free of oil, grease, dirt, trash, absorbent used for oil spills, etc.
12	Classic Design / Rocket Neon	530 W. Myrtle St, Boise, ID 83702	Yes	Boise River	3993	9/7/2023	
13	Pac Lease	3940 S Transport St, Boise, ID 83705	No		7513	8/1/2023	
14	Mister Car Wash	1790 Broadway Ave, Boise, ID 83706	No		7542	7/20/2023	
15	Flying J Travel Center	3353 Federal Way, Boise, ID 83705	Yes	Ridenbaugh Canal	5541	8/31/2023	
16	Artis Metal Company	3323 W. Chinden Blvd, Garden City, Idaho 83714	Yes	Davis Drain	3444	6/21/2023	

#	FACILITY	ADDRESS	MS4 CONNECTION (YES/NO)	RECEIVING WATER	SIC CODE	INSPECTION DATE	FOLLOW-UP ACTIONS
17	Autobon Import Motors	3980 W. Chinden Blvd., Garden City, Idaho 83714	No		7538	7/19/2023	
18	Boise Cylinder Head Services	200 W. 35th St. #A, Garden City, Idaho 83714	Yes	Davis Drain	7538	7/13/2023	
19	Evergreen Sprinklers	107 W. 32nd Street, Garden City, Idaho 83714	Yes	Davis Drain	3432	6/2/2023	
20	Molding Mud Inc.	110 E. 40th St., Garden City, Idaho 83714	No		3272	6/14/2023	
21	Nicholson Diesel Services	107 W. 40th Street, Garden City, Idaho 83714	Yes	Davis Drain	7538	6/8/2023	
22	O'Reilly Auto Parts	4432W. Chinden Blvd., Garden City, Idaho 83714	Yes	Davis Drain	3714	8/3/2023	
23	Roe Painting	703 E. 44th St., #8,9,10,11, Garden City, Idaho 83714	Yes	Boise River	1799	6/28/2023	Cleanup waste concrete dust around outside garbage bin.
24	Throttle Works	104 E. 44th Street, Garden City, Idaho 83714	No		7538	7/26/2023	

Attachment J
NPDES Phase I 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

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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.

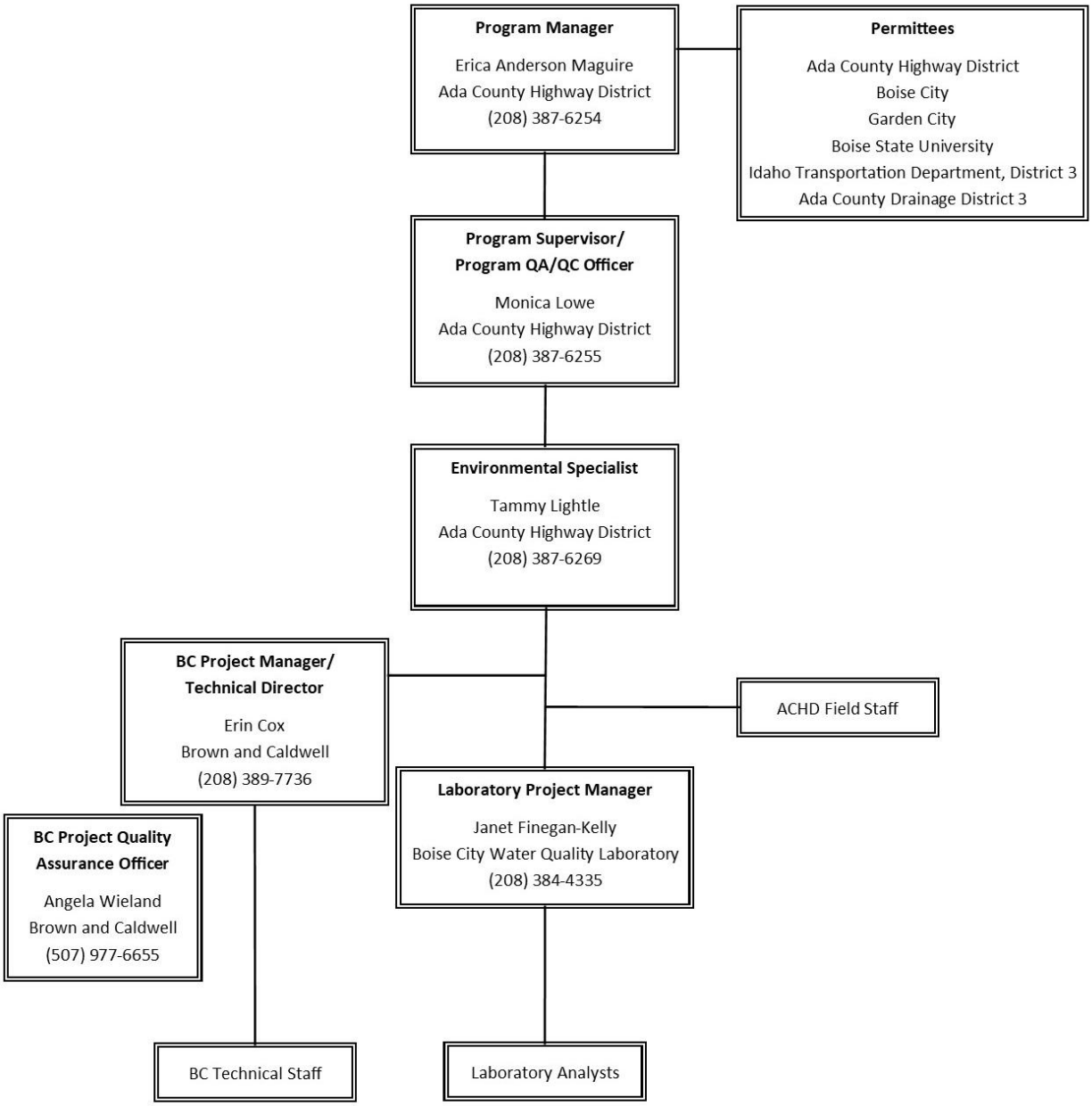
Table 1-1. QAPP Element Document Reference

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 (NH_3) 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 Temperature pH Conductivity	1 L glass	Field analysis; 15 minutes

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.

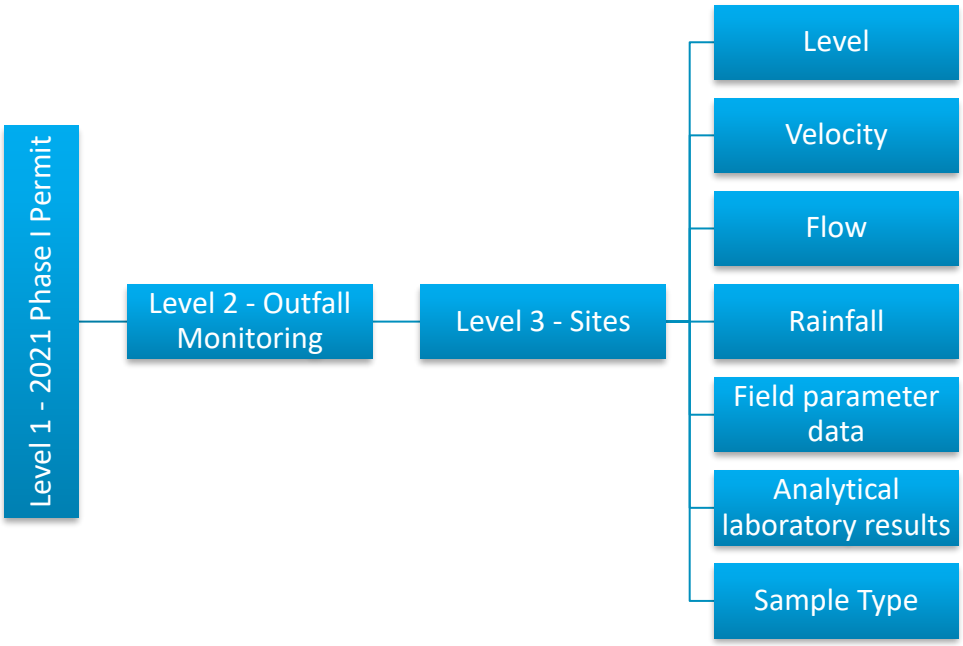


Figure 6-1: Database Levels Setup

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.

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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

Monitoring Area

Lucky

Whitewater

Main

Americana

Rain Gauges

Figure 1

Vicinity Map
Phase I NPDES Outfall Sampling Stations

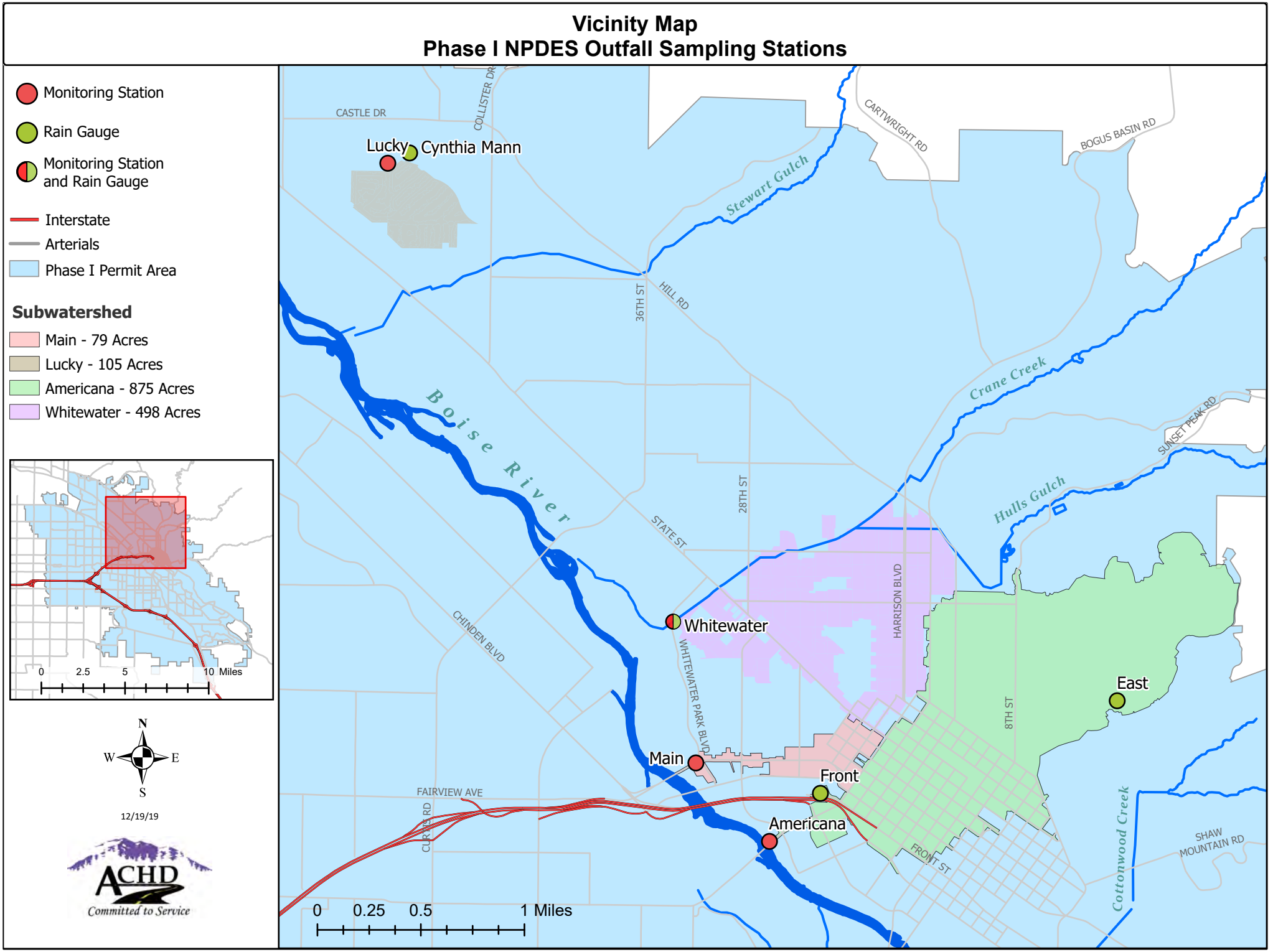
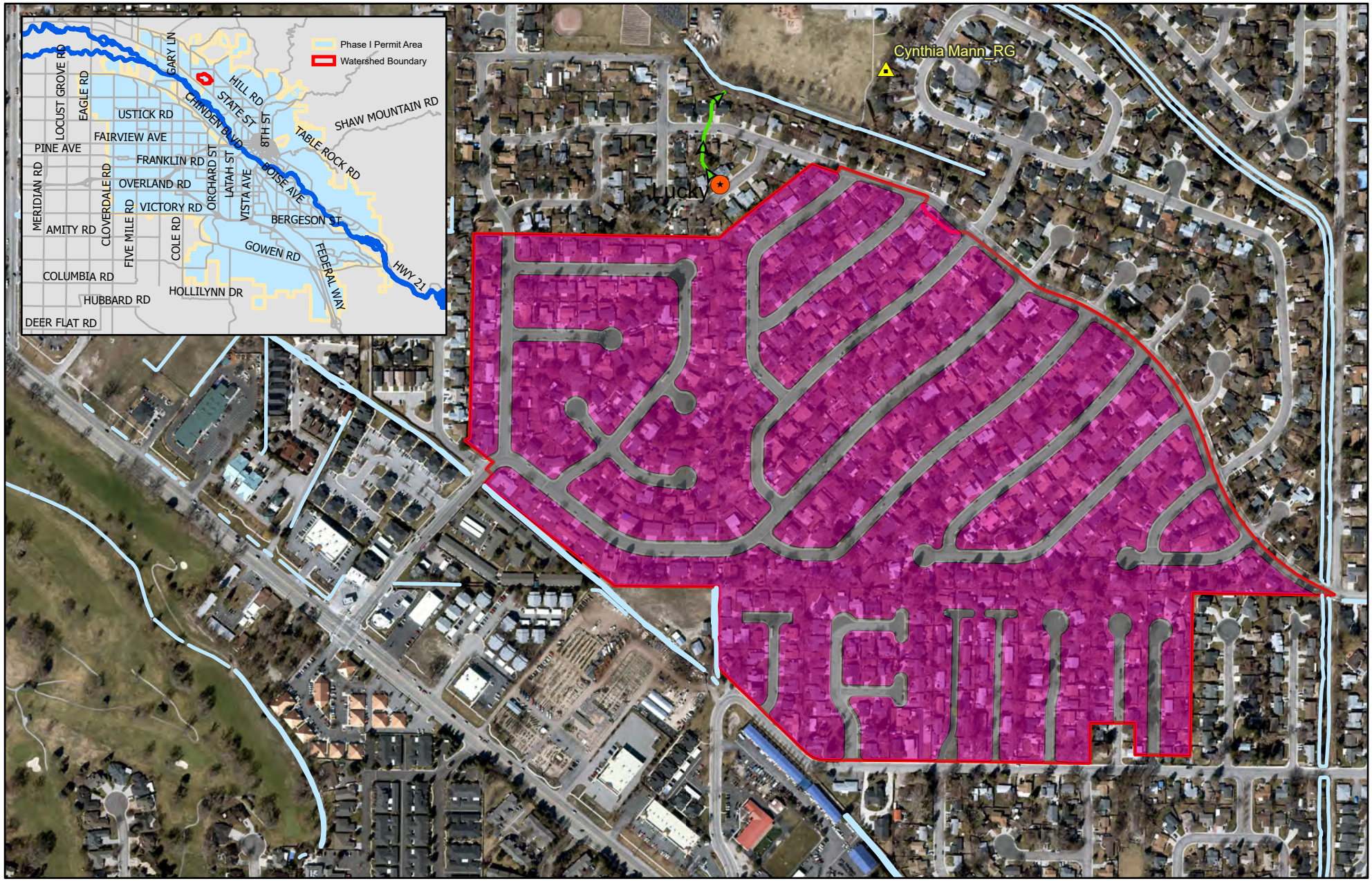


Figure 2



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

0 390 780 Feet

ACHD Committed to Service

File Location: \\APPWSUS\ACHDFiles\Groups\DVS\STORMWATER\Maps\Phase I Monitoring\Lucky

Figure 3

Lucky Monitoring Station

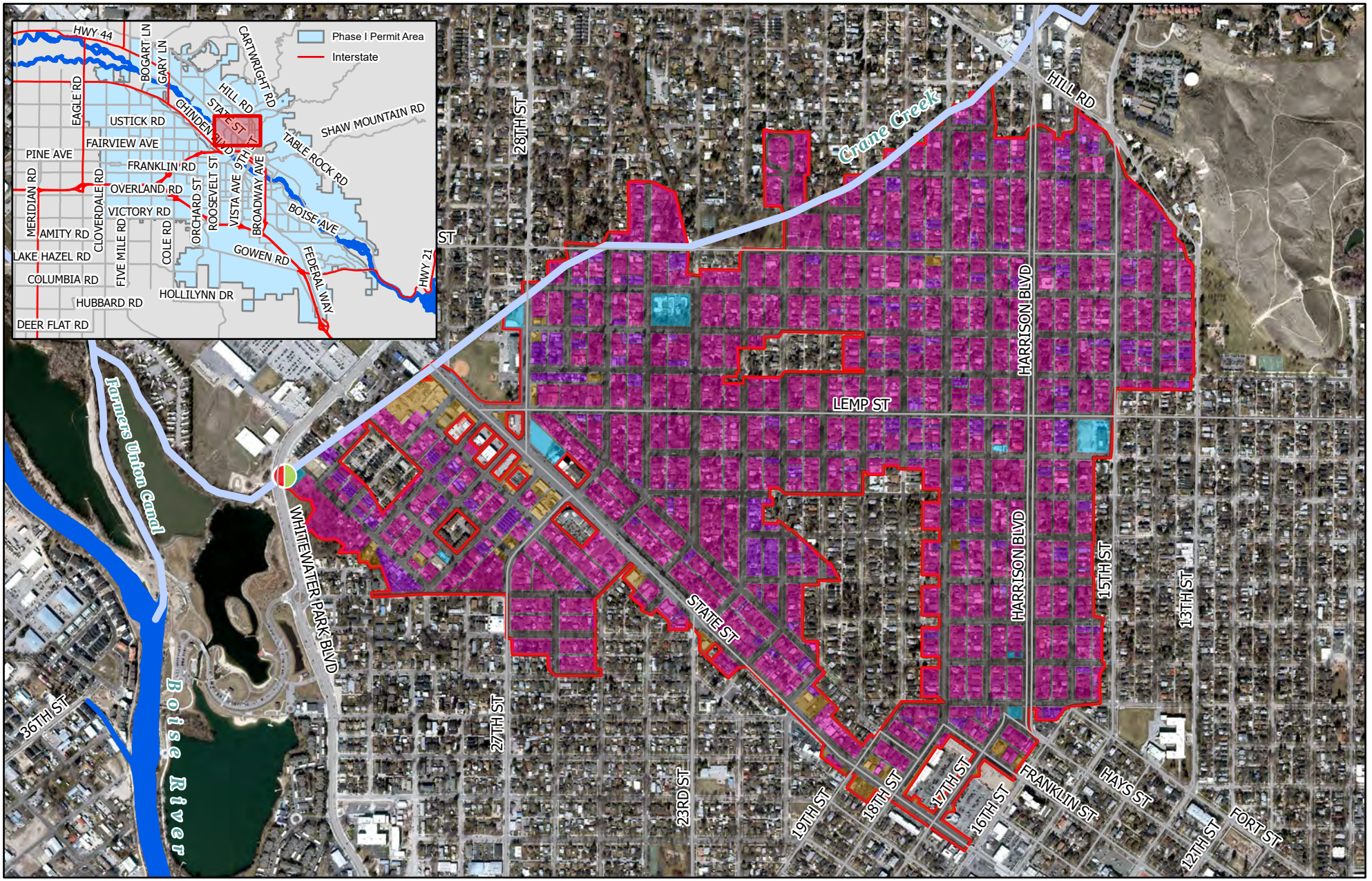


Station setting looking northwest – equipment in manhole



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

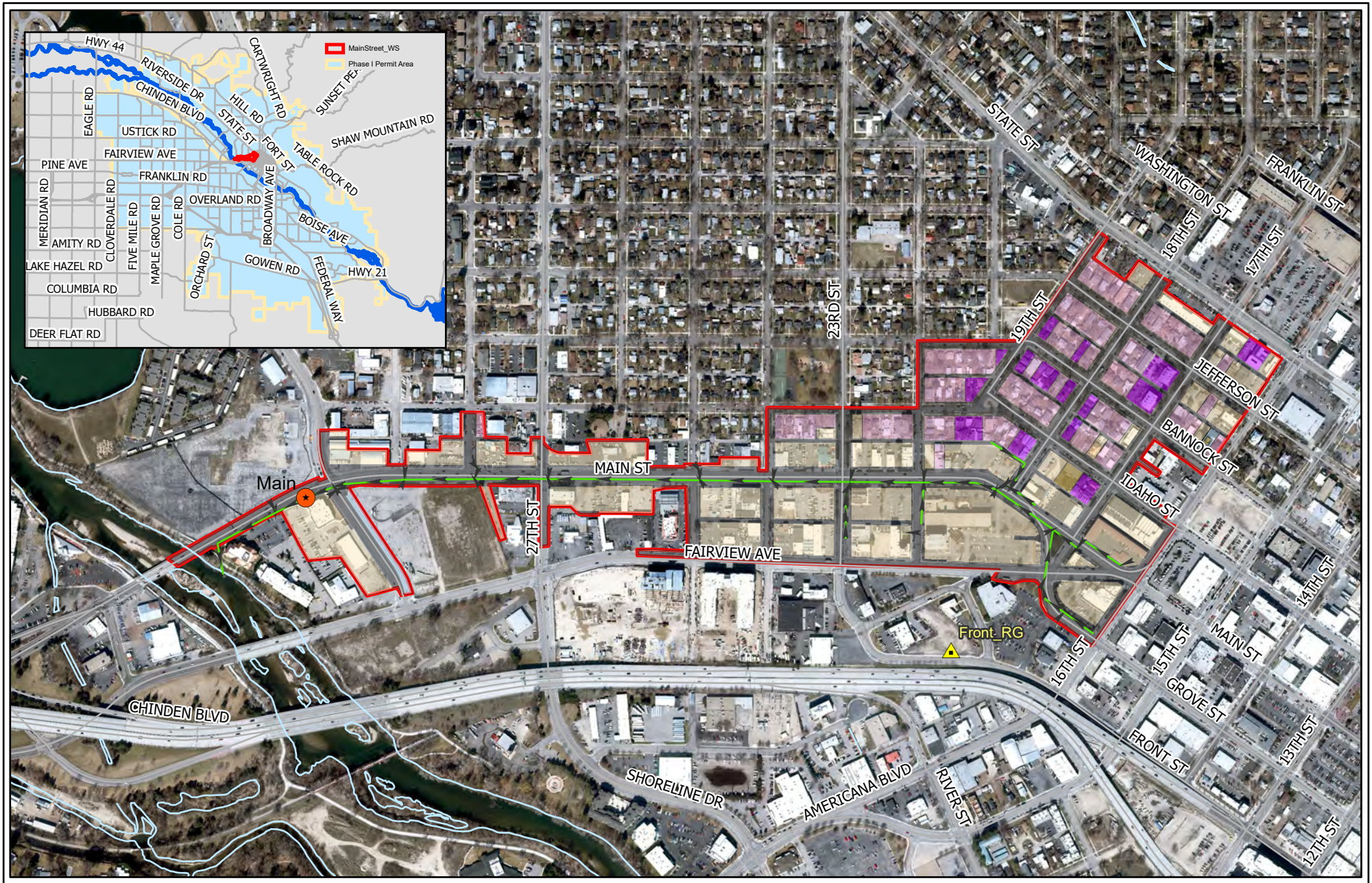


Station setting looking north



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

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

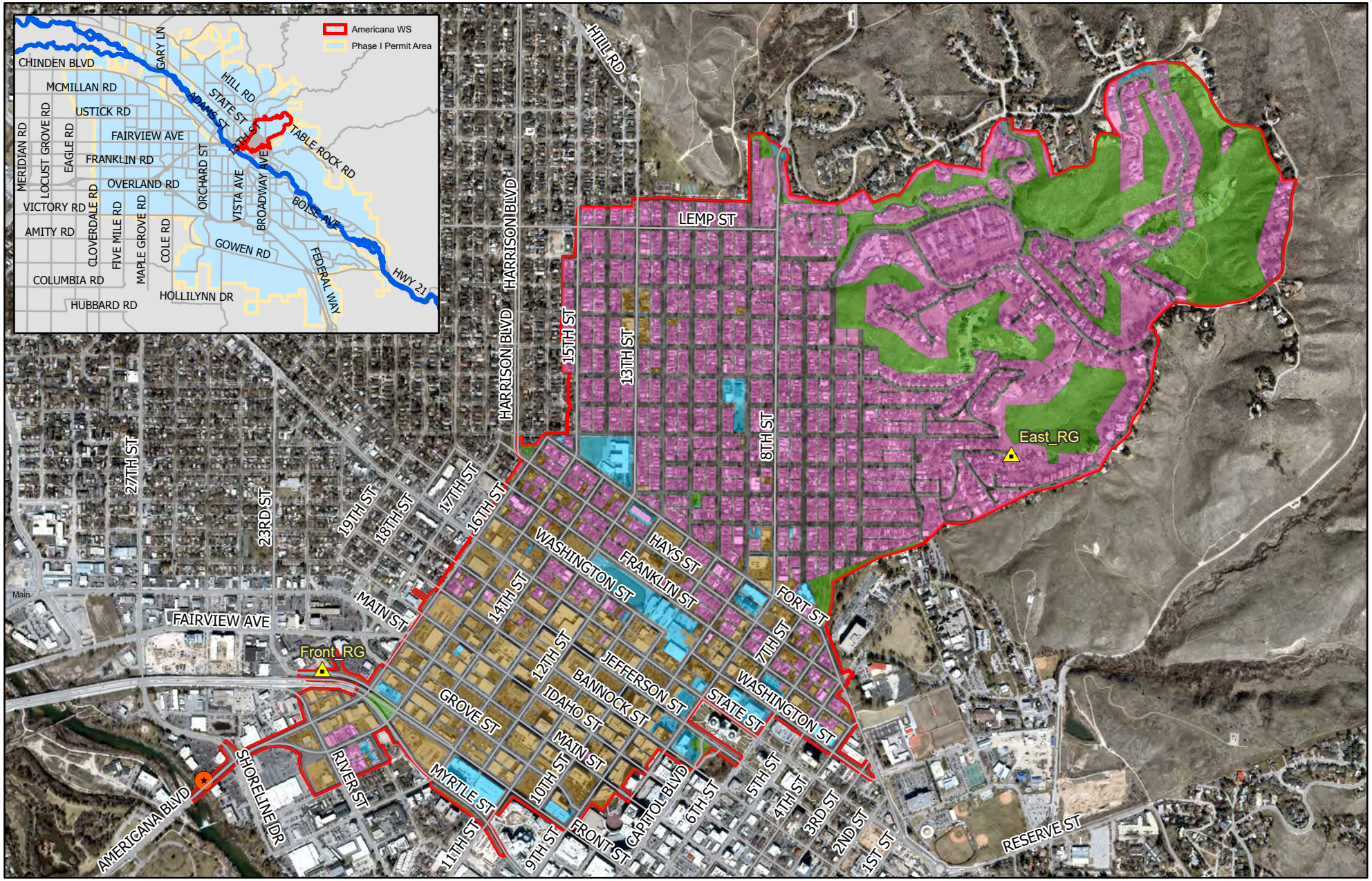


Station setting looking northwest



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

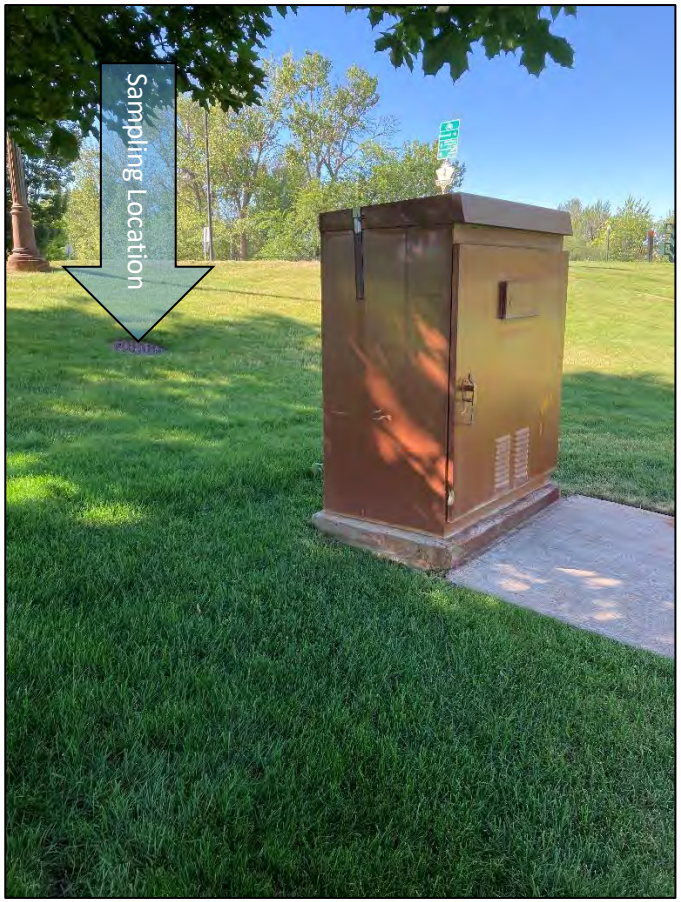
ACHD Committed to Service

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:	**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: _____**
	☐ 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

- ☐ 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 Flowlink Instructions, if needed)

- ☐ 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

- ☐ Replace flowmeter battery
- ☐ Remove battery from sampler

Flowlink (Refer to Flowlink Instructions, if needed)

- ☐ 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 ☐ Download flowmeter data ☐ Remove flowmeter battery	☐ Replace flowmeter battery ☐ Reset logging interval to 15 minutes ☐ 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):

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

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.

Example

Tuesday Night: Partly cloudy, with a low around 47.
Wednesday: Partly sunny, with a high near 69.

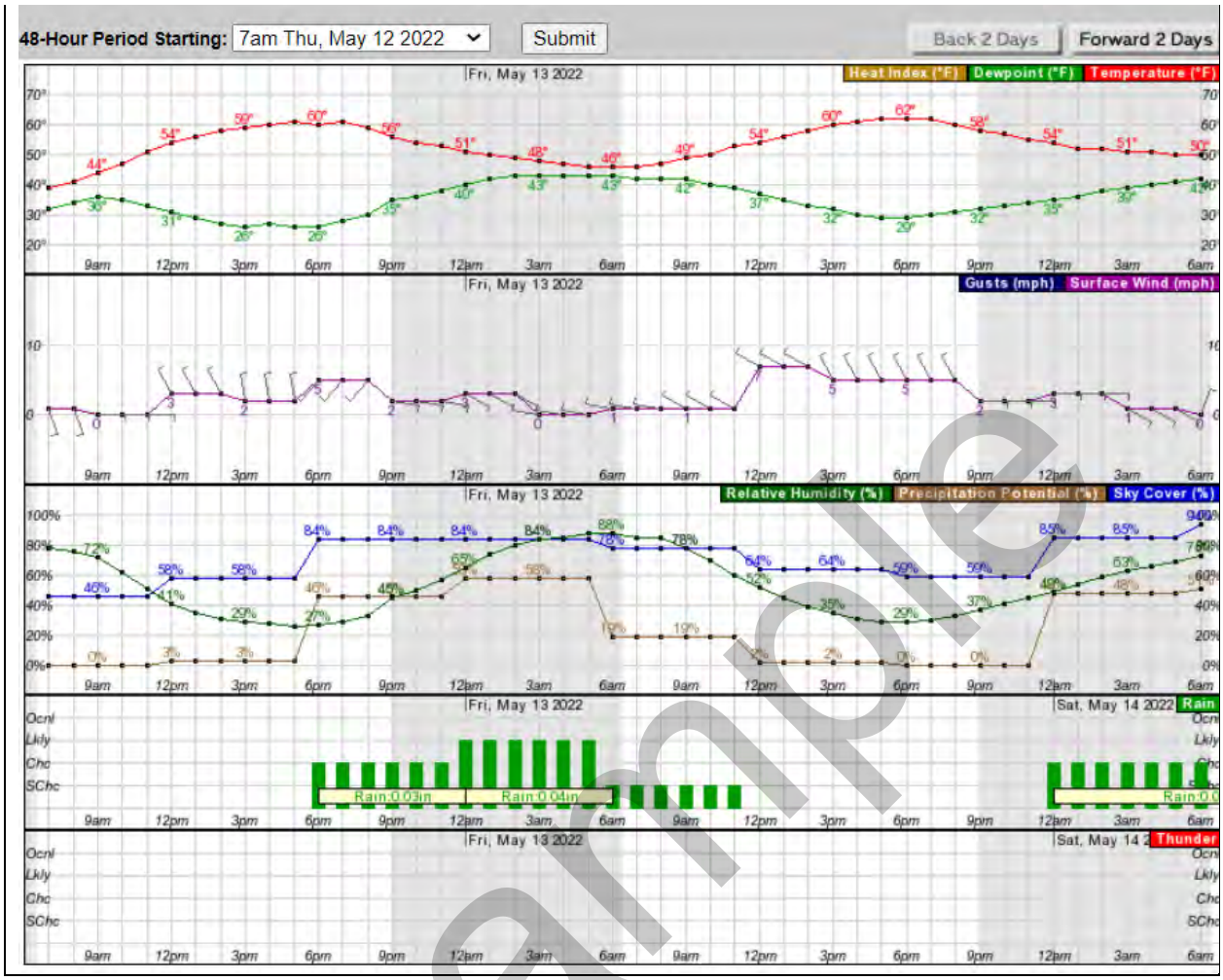
Forecast Discussion
Area Forecast Discussion
National Weather Service Boise ID
342 AM MDT Thu May 12 2022

.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.

Example

Hourly Forecast


48-Hour Period Starting: 7am Thu, May 12 2022
Submit
Back 2 Days
Forward 2 Days
Heat Index (°F)
Dewpoint (°F)
Temperature (°F)
Gusts (mph)
Surface Wind (mph)
Relative Humidity (%)
Precipitation Potential (%)
Sky Cover (%)
Rain
Thunder
Fri, May 13 2022
Sat, May 14 2022
Rain 0.03in
Rain 0.04in
Ocnl
Lkly
Chc
SChc
9am
12pm
3pm
6pm
9pm
12am
3am
6am

Example

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.

Attachment K
Ada County Drainage District No. 3 Stormwater Management Plan NPDES Permit #IDS-027561

Ada County Drainage District No. 3

Stormwater Management Plan

NPDES Permit #IDS-027561

OCTOBER 2022

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   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 NOTARY PUBLIC STATE OF IDAHO Comm. No. 20203909 My Commission Expires 10/05/26

_____
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 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. Schedule and Process:

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: _____
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

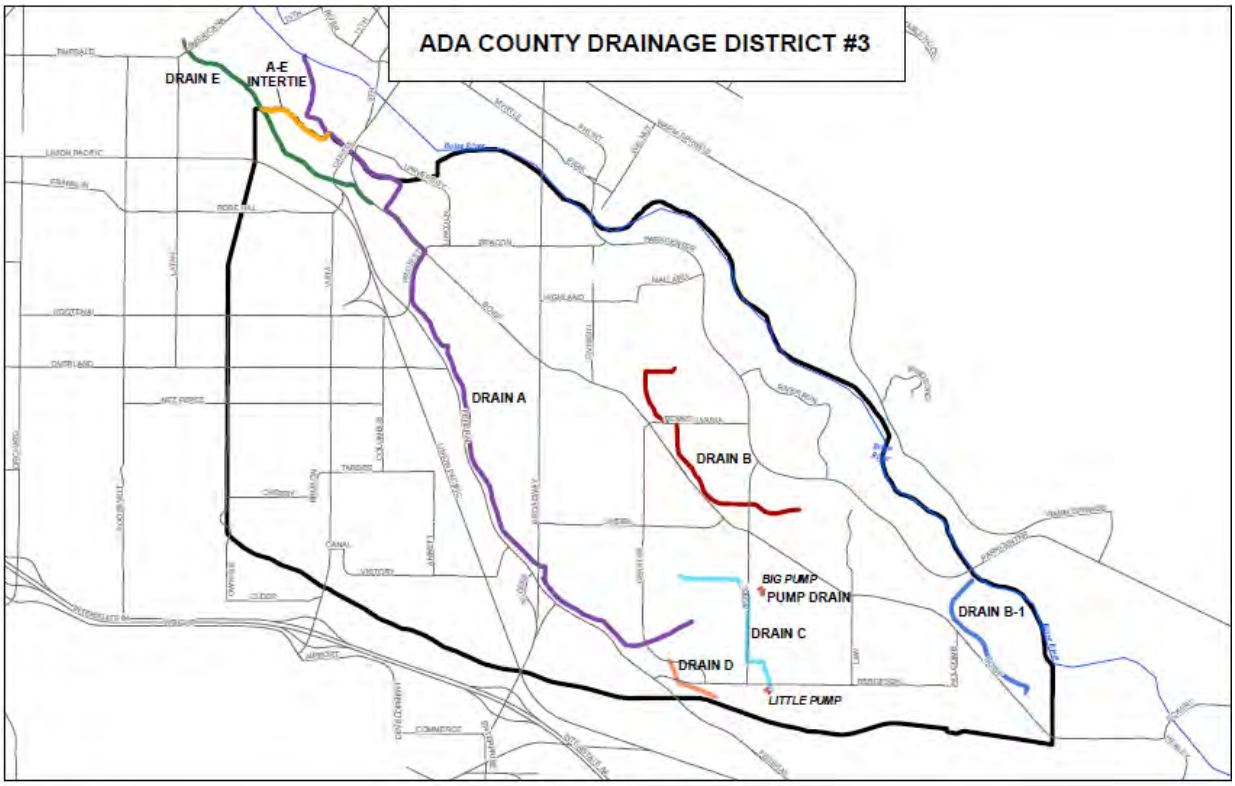
ACHD DRAINAGE = 387-6320
BOISE CITY PUBLIC WORKS = 384-3900
GARDEN CITY PUBLIC WORKS = 375-3194
NAMPA & MERIDIAN IRRIGATION DIST. = 466-7861
BOISE PROJECT BOARD OF CONTROL = 344-1141
SOUTH BOISE MUTUAL IRRIGATION CO. = 344-3062
DRAINAGE DISTRICT #2 = 342-4591
DRAINAGE DISTRICT #4 = 342-4591
SOUTH BOISE WATER CO. = 761-6450

PROJECT COORDINATED FOR ADA COUNTY DRAINAGE DISTRICT #3 BY

Quadrant Consulting Inc.

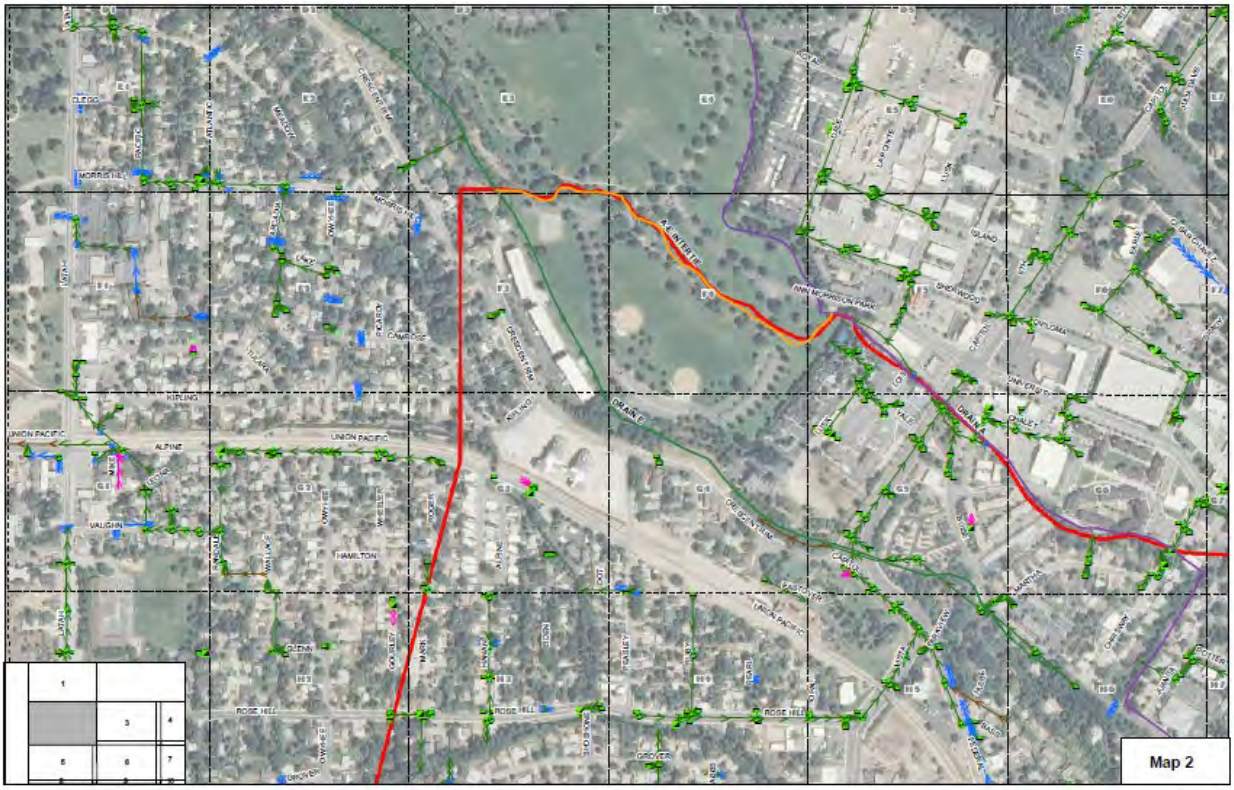
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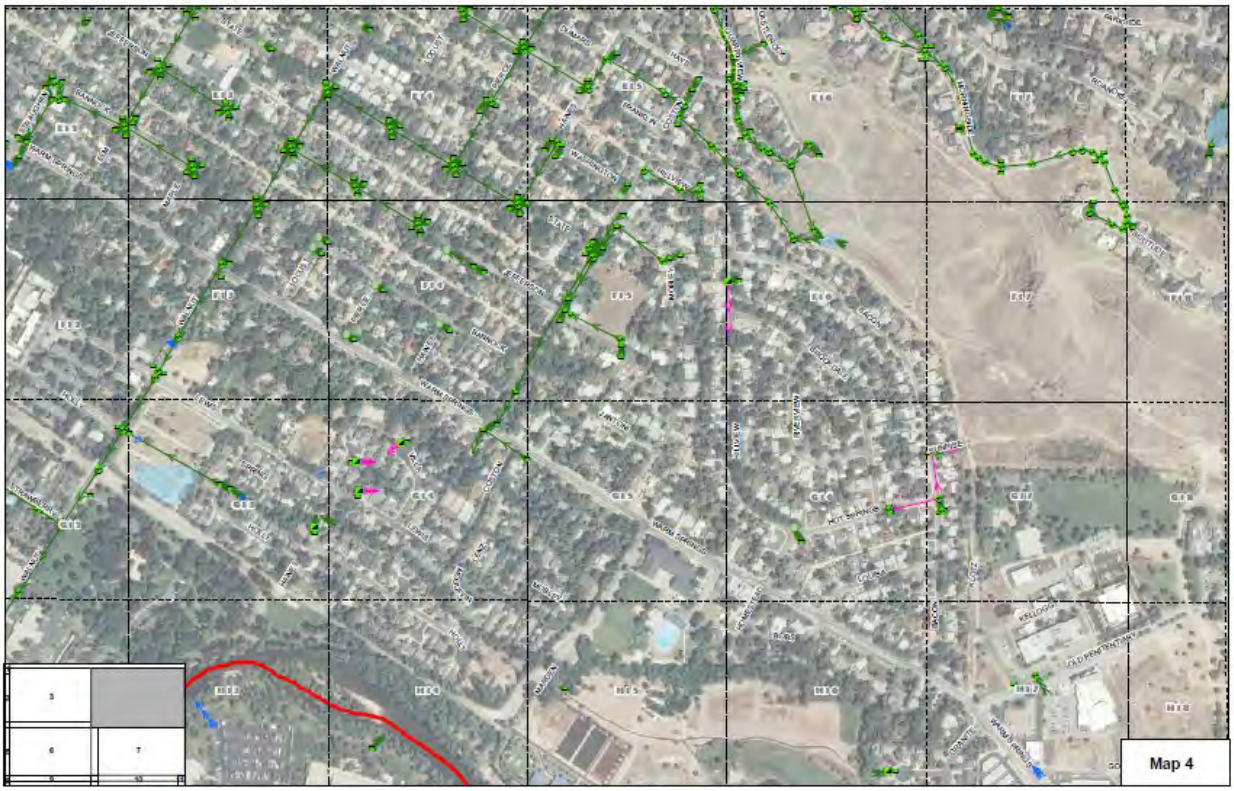


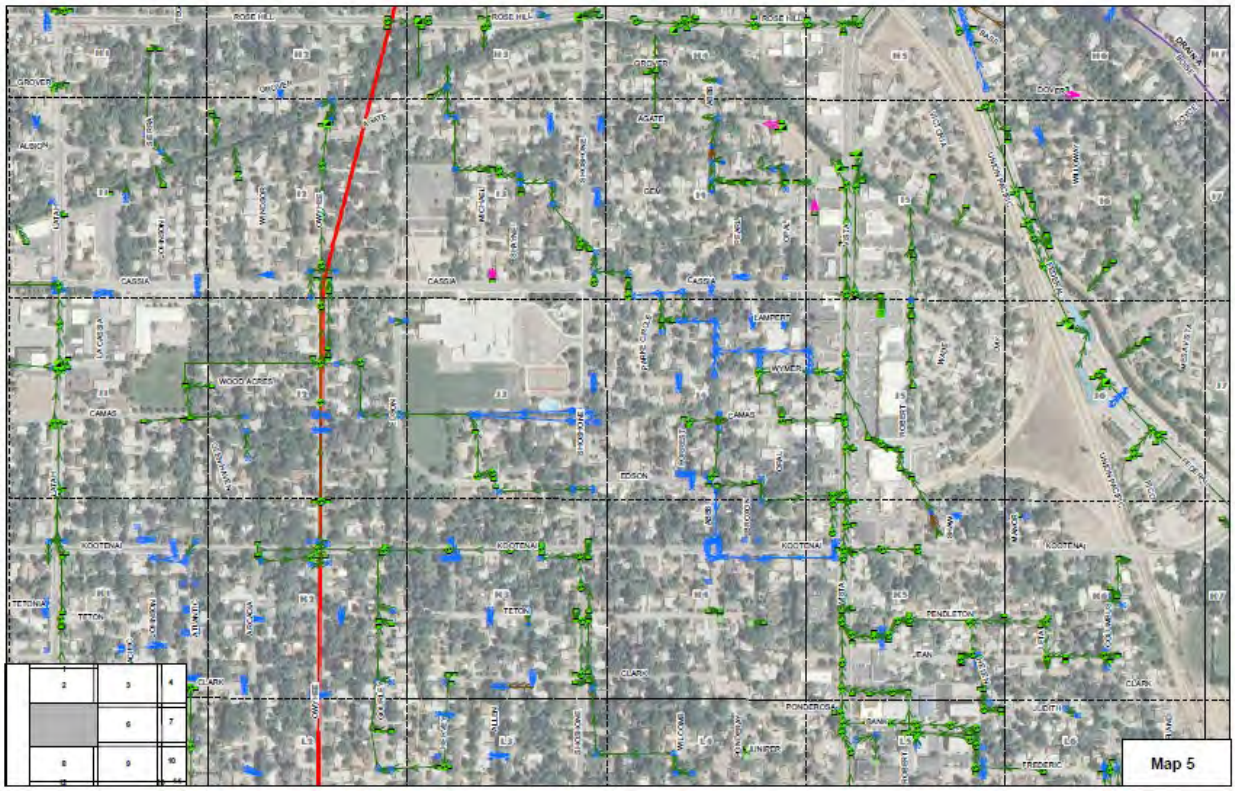

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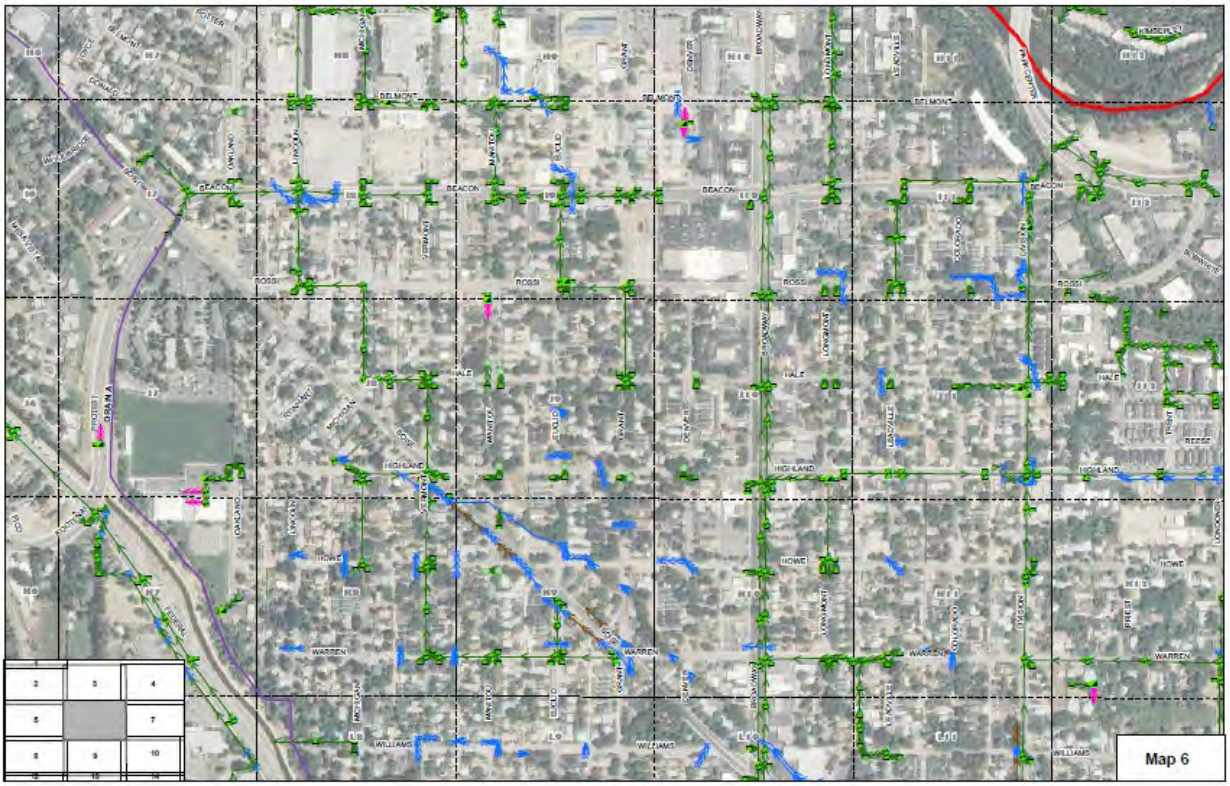

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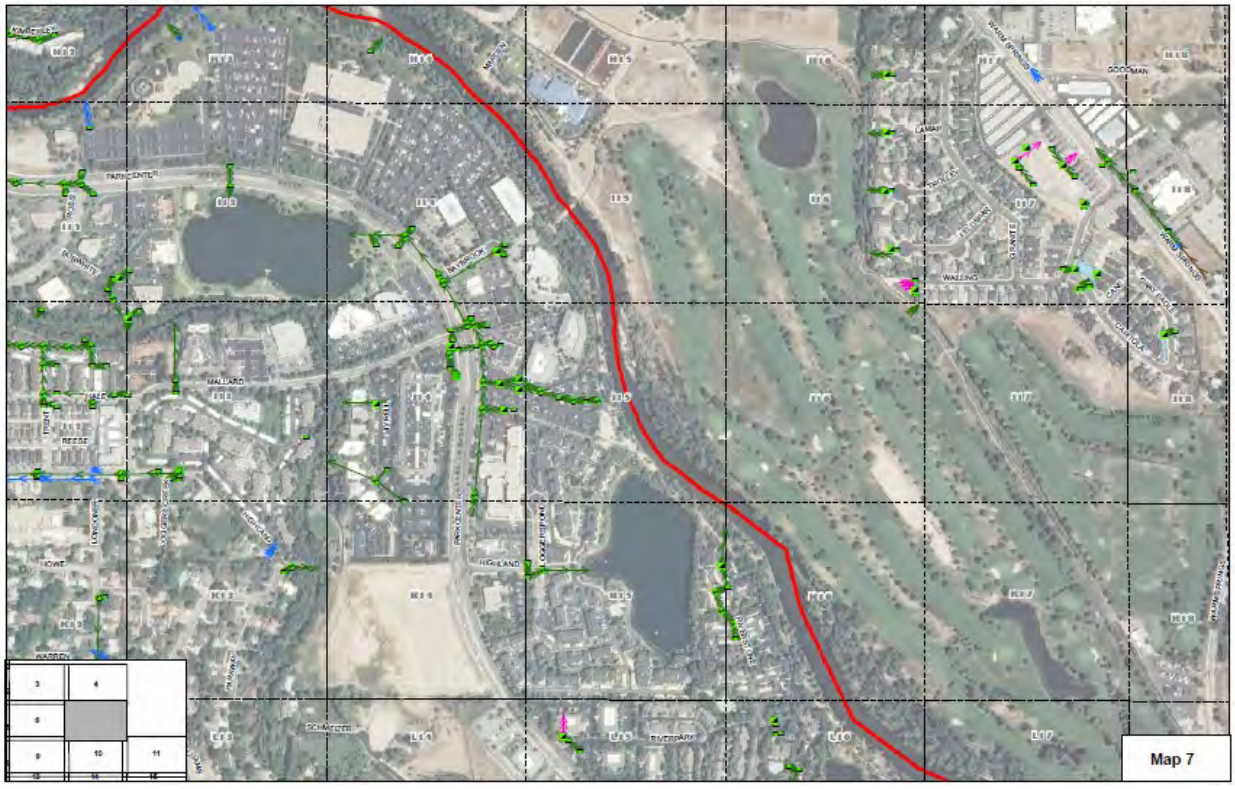

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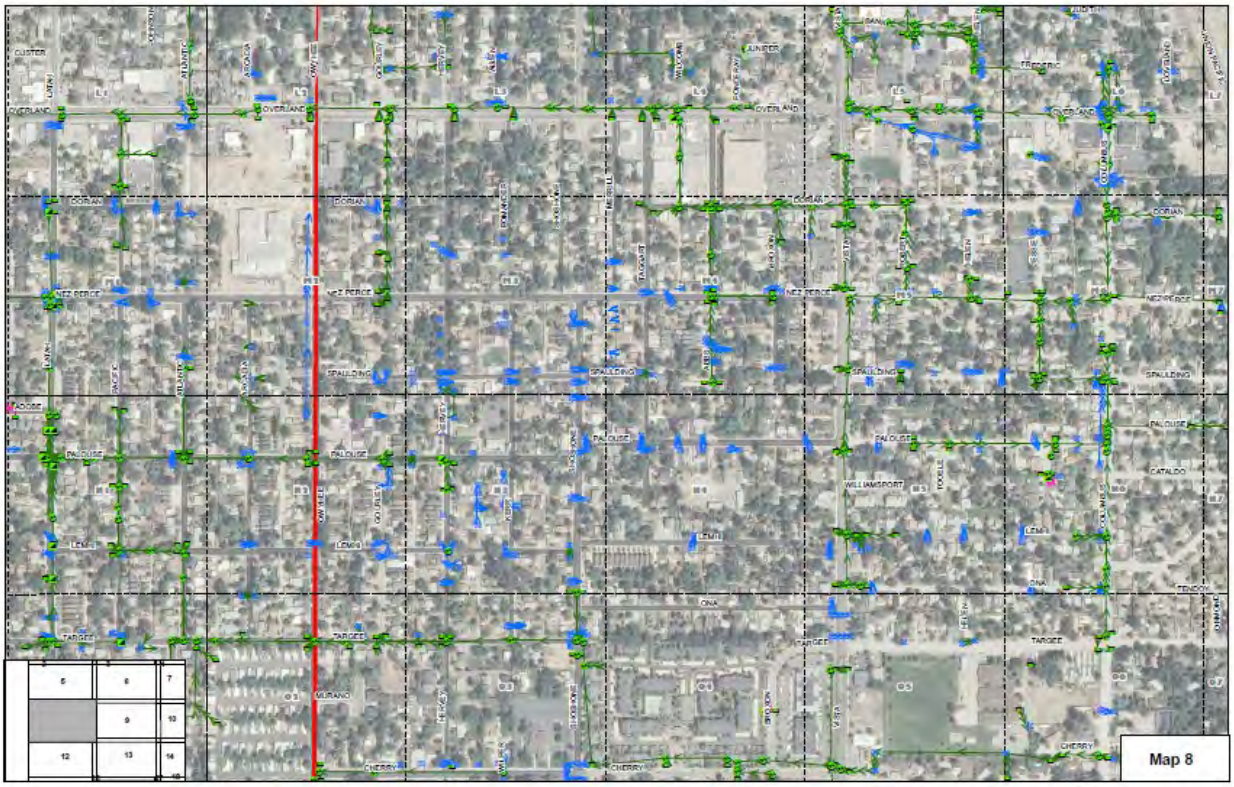

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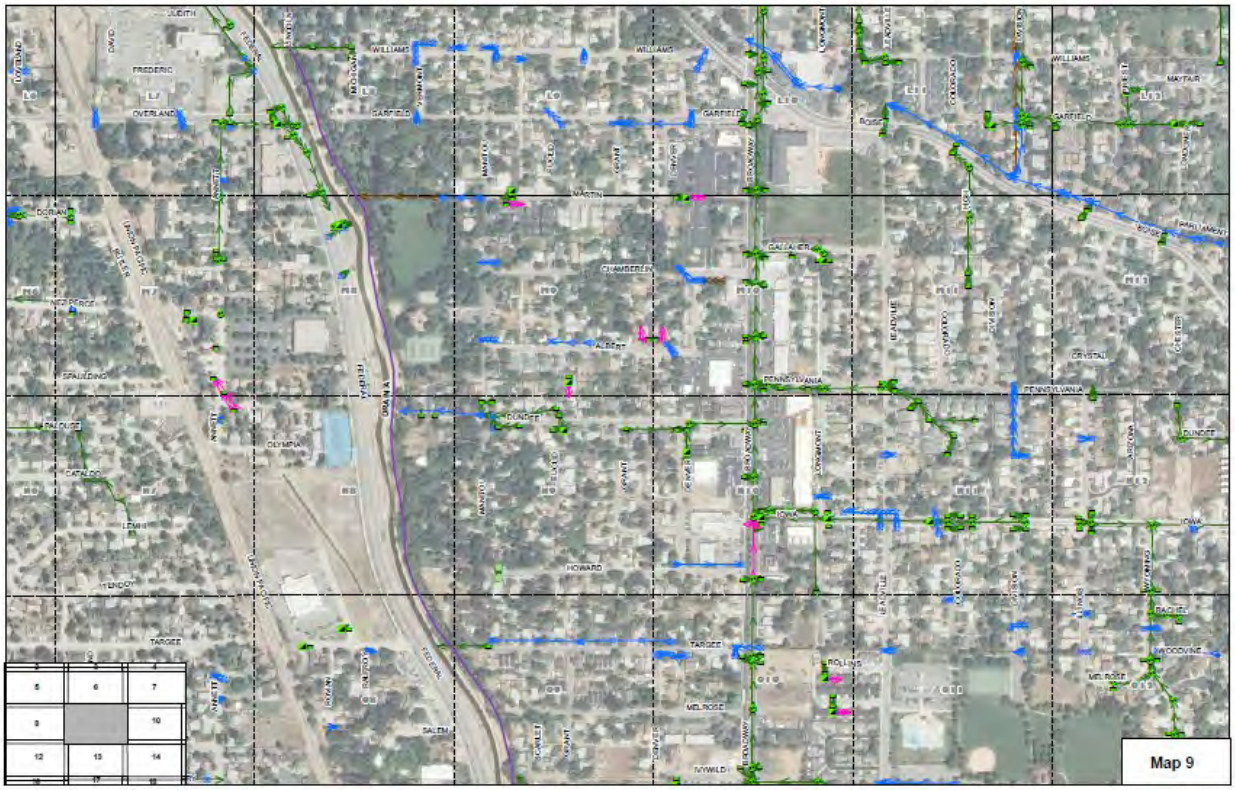

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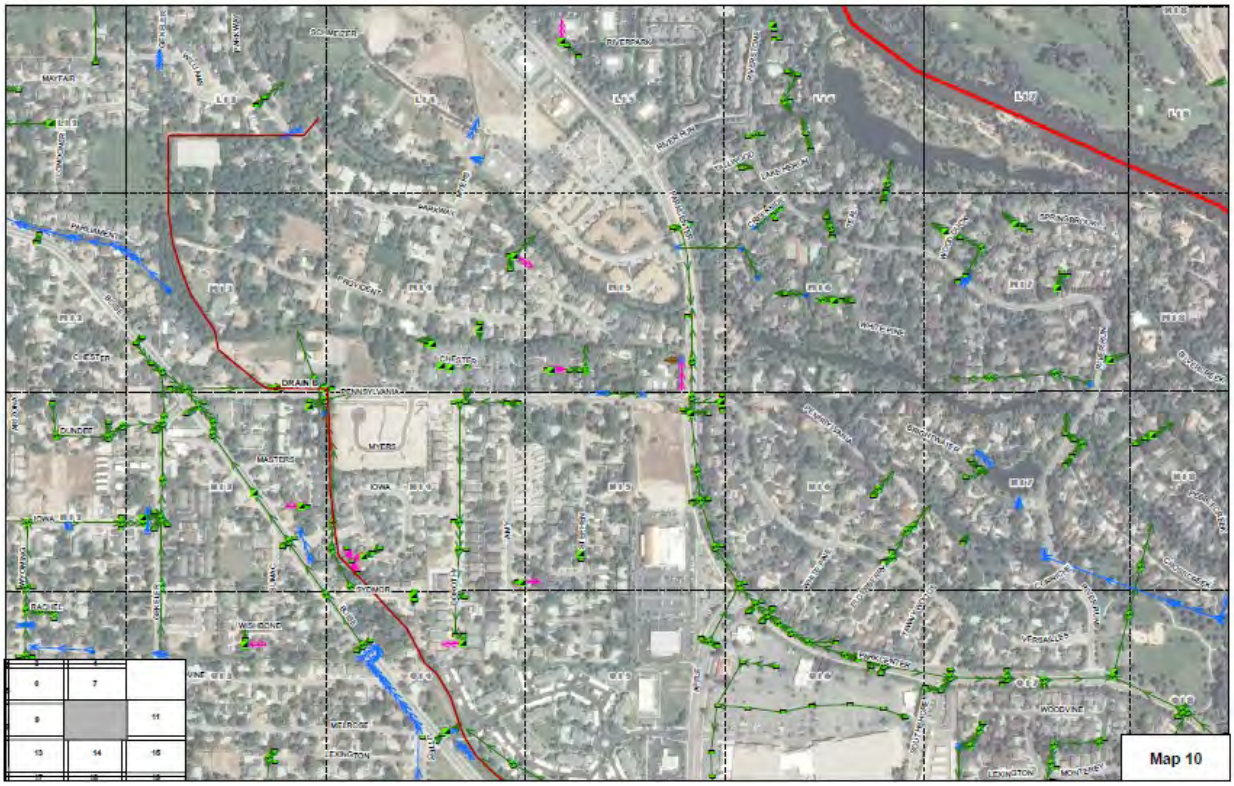

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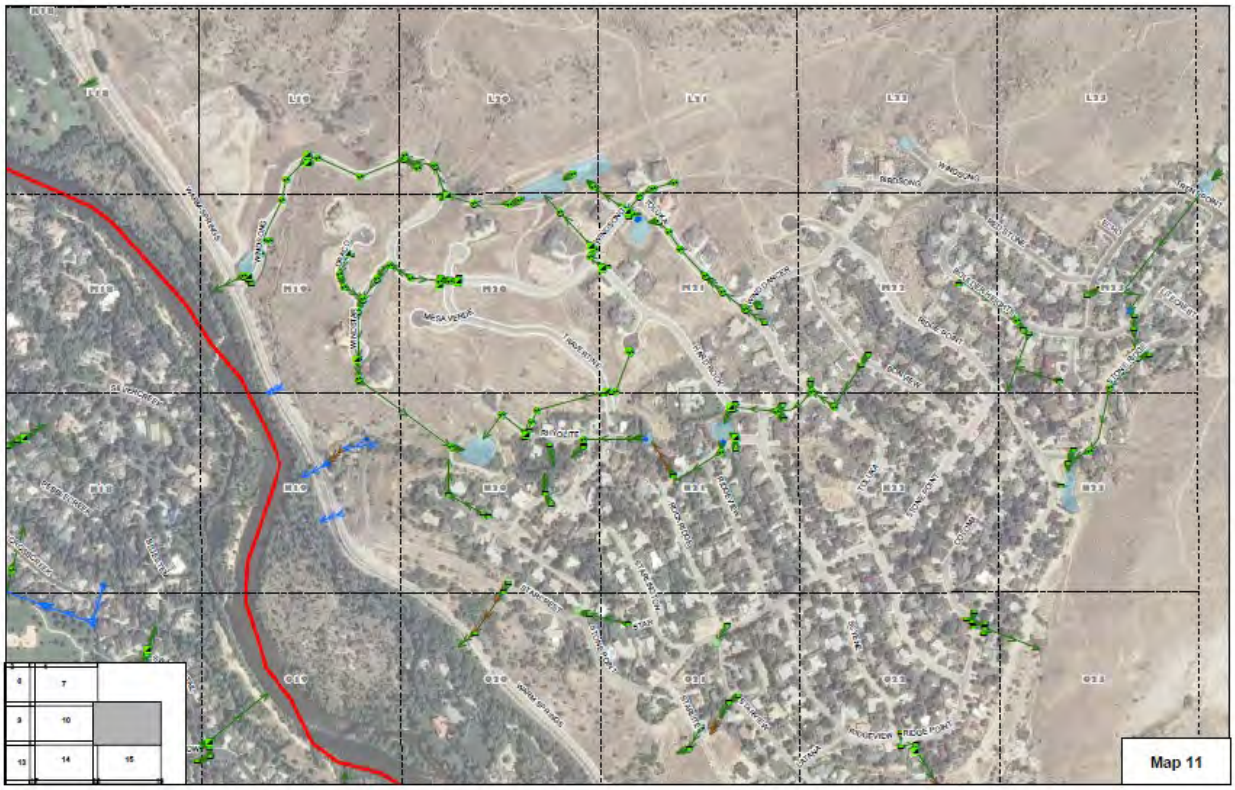

BEACON
ROSSI
HALE
HIGHLAND
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WILLIAMS
Map 6

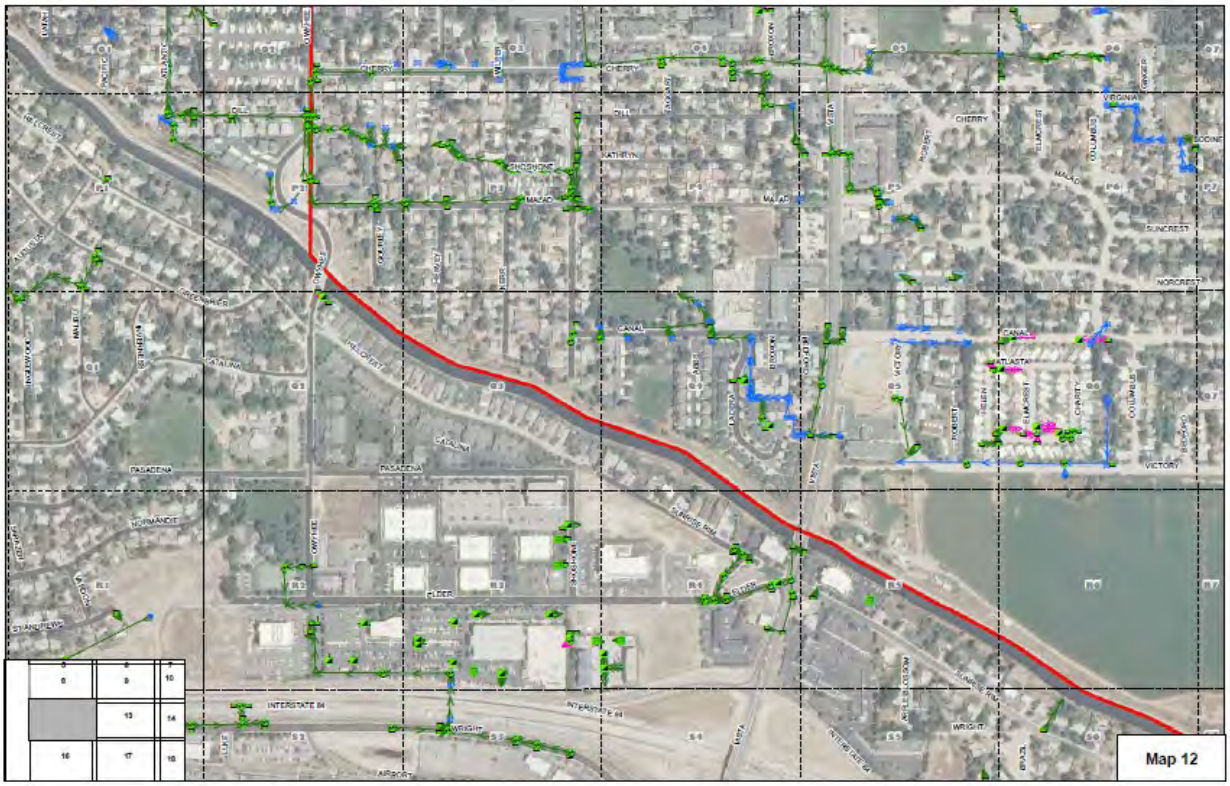

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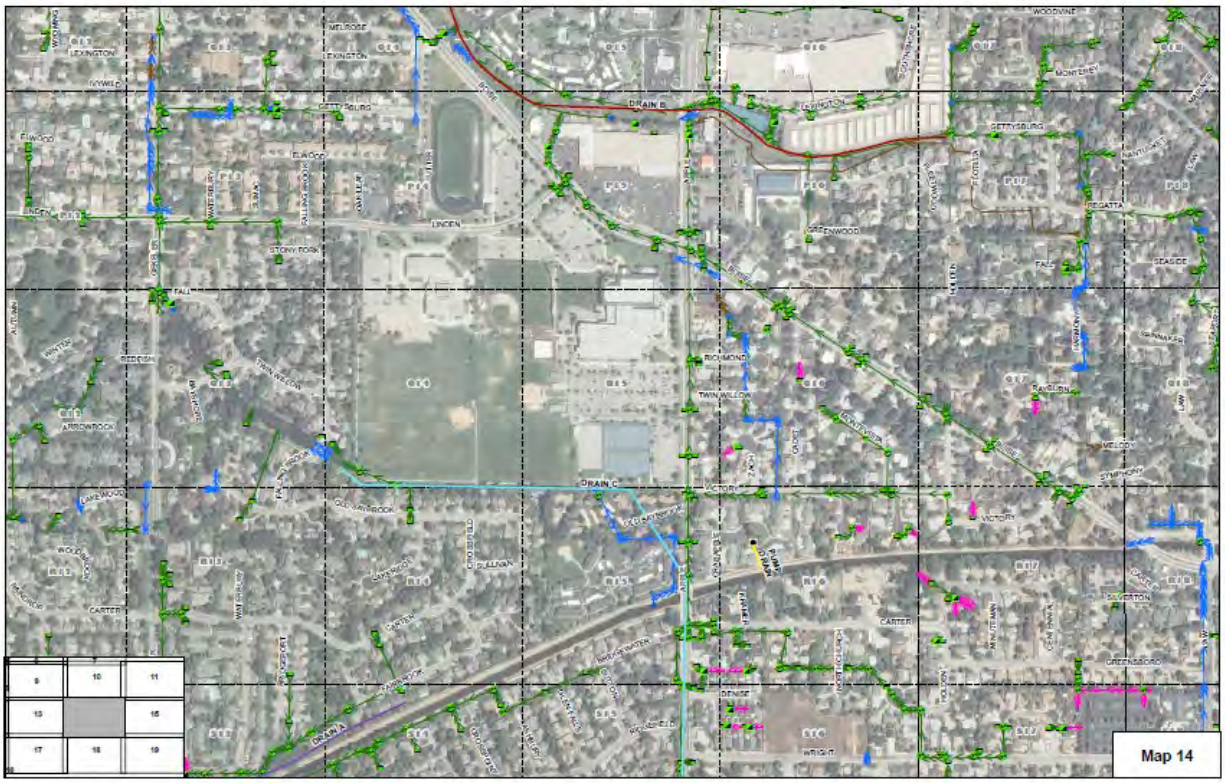

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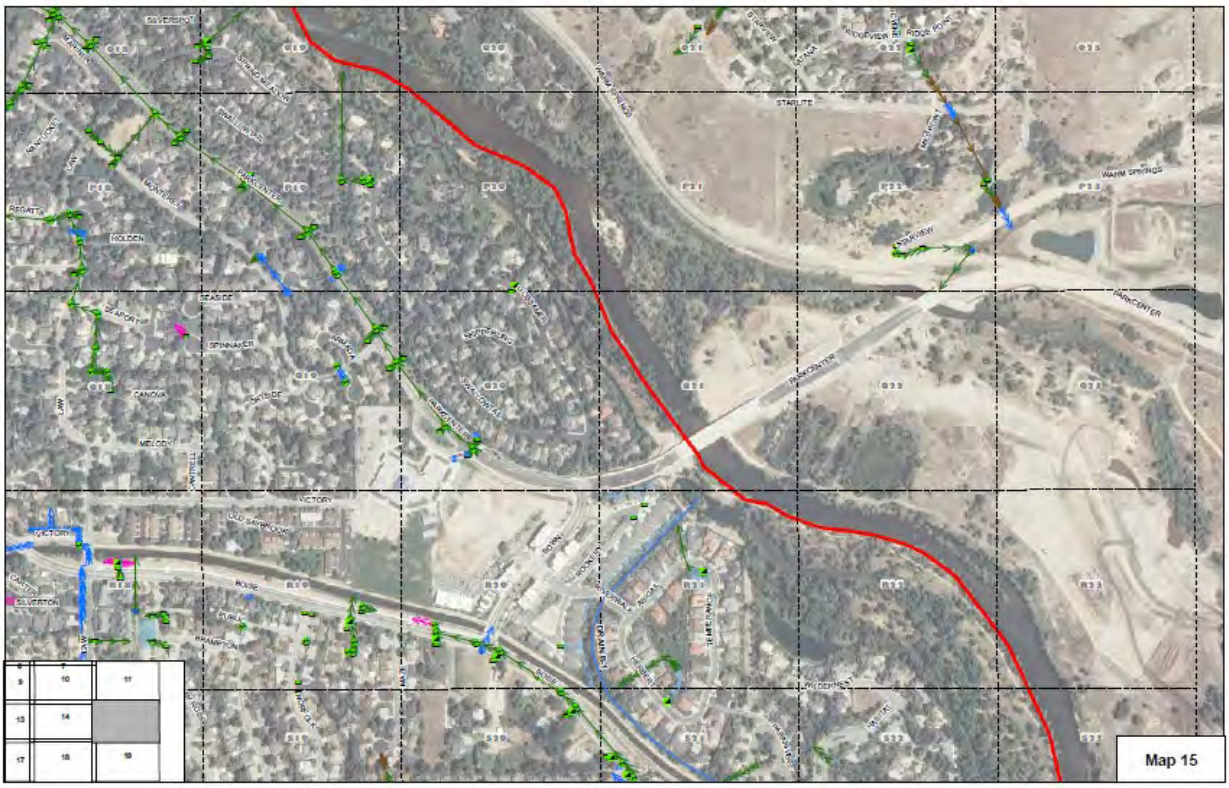

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Map 11

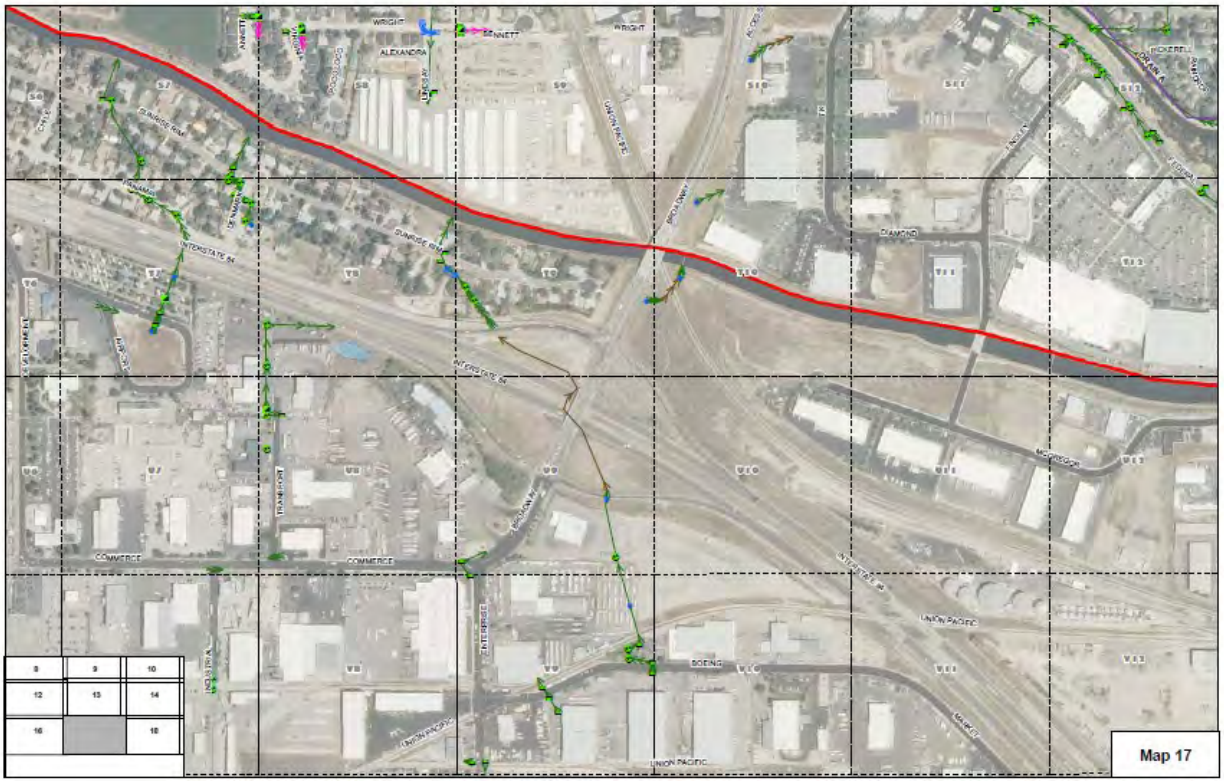

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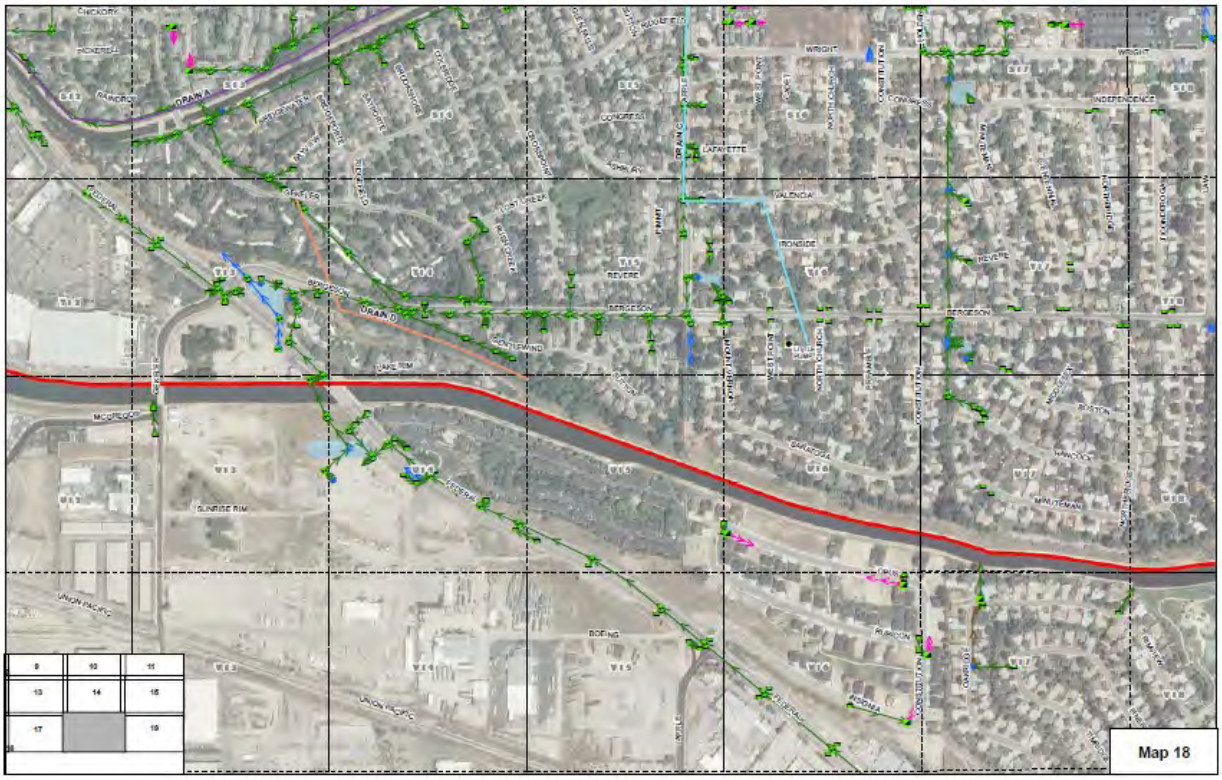

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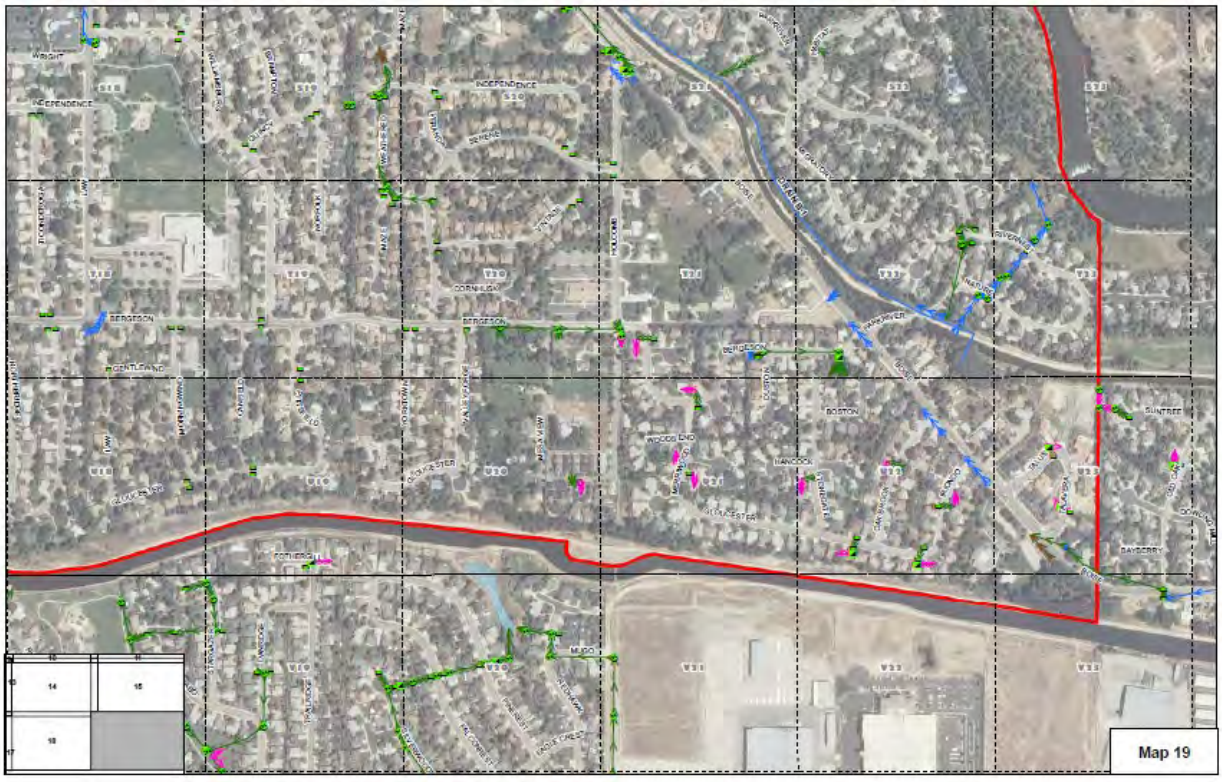

Map 14


Map 15


WRIGHT
RICKENBACKER
AIRPORT
INTERSTATE 64
ROBINSON
COMMERCE
Map 16


WRIGHT
ALEXANDRA
BENNETT
SUNRISE RIM
INTERSTATE 64
UNION PACIFIC
DIAMOND
COMMERCE
BOEING
Map 17


Map 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

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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 October 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.

Attachment L
NPDES Phase 1 Temperature Monitoring Approach

NPDES Phase I Temperature Monitoring Approach

Ada County Highway District

12/7/2022

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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.

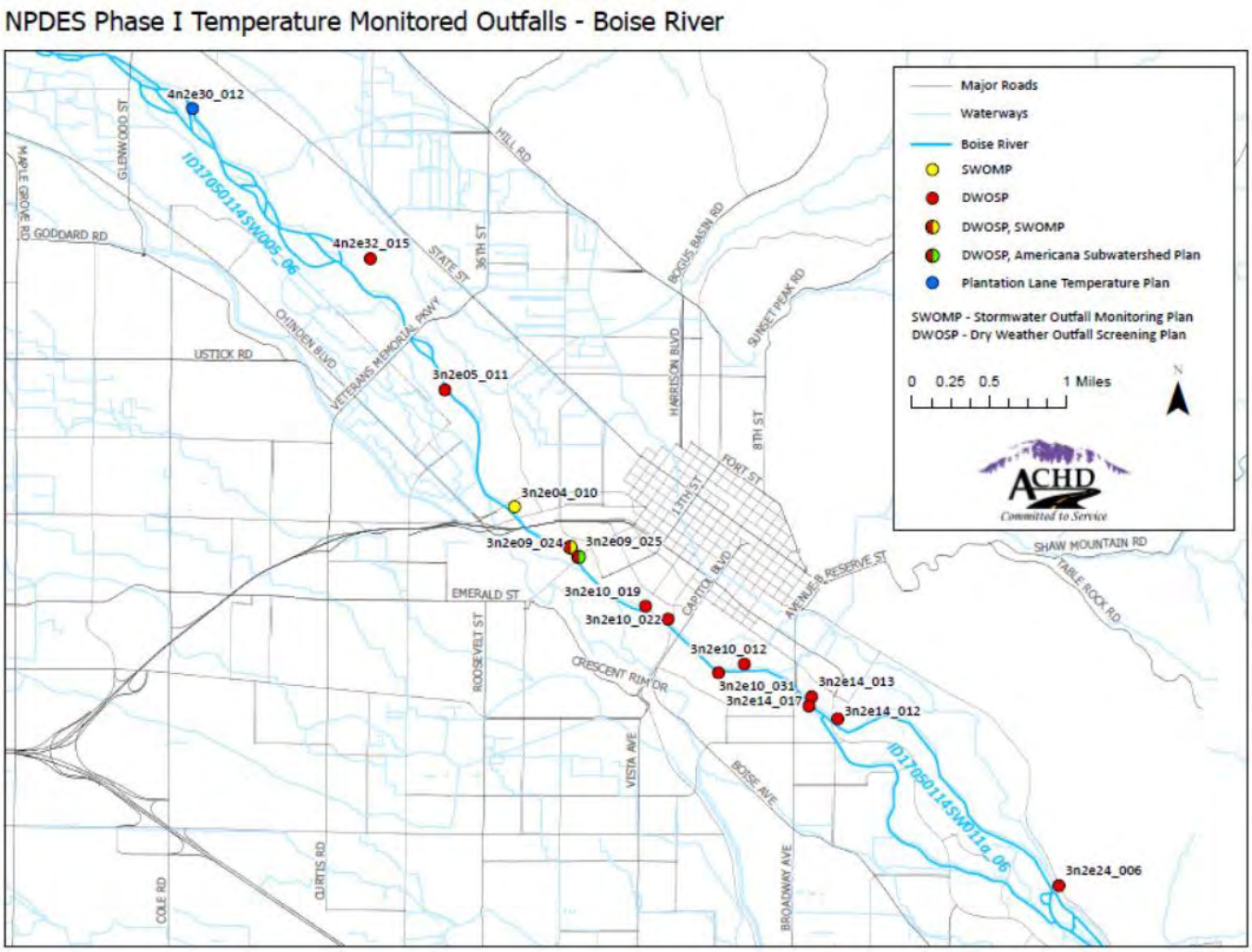


Figure 1 Temperature Monitored Outfalls

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

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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.

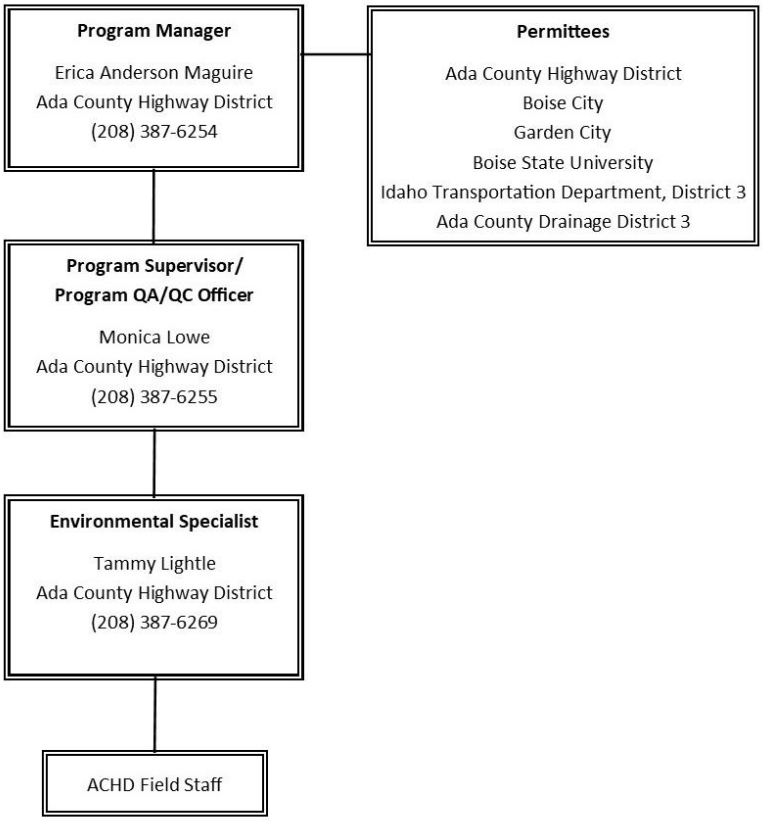


Figure 1 4n2e30_012 Temperature Monitoring Organization Chart

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*.

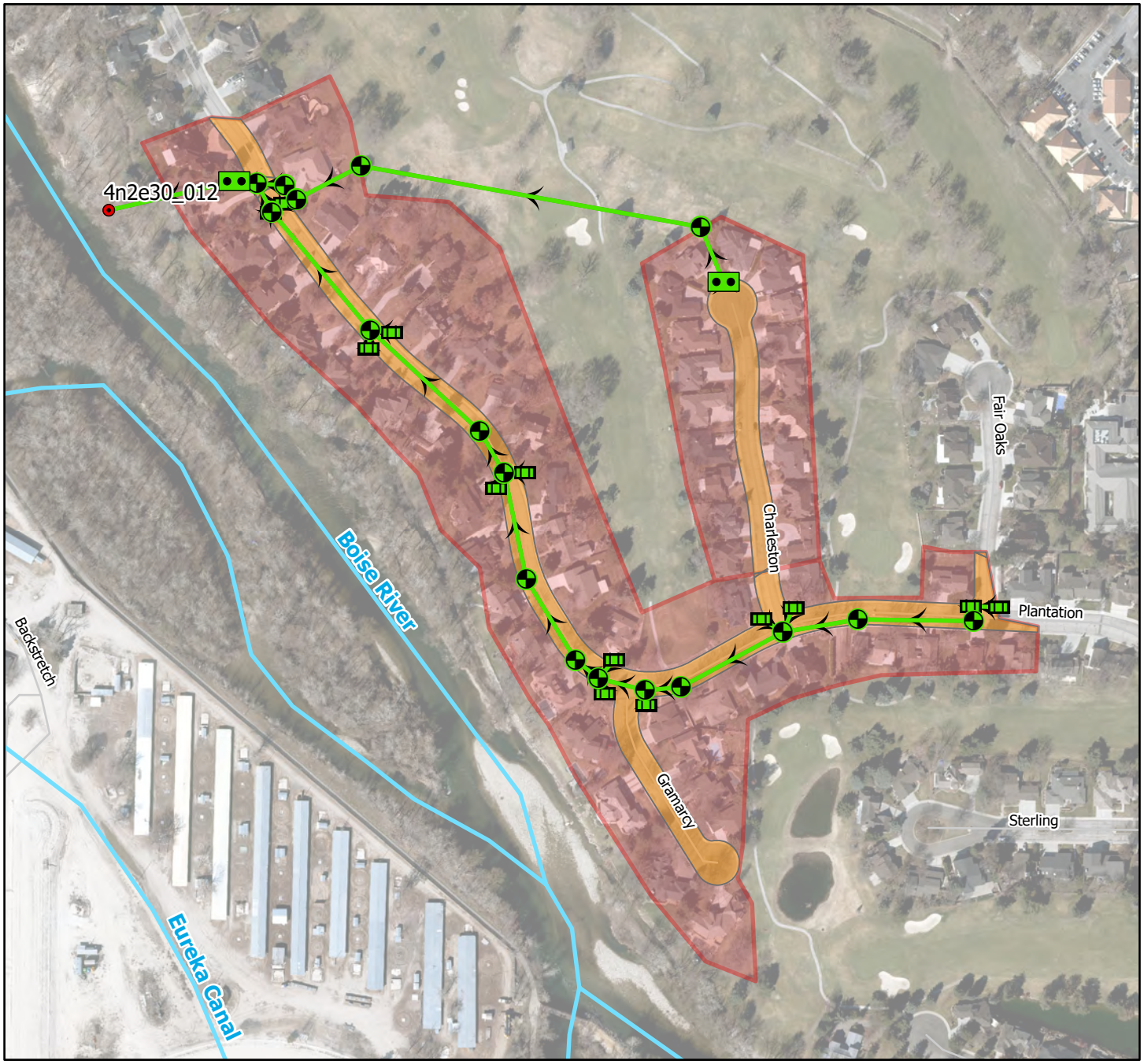
Code of Federal Regulations. (2022). *40 CFR Part 136.* Retrieved from https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-136.

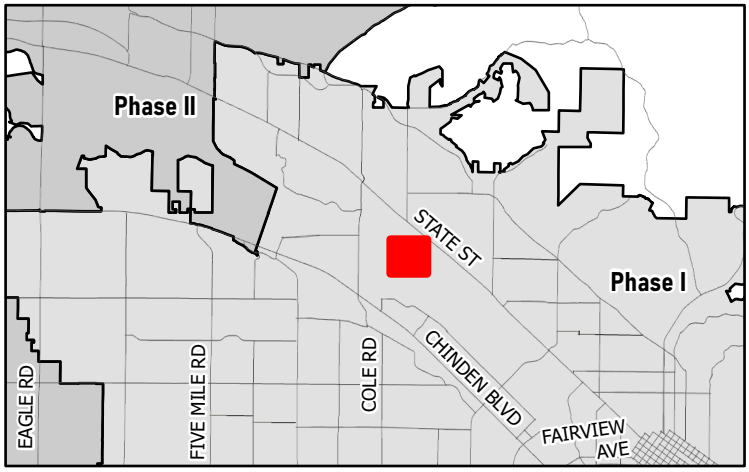
Idaho Department of Environmental Quality. (2022). *58.01.02 – Rules Regulating the Idaho Pollutant Discharge Elimination System Program.* Retrieved from https://adminrules.idaho.gov/rules/current/58/580125.pdf.

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
Storm Drain Pipe
Waterways
Roadway
Right-of-Way Drainage = 3.19 Acres
Drainage Area = 22.43 Acres

N

0 125 250 500 Feet

ACHD
Committed to Service

Attachment M
IDDE Stormwater Pollution Hotline Report

FY23 Stormwater Pollution Hotline Summary

Call recipient	Account number	Number of calls
Garden City	9015	0
Boise City	9017, 9023	17
Ada County Highway District	9018	26
Idaho Transportation Department Dist. 3	9020, 9021	0
Ada County Drainage District 3	9014	2
Boise State University	9019	0
All Other Agencies	N/A	0

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Attachment N
DD3 Manager, Dean Callen, Inspection Logs

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEANE ALLEN PAYROLL PERIOD ENDING: Oct 2022

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
10/5		Sammy Ruffalo 2425 Herbert Dr	
		Bown Crossing area. That the ditch	
		(B-1) was heavily over grown. I met	
		with her Oct 7 at the ditch. It had	
		tall grasser and some cat tails. Water was	
		moving with out a problem. I explained to	
		her as long as nothing was impeding the	
		flow of water. I didn't have a problem	
		with the ditch. If she wanted it cleaned	
		up more; She can if they haul all trimmings	15
	2 hrs	off.	
10/13		Checked and cleared all grates on	
	1 1/2	Drain A and Drain B	27
10/24	4 hrs	Clear Grate ~~@~~ on Drain C from	
		Broadway to Garfield. Clear Drain C	
		~~Intersection~~ Williams Park	25
10/31	2 hrs	Clear grates Williams Park drain C,	
		drain A Boise Ave and Chrisway	27

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: NOV 2022

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
11/4	4	CLEAR GRATE DRAIN A @ DUNCLEE. WALK AND	
		SOME LIMBS AT MANITOU PARK	
		CLEAR BOISE AVE AND CHRISWAY DRAIN GRATE	25
11/10	2	CLEAR GRATES AT WILLIAMS PARK DRAIN C	
		AND KEACVILLE, MARTHA AND CHRISWAY	25
11/17	2	SAME AS ABOVE	25
11/28	3	WILLIAMS PARK DRAIN C CHECK GRATE.	
		CHECK FOR BEAVER AND FOUND TRACKS. I	
		CALLED CRITTER RIDDERS PEST CONTROL.	
		LEFT MESSAGE. CLEAR GRATES DRAIN A	
		BOISE AVE AND CHRISWAY	25
11/30	1.5	MET WITH CRITTER RIDDER PEST CONTROL TO	
		SET TRAP FOR BEAVERS. DRAINAGE C	
		AT WILLIAMS PARK. CLEAR GRATE WILLIAMS	
		PARK. "	25
		" "	

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CAILEN PAYROLL PERIOD ENDING: DEC 2022

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
12-6	4 hrs	Check & CLEAN DRAIN A CHRISWAY,	
		MARTHA ST. And BOISE AVE and LEADVILLE	
		DRAIN B WILLIAMS PARK off PENNSYLVANIA	
		DRAIN District MEETING	27
12-15	2	SAME AS ABOVE NO MEETING	25
12-21	2	Check DRAIN B WILLIAMS PARKS AREA	25
		FOR BEAVERS. NO sign of any BEAVERS	
		CRITTER RIDDER trapped one A week ago.	
		SINCE THEN NO SIGNS. CRITTER RIDDER	
		REMOVED the TRAP. CLEANED that GRATE	
		AND DRAIN A CHRISWAY ST., MARTHA -	
		BOISE AVE and LEADVILLE	
12-26	1.5	Check DRAIN A + B	25

DRAINAGE DISTRICT NO. 3

MONTHLY TIME SHEET

NAME: DEAN CALLEN PAYROLL PERIOD ENDING: JAN 2023

DATE	TIME	DESCRIPTION OF ACTIVITIES	MILES
1-6	3	DD3 MEETING	
	2	CLEAN GRATE DITCH B @ WILLIAMS PARK AND WALKING AREA TO CHECK FOR BEAVERS. NO VISIBLE TRACKS.	
		CHECK & CLEAN GRATES @ DITCH A @ GARFIELD ST. BOISE AVE & CHRISWAY AND MARTHA ST.	25
1-11	1.5	MEETING WITH ABBY NEWBRY (ELAM & BURKE LAWYER) CLEAR GRATE DRAINAGE B @ WILLIAMS PARK. CHASE DOWN LOCATION OF WATER OUTLETS FOR	
	4.5	DEQ	30
1-20	2.5	CHECKED & CLEARED ALL DRAINAGE GRATES (GARFIELD ST, BOISE AVE, BSU TENNIS COURTS AND MARTHA ST. CHECKED AREA NEAR DRAINS FOR GARBAGE AND TREE LIMBS. SAME WITH DRAIN @ B WILLIAMS PARK	25

ADA COUNTY DRAINAGE DISTRICT NO.3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS
AND MONTHLY TIME SHEET FOR DEAN CALLEN

TOTAL TIME: 2.5 hrs

TOTAL MILEAGE: 25

Date of Maintenance/Inspection
FEB 1 2023

Location of Maint/Insp:
WILLIAMS PARK DRAIN B

Condition of Facility:
CLEARED GRATE, CUT DOWN SMALL STARTER TREES
WALKED DITCH AND CLEARED LIMBS Ditches in good condition

Notes:
SAMPLE

Date of Maintenance/Inspection
FEB 1 2023

Location of Maint/Insp:
DRAIN A BSU TENNIS COURT, BOISE AVE AND MARTHA ST

Condition of Facility:
CLEARED 3 GRATES
CLEARED SMALL FALLEN TREES OFF MARTH ST

Notes:

Date of Maintenance/Inspection

Location of Maint/Insp:

Condition of Facility:

Notes:

ADA COUNTY DRAINAGE DISTRICT NO.3 DRAIN FACILITY MAINTENANCE AND INSPECTIONS AND MONTHLY TIME SHEET FOR DEAN CALLEN		Total Time: 2 hrs Total Mileage: 25
Date of Maintenance/Inspection	Feb. 6, 2023	
Location of Maint/Insp:	Williams Park - Drain B	
Condition of Facility:	Cleared grate and stacked tree limbs cut down previous week.	
Notes:		
Date of Maintenance/Inspection	Feb. 6, 2023	
Location of Maint/Insp:	Drain A - Victory St, Boise Ave, & Marth St	
Condition of Facility:	Cleared all 3 grates and cleaned up limbs from previous week.	
Notes:		
Date of Maintenance/Inspection		
Location of Maint/Insp:		
Condition of Facility:		
Notes:		

ADA COUNTY DRAINAGE DISTRICT NO.3 DRAIN FACILITY MAINTENANCE AND INSPECTIONS AND MONTHLY TIME SHEET FOR DEAN CALLEN		Total Time: 2 hrs Total Mileage: 25
Date of Maintenance/Inspection	Feb. 15, 2023	
Location of Maint/Insp:	Williams Park - Drain B	
Condition of Facility:	Cleared trash grate. Ditch looks good.	
Notes:		
Date of Maintenance/Inspection	Feb. 15, 2023	
Location of Maint/Insp:	Drain A - Victory St, Boise Ave., & Martha St	
Condition of Facility:	These ditches are dry. No maint. Needed.	
Notes:		
Date of Maintenance/Inspection		
Location of Maint/Insp:		
Condition of Facility:		
Notes:		

ADA COUNTY DRAINAGE DISTRICT NO.3 DRAIN FACILITY MAINTENANCE AND INSPECTIONS AND MONTHLY TIME SHEET FOR DEAN CALLEN		Total Time:	2 hrs
		Total Mileag	25 miles
Date of Maintenance/Inspection	March 3 2023		
Location of Maint/Insp:	Drain B Wiliams Park Clear trash grate		
Condition of Facility:	Ditch is clean very little leaves or limbs		
Notes:			
Date of Maintenance/Inspection	March 3 2023		
Location of Maint/Insp:	Drain A At BSU's tennis courts, Victory St,Chis Way and Martha St		
Condition of Facility:	Ditches needs some trash remove limbs needed timed. Little bit of spring cleaning.		
Notes:			
Date of Maintenance/Inspection			
Location of Maint/Insp:			
Condition of Facility:			
Notes:			

ADA COUNTY DRAINAGE DISTRICT NO.3 DRAIN FACILITY MAINTENANCE AND INSPECTIONS AND MONTHLY TIME SHEET FOR DEAN CALLEN		Total Time:	2.5 hrs
		Total Mileag	25 miles
Date of Maintenance/Inspection	March 15 2023		
Location of Maint/Insp:	Inspect Drain B Clear trash grate at Williams Park		
Condition of Facility:	Ditch B is in good condition. Lots of Pine needles to clean up near William Park		
Notes:			
Date of Maintenance/Inspection	March 15 2023		
Location of Maint/Insp:	Run drainage ditch A cleared branches and trash Cleared trash grates at Chris way and Martha t		
Condition of Facility:			
Notes:			
Date of Maintenance/Inspection			
Location of Maint/Insp:			
Condition of Facility:			
Notes:			

ADA COUNTY DRAINAGE DISTRICT NO.3 DRAIN FACILITY MAINTENANCE AND INSPECTIONS AND MONTHLY TIME SHEET FOR DEAN CALLEN		Total Time:	2.5 hrs
		Total Mileag	27

Date of Maintenance/Inspection 30-Mar
Location of Maint/Insp: Williams Park Drain B
Condition of Facility: Clear trash grate. No blockage ditc on ditch a little over growth All looks real good
Notes:
Date of Maintenance/Inspection 30-Mar
Location of Maint/Insp: Drain A BSU Tennis courts,Bois ise Ave - Protest St and Chrisway st.
Condition of Facility: Bsu Tennis courts look good. Drain along Boise Ave needs some brush remove and some small trees removed
Notes:
Date of Maintenance/Inspection
Location of Maint/Insp:
Condition of Facility:
Notes:

ADA COUNTY DRAINAGE DISTRICT NO.3 DRAIN FACILITY MAINTENANCE AND INSPECTIONS AND MONTHLY TIME SHEET FOR DEAN CALLEN		Total Time:	3.5 hrs
		Total Mileag	25 miles
Date of Maintenance/Inspection	14-Apr-23		
Location of Maint/Insp:	Drain B Williams Park		
Condition of Facility:	Drain B is real good shape vary little water and very little clean up needed		
Notes: n			
Date of Maintenance/Inspection	14-Apr-23		
Location of Maint/Insp: Chris Way	Drain B behind BSU tennis courts,Boise Ave-Joyce ST,		
Condition of Facility:	Low Water not a lot of trash or debris in drain B. Some clean up needed.		
Notes:			
Date of Maintenance/Inspection			
Location of Maint/Insp:			
Condition of Facility:			
Notes:			

ADA COUNTY DRAINAGE DISTRICT NO.3 DRAIN FACILITY MAINTENANCE AND INSPECTIONS AND MONTHLY TIME SHEET FOR DEAN CALLEN		Total Time:	2.2 hrs
		Total Mileag	25
Date of Maintenance/Inspection	17-Apr-23		
Location of Maint/Insp:	Drain A Williams Park From Apple St to Pennsylvania		
Condition of Facility:	Very little water ditch looks good		
Notes:			
Date of Maintenance/Inspection	17-Apr-23		
Location of Maint/Insp: Chris Way	Drain B all All grates where cleared onJoyce		
Condition of Facility:	Drain B is in good condition		
Notes:			
Date of Maintenance/Inspection			
Location of Maint/Insp:			
Condition of Facility:			
Notes:			

ADA COUNTY DRAINAGE DISTRICT NO.3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS
AND MONTHLY TIME SHEET FOR DEAN CALLEN

Total Time:	2.5 hrs
Total Mileag	25

Date of Maintenance/Inspection

May 4 2023

Location of Maint/Insp:

Drain B
iliams Park

Condition of Facility:

Ditch a lot of water, trash grate was full. Drain B is in great condition.

Notes:

Date of Maintenance/Inspection

May 4 2023

Location of Maint/Insp:

Drain a off Victory & Braodway,Behind BSU Tennis courts,Boise near Protest Rd. and Chris Way.

Condition of Facility:

All Drain A is running good. May need to have culvert at 2158 Boise Ave flushed again. Seems to be running slow. Will call Master Plumper to check it out.

Notes:

Date of Maintenance/Inspection

Location of Maint/Insp:

Condition of Facility:

Notes:

ADA COUNTY DRAINAGE DISTRICT NO.3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS
AND MONTHLY TIME SHEET FOR DEAN CALLEN

Total Time:	3 hrs.
Total Mileag	27

Date of Maintenance/Inspection
May 11 2023

Location of Maint/Insp:
Drain B Wiliams Park area

Condition of Facility:
Drain B is in real good condition

Notes:

Date of Maintenance/Inspection May 11 2023

Location of Maint/Insp:
Drain A Victory St & Broad Way,Protest & Boise Ave,and Chris Way

Condition of Facility:
Ditch along Boise Ave still running slow. Water is not backing so far.

Notes:
aster Plumper will meet with me in June.

Date of Maintenance/Inspection

Location of Maint/Insp:

Condition of Facility:

Notes:

ADA COUNTY DRAINAGE DISTRICT NO.3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS
AND MONTHLY TIME SHEET FOR DEAN CALLEN

Total Time: 3 hrs

Total Mileag 27

Date of Maintenance/Inspection
May 21 2023

Location of Maint/Insp:
DRAIN B williams Park

Condition of Facility:
Water running good no problems

Notes:

Date of Maintenance/Inspection
May 21 2023

Location of Maint/Insp:
Drain A
Manitou Park, BSU Tennis courts.Boise Ave & Protest ST., Chris Way and Martha St

Condition of Facility:
All in all the ditch is flowing good.

Notes:

Date of Maintenance/Inspection

Location of Maint/Insp:

Condition of Facility:

Notes:

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	6-29-23 miles 34 hrs 3.5
Location of Maintenance/Inspection:	DRAIN B-1 RIVERPARK
Condition of Facility:	Ditch on EAST SIDE of ROAD NEEDS RASPBERRIES AND WEEDS CLEANED UP. TREES NEED TRIMED
Notes:	I will get bids
Date of Maintenance/Inspection:	6-29-23
Location of Maintenance/Inspection:	DRAIN B WILLIAMS PARK
Condition of Facility:	CLEARED TRASH GRATE The ditch is flowing great
Notes:	
Date of Maintenance/Inspection:	6-29-23
Location of Maintenance/Inspection:	DRAIN A CLEARED ALL GRATES Victory St, BSU Tennis Courts, Joyce St, Martha St
Condition of Facility:	Ditch is flowing steady
Notes:	

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ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	7-12-23 MILEAGE 31 TIME 3.5 hrs
Location of Maintenance/Inspection:	DRAIN Ditch B-1 ~~R~~ PARK RIVER St. to BON CROSSING
Condition of Facility:	VERY little WATER flowing this ditch is ALMOST level so WATER doesn't flow very fast
Notes:	
Date of Maintenance/Inspection:	7-12-23
Location of Maintenance/Inspection:	DITCH A from Apple St. to Capitol Blvd
Condition of Facility:	ALL trash grate have been cleared WATER is flowing well
Notes:	TRASH GRATES VICTORY & BROADWAY, Dundee St, Barfield St. BSU TENNIS Courts, Joyce St and MARTHA St.
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:	7-18-23 Time 3.5 Mileage 31
Location of Maintenance/Inspection:	DRAINAGE Ditch B-1 PARK RIVER to BON CROSSING
Condition of Facility:	WATER Flowing SLOW
Notes:	Ditch is pretty level
Date of Maintenance/Inspection:	7-18-23
Location of Maintenance/Inspection:	DRAINAGE DITCH A CLEAR ALL GRATES DUNBEE ST, GARFIELD, VICTORY ST, JUANITA ST. AND MARTHA
Condition of Facility:	MARTHA ST HAD TO CLEAR LAWN TREES JUANITA ST cut SMALL TREES.
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:	7-21-23 Time 2.5 Mileage 22.5
Location of Maintenance/Inspection:	DRAINAGE B William Park Area
Condition of Facility:	Cleared trash grate Low water flowing well
Notes:	
Date of Maintenance/Inspection:	7-21-23
Location of Maintenance/Inspection:	DRAIN A Victory St, Dundee St, Garfield St, Juanita and Martha St
Condition of Facility:	Finish clearing small trees Stacking in pile for pick-up take to dump.
Notes:	Need to clean area when water is out.
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:	7-24-23 Time 2 hrs Mileage 26
Location of Maintenance/Inspection:	DRAIN B NEAR WILLIAMS PARK
Condition of Facility:	CLEARED TRASH GRATE ditch is in great CONDITION!
Notes:	
Date of Maintenance/Inspection:	7-24-23
Location of Maintenance/Inspection:	DRAIN A Victory - MARTHA St - Joyce St.
Condition of Facility:	Low water Ditches are running slow
Notes:	Pick-up Limbs @ Joyce St and Victory
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:	7-31-23 Time 2.5 hrs Mileage 28
Location of Maintenance/Inspection:	DRAIN B Williams Park
Condition of Facility:	Cleared trash grate ditch is in good shape
Notes:	
Date of Maintenance/Inspection:	7-31-23
Location of Maintenance/Inspection:	DRAIN A Victory St., Garfield St., Joyce And Martha
Condition of Facility:	TRASH GRATES ARE CLEAN LOW WATER ALL ARE Running good.
Notes:	
Date of Maintenance/Inspection:	
Location of Maintenance/Inspection:	
Condition of Facility:	
Notes:	

Supply For Chainsaw

-----Customer Copy-----

D&B Supply Inc
680 E. Boise Ave
Boise, ID 83706
208-472-7252
Manager: Darrel Willis

956357 5/32IN 3PK CHAIN FILE 9.99 T

Taxable Subtotal	9.99
NonTax Subtotal	0.00
Tax	0.60
Total	10.59
Auth: 737139 CRED CARD: DE 4498	10.59

TransID: 559103853
Trn Type: SALE
Entry Mode: CHIP
App:
AID: A0000000980840
TC: 978AEC1119556105
PIN VERIFIED
Cardholder: CALLEN/DEAN
I AGREE TO PAY ABOVE TOTAL AMOUNT
ACCORDING TO THE CARD ISSUER AGREEMENT.

Change 0.00

Str:14 Trn:39391 Reg:6 Ver:5.5.4.161
Date: 7/17/2023 Time: 11:54:40 AM
Associate:213670

-----Customer Copy-----

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	8-4-23 Hours 4.5 Mileage 31
Location of Maintenance/Inspection:	DD3 MEETING 2hrs
Condition of Facility:	
Notes:	
Date of Maintenance/Inspection:	8-4-23
Location of Maintenance/Inspection:	DRAIN B CLEARED TRASH GRATE William PARK AREA
Condition of Facility:	DRAIN B CLEAR RUN good
Notes:	
Date of Maintenance/Inspection:	8-4-23
Location of Maintenance/Inspection:	DRAIN A. Victory St, Janita St, MARTHA ST. and CHRISWAY
Condition of Facility:	MARTHA AND CHRISWAY NEED LIMBS TRIMED AND HAULED OFF
Notes:	

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	8-8-23 HOUR 2.5 MILEAGE 30
Location of Maintenance/Inspection:	DRAIN A MARTHA ST AND CHRISWAY TRIMED LIMBS AND STACKED UP FOR HAULING
Condition of Facility:	WATER FLOWING GREAT
Notes:	
Date of Maintenance/Inspection:	8-8-23
Location of Maintenance/Inspection:	DRAIN A VICTORY ST, DUNDEE ST. GARFIELD ST. AND MARTHA ST.
Condition of Facility:	CLEARED UP TRASH GRATE AND DITCHES FLOWING WELL
Notes:	
Date of Maintenance/Inspection:	8-8-23
Location of Maintenance/Inspection:	DRAIN B ~~VICTORY~~ WILLIAM PARK
Condition of Facility:	CLEARED TRASH GRATES
Notes:	

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	8-14-23 Mileage 30 Hours 3.5
Location of Maintenance/Inspection:	DRAIN B Williams Park
Condition of Facility:	Cleared grate water is flowing well.
Notes:	
Date of Maintenance/Inspection:	8-14-23
Location of Maintenance/Inspection:	DRAIN A Victory St, Dundee St Garfield St. Janita St. Clear nilgrates Martha St. Chrisway
Condition of Facility:	Clean-up and stack branches for pick-up and take to dump
Notes:	Will pick-up branches ~~when~~ when water is off. for winter.
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:	8-17-23 Mileage 27 Hours 2.5
Location of Maintenance/Inspection:	DRAIN B Williams Park Clear trash grates. Stack and haul branches off.
Condition of Facility:	Ditch is clean and running good
Notes:	
Date of Maintenance/Inspection:	8-17-23
Location of Maintenance/Inspection:	DRAIN A Victory St. - Juanita St. - Martha St
Condition of Facility:	Clean grates water is running slow. Caused by driveway culver need replaced.
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:	8-21-23 Mileage 27 Hours 2.5
Location of Maintenance/Inspection:	DRAIN A Victory St. - Dundee St. Martha St
Condition of Facility:	Victory St area. flowing good Martha St. flowing slow
Notes:	
Date of Maintenance/Inspection:	8-21-23
Location of Maintenance/Inspection:	DRAIN B Williams Park
Condition of Facility:	All is pretty clear and 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:	8-24-23 Mileage 27 Hours 2.5
Location of Maintenance/Inspection:	DRAIN B Williams Park
Condition of Facility:	Clear trash grates flows well
Notes:	
Date of Maintenance/Inspection:	8.24.23
Location of Maintenance/Inspection:	DRAIN A. Victory St - Garfield St. - Martha St.
Condition of Facility:	water flowing slow most of ditch look 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:	9-5-23 Mileage 31 hours 3
Location of Maintenance/Inspection:	DRAIN B Williams PARK AREA
Condition of Facility:	Ditch is CLEAR Running great
Notes:	
Date of Maintenance/Inspection:	9.5.23
Location of Maintenance/Inspection:	DRAINAGE AB Victory St. Garfield St. Joyce St And Martha St.
Condition of Facility:	DRIVE WAY CULVERTS AROUND 2195 BOISE AVE NOT flowing FREE. TREE ROOTS AND debris
Notes:	slowing water flow. All others flowing good.
Date of Maintenance/Inspection:	9-8-23 Hours 3 1/2 Mileage 15
Location of Maintenance/Inspection:	DD3 MEETING And Ditch TOUR
Condition of Facility:	
Notes:	

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ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	9-12-23 Hours 2 1/2 Mileage 28
Location of Maintenance/Inspection:	DRAIN B CLEAR TRASH GRATE
Condition of Facility:	DRAIN B IN GREAT SHAPE
Notes:	
Date of Maintenance/Inspection:	9-12-23
Location of Maintenance/Inspection:	DRAIN A Victory St. - BSU Tennis courts - Mart Ha St.
Condition of Facility:	All Area are run 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:	9/14/23 Hours 2.5 Mileage 29
Location of Maintenance/Inspection:	DRAIN B Williams Park
Condition of Facility:	Clean trash grate. Ditch flowing good
Notes:	
Date of Maintenance/Inspection:	9/14/23
Location of Maintenance/Inspection:	DRAIN B Victory St. - Joyce St. - Martha St
Condition of Facility:	
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:	9/19/23 Mileage 33 Hours 2.5
Location of Maintenance/Inspection:	DRAIN A Victory St. - BSU Tennis Ct. - Market St
Condition of Facility:	Clear trash grates Normal water flow all OK
Notes:	
Date of Maintenance/Inspection:	9/19/23
Location of Maintenance/Inspection:	DRAIN B Williams Park
Condition of Facility:	Clear trash grate ditch is in good condition
Notes:	
Date of Maintenance/Inspection:	9/19/23
Location of Maintenance/Inspection:	DRAIN B-1 River Park All waters running good
Condition of Facility:	
Notes:	

ADA COUNTY DRAINAGE DISTRICT NO. 3
DRAIN FACILITY MAINTENANCE AND INSPECTIONS

Date of Maintenance/Inspection:	9-22-23 Mileage 29 Hours 2.5
Location of Maintenance/Inspection:	DRAIN A Victory Ln - BSU Tennis - Joyce - Martha St.
Condition of Facility:	All ditches are flowing slow.
Notes:	Will camera culvert at Joyce this fall
Date of Maintenance/Inspection:	92223
Location of Maintenance/Inspection:	DRAIN B Williams Park Area
Condition of Facility:	Ditches are clear running good
Notes:	Need to trim some tree over hang
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:	9-26-23 Mileage 29 Hours 2.5
Location of Maintenance/Inspection:	DRAIN A Victory St. - BSU Courts - Joyce St. - Marth St.
Condition of Facility:	All trash grates clean Water flowing well
Notes:	
Date of Maintenance/Inspection:	9-26-23
Location of Maintenance/Inspection:	DRAIN B Williams Park Area
Condition of Facility:	Water low and 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:	9-29-23 Mileage 30 Hours 2.5
Location of Maintenance/Inspection:	DRAIN A Victory St - Garfield St - Joyce ST. - Martha
Condition of Facility:	CLEAR ALL TRASH GRATES
Notes:	
Date of Maintenance/Inspection:	9-29-23
Location of Maintenance/Inspection:	DRAIN B Williams Park AREA All CLEAR
Condition of Facility:	
Notes:	
Date of Maintenance/Inspection:	
Location of Maintenance/Inspection:	
Condition of Facility:	
Notes:	

Attachment O
Spill Response and Household Hazardous Wastes Controls



ACHD SPILL RESPONSE PLAN

October 2023

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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 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 (< 1 cu.ft.)
- 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: 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.**

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

Kent Goldthorpe, President
Paul Woods, Vice President
Rebecca W. Arnold, Commissioner
Sara M. Baker, Commissioner
Jim D. Hansen, Commissioner

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

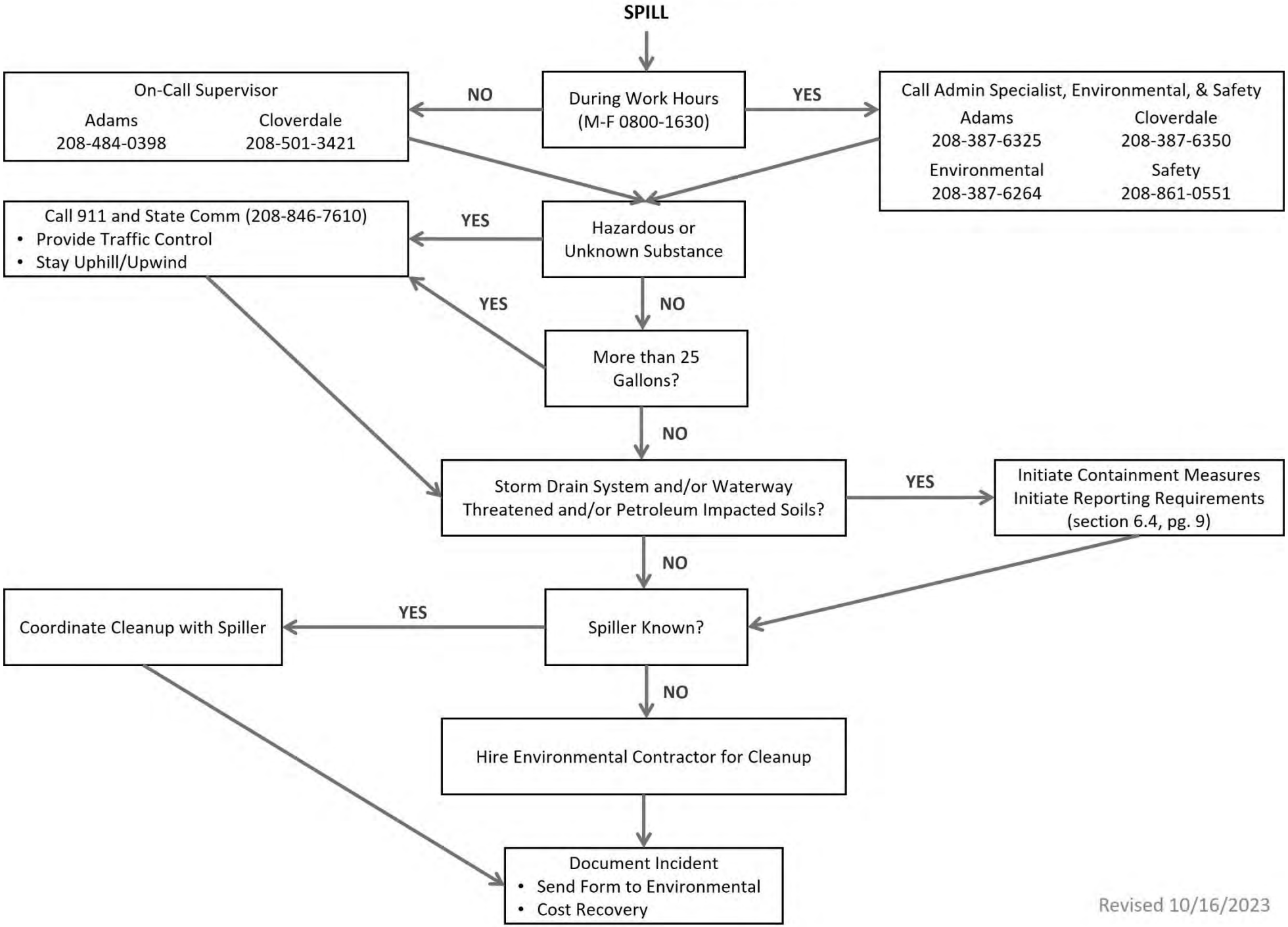
Sara M. Baker, Commissioner

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**
- Ray McVey - District Manager	(208) 449-2407 (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

Revised 3/21/2023

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

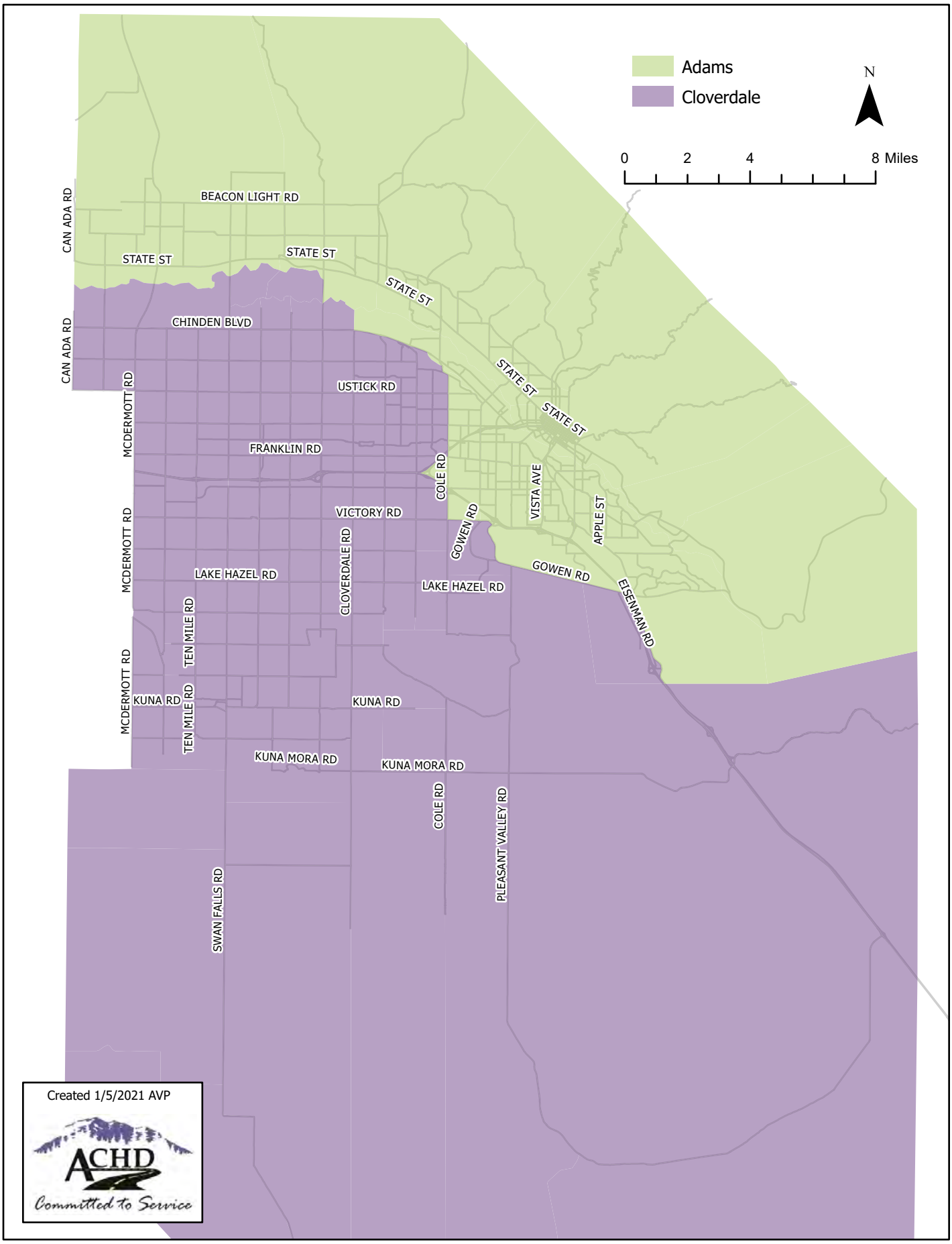
ABBR:	DRAINAGE DISTRICTS:	CONTACT	PHONE	FAX	EMERGENCY (24/7)	NOTES
DD2	Drainage District No. 2 & 4 (combined as No.2)	Allen Funkhouser (will retire by 12/31/21)	(208) 571-3804	NA	(208) 571-3804	District Canals
DD3	Drainage District No. 3	Dean Callen	(208) 602-1713	NA	NA	District Drains
DD2	Drainage District 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

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

Alexis Pickering, President
Jim D. Hansen, Vice President
Kent Goldthorpe, 2nd Vice President
Dave McKinney, Commissioner
Miranda Gold, Commissioner

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: ☐

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 collection sites. Residents may take Household Hazardous Waste to any mobile collection site or the Household Hazardous Waste Facility. There is no charge to residential customers. Additional service is available to elderly and physically challenged residents who are unable to transport hazardous materials to a collection site.

Materials accepted at all Household Hazardous Waste 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 2023, approximately 1,055,523 lbs of material were collected from the county-wide HHW program. Approximately 603,366 lbs of material were collected from Boise-area mobile HHW collection sites specifically. 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 into the HHW program that meet certain criteria are made available to the public free of charge in the "Reuse Area" located at the Household Hazardous Waste 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 Conditionally Exempt Small Quantity Generator (CESQG) 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 and qualify as Conditionally Exempt manage those materials through the CESQG Program. The CESQG program is operated out of the Household Hazardous Waste Facility at the Ada County Landfill.

Attachment P
Americana Subwatershed Monitoring Summary WY 2023

Americana Subwatershed Monitoring Summary Report

Water Year 2023

Prepared by
Brown and Caldwell

Prepared for
Ada County Highway District
December 20, 2023

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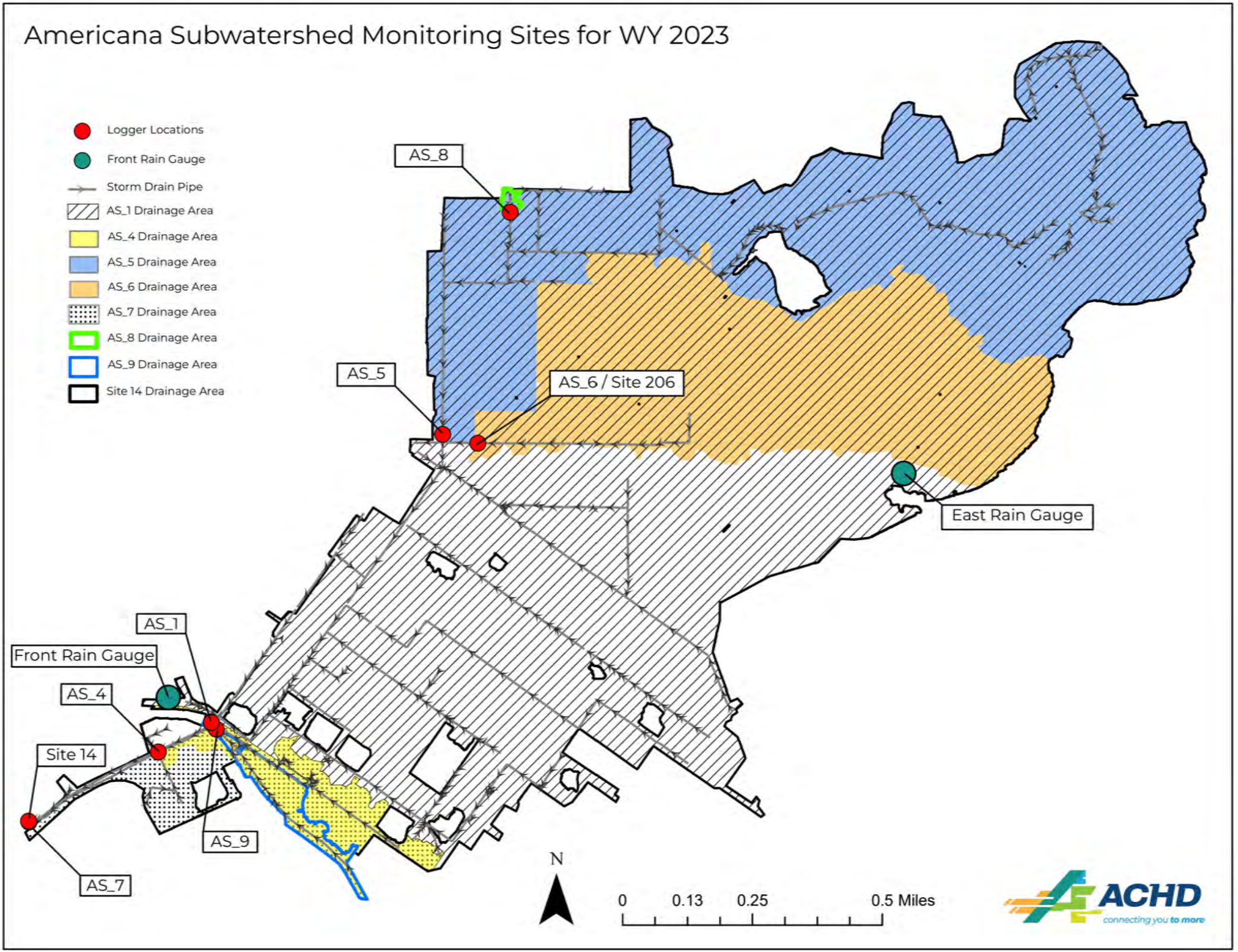
Section 1: Introduction

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 #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 6.2.2, *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) 2023 (October 1, 2022–September 30, 2023).

In WY 2023, 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 eight 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.

Figure 1


Americana Subwatershed Monitoring Sites for WY 2023
Logger Locations
Front Rain Gauge
Storm Drain Pipe
AS_1 Drainage Area
AS_4 Drainage Area
AS_5 Drainage Area
AS_6 Drainage Area
AS_7 Drainage Area
AS_8 Drainage Area
AS_9 Drainage Area
Site 14 Drainage Area
AS_8
AS_5
AS_6 / Site 206
East Rain Gauge
AS_1
Front Rain Gauge
AS_4
Site 14
AS_9
AS_7
N
0
0.13
0.25
0.5 Miles
ACHD
connecting you to more

Section 2: Monitoring Sites, Equipment, and Sample Types

Data was collected at the following monitoring sites during WY 2023: AS_1, AS_4, AS_5, AS_6, 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.

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 setup 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 the AS_5 site. Past data from AS_5 subwaterhed has shown that the AS_5 subwatershed is not a source of dry weather flow, with the exception of Hull's Gulch influence during high flow. 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_4 representing the upstream portion of the AS_9 subwatershed.

The AS_6 logger site was discontinued in the second quarter of WY2023, however site 206 still collects flow and water quality data during targeted storm events.

AS_1, AS_4, AS_5,AS_6, 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.

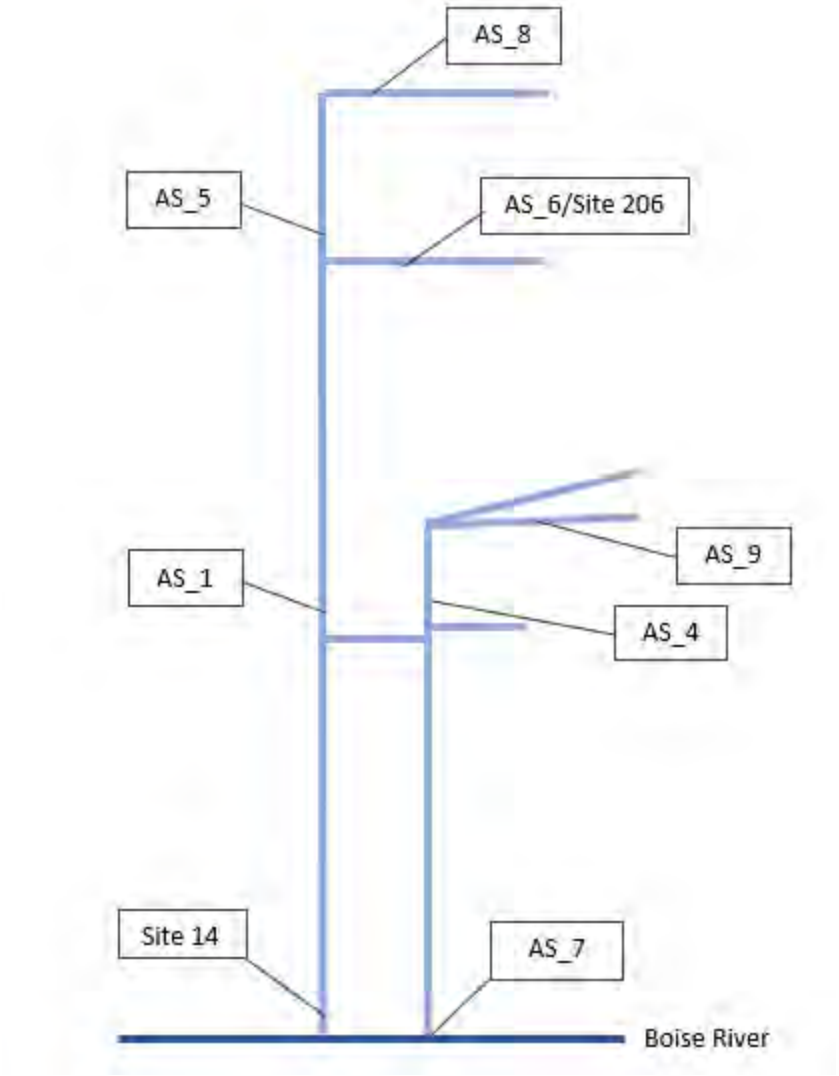


Figure 2. Conceptual Layout of Monitoring Sites

2.1 Water Quality Sample Types

The sample types collected during WY 2023 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 the discharge stream using a swing sampler. The grab samples were submitted to the Boise City Water Quality Laboratory 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 Boise City Water Quality Laboratory 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; total phosphorus; orthophosphate, as P; ammonia; nitrate + nitrite; total Kjeldahl nitrogen (TKN); total arsenic; dissolved and total cadmium; dissolved and total copper; dissolved and total lead; dissolved and 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 2023 data.

3.1 Water Level Monitoring Results

For WY 2023, water level data from eight monitoring sites (AS_1, AS_4, AS_5, AS_6, 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 2023. 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.
- Concurrent water level increases and decreases were observed at AS_1, AS_4, AS_7, and Site 14. Using the conceptual pipe layout in Figure 2 as a reference, it becomes apparent that there must be another piped connection between the AS_1 and AS_4 subcatchments.
- Extended periods of non-stormwater flow originating from AS_1 subcatchment (which includes downtown Boise) occurred on the following dates:
  - October 17, 2022–January 30, 2023 (approx. 105 days)
  - January 31, 2023–February 2, 2023 (approx. 2 days)

  - February 2, 2023–February 10, 2023 (approx. 7 days)
  - February 18, 2023–February 20, 2023 (approx. 3 days)
  - February 20, 2023–February 25, 2023 (approx. 5 days)
- Extended periods of non-stormwater flow originating from AS_8 subcatchment occurred on the following dates:
  - March 14, 2023–March 24, 2023 (approx. 10 days)
  - March 30, 2023–March 31, 2023 (approx. 1 day).
  - April 10, 2023–April 13, 2023 (approx. 3 days).
  - September 15, 2023 (approx. 9.5 days)

  The non-stormwater source is likely snow melt in Hull's Gulch.
- No sudden water level increase or decrease was observed at AS_9. There are extended periods of non-stormwater flow originating from the AS_9 subcatchment detailed below. After the installation of the AS_9 monitoring point there continued to be sudden water level fluctuations originating from the AS_4 subcatchment.
- Extended periods of non-stormwater flow originating from the AS_9 subcatchment occurred on the following dates:
  - July 26, 2023–August 15, 2023 (approx. 19 days)
- Extended periods of non-stormwater flow originating from Site 14 subcatchment occurred on the following dates:
  - April 20, 2023–April 25, 2023 (approx. 5 days)
  - April 25, 2023–May 19, 2023 (approx. 24 days)

  The non-stormwater source from April through June is likely from the Boise River surcharge.
- Non-stormwater discharge originated from the AS_7 subcatchment 64 times.
  - Quarter 1 and quarter 2 had no fluctuations of AS_7 independently (no other concurrent fluctuations with other monitoring points) observed.
  - In quarter 3 there were 16 anomalies observed generally occurring between 0000-0100 (93%) with no anomalies occurring on Fridays.
  - In quarter 4 there were 48 anomalies observed generally occurring between 0000-0200 (88%) with no anomalies occurring on Fridays.
  - During routine field work it was noted that flow was being recorded when there was no flow observed in the pipe.
  - Possible debris on the sensor was noted during quarter 4.
  - Troubleshooting of the equipment is recommended to determine if equipment error is the source of the observed fluctuations.

3.2 Water Quality Monitoring Results

During WY 2023, 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 six 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
10/22/22	Grab, composite [a]	Grab, composite [a]
01/09/23	Grab [b]	Grab [b]
03/10/23	Grab	Grab, composite [c]
03/29/23	Grab, composite	Grab, composite [c]
05/05/23	–	Composite
08/21/23	Composite	Composite

– No data

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

[b] Data rejected due to insufficient rainfall (< 0.08 inch).

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

3.2.1 Grab Samples

Paired grab samples were collected from Site 14 and Site 206 on October 22, 2022, and March 29, 2023. They were analyzed for *E. coli*, temperature, pH, dissolved oxygen, and conductivity. Notable conclusions from each storm event are provided below.

October 10, 2022

- *E. coli* at Site 206 was 1.5 times higher than at Site 14.

October 22, 2022

- *E. coli* at Site 206 was two times higher than at Site 14.

March 29, 2023

- *E. coli* at Site 206 was nearly five times higher than at Site 14.

3.2.2 Composite Samples

Paired composite samples were collected from Site 14 and Site 206 on March 29, 2023, and August 21, 2023. Due to low composite sample volume, the March 29, 2023, composite from Site 206 was not analyzed for TSS.

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.

$$\frac{pollutant\ load\ (lbs) from\ subcatchment}{pollutant\ load\ (lbs) from\ outfall} > \frac{discharge\ volume\ (cf) from\ subcatchment}{discharge\ volume\ (cf) from\ outfall}$$

$$IF$$

$$THEN$$

$$pollutant\ load\ from\ subcatchment\ is\ disproportionately\ high$$

The percent contribution of pollutant load and the percent contribution of discharge volume was calculated for both Site 206 and Site 14 from each storm event (Figures 7 and 8). The graphs include a vertical orange line indicating the value for the percent of discharge. Constituent loads that exceed the red line are disproportionately high. Noteworthy outcomes from each paired storm event are presented below.

March 29, 2023

- Load contributions from Site 206 were disproportionately high for most constituents except for the following parameters: hardness as $CaCO_3$, nitrate + nitrite as N, total arsenic, and total mercury.
- The percent pollutant load from Site 206 was between 2.5 to 3.0 times higher than the percent discharge volume for the following parameters: total phosphorus, orthophosphate as P, and 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: BOD_5, and COD.
- 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: TKN, total cadmium, and total lead.
- TSS was not evaluated as the TSS parameter was not analyzed by the lab due to incomplete water quality analysis due to low composite sample volume.

August 21, 2023

- Load contributions from Site 206 were disproportionately high for most constituents except for the following parameters: hardness as $CaCO_3$, ammonia as nitrogen, nitrate + nitrite as N and total cadmium.
- The percent of BOD_5 load from Site 206 was approximately 4 times higher than the percent of discharge volume.
- 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: COD, total phosphorus, and orthophosphate as P.
- 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 dissolved solids, TKN, and dissolved lead.

- 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: TSS, dissolved cadmium, dissolved copper, and total mercury.

Tables

Table 1. Monitoring Site Information

Table 2. Field and Analytical Data Summary

Table 3. Event Pollutant Loading Estimates in Pounds

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 St	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	11/7/2023	
												HOBO Logger SN: 20029105	11/7/23	NA	Logger installed downstream of manhole with conduit facing downstream
												ISCO 2150 Flowmeter (FL-21)	10/25/2019	1/24/2020	
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 St	AS_4	43°37'4.63"N 116°13'0.20"W	J5567	35568	29	23	42	concrete	0.015	0.0001	2	HOBO logger (SN:20029101)	8/10/2018	NA	Large pipe upstream of manhole (north) with conduit perpendicular to flow
											1.7	ISCO 2150 Flowmeter (FL-21)	7/10/2020	3/5/2021	Water level at installation: 2.7 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	NA	
												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	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 (PT09)	2/24/2023	NA	

Table 2. Field and Analytical Data Summary

Sample Date	Monitoring Station	Sample ID Grab	Field Parameters					Analytical Parameters																					
			Dissolved Oxygen mg/L	pH S.U.	Conductivity uS/cm	Temperature C	*E. coli* mpn/100 mL	Sample ID Composite	BOD_5 mg/L	COD mg/L	Hardness as $CaCO_3$ mg/L	Turbidity NTU	TSS mg/L	TDS mg/L	Total Phosphorus mg/L	Orthophosphate as P mg/L	Ammonia as N mg/L	Nitrate + Nitrite as N mg/L	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
10/22/2022	Site 14	221022-14-WG	8.05	7.03	367.6	17.12	648.8	221022-14-WC	225 [2J]	416 [2J]	55.9 [2J]	62.5 [2J]	125 [2J]	244 [2J]	1.07 [2J]	0.712 [2J]	1.25 [2J]	0.927 [2J]	5.26 [2J]	5.1 [2J]	<0.025 [2J]	0.19 [2J]	10.1 [2J]	0.14 [2J]	8.2 [2J]	0.0147 [2J]	61.6 [2J]
	Site 206	221022-206-WG	8.30	7.08	325.9	14.83	1299.7	221022-206-WC	680 [2J]	1200 [2J]	51.3 [2J]	106 [2J]	301 [2J]	542 [2J]	2.84 [2J]	1.96 [2J]	1.5 [2J]	0.890 [2J]	9.29 [2J]	4.5 [2J]	<0.025 [2J]	0.23 [2J]	13.6 [2J]	0.77 [2J]	15.0 [2J]	0.0309 [2J]	119 [2J]
1/9/2023	Site 14	230109-14-WG	9.98 [2R]	6.60 [2R]	517.1 [2R]	9.51 [2R]	2850.0 [2R]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Site 206	230109-206-WG	7.66 [2R]	6.89 [2R]	200.8 [2R]	6.36 [2R]	157.6 [2R]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3/10/2023	Site 14	230310-14-WG	11.16	7.44	1282.6	6.68	547.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Site 206	230310-206-WG	10.84	7.53	1252.9	6.01	920.8	230310-206-WC	50.9	964	184	665	1190	565	1.7	0.218	0.284	0.181	11.5	13.6	–	0.54	--	--	66.2	0.0782	–
3/29/2023	Site 14	230329-14-WG	10.42	7.67	481.7	7.65	218.7	230329-14-WC	9.64	62.0	133	45.8	38.6	318	0.205	0.0914	0.633	1.08	1.90	3.6	0.023	0.065	3.4	0.080	3.6	0.0300	20.5
	Site 206	230329-206-WG	9.41	7.85	247.3	5.75	1046.2	230329-206-WC	21.4	145	123	69.4	–	354	0.528	0.266	0.600	0.387	2.84	3.2	0.028	0.099	4.8	0.22	6.5	0.0181	23.9
5/5/2023	Site 206	–	–	–	–	–	–	230505-206-WC	74.9	298	42.0	88.0	204	163	1.51	0.927	1.33	0.310	5.23	3.5	0.022	0.14	15.7	0.72	10.6	0.0182	54.5
8/21/2023	Site 14	–	–	–	–	–	–	230821-14-WC	67.7	213	57.7	57.1	80.0	184	0.625	0.355	0.676	0.758	3.41	3.6	0.023	0.13	9.0	0.22	5.6	0.0118	62.5
	Site 206	–	–	–	–	–	–	230821-206-WC	309	875	55.5	83.5	136	420	2.54	1.47	0.529	0.417	8.40	3.8	0.040	0.12	18.3	0.61	6.7	0.0237	99.1

Notes:

– No data

[2J] Data qualified due to lack of representativeness (50%–75%)

[2R] Data rejected due to insufficient rainfall (< 0.08 inch)

Table 3. Event Pollutant Loading Estimates in Pounds																				
Event Date	BOD_5		COD		Hardness as CaCO3		TSS		TDS		Total Phosphorus		Orthophosphate as P		Ammonia as N		Nitrate + Nitrite as N		TKN	
	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
3/29/2023	32.9	2.13	212	14.4	454	12.2	132	–	1086	35.2	0.700	0.0524	0.312	0.0264	2.16	0.0596	3.69	0.0384	6.49	0.282
8/21/2023	617	142	1942	401	526	25.4	729	62.3	1678	192	5.70	1.16	3.24	0.673	6.16	0.242	6.91	0.191	31.1	3.85

Notes:

– No data

Table 3. Event Pollutant Loading Estimates in Pounds																
Event Date	Arsenic, total		Cadmium, dissolved		Cadmium, total		Copper, dissolved		Lead, dissolved		Lead, total		Mercury, total		Zinc, dissolved	
	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
3/29/2023	0.0123	0.000318	0.0000785	0.00000278	0.000222	0.00000983	0.0116	0.000477	0.000273	0.0000219	0.0123	0.000646	0.000102	0.00000180	0.0700	0.00237
8/21/2023	0.0328	0.00174	0.000210	0.0000183	0.00119	0.0000550	0.0821	0.00838	0.00201	0.000279	0.0511	0.00307	0.000108	0.0000109	0.570	0.0454

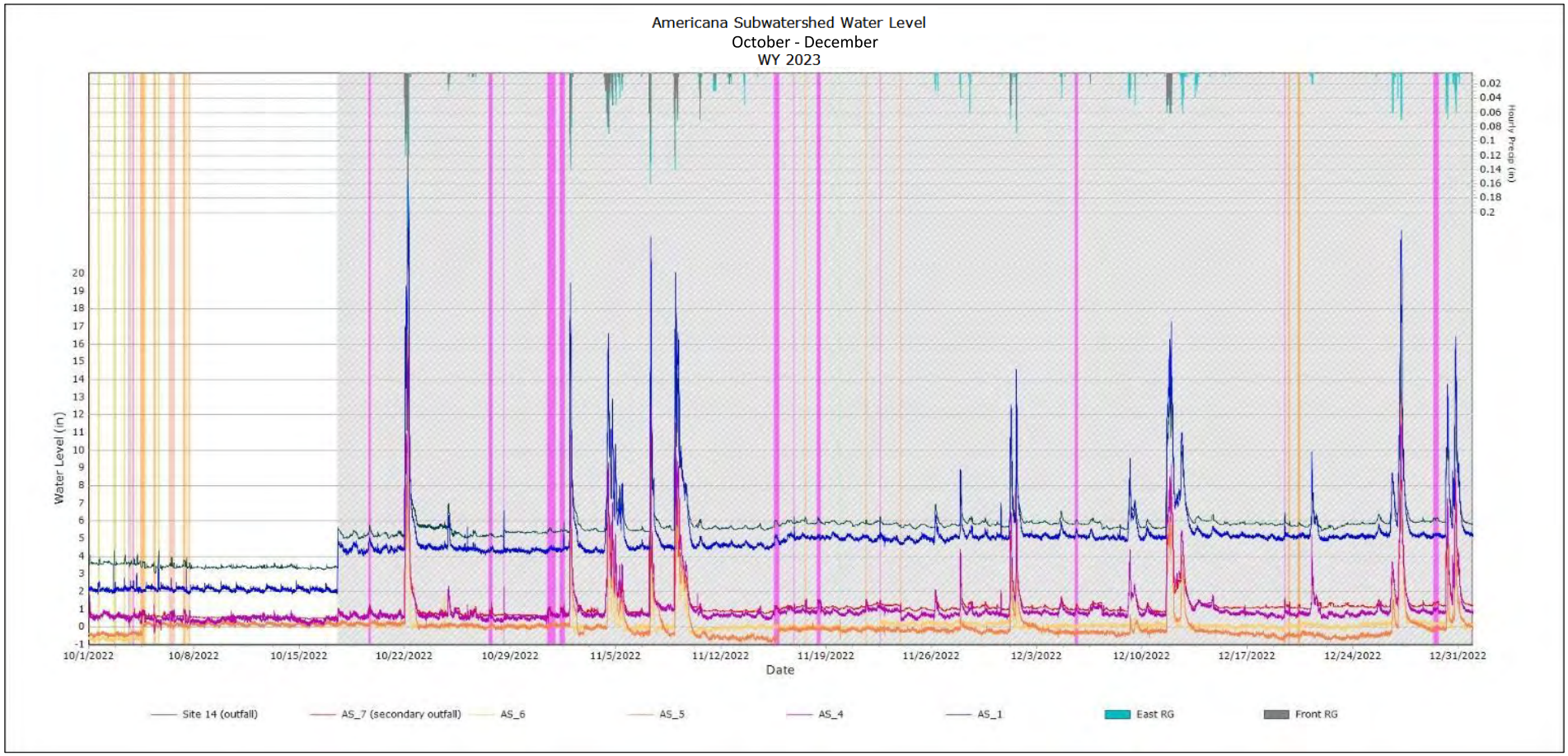
Notes:

– No data

Figures

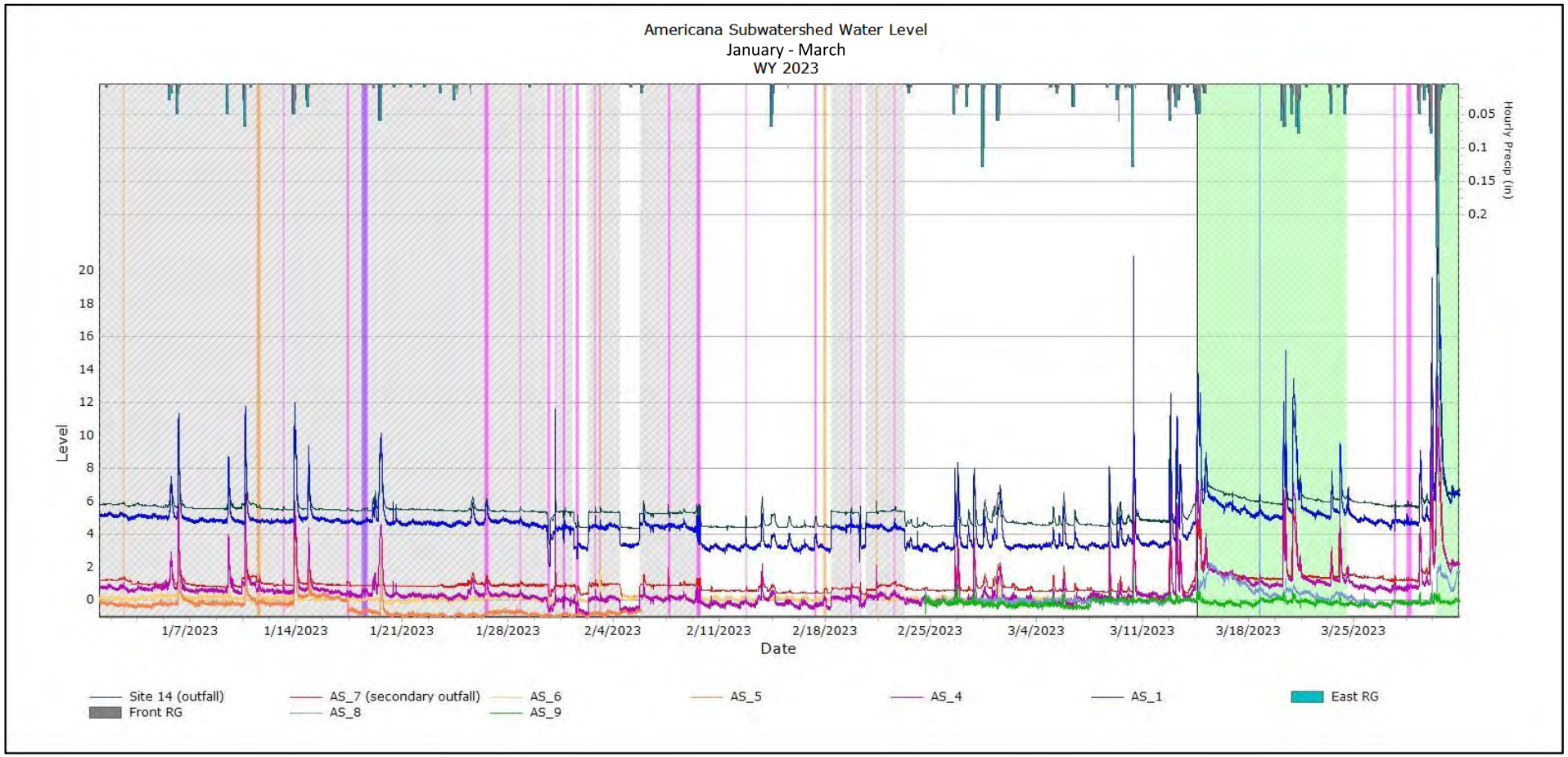
Figure 3. Americana Subwatershed Water Level WY 2023 October–December
Figure 4. Americana Subwatershed Water Level WY 2023 January–March
Figure 5. Americana Subwatershed Water Level WY 2023 April–June
Figure 6. Americana Subwatershed Water Level WY 2023 July–September
Figure 7. Percent Contribution for Storm Event 03/29/2023
Figure 8. Percent Contribution for Storm Event 08/21/2023

Figure 3


Americana Subwatershed Water Level
October - December
WY 2023
Water Level (in)
Hourly Precip (in)
Date
10/1/2022
10/8/2022
10/15/2022
10/22/2022
10/29/2022
11/5/2022
11/12/2022
11/19/2022
11/26/2022
12/3/2022
12/10/2022
12/17/2022
12/24/2022
12/31/2022
Site 14 (outfall)
AS_7 (secondary outfall)
AS_6
AS_5
AS_4
AS_1
East RG
Front RG

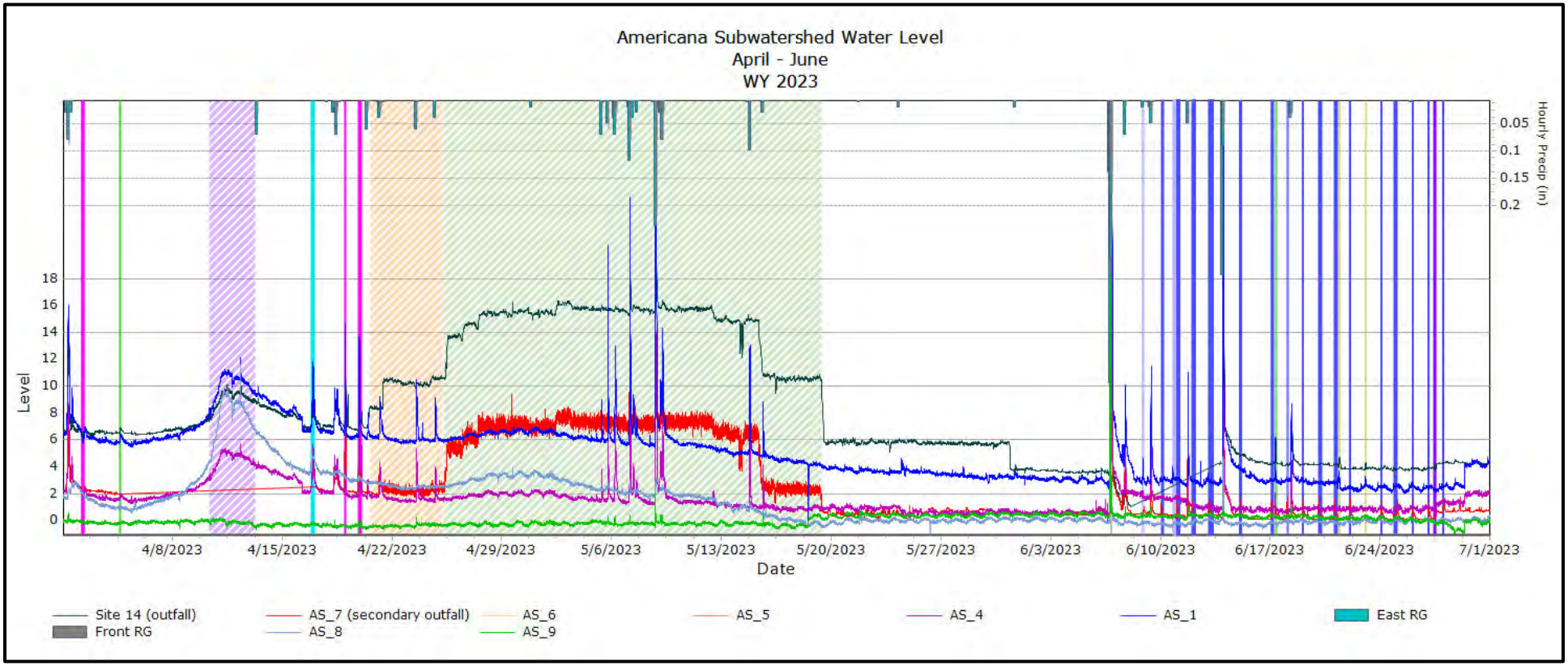
Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	10/1/2022 1:00:00	2.5	AS_4, AS_7, Site 14	AS_4 subcatchment
	10/1/2022 14:30:00	4.5	AS_1, Site 14	AS_1 subcatchment
	10/2/2022 15:30:00	5.0	AS_1, Site 14	AS_1 subcatchment
	10/3/2022 8:30:00	3.5	AS_1, Site 14	AS_1 subcatchment
	10/3/2022 15:30:00	2.5	AS_4, Site 14	AS_4 subcatchment
	10/3/2022 18:30:00	2.5	AS_1, Site 14	AS_1 subcatchment
	10/3/2022 22:00:00	4.0	AS_1, Site 14, AS_7	AS_1 subcatchment
	10/4/2022 3:30:00	3.0	AS_1, Site 14	AS_1 subcatchment
	10/4/2022 9:30:00	9.5	AS_4, AS_7, Site 14	AS_4 subcatchment
	10/4/2022 19:00:00	2.0	AS_1, Site 14	AS_1 subcatchment
	10/5/2022 7:30:00	5.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	10/5/2022 14:30:00	3.5	AS_1, Site 14	AS_1 subcatchment
	10/6/2022 8:00:00	3.5	AS_4, AS_7, Site 14	AS_4 subcatchment
	10/6/2022 11:30:00	2.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	10/6/2022 14:00:00	4.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	10/7/2022 7:00:00	4.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	10/7/2022 11:00:00	2.0	AS_1, Site 14	AS_1 subcatchment
	10/7/2022 15:30:00	4.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	10/17/2022 13:00:00	1811.0	AS_1, AS_4, AS_7, Site 14 (elongated)	AS_1 subcatchment
	10/19/2022 14:00:00	5.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	10/27/2022 14:00:00	7.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	10/28/2022 14:00:00	2.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	10/31/2022 11:00:00	15.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	11/1/2022 7:30:00	9.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	11/15/2022 13:00:00	9.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	11/16/2022 20:30:00	2.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	11/17/2022 14:30:00	3.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	11/18/2022 9:30:00	7.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	11/19/2022 21:30:00	2.0	AS_5	AS_5 subcatchment
	11/21/2022 15:00:00	3.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	11/22/2022 13:30:00	2.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	11/23/2022 22:30:00	2.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	12/5/2022 13:00:00	6.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	12/19/2022 11:00:00	2.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	12/19/2022 17:30:00	3.5	AS_4, AS_7, Site 14	AS_4 subcatchment
	12/20/2022 8:00:00	5.5	AS_4, AS_7, Site 14	AS_4 subcatchment
	12/29/2022 8:00:00	10.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment

Figure 4


Americana Subwatershed Water Level
January - March
WY 2023
Level
Hourly Precip (in)
0.05
0.1
0.15
0.2
20
18
16
14
12
10
8
6
4
2
0
1/7/2023
1/14/2023
1/21/2023
1/28/2023
2/4/2023
2/11/2023
2/18/2023
2/25/2023
3/4/2023
3/11/2023
3/18/2023
3/25/2023
Date
Site 14 (outfall)
Front RG
AS_7 (secondary outfall)
AS_8
AS_6
AS_9
AS_5
AS_4
AS_1
East RG

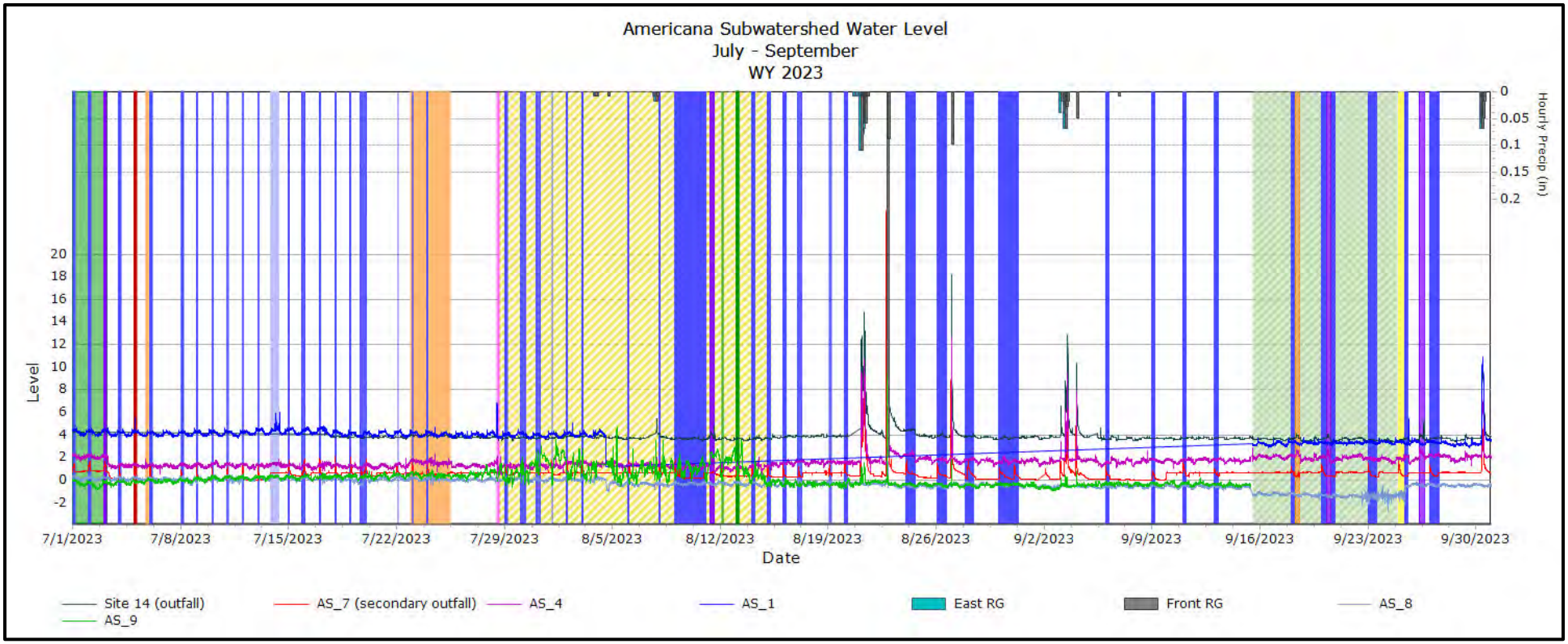
Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	10/17/2022 13:00:00	2057.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	1/2/2023 14:00	3.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	1/11/2023 10:00	7.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	1/13/2023 3:30	3.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	1/17/2023 9:00	5.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	1/18/2023 8:00	11.0	AS_4, Site 14	AS_4 subcatchment
	1/26/2023 11:00	9.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	1/28/2023 20:00	3.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	1/30/2023 15:30:00	6.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	1/31/2023 3:00	2.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	1/31/2023 5:00	28.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	1/31/2023 16:00	5.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/1/2023 13:00	6.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/1/2023 3:00	2.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/2/2023 7:30	53.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/2/2023 18:30	2.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/3/2023 2:30	3.0	AS_1, AS_4, AS_6, AS_7, Site 14	AS_6 subcatchment
	2/5/2023 17:00	98.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/6/2023 10:30	6.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/7/2023 14:30	4.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/8/2023 14:00	5.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/9/2023 11:30	8.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/12/2023 17:30	3.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/13/2023 18:00	5.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/17/2023 7:30	4.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/17/2023 21:30	6.5	AS_4, AS_7, Site 14	AS_4 subcatchment
	2/18/2023 9:00	45.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/19/2023 16:30	2.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/20/2023 7:30	2.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/20/2023 16:30	63.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/21/2023 9:00	2.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	2/22/2023 13:00	4.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	2/24/2023 2:00	2.5	AS_1, Site 14	AS_1 subcatchment
	3/2/2023 7:00	11.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	3/3/2023 8:00	10.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	3/14/2023 16:00	238.0	AS_8 (previously AS_5)	Likely Hull's Gulch
	3/18/2023 17:30	2.5	AS_1, AS_4, AS_7, AS_8, and Site 14	AS_8 subcatchment
	3/27/2023 15:30	4.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	3/28/2023 11:30	9.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	3/30/2023 11:00	37.0	AS_8 (previously AS_5)	Likely Hull's Gulch

Figure 5


Americana Subwatershed Water Level
April - June
WY 2023
Level
Hourly Precip (in)
0.05
0.1
0.15
0.2
18
16
14
12
10
8
6
4
2
0
4/8/2023
4/15/2023
4/22/2023
4/29/2023
5/6/2023
5/13/2023
5/20/2023
5/27/2023
6/3/2023
6/10/2023
6/17/2023
6/24/2023
7/1/2023
Date
Site 14 (outfall)
Front RG
AS_7 (secondary outfall)
AS_8
AS_6
AS_9
AS_5
AS_4
AS_1
East RG

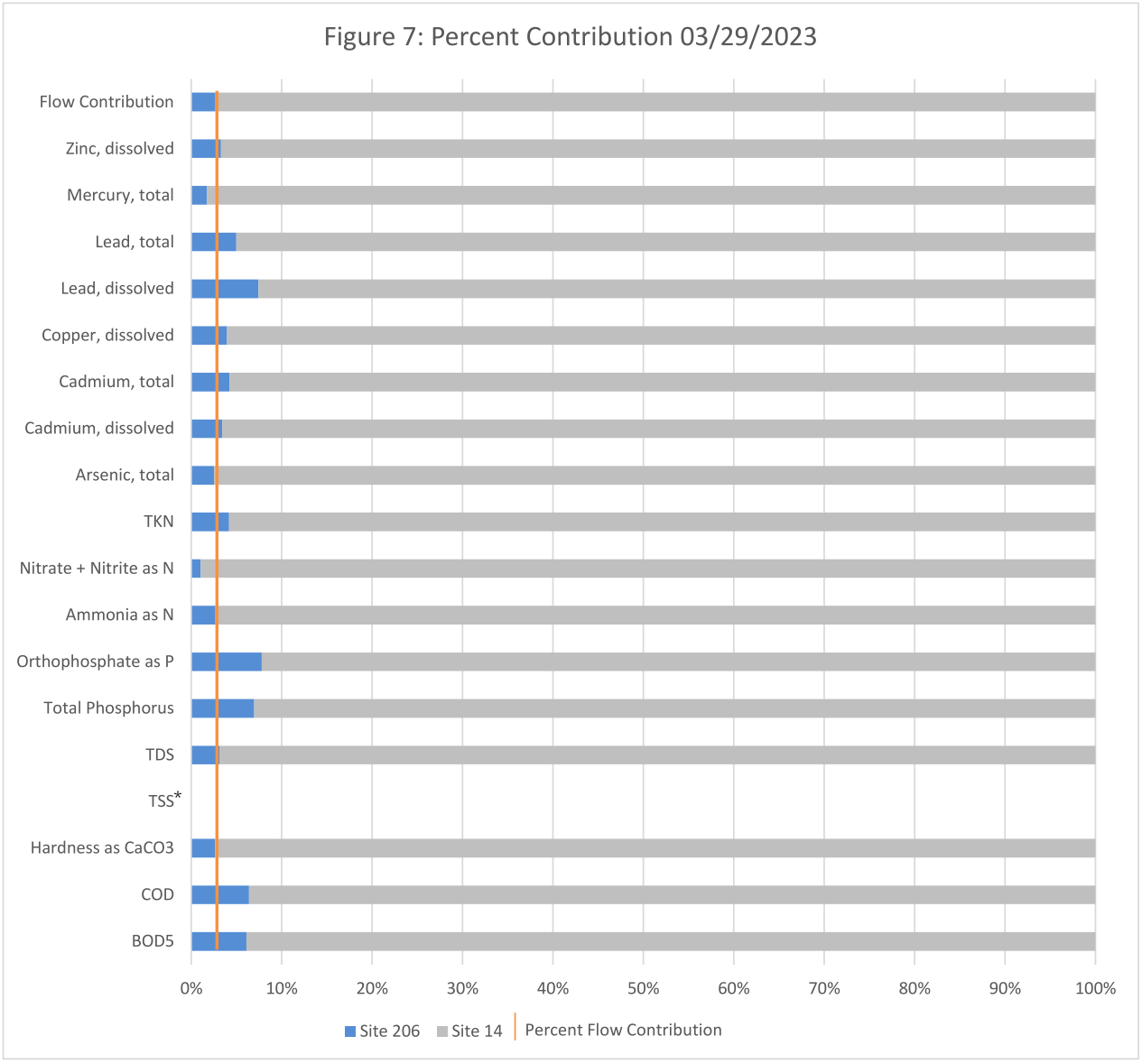
Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	4/2/2023 4:30:00	6.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	4/4/2023 15:00:00	5.5	AS_1, AS_4, Site 14	AS_1 subcatchment
	4/10/2023 8:00:00	72.5	AS_1, AS_4, AS_8, Site 14 (elongated)	Hull's Gulch
	4/16/2023 20:00:00	5.0	AS_1, AS_4, AS_8, Site 14	Hull's Gulch
	4/18/2023 23:00:00	4.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	4/19/2023 20:30:00	5.5	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	4/20/2023 15:00:00	113.0	AS_7 Site 14 (elongated)	Site 14 (likely Boise River surcharge)
	4/25/2023 8:00:00	580.0	AS_1, AS_4, AS_7, Site 14 (elongated)	Site 14 (likely Boise River surcharge)
	6/8/2023 20:00:00	2.0	AS_1	AS_1 (likely construction dewatering)
	6/10/2023 0:30:00	3.0	AS_7	AS_7 subcatchment
	6/10/2023 18:30:00	2.5	AS_1	AS_1 (likely construction dewatering)
	6/11/2023 0:00:00	3.0	AS_7	AS_7 subcatchment
	6/12/2023 0:00:00	3.0	AS_7	AS_7 subcatchment
	6/13/2023 1:00:00	4.0	AS_7	AS_7 subcatchment
	6/15/2023 1:00:00	4.0	AS_7	AS_7 subcatchment
	6/17/2023 1:00:00	2.5	AS_7	AS_7 subcatchment
	6/17/2023 7:00:00	2.0	AS_1, AS_4, Site 14	AS_1 subcatchment
	6/18/2023 1:00:00	2.0	AS_7	AS_7 subcatchment
	6/19/2023 1:00:00	2.5	AS_7	AS_7 subcatchment
	6/20/2023 1:00:00	6.5	AS_7	AS_7 subcatchment
	6/21/2023 0:30:00	7.0	AS_7	AS_7 subcatchment
	6/21/2023 8:30:00	3.0	AS_1, Site 14	AS_1 (likely construction dewatering)
	6/22/2023 1:00:00	4.0	AS_7	AS_7 subcatchment
	6/23/2023 1:00:00	2.0	AS_1, Site 14	AS_1 subcatchment
	6/24/2023 1:00:00	3.0	AS_7	AS_7 subcatchment
	6/24/2023 21:00:00	7.0	AS_7	AS_7 subcatchment
	6/26/2023 1:00:00	2.5	AS_7	AS_7 subcatchment
	6/27/2023 1:00:00	3.0	AS_7	AS_7 subcatchment
	6/27/2023 10:00:00	5.0	AS_4, Site 14	AS_4 subcatchment
	6/28/2023 0:30:00	3.0	AS_7	AS_7 subcatchment

Figure 6


Americana Subwatershed Water Level
July - September
WY 2023
Level
Hourly Precip (in)
Date
7/1/2023
7/8/2023
7/15/2023
7/22/2023
7/29/2023
8/5/2023
8/12/2023
8/19/2023
8/26/2023
9/2/2023
9/9/2023
9/16/2023
9/23/2023
9/30/2023
Site 14 (outfall)
AS_7 (secondary outfall)
AS_4
AS_1
East RG
Front RG
AS_8
AS_9

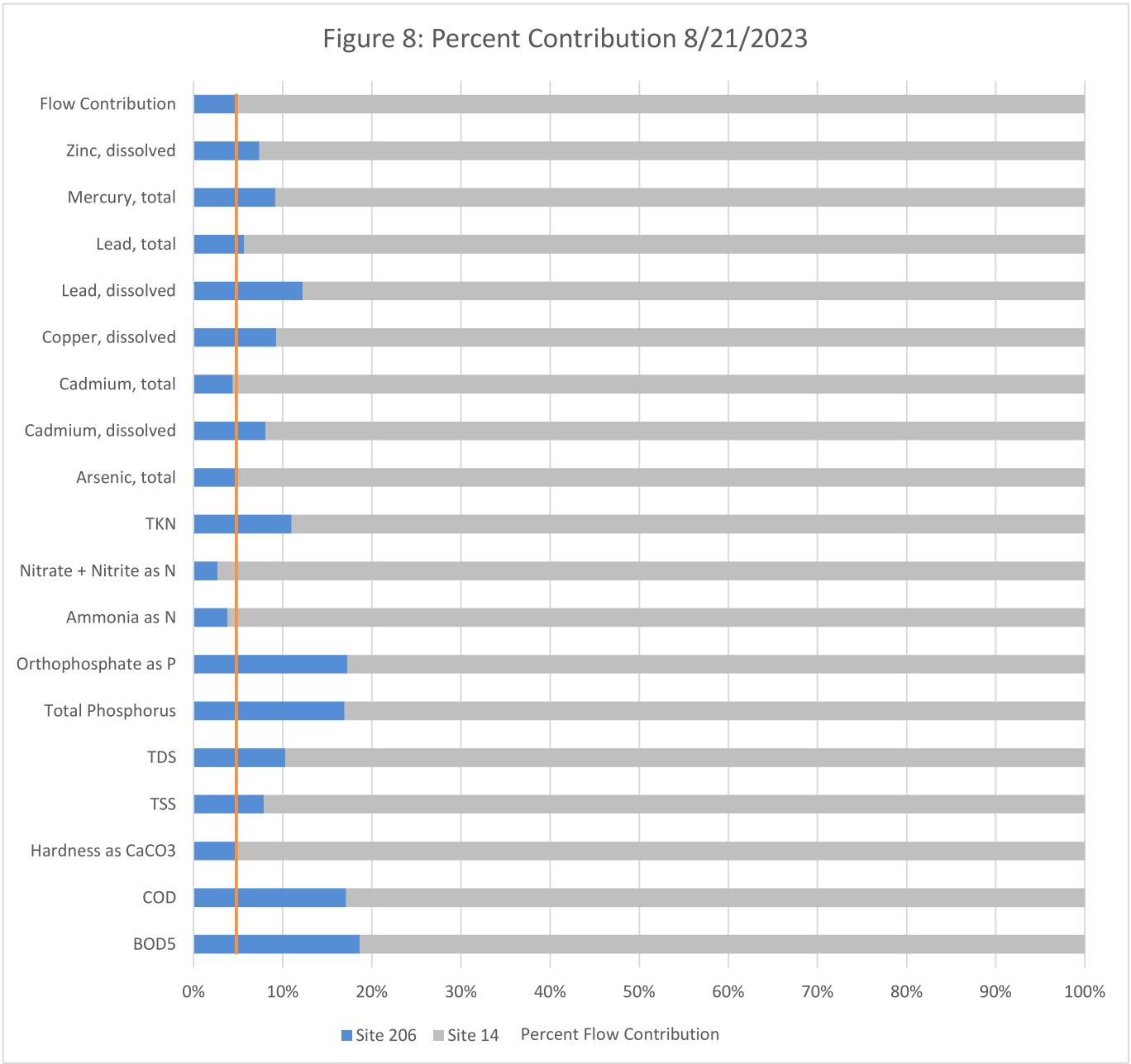
Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	7/1/2023 0:00:00	56	AS_4, AS_7	AS_4 subcatchment
	7/1/2023 0:00:00	3.5	AS_7	AS_7 subcatchment
	7/2/2023 0:00:00	3.5	AS_7	AS_7 subcatchment
	7/3/2023 0:00:00	3.5	AS_4, Site 14	AS_4 subcatchment
	7/4/2023 0:00:00	2.5	AS_7	AS_7 subcatchment
	7/5/2023 0:00:00	2.5	AS_1, AS_7	AS_1 subcatchment
	7/5/2023 17:30:00	3.5	AS_4	AS_4 subcatchment
	7/6/2023 0:00:00	2.5	AS_7	AS_7 subcatchment
	7/8/2023 0:30:00	3.0	AS_7	AS_7 subcatchment
	7/9/2023 0:30:00	3.0	AS_7	AS_7 subcatchment
	7/10/2023 0:30:00	2.0	AS_7	AS_7 subcatchment
	7/11/2023 0:00:00	2.0	AS_7	AS_7 subcatchment
	7/12/2023 0:00:00	2.0	AS_7	AS_7 subcatchment
	7/13/2023 0:00:00	2.0	AS_7	AS_7 subcatchment
	7/13/2023 20:00:00	15.0	AS_1	AS_1 subcatchment
	7/15/2023 0:00:00	3.0	AS_7	AS_7 subcatchment
	7/15/2023 21:00:00	6.0	AS_7	AS_7 subcatchment
	7/17/2023 0:00:00	3.0	AS_7	AS_7 subcatchment
	7/18/2023 0:00:00	3.0	AS_7	AS_7 subcatchment
	7/19/2023 0:00:00	3.0	AS_7	AS_7 subcatchment
	7/19/2023 16:00:00	11.0	AS_7	AS_7 subcatchment
	7/22/2023 0:30:00	2.0	AS_7	AS_7 subcatchment
	7/23/2023 0:00:00	2.0	AS_7	AS_7 subcatchment
	7/23/2023 23:30:00	3.0	AS_7	AS_7 subcatchment
	7/22/2023 21:30:00	65.0	AS_4	AS_4 subcatchment
	7/26/2023 15:00:00	427	AS_9 (elongated amount of time)	AS_9 subcatchment
	7/28/2023 12:00:00	3.0	AS_1, AS_4, AS_7, Site 14	AS_1 subcatchment
	7/29/2023 1:30:00	2.5	AS_7	AS_7 subcatchment
	7/30/2023 1:30:00	4.5	AS_7	AS_7 subcatchment
	7/31/2023 1:30:00	8.5	AS_7	AS_7 subcatchment
	8/1/2023 1:30:00	2.5	AS_7	AS_7 subcatchment
	8/2/2023 1:00:00	3.0	AS_7	AS_7 subcatchment
	8/3/2023 1:00:00	3.0	AS_7	AS_7 subcatchment
	8/6/2023 0:00:00	4.0	AS_7	AS_7 subcatchment
	8/8/2023 0:00:00	4.0	AS_7	AS_7 subcatchment
	8/9/2023 1:00:00	50.0	AS_7	AS_7 subcatchment
	8/11/2023 8:00:00	8.0	AS_4, Site 14	AS_4 subcatchment
	8/12/2023 1:30:00	2.5	AS_4, AS_7	AS_4 subcatchment
	8/13/2023 1:00:00	2.0	AS_4, AS_7	AS_4 subcatchment
	8/14/2023 1:00:00	7.0	AS_7	AS_7 subcatchment
	8/15/2023 1:00:00	7.0	AS_7	AS_7 subcatchment
	8/16/2023 1:00:00	7.0	AS_7	AS_7 subcatchment
	8/17/2023 1:00:00	8.0	AS_7	AS_7 subcatchment
	8/19/2023 1:00:00	6.0	AS_7	AS_7 subcatchment
	8/20/2023 1:00:00	6.0	AS_7	AS_7 subcatchment
	8/24/2023 1:00:00	16.0	AS_7	AS_7 subcatchment
	8/26/2023 1:30:00	15.5	AS_7	AS_7 subcatchment
	8/27/2023 22:00:00	6.0	AS_7	AS_7 subcatchment

Color Code	Beginning Date Time	Duration (hrs)	Sites Included	Non-stormwater source
	8/30/2023 2:00:00	8.0	AS_7	AS_7 subcatchment
	9/6/2023 0:00:00	6.0	AS_7	AS_7 subcatchment
	9/9/2023 0:00:00	6.0	AS_7	AS_7 subcatchment
	9/11/2023 0:00:00	6.0	AS_7	AS_7 subcatchment
	9/13/2023 0:00:00	9.0	AS_7	AS_7 subcatchment
	9/15/2023 12:00:00	228.0	AS_8 (elongated amount of time)	Likely Hull's Gulch
	9/18/2023 0:00:00	8.0	AS_7	AS_7 subcatchment
	9/18/2023 8:00:00	8.0	AS_4, AS_7, Site 14	AS_4 subcatchment
	9/20/2023 0:00:00	8.0	AS_7	AS_7 subcatchment
	9/20/2023 8:00:00	8.0	AS_4, Site 14	AS_4 subcatchment
	9/20/2023 16:00:00	7.0	AS_7	AS_7 subcatchment
	9/23/2023 0:00:00	16.0	AS_7	AS_7 subcatchment
	9/25/2023 0:00:00	10.0	AS_7, AS_8	AS_8 subcatchment
	9/25/2023 10:00:00	6.0	AS_7	AS_7 subcatchment
	9/26/2023 8:00:00	10.0	AS_4, Site 14	AS_4 subcatchment
	9/27/2023 0:00:00	16.0	AS_7	AS_7 subcatchment



Notes:

**Incomplete water quality analysis (no TSS parameter) due to low composite sample volume*


Figure 8: Percent Contribution 8/21/2023
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

Attachment Q
Temperature Monitoring Summary WY 2023

Temperature Monitoring Summary WY 2023

Ada County Highway District

1/4/2023

Table of Contents

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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) 2023 (October 1, 2022 – September 20, 2023) 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 13 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 aquaTroll or smarTroll handheld instrument. Continuous measurements were taken at a specified interval by equipment that is installed at the outfall site. In WY 2023, 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	11	3n2e04_010 (Main)	Discrete and Continuous
			3n2e05_011	Discrete
			3n2e09_024 (AS_7)	Discrete and Continuous
			3n2e09_025 (Americana)	Discrete and Continuous
			3n2e10_012	Discrete
			3n2e10_022	Discrete
			3n2e14_012	Discrete
			3n2e14_013	Discrete
			3n2e14_017	Discrete
			3n2e24_006	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 ID.

Graphs of continuous temperature results are found in Figures 3-6. The graphs from sites where temperature is recorded using an area-velocity sensor (Figures 3-5) displays 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. Data gaps in the temperature data shown in Figure 6, indicate water is not present. Unlike the other graphs of continuous temperature results, water level data are not available at this monitoring site. Sediment was observed on the temperature logger in October 2023 during routine data download. The presence of sediment yielded results water was present when it was observed the site was dry. Additionally, water was present, based on the recorded temperature data, when rainfall was not recorded and dry weather flows at this site have not been observed. During WY24, ACHD will increase the frequency of inspections of the Hobo Temperature Logger to learn more about site conditions and if the logger is suitable for the site.

Table 3-1. Discrete Temperature Results

Outfall ID (Station Name)	Date	Weather	Temperature (C)
3n1e01_010	08/09/22	Dry Weather	19.36
3n2e04_010 (Main)	10/22/2022 3/10/2023 3/29/2023	Wet Weather	17.07 7.99 7.74
3n2e05_011	9/11/2023	Dry Weather	20.51
3n2e09_024 (AS_7)	2/22/2023 6/27/23	Dry Weather	12.75 20.00
3n2e09_025 (Americana)	2/22/2023	Dry Weather	10.67
3n2e09_025 (Americana)	10/22/2022 3/10/2023 3/29/2023	Wet Weather	17.12 6.68 7.65
3n2e10_012	3/27/2023 9/12/23	Dry Weather	3.64 16.19
3n2e10_022	2/22/23 9/12/23	Dry Weather	10.11 20.84
3n2e14_012	3/27/23 5/22/23	Dry Weather	8.21 14.78
3n2e14_013	3/27/2023 9/13/23	Dry Weather	7.06 16.16
3n2e14_017	3/27/2023 9/13/23	Dry Weather	10.2 19.04
3n2e24_006	5/22/2023	Dry Weather	17.19
3n2e24_025	5/22/2023	Dry Weather	16.15
4n2e32_015	8/1/2023	Dry Weather	17.85

Appendix A: Figures

Figure 1. Overview Map

Figure 2. Discrete Temperature Results

Figure 3. Continuous Temperature Results – Main

Figure 4. Continuous Temperature Results – AS_7

Figure 5. Continuous Temperature Results – Americana

Figure 6. Continuous Temperature Results – Plantation

Figure 1

WY2023 Temperature Monitored Outfalls

Created: 12/20/2023



Figure 2

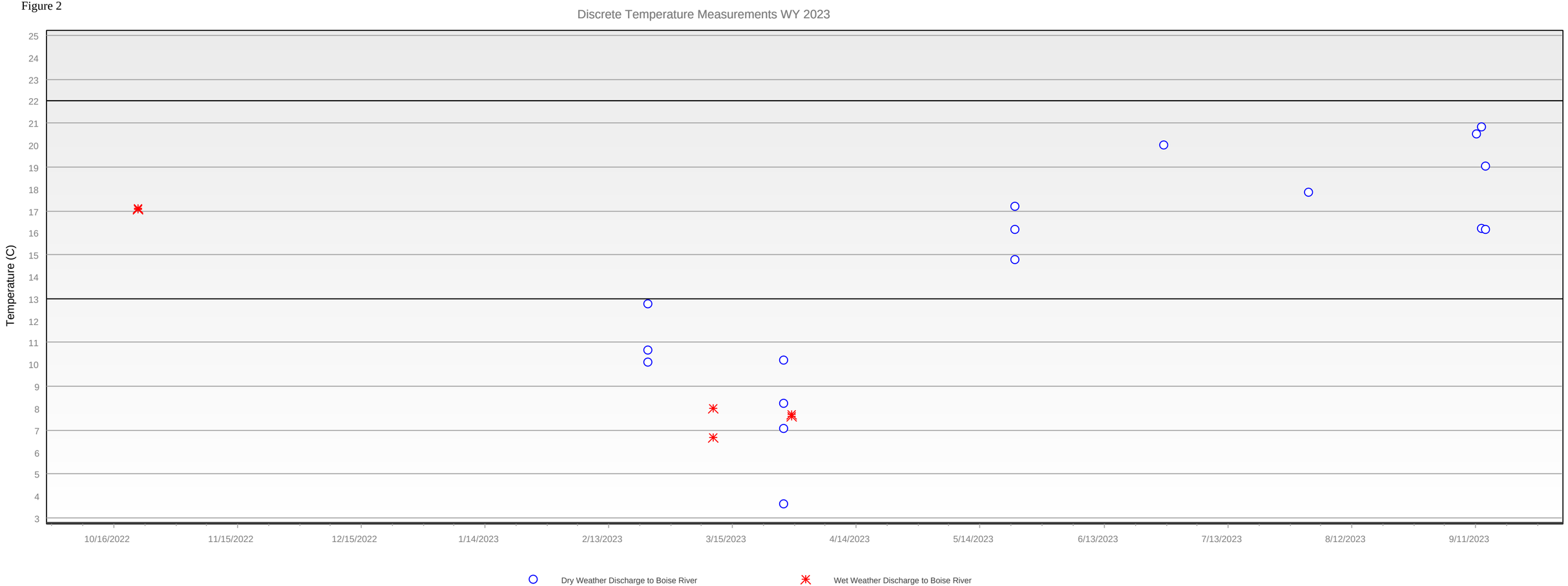

Discrete Temperature Measurements WY 2023
Temperature (C)
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
10/16/2022
11/15/2022
12/15/2022
1/14/2023
2/13/2023
3/15/2023
4/14/2023
5/14/2023
6/13/2023
7/13/2023
8/12/2023
9/11/2023
Dry Weather Discharge to Boise River
Wet Weather Discharge to Boise River

Figure 3

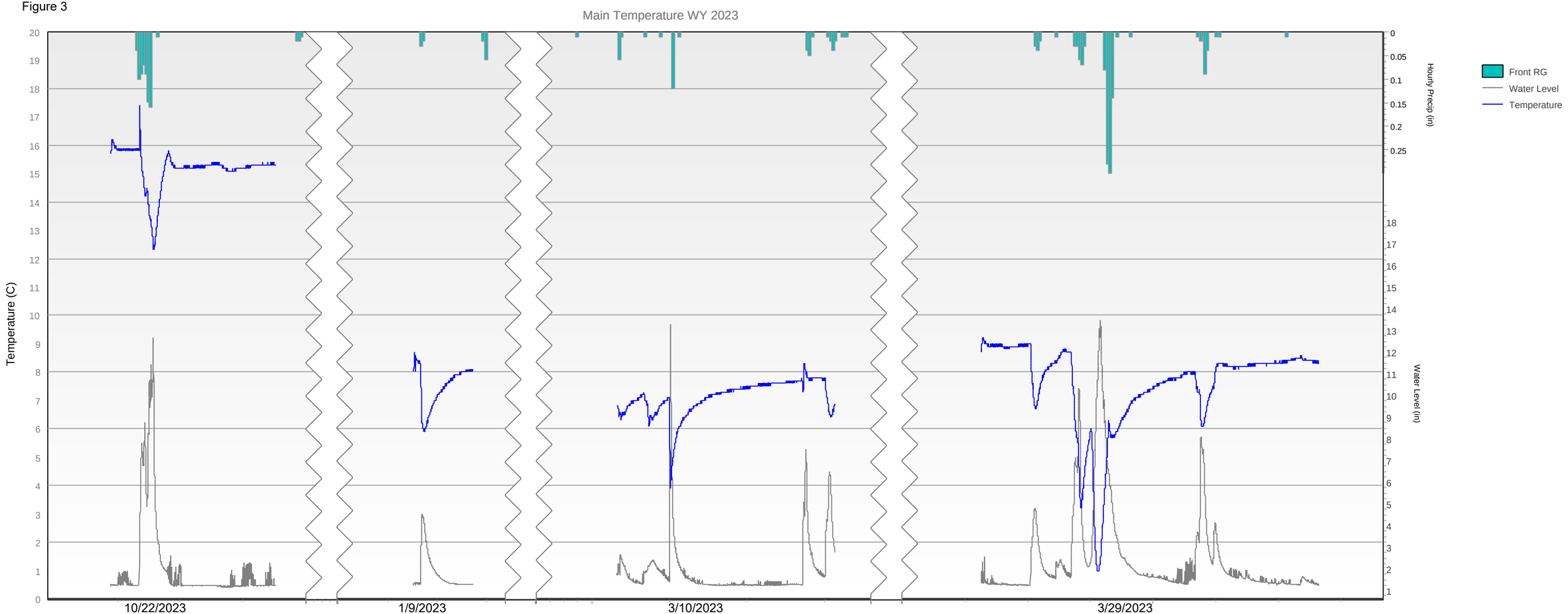

Main Temperature WY 2023
Temperature (C)
Hourly Precip (in)
Water Level (in)
Front RG
Water Level
Temperature
10/22/2023
1/9/2023
3/10/2023
3/29/2023

Figure 4

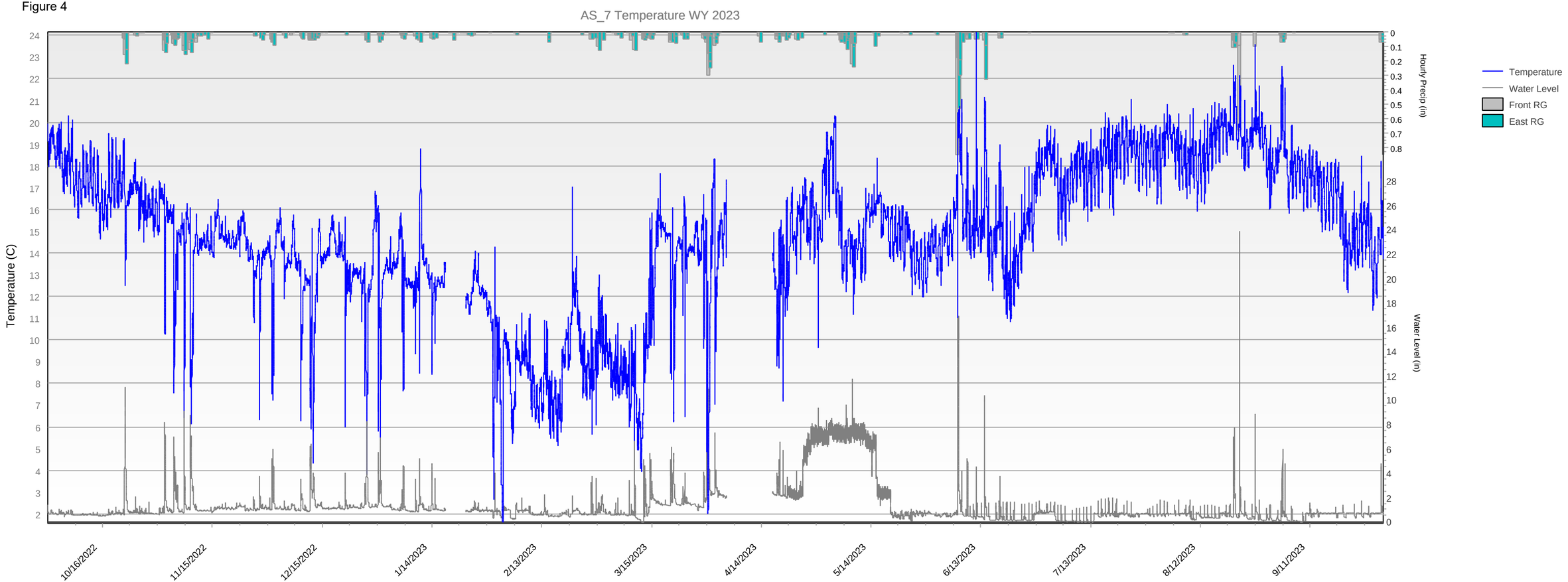

AS_7 Temperature WY 2023
Temperature (C)
Hourly Precip (in)
Water Level (in)
Temperature
Water Level
Front RG
East RG
10/16/2022
11/15/2022
12/15/2022
1/14/2023
2/13/2023
3/15/2023
4/14/2023
5/14/2023
6/13/2023
7/13/2023
8/12/2023
9/11/2023

Figure 5

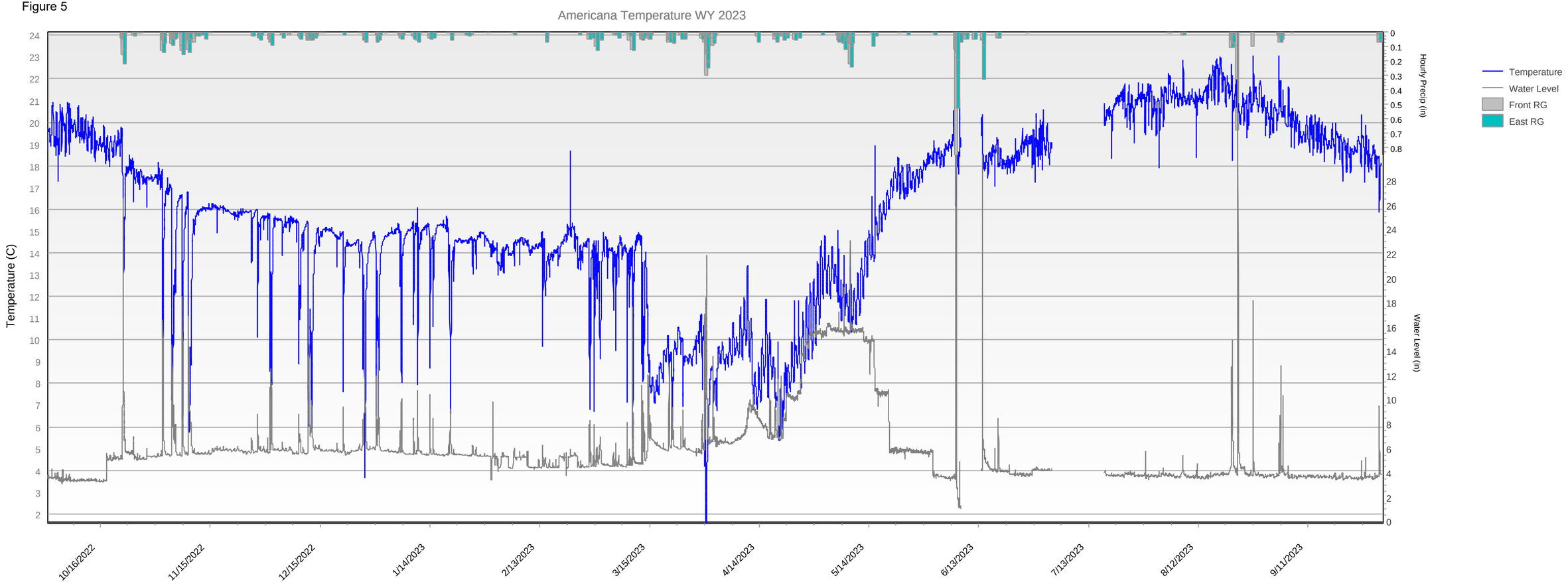
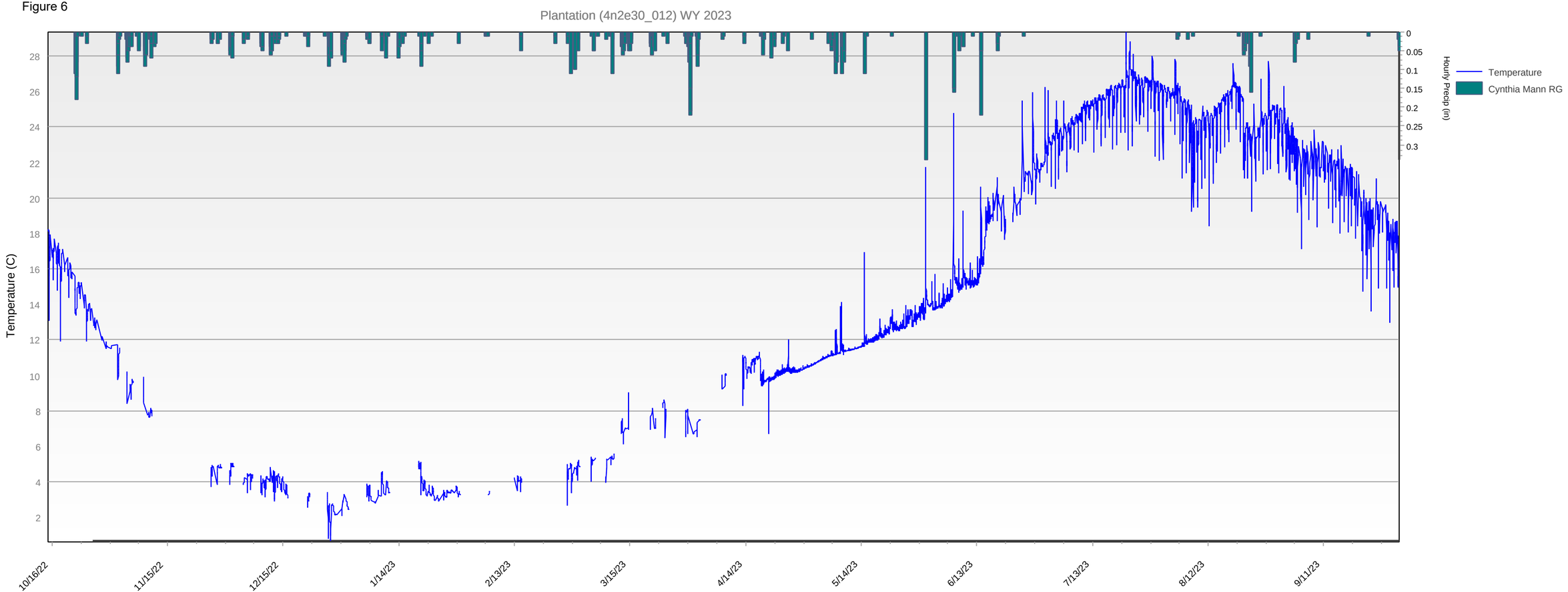

Americana Temperature WY 2023
Temperature (C)
Hourly Precip (in)
Water Level (in)
Temperature
Water Level
Front RG
East RG
10/16/2022
11/15/2022
12/15/2022
1/14/2023
2/13/2023
3/15/2023
4/14/2023
5/14/2023
6/13/2023
7/13/2023
8/12/2023
9/11/2023

Figure 6


Plantation (4n2e30_012) WY 2023
Temperature (C)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
0.05
0.1
0.15
0.2
0.25
0.3
Hourly Precip (in)
Temperature
Cynthia Mann RG
10/16/22
11/15/22
12/15/22
1/14/23
2/13/23
3/15/23
4/14/23
5/14/23
6/13/23
7/13/23
8/12/23
9/11/23