GRANDE RONDE BASIN WATER QUALITY ASSESSMENT

DATA REPORT

2023

Prepared for:
Grande Ronde Model Watershed

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Prepared for:
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Executive Summary

Anderson Perry & Associates, Inc. (AP) conducted a two-year water quality assessment on behalf of the Grande Ronde Model Watershed (GRMW) to investigate whether poor water quality plays a role in Chinook salmon smolt mortality in the Grande Ronde Basin.

After conducting a literature review to determine which chemicals could be present, surface water samples were collected at ten locations during ten sampling events between November 2020 and September 2022 and tested for chemical parameters including conventionals, metals, polyaromatic hydrocarbons (PAHs), and currently used pesticides and herbicides.

The following chemicals were detected at least once during the sampling program: arsenic, chromium, copper, iron, nickel, zinc, ammonia, alkalinity, sulfide, and chloride. One herbicide (prodiamine) was detected at low concentrations in a multi-residue pesticide/herbicide screen during one event. The following chemicals were never detected during the sampling program: cadmium, lead, selenium, silver, mercury, 18 priority PAHs, total cyanide, and phosphorus.

Over the two-year study period, field data and analytical data were within quality control requirements, with a few exceptions related to temperature, hold times, and laboratory quality control parameters. These data were qualified when needed.

Copper exceeded the Oregon Department of Environmental Quality (DEQ) Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - acute criterion (criterion maximum concentration) Freshwater. The copper criterion is hardness adjusted based on the biotic ligand model (BLM). Copper exceedances occurred on five separate sampling events at six locations. The dissolved oxygen (DO) DEQ Table 30 Aquatic Life Water Quality Criteria acute criterion was exceeded at Ladd Creek Peach Lane (LCPL) during three events and at Catherine Creek at Market Lane (CCML) during one event. Zinc, chromium, and nickel were exceeded at one location and one event each, though locations varied.

These results indicate water quality in the Grande Ronde Valley is impaired in some areas during portions of the year. While elevated concentrations of metals and low DO can adversely affect Chinook salmon smolt, additional information is needed to understand the relative contribution of these metals and low DO to the Chinook salmon smolt mortality observed in the Grande Ronde Valley.

The risk to Chinook salmon smolt from the sampled water quality parameters detected at concentrations below water quality criteria is low. These chemicals could contribute to poor survival if grab samples collected during this sampling effort are not sufficiently representative of longer-term average concentrations. Contaminants not detected at concentrations above water quality criteria could be contributing to reduced survival if actual concentrations are consistently above water quality criteria. These contaminants should be sampled and analyzed with lower detection limits in future efforts (this work was not completed as part of this study due to budget limitations).

Uncertainty in copper risk to Chinook salmon smolt remains. This investigation explored multiple avenues to determine the source of copper. This information could be used in future investigations to further understand the extent and duration of impaired water quality.

The results of this assessment indicate that copper concentrations are high enough at some times and locations to potentially cause adverse effects to Chinook salmon smolt. Because the location and timing of the copper exceedances were not consistent, the extent of copper contamination in the Grande Ronde Basin is difficult to characterize.

Based on the observed elevated concentrations of copper at locations throughout the Grande Ronde Valley and low DO at LCPL and CCML, it is possible that these chemicals may contribute to Chinook salmon smolt mortality. Ladd Creek was already known to have low DO, so the low DO in Catherine Creek potentially indicates that the low DO extends further down the Grande Ronde Basin. Additional sampling to characterize timing, duration, and spatial extent of exceedances relative to fish occurrence within the Grande Ronde Basin is needed to better understand the impact and risk from these chemicals (specifically copper and DO).

The following conclusions may be drawn about the possible contributions of water chemistry to outmigrating Chinook salmon smolt mortality during the months of February through May in the Grande Ronde Valley:

- This assessment found evidence that low DO occurs during the months of February to May.
- Low DO at LCPL and CCML, and elevated copper concentrations at the LCPL location may have an acute adverse impact on Chinook salmon smolt survival.
- This assessment found elevated copper concentrations throughout the assessment area, including in the most upstream location, Grande Ronde River near the confluence with Fly Creek (GRFC), which was anticipated to be a reference location; this indicates copper may be pervasive in the Grande Ronde Basin.
- Based on the elevated concentrations of copper observed at six locations and other analytes detected at elevated concentrations, it is possible that one or more of the analyzed chemicals is the cause of, or is contributing to, smolt mortality. However, additional sampling is needed, and other environmental and biological factors should be considered.

Potential additional future work to integrate the findings of the water quality sampling with other efforts to understand the causes of outmigrant Chinook salmon smolt mortality may include:

- Conducting additional water quality sampling at selected locations to investigate the link between stormwater runoff, turbidity, and copper exceedances. Duplicate samples could potentially be sent to different labs to compare results.
- Collecting 24-hour composite surface water samples over a longer duration at selected locations to evaluate whether select chemical or conventional parameters have potentially more toxic levels than observed in grab samples.
- Characterizing the spatial extent of low DO at LCPL and CCML by installing DO loggers upstream and downstream. Additional information regarding fish habitat and population is needed to better understand the impact of low DO events at these locations. Additional information regarding the duration and spatial extent of low DO is also needed.
- Collecting sediment samples at each of the ten sampling locations and testing for metals. These data will help determine if the source of the high copper levels in select water grab samples is

linked to high copper levels in the soil. This task was recommended at the State of the Science meeting due to historical mining operations in the Grande Ronde Basin.

- Collecting macroinvertebrate samples to test for heavy metal concentrations. These data can provide an integrated look at the various stressors impacting the aquatic community.
- Engaging with the Oregon Department of Fish and Wildlife (ODFW) biologist who conducted a pit tagging study to discuss observations of fish health that may provide insight into potential water quality stressors.
- Collecting a representative sample of the outmigrant Chinook salmon smolt population to determine fish health including the incidence of deformities, erosions, lesions, tumors, parasites, and gill pathologies indicative of copper and other stressors.
- Testing fish tissue for presence of copper in existing mortalities, or potentially conducting a new study of smolts.
- Conducting a caged fish study to further evaluate linkages between mortality and water quality.
- Acquiring additional funding to continue this water quality assessment. Potential sources of funding include the U.S. Environmental Protection Agency (EPA) Clean Water Act Section 123 Columbia River Basin Restoration Program grants and the Oregon Department of Agriculture Water Quality Support Grant.

There is still significant uncertainty regarding the elevated copper concentrations, especially because exceedances are occurring at different locations in the various sampling events. If locations of copper exceedances could be predicted, a longer-term integrated sampling event could be utilized to further understand the duration of the exceedances.

This assessment provides new information (timing and location) of potential water chemistry issues (copper and low DO) in the Grande Ronde Basin; found no evidence that PAHs, pesticides/herbicides, and non-detect metals contributed to potential water chemistry issues in the basin; addressed questions relative to water chemistry; and provides a starting point for future work, when funding allows for additional investigation.

Introduction

The purpose of this water quality assessment was to investigate whether poor water quality plays a role in Chinook salmon smolt mortality. This two-year assessment analyzed water quality in the Grande Ronde River and Catherine Creek within the Grande Ronde Valley to Elgin, to encompass the communities and surrounding areas of La Grande, Union, Cove, Summerville, and Elgin. The goal of this assessment was to determine whether chemicals are present (and at what levels) in streams in the Grande Ronde Basin that could be contributing to mortality in salmonids (particularly during the months of February to May when outmigrating Chinook salmon smolt populations are experiencing high mortality).

Assessment Background and Description

The Grande Ronde Valley is located in Union County in northeast Oregon. See Figure 1, Location and Vicinity Maps. Consistently high mortality rates (60 to 70 percent) in recent history for migrating Chinook salmon smolt within this region are hypothesized by ODFW researchers to be caused by predation from herons (one study suggests this could account for up to 10 percent mortality) and poor water quality (Favrot and Sedell, 2018). It has been widely presumed that water temperature was the cause of the remaining losses; however, mortality occurs during Chinook salmon smolt migration (February through May), when water temperatures are generally below lethal levels (Favrot and Sedell, 2018). Mortality is primarily occurring in a reach identified by the U.S. Bureau of Reclamation (Reclamation) as “reach 3” near Union (Reclamation, 2012; p. 95). See Figure 2, Sampling Locations with Water Quality Exceedances. The in-basin factors limiting spring Chinook salmon smolt populations in the Catherine Creek and middle Grande Ronde River systems are water quality (elevated summer water temperature), excess fine sediment, altered hydrologic function, predation, food availability, riparian conditions, habitat complexity/diversity, competition with hatchery fish, and pathogens. Altered hydrologic function is primarily a consequence of irrigation water management, which results in reduced in-stream flows during critical summer months, potentially contaminated return water, elevated stream temperatures, and passage barriers. The Upper Grande Ronde Sub-Basin Total Maximum Daily Load (TMDL) shows that water quality in the Upper Grande Ronde sub-basin frequently violates state water quality standards. The standards of concern include stream temperature, DO, and pH (DEQ, 2000). Habitat complexity issues are primarily due to reduced wetted widths and a lack of pools and large woody debris. Additionally, some reaches of Catherine Creek have been channelized and armored to accommodate road construction, homesteads, and irrigated agriculture (Reclamation, 2012; p 57).

The Grande Ronde River and Catherine Creek converge in the Grande Ronde Valley. The landscape is highly altered. Oregon Trail homesteaders drained wetlands and channelized rivers to create agricultural land through the late 1800s to 1930s. These alterations impacted habitat, both upland and aquatic, for fish and wildlife.

Notably, Catherine Creek’s confluence with the Grande Ronde River is 22.4 miles farther downstream than it was historically (Favrot and Sedell, 2018). During low flow periods beginning in the summer, this area (partially including the historic Grande Ronde River channel) is characterized by high water temperatures and low DO, low flows, high fine sediment content, and the presence of non-native warm water fish species.

Additionally, when the State Ditch was completed, it reduced 32.5 miles of natural Grande Ronde River channel to 4.5 miles of artificial channel to provide flood control for the Grande Ronde Valley (Favrot and Sedell, 2018; Gildemeister, 1998).

Study Objectives

The primary objective of this study was to identify whether chemicals are present in streams in the Grande Ronde Basin at concentrations above fish health protective water quality criteria.

The secondary objective was to better understand whether chemicals exceeding water quality criteria might contribute to smolt mortality.

Approach to Sampling

Chemical analytes were determined based on a review of the sources of potential contamination in the Grande Ronde Basin. These include agricultural, ranching, forestry, city/residential, and industrial land use; roads; railroads; industrial point sources; and wastewater treatment plant outfalls (see Appendix A, Approved Sampling and Analysis Plan).

A regional water planning effort identified land use in the region (Upper Grande Ronde River Watershed Partnership, 2018). In general, local municipal concerns include microbes, salts, metals, pesticides, herbicides, organics, radioactive contaminants, and arsenic. Local agricultural concerns include sediment/turbidity, invasive seeds, bacteria, and weed and algae growth from excessive nutrients. Local in-stream concerns include temperature, DO, pH, sediment, bacteria, ammonia, and channel and flow regime alterations. Based on land use in the Grande Ronde Basin, potential contaminants of concern include:

- Industrial production - La Grande Dimensional Lumber/Trim Boards (Woodgrain), Island City Particleboard (Boise Cascade), and Elgin Plywood (Woodgrain). Chips and logs are stored in yards. Formaldehyde is the principal contaminant of concern associated with plywood production, as well as phenols. These contaminants would likely be a concern only if water quality limits on discharge permits were consistently violated.
- Industrial forestry (herbicides, pesticides, and sedimentation) (Kelly et al., 2012)
- Agricultural production (pesticides/herbicides/fertilizers/nitrogen/phosphorus/ sedimentation)
- Ranching (nutrients)
- Mining (heavy metals)
- Stormwater runoff with road salt and particles from tire erosion on paved roads (chlorides/metals/PAHs/suspended solids) (Federal Highway Administration, 2016; Tian et al., 2021)
- Publicly owned treatment works wastewater discharge (nutrients/hormones/ pharmaceuticals/personal care products/polybrominated diphenyl ethers/pesticides)

- Stormwater runoff along railroad tracks (metals/creosote/herbicides/PAHs) (Rails-to-Trails, Nd.)
- Vector control spray of mosquitos (organophosphate pesticides) (EPA, Nd.)

Based on the above review, analytes were selected based on the following criteria:

- Conventionals - It was determined that these should be tested for at all locations for all events to provide sufficient information about water conditions to evaluate other chemistry data. Conventionals analyzed included ammonia, total alkalinity, sulfide, chloride, total phosphorus, and total hardness.
- Metals - It was determined that these should be tested for at all locations for all events as metals are one of the chemicals frequently posing risk to salmonids. Metals analyzed included arsenic, cadmium, chromium, copper, total cyanide, iron, lead, nickel, selenium, silver, zinc, and mercury.
- PAHs - It was determined that these should be tested for as PAHs are one of the chemicals posing risks to salmonids.
- Pesticide/Herbicide Multi-Residue Screen - It was determined that these should be tested for as pesticides from runoff associated with agricultural practices and vector control are some of the chemicals frequently posing risk to salmonids.

Sampling Program

A Sampling and Analysis Plan (SAP) was prepared to document the approach for the GRMW's Grande Ronde Basin Water Quality Assessment (AP, 2020). The SAP identified the objectives of data collection and enumerated the field quality assurance/quality control (QA/QC) methods that occurred during field sampling and laboratory analysis (see Appendix A, Approved SAP).

Surface water samples were collected at ten locations during ten sampling events between November 2020 and September 2022 and tested for chemical parameters using a phased sampling approach. These locations, parameters, and dates were modified based on budget, findings, and weather events. Reviews of literature, existing data, and potential sources of contamination in the Grande Ronde Basin were conducted to determine initial analytes for testing. The sampling program was divided into two phases. Phase 1 included two sampling events, and Phase 2, the remaining eight sampling events. Table 1, Sampling Locations and Rationales, lists all Phase 1 and 2 analytes and locations. Figures 1 and 2 show sample locations. The ten sampling locations and their abbreviations are listed below:

1 - Catherine Creek State Park (CCSP)
2 - Catherine Creek below the City of Union wastewater treatment plant outfall (CCUB)
3 - Catherine Creek at Wilkinson Lane (CCWL)
4 - Ladd Creek at Peach Lane (LCPL)
5 - Grande Ronde River in Island City (GRIC)
6 - Grande Ronde River at Market Lane (GRML)
7 - Catherine Creek Market Lane Bridge (CCML)
8 - Willow Creek at Courtney Lane (WCCL)

9 - Grande Ronde River, Highway 82 near Indian Creek (GR82)
10 - Grande Ronde River near the confluence with Fly Creek (GRFC)

The Phase 1 analyte list included conventionals, metals, PAHs, and currently used pesticides and herbicides (November 2020 event). The Phase 1 surface water samples were collected from four locations (2, 3, 5, and 9). Phase 1 chemicals that exceed DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 (acute water quality criteria) or were present at elevated concentrations were retained for analysis during Phase 2 sampling. The Phase 2 analyte list included conventionals, metals (excluding selenium, cadmium, lead, mercury, total cyanide, and silver), and currently used pesticides and herbicides (two additional events in Phase 2, when pesticide and herbicide runoff is most likely). PAHs were removed after Phase 1 as none were detected. The Phase 2 surface water samples were collected from all ten locations; however, chemicals measured at each event varied based on previous results and seasonality. At each sample location, water quality parameters including temperature, conductivity, DO, pH/oxidation reduction potential (ORP), total hardness, depth, and turbidity were measured in the field and recorded on the field log (see Appendix B, Field Logs). Photos of current conditions were also taken at each sample location (see Appendix C, Photographs). When possible, sample collection was conducted after a precipitation event to assess potential impacts from stormwater runoff or when outmigration occurred. Sampling targeted precipitation events forecasted to produce greater than 0.25 inch of precipitation. When possible, samples were collected as water levels were rising and before turbidity began to increase to maximize the chances of detecting analytes of concern that may be present in the Grande Ronde Basin. Table 2, Sampling Event Precipitation and Water Depth, shows the recorded precipitation during each sampling event. Field duplicates and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5 percent during each Phase 2 event.

Water Sample Collection

Sample locations and rationale are described on Table 1. Samples were collected as follows:

- At each location, staff made an entry in the daily log and took a GPS point to record the sampling location.
- Prior to sample collection, a water quality instantaneous field measurement was collected using a YSI Professional Digital Sampling System (ProDSS). Parameters included temperature, conductivity, DO, pH/ORP, and depth. The YSI ProDSS was deployed in situ (cord to be hung off bridges or placed in the water by hand if the site was accessible). Turbidity was measured using the Hatch turbidity meter. A water quality sampling data sheet was completed for the water quality instantaneous measurements (see Appendix B, Field Logs).
- The water sample was collected in the laboratory-provided sampling bottle in situ by staff (wearing appropriate personal protective gear including nitrile gloves). Samples were collected by hand if the site was accessible or with a Van Dorn grab sampler or swing water sampler deployed from the top of the bridge.

Summaries of the ten sampling events are provided on Table 3, Water Quality Exceedances.

Analytical Methods

In accordance with the SAP (Appendix A), all samples were initially analyzed for Phase 1 analytes including conventionals (ammonia-N, alkalinity, total phosphorus, and sulfides), metals (arsenic, cadmium, chloride, chromium, copper, cyanide, iron, lead, nickel, selenium, silver, zinc, and mercury), PAHs, pesticide/herbicide multi-residue screen (November 2020), and YSI ProDSS measured parameters (pH, temperature, DO, conductivity, and turbidity). Phase 1 analytes that exceeded water quality criteria or were present at elevated concentrations were retained for analysis during Phase 2 sampling.

Sample analysis for conventionals, metals, and PAHs was conducted by Fremont Analytical Laboratory in Seattle, Washington, and herbicide/pesticide analysis was conducted by the Pacific Agricultural Laboratory in Sherwood, Oregon.

The samples were analyzed for the following (during the dates listed on Table 4, Chemistry Results):

- Ammonia by SM 4500 NH3G
- Cyanide by SM 4500-CN C, E
- Dissolved Metals by EPA Method 200.8
- Dissolved Mercury by EPA Method 245.1
- Ion Chromatography by EPA Method 300.0
- Sulfide by SM 4500-S2-F
- Total Alkalinity by SM 2320B
- Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
- Total Hardness by EPA Method 200.8/SM 2340B
- Total Phosphorous by EPA Method 365.3

Sampling Positions

Target sampling positions were determined based on aerial photograph data, and coordinates were recorded during each sampling event using a Trimble R1 GPS unit with Esri Field Maps app for iPad. Sampling positions varied slightly throughout the sampling events due to water depth.

Sample Processing/Handling/Shipping/Temperatures

The samples were all collected into lab-provided sampling bottles. Once collected, the water samples were firmly sealed and clearly labeled with project name, sample ID, type of analysis, date, time, and initials of sampler and logged on the laboratory's chain of custody (COC) form. Samples were preserved with ice and, once all samples were collected, they were placed in bubble wrap in coolers and shipped to the laboratories. Ground shipping (two-day) was used if samples were able to be shipped the day of the sampling event. Overnight shipping was used if samples were shipped the next day. See Appendix D for copies of the COCs.

All samples arrived at the laboratories in good condition with proper labeling.

All results for samples exceeding hold times or temperature thresholds were qualified in the qualifier column of Table 4. Results from these events appeared to be similar to other events, so the data were retained and used in analysis.

Sampling and Analysis Plan Deviations

During the November 2020 sampling event, the following PAHs exceeded holding times for preparation or analysis: 2-methylnaphthalene, acenaphthylene, acenaphthene, anthracene, pyrene, benz(a)anthracene, and benzo(a)pyrene. During the January 2021 sampling event, chloride exceeded holding times for preparation or analysis. During the August 2021 sampling event, sulfide exceeded holding times for preparation or analysis. The remaining samples were processed within the holding time and arrived at Fremont Analytical Laboratory at the recommended cooler temperatures of 0 to 6° Celsius (C) upon arrival; therefore, this deviation was determined to have no impact on the chemistry results. Additionally, one cooler arrived at 19.5°C (August 2021 event), and another cooler arrived at 8.1°C (May 2022 event). Fremont Analytical Laboratory stated that this temperature is unlikely to impact the results of the May 2022 samples. Upon arrival to the lab, the temperature was taken using a thermometer placed inside each cooler. Temperatures were not provided by the lab for the April 2022 event.

For each event, the following deviations from the SAP occurred:

- Location 2 was moved downstream near the City of Union Wastewater Treatment Facility outfall prior to the first sampling event in November 2020.
- The November 2020, October 2021, January 2022, May 2022, and September 2022 samples were not shipped within 24 hours but were iced and sent within the shortest hold time of seven days.
- During the November 2020 sampling event, turbidity was not collected.
- When sampling for turbidity, a Hach turbidity meter was used rather than a YSI ProDSS as stated in the SAP.
- Total hardness was added as a parameter during the January 2021 sampling event.
- For the January 2021 sampling event, it was determined that sampling would consist only of conventionals and metals based on Phase 1 results. The reason for this modification was that no PAHs were detected during the November 2020 sampling event, and it was expected that no pesticides had been applied since the November 2020 sampling event.
- Selenium, cadmium, lead, mercury, silver, and total cyanide were excluded from Phase 2 sampling as they were not detected during the first two sampling events.
- During the April 2021 sampling event, depths were not recorded at CCWL, LCPL, GR82, WCCL, CCML, and GRML because a sampling pole was used. During the August 2021 sampling event, depths were estimated at WCCL and CCML because a sampling pole was used. During the October 2021 sampling event, depths were estimated at WCCL and CCML because a sampling pole was used. During the January 2022 sampling event, depths were estimated at WCCL and CCML because a sampling pole was used and at GRML because a Van Dorn sampler was used. During the April 2022 sampling event, depths were estimated

at CCWL, LCPL, WCCL, and CCML because a sampling pole was used and at GRML because a Van Dorn sampler was used. During the May 2022 sampling event, depths were estimated at CCWL, LCPL, WCCL and CCML because a sampling pole was used and at GRML because a Van Dorn sampler was used. During the September 2022 sampling event, depths were estimated at WCCL and CCML because a sampling pole was used.

- For the August 2021 sampling event, the YSI ProDSS ORP was calibrated ten days prior to the calibration of all other parameters.
- For the August 2021 sampling event, the samples arrived at the lab at approximately 19.5°C. The normal temperature criterion is between 0 to 6°C.
- Samples were not taken at LCPL during the October 2021 and September 2022 sampling events because no water was present in Ladd Creek.
- Field duplicate data were not provided by the lab during the October 2021 sampling event due to an error on the COC.
- For the May 2022 sampling event, the samples arrived at the lab at approximately 8.1°C. The normal temperature criterion is between 0 to 6°C.
- For the May 2022 and September 2022 sampling events, Fremont Analytical Laboratory was unable to accommodate sulfide in-house and, therefore, contracted it to Am Test Inc. The samples were received and analyzed by Am Test within the hold time of seven days.

Discussion of Deviations

The deviations mentioned above include activities that were not consistent with the SAP. None of these deviations are likely to have adversely affected the results of the water quality assessment.

Analytical Results

Field Measured Results

The following sections discuss the data measured in the field by the YSI ProDSS probe (see Table 4, Chemistry Results).

Temperature

Temperature ranged from 0 to 27.1°C with a mean of 8.44°C. The Upper Grande Ronde Sub-Basin has a temperature TMDL. According to the DEQ Temperature Water Quality Standard Implementation Internal Management Directive, the salmon rearing and migration temperature criterion is 13.0°C, seven-day average maximum year-round (DEQ, 2008). Temperatures exceeded the 13.0°C threshold during the August 2021 sampling event at all locations; at LCPL during the May 2022 sampling event; and at CCML, CCUB, CCWL, GR82, GRML, GRIC, and GRFC during the September 2022 sampling event, although seven-day averages were not collected.

Conductivity

Conductivity ranged from 38.9 specific conductance (SPC) to 642 SPC with a mean of 121.72 SPC. SPC measures the ability of water to conduct an electrical current and is proportional to the concentration of dissolved ions in water. High conductivity can be associated with anthropogenic impacts.

Dissolved Oxygen

DO ranged from 3.66 milligrams per liter (mg/L) to 13.22 mg/L with a mean of 10.48 mg/L. For water bodies identified by the DEQ as providing cool-water aquatic life, the DO may not be less than 6.5 mg/L as an absolute minimum (DEQ, 2010). DO was observed below 6.5 mg/L during three sampling events in LCPL during November 2020, April 2021, and May 2022. DO was observed below 6.5 mg/L during two sampling events in CCML during August 2021 and September 2022. DO results were compared to the application of the cold water DO criterion in Oregon Administrative Rules 340-041-0016(2).

pH

pH ranged from 6.79 to 9.16 with a mean of 7.62. According to the EPA National Recommended Aquatic Life Criteria Table, the pH limits established for fresh water are 6.5 to 9 (EPA, 2022). GRML exceeded the pH water quality criterion in August 2021 with a pH of 9.16. All other locations were within the pH limits.

Oxygen Reduction Potential

ORP ranged from 115 voltage potential difference (mV) to 336.6 mV with a mean of 241.39 mV. ORP should read between 300 and 500 mV in healthy waters (DataStream Initiative, 2021). A higher ORP reading indicates that more oxygen is present in water.

Turbidity

Turbidity levels ranged from 0.64 nephelometric turbidity unit (NTU) at GRFC in September 2022 to 55.2 NTU at WCCL in March 2021 and had a mean of 15.47. Turbidity levels were 322 NTU at LCPL in August 2021 because samples were collected from standing water in a small pool as there was no flowing water in the creek.

Chemistry Results

The following sections present the chemistry results and a comparison to DEQ Table 30 water quality criteria and ecological health-specific water quality criteria (DEQ, 2015) (see Table 4, Chemistry Results).

Conventionals

Ammonia

Ammonia ranged from 0.1 mg/L to 1.72 mg/L with a mean of 0.13 mg/L. Freshwater criteria for ammonia are pH, temperature, and life-stage dependent. Criteria magnitudes are expressed as total ammonia nitrogen (mg/L) at pH 7 and 20°C, with the acute (one-hour average) being 17 mg/L and the chronic (30-day rolling average) being 1.9 mg/L (not to exceed 2.5 times the criterion continuous concentration as a four-day average within a 30-day period) (EPA, 2013). Ammonia was detected at CCUB in January 2021 and March 2021, and at LCPL in August 2021 and January 2022. None of the locations exceeded the acute or chronic water quality criteria for ammonia, although one-hour and 30-day averages were not collected.

Total Phosphorus

Total phosphorus ranged from 0.2 mg/L to 4.64 mg/L with a mean of 0.32 mg/L. Total phosphorus was detected at LCPL in November 2020, January 2021, August 2021, and January 2022 and at GRML in March 2021. No water quality criteria were available for total phosphorus.

Alkalinity

Alkalinity ranged from 20.5 mg/L to 213 mg/L with a mean of 47.99 mg/L. According to the EPA National Recommended Aquatic Life Criteria Table, the freshwater criterion continuous concentration is 20 mg/L at a minimum, except where alkalinity is naturally lower, in which case the criterion is the natural alkalinity of the water in question (EPA, 2022). All locations had alkalinity concentrations above the minimum 20 mg/L.

Chloride

Chloride ranged from 0.36 mg/L to 92.8 mg/L with a mean of 6.17 mg/L. The water quality criteria for chloride were obtained from the DEQ Table 30: Aquatic Life Water Quality Criteria for Toxic Pollutants. The water quality criteria are 230 mg/L (chronic) and 860 mg/L (acute). The maximum total chloride value was 92.8 mg/L in LCPL in January 2021. All values were very low compared to the water quality criteria and were not evaluated further.

Sulfide

Sulfide ranged from 0.05 mg/L to 10.4 mg/L with a mean of 0.87 mg/L. According to the EPA National Recommended Aquatic Life Criteria Table, the chronic freshwater criterion continuous concentration of sulfide is 0.002 mg/L (EPA, 2022). The detection limit for sulfide is 0.3060 mg/L, which is higher than the water quality criteria. Sulfide was detected at LCPL in November 2020, January 2021, March 2021, April 2021, January 2022, and April 2022; at GR82 in January 2021, and January 2022; at WCCL in March 2021, January 2022, and April 2022; at CCSP in August 2021 and January 2022; at GRIC in January 2022 and April 2022; at CCML in April 2022; and at CCUB, CCWL, GRFC, and GRML in January 2022.

Hardness

Hardness ranged from 7.96 mg/L calcium carbonate ($CaCO_3$) to 225 mg/L $CaCO_3$ with a mean of 38.90 mg/L $CaCO_3$. Hardness was used to compare the metals to criteria and data for BLM calculation of the copper water quality criteria.

Polyaromatic Hydrocarbons (EPA Method 8270 [SIM])

Water quality criteria were obtained from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures (EPA, 2003). PAH analysis occurred during Phase 1, and no PAHs were detected; therefore, they were not evaluated further (see Table 4, Chemistry Results).

Metals

Arsenic, chromium, copper, iron, nickel, and zinc were detected in various samples throughout Phase 1. Copper was the only metal to exceed water quality criteria in Phase 1. Cadmium, cyanide, lead, silver, and mercury were not detected in Phase 1 and, therefore, were not evaluated further. Selenium was not detected in Phase 1 but was still tested for during Phase 2 due to its association with agricultural land use.

Because arsenic, chromium, copper, iron, nickel, and zinc were detected at most locations, these metals were retained for analysis during Phase 2. Selenium was detected at WCCL in April 2021. Copper, chromium, zinc, and nickel exceeded water quality criteria in Phase 2 (see Table 4, Chemistry Results). The following summarizes the range and mean of detected values.

- Arsenic ranged from 0.5 micrograms per liter (µg/L) to 3.33 µg/L with a mean of 1.07 µg/L. No arsenic exceedances occurred.
- Chromium ranged from 0.75 µg/L to 55.5 µg/L with a mean of 1.60 µg/L. One of the 80 results for chromium exceeded the chronic water quality criterion of 10.85 µg/L.
- Copper ranged from 1 µg/L to 51.6 µg/L with a mean of 3.40 µg/L. Seven of the 80 results for copper exceeded the DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 acute criterion of 5.50 µg/L. This copper criterion is hardness adjusted based on BLM outputs as described in the BLM section of the discussion.
- Iron ranged from 100 µg/L to 799 µg/L with a mean of 117.97 µg/L. No iron exceedances occurred.
- Nickel ranged from 0.65 µg/L to 26.1 µg/L with a mean of 1.78 µg/L. One of the 80 results for nickel exceeded the chronic water quality criterion of 6.13 µg/L.
- Zinc ranged from 2.50 µg/L to 57.30 µg/L with a mean of 5.46 µg/L. One of the 80 results for zinc exceeded the acute water quality criterion of 14.04 µg/L.

Figure 3, Metals Concentrations by Date and Location, compares the metals concentrations throughout the sampling events.

Pesticides and Herbicides

Pesticides and herbicides were sampled at CCUB, CCWL, GR82, and GRIC during the November 2020, April 2021, and April 2022 sampling events. These locations were selected due to their likelihood to receive herbicide and pesticide runoff. Prodiamine was detected at all locations during the November 2020 sampling event. For four samples where it was detected, prodiamine concentrations ranged from 0.11 µg/L to 0.12 µg/L with a mean of 0.12 µg/L. These results did not exceed the acute water quality criterion of 829 µg/L (EPA, 1992). None of the remaining 286 pesticides/herbicides were detected; therefore, pesticides/herbicides were not evaluated further (see Table 4, Chemistry Results).

Chemistry Summary

All samples were initially analyzed for the Phase 1 analytes. Phase 1 chemicals that exceeded Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 or were present at elevated concentrations were retained for analysis during Phase 2 sampling. Of the chemicals analyzed, only copper, chromium, zinc, and nickel exceeded the water quality criteria. (Copper concentrations exceeded the acute water quality criterion of 5.50 µg/L at six locations during six events, chromium exceeded the chronic water quality criterion of 10.85 µg/L at one location during one event, zinc exceeded the acute water quality criteria of 14.04 µg/L at one location during one event, and nickel exceeded the chronic water quality criterion of 6.13 µg/L at one location during one event.) Additionally, DO failed to meet the DEQ threshold for cool-water aquatic life of 6.5 mg/L at two locations during five events. All other chemistry results were less than the water quality criteria. Table 3 shows location, sampling date, analysis, and water quality exceedances, if present.

Data Quality

This section summarizes project QA/QC objectives for chemical data, as well as findings for validation activities.

Laboratory Accreditation

Chemical testing was performed by Fremont Analytical Laboratory. Fremont Analytical Laboratory is accredited by the Washington State Department of Ecology. Pesticide/herbicide testing was performed by Pacific Agricultural Laboratory.

Data Validation

The following section contains the data validation review using EPA Level 2B validation. A Level 2B validation of results includes verification based on completeness and compliance by reviewing the sample receipt conditions, sample QC, and instrument QC results (EPA, 2009). This section summarizes the review of analytical results for the water samples collected during each sampling event. The samples were received for analysis by Fremont Analytical Laboratory on November 17, 2020; January 20, March 19, May 4, August 6, and November 1, 2021; and January 26, April 11, June 3, and September 30, 2022.

Samples were received for analysis by Pacific Agricultural Laboratory on November 11, 2020; April 28, 2021; and April 8, 2022. They were analyzed for the multi-residue pesticide screen. All analytes are listed on Table 4, and lab chemistry reports are included in Appendix E.

Data validation and qualifications are included in Appendix F.

Laboratory Reporting

Detection limits and reporting limits were below acute and chronic water quality criteria with a few exceptions. These are detailed in Appendix F. Because some water quality criteria were below detection limits and reporting limits for some metals, there is the potential that acute and chronic water quality criteria were exceeded for more analytes than described in this report.

Overall Quality Assurance/Quality Control Assessment

The evaluation of the laboratory-produced data determined that the laboratory completed all requested sample analyses and followed the analytical methods specified in the SAP. Precision of results was acceptable through laboratory duplicates, laboratory control samples (LCS), and initial and continuing calibrations within control limits. Minor exceptions to this level of precision are noted above. Accuracy of results was acceptable as the surrogate, LCS, MS, and MSD percent recovery values were within specified limits, except for the minor exceptions noted above. The majority of the data were acceptable as reported; all other data were qualified in the validation process and are acceptable as qualified (see Appendix F, Data Validation and Qualifications).

Discussion

Seasonal water sampling at locations throughout the Grande Ronde Valley between 2020 and 2022 indicated that few parameters exceeded water quality criteria or were outside the acceptable range for Chinook salmon smolt. However, concentrations of DO and metals, particularly copper, deviated from acceptable water quality criteria at some locations during several of the sampling events. These results indicate water quality in the Grande Ronde Valley is impaired in some areas during portions of the year. While elevated concentrations of metals and low DO can adversely affect Chinook salmon smolt, additional information is needed to understand the relative contribution of these metals and low DO to the Chinook salmon smolt mortality observed in the Grande Ronde Valley.

The risk to Chinook salmon smolt from the sampled water quality parameters that were detected at concentrations below water quality criteria is low. These chemicals could contribute to poor survival if grab samples collected during this sampling effort are not sufficiently representative of longer-term average concentrations. Contaminants not detected at concentrations above water quality criteria could be contributing to reduced survival if actual concentrations are consistently above water quality criteria. These contaminants should be sampled and analyzed with lower detection limits in future efforts.

Analysis of Dissolved Oxygen Exceedances

DO measurements were less than the acute water quality criterion of 6.5 mg/L at LCPL during three events and at CCML during two events. These low DO events occurred during the months of April, May, August, September, and November, which overlap with the February through May period of

elevated smolt mortality observed in the Grande Ronde Basin. Low DO is a known cause of fish mortality and the DO concentrations observed during this study could have resulted in fish mortality. The relative impact of these low DO events on Chinook salmon smolt mortality in the Grande Ronde Basin depends on the number of these fish present within the affected area during the low DO events. Because the low DO events were localized (two locations of ten sampled), the population level impact from mortality that may have occurred at these locations is likely relatively small. Additionally, fish habitat at LCPL is generally poor (based on flow restrictions and habitat modifications), and the fish population in the vicinity is likely to be small.

Analysis of Zinc, Chromium, and Nickel Exceedances

Zinc, chromium, and nickel concentrations exceeded the water quality criteria once each at two locations. The chromium and nickel exceedances occurred at the WCCL location in May 2022, and the zinc exceedance occurred at the GRML location in April 2022. During the May 2022 event, flows were recorded at the highest levels of any sample date (Perry gauge: 1,000 cubic feet per second mean daily flow; precipitation was recorded at 0.70 inch). In addition to the chromium and nickel exceedances in May 2022, copper concentrations also exceeded the water quality criteria at GRIC. DO was less than the DEQ threshold at the LCPL location in November 2020, April 2021, and May 2022, and at the CCML location in August 2021 and September 2022. This suggests that stormwater contamination during high precipitation events contributes to poor water quality, which could affect smolt survival.

Analysis of Copper Exceedances

Dissolved copper exceeded the hardness-based acute water quality criteria in six of the ten locations during six of the ten sampling events. The water quality criteria were conservatively calculated assuming the lowest site-specific hardness concentration that might overestimate risk. As discussed below, more accurate estimates of bioavailable copper concentrations calculated using the BLM also exceeded the respective acute water quality criteria at the same locations and dates. The exceedances that occurred during January, March (two locations), and May overlap with the period of smolt outmigrant mortality (February through May). Because copper concentrations were elevated above acute water quality criteria by up to a factor of 6 and exceedances were widespread, copper could pose a risk to Chinook salmon smolt survival in the Grande Ronde Basin.

Because water quality parameters can alter the toxicity of metals to aquatic life, the BLM was used to evaluate copper toxicity at the sampling locations using site-specific water quality measurements. An evaluation of the BLM results is provided below.

Biotic Ligand Model

The BLM for copper is the EPA's current recommendation for determining freshwater aquatic life criteria for copper. This model determines site-specific criteria that account for changes in bioavailability, and thus toxicity, of copper to aquatic life due to differences in water chemistry (DEQ, 2017).

Selected preliminary data from the sites were modeled through the copper BLM in "simplified mode." This mode approximates the values for several parameters based on the hardness data.

The dissolved organic carbon default value for eastern Oregon specified by the DEQ and the ion ratios for the Western Cordillera ecoregion provided in the BLM model were used. The ion ratios estimate the values for calcium, magnesium, sodium, potassium, sulfate, and chloride. The results are attached in Appendix G, BLM results. The DEQ BLM implementation memo provides default parameter values for Eastern Oregon and alternative estimates based on SPC, if measured (DEQ, 2017).

Using site-specific copper and hardness data and the default values noted above, the BLM predicted similar magnitude and locations of copper exceedances to those identified using the hardness-based acute water quality criteria for copper. Based on both the BLM results and the results of the initial copper water quality criteria assessment, it was determined that the elevated copper concentrations observed during the study could cause adverse effects to fish and other aquatic life.

In future events, providing site-specific data for all of the model inputs (pH [Standard Units], DO, calcium, magnesium, sodium, potassium, sulfate, chloride, alkalinity, and SPC) may allow a more accurate assessment of the magnitude of potential toxicity.[1]

Potential Sources of Copper in the Grande Ronde Basin

Significant uncertainty in copper risk to Chinook salmon smolt remains. This investigation explored multiple avenues to determine the source of copper. This information could be used in future investigations to further understand the extent and duration of impaired water quality. Figure 4, Copper Concentrations by Date and Location, compares the copper exceedances to the hardness-based acute and chronic water quality criteria and the DEQ copper surface water detections for the Blue Mountains ecoregion.

The results of this investigation indicate that copper concentrations are high enough at some times and locations to potentially cause adverse effects in Chinook salmon smolt. Because the locations and timing of the copper exceedances were not consistent, the extent of copper contamination in the Grande Ronde Basin is difficult to characterize. Although development of a conceptual site model was beyond the scope of this study, several additional assessments were conducted to support the characterization of copper in the Grande Ronde Basin. These assessments included an evaluation of background concentrations of copper in soil and an assessment of roadside spraying practices. This information could be used in future investigations to further understand the extent and duration of impaired water quality.

Flow was considered a potential factor that could be linked with high copper concentrations in water. Low flows could potentially be associated with high copper concentrations in groundwater or soils. High flows could potentially be associated with high copper concentrations in suspended sediment (measured by turbidity or total suspended solids). As shown on Table 5, Streamflow Data During Copper Exceedances, exceedances occurred during

[1] Additional parameter costs were obtained from the lab for pH (Standard Units), DO, calcium, magnesium, sodium, potassium, sulfate, chloride, alkalinity, and SPC. It was determined that acquiring the additional BLM data would not be cost-effective for this study.

both high flow and low flow conditions. Turbidity readings are shown on Table 6, Turbidity Readings During Copper Exceedances.

Background Concentrations of Copper in Soil

Concentrations of copper in soil were evaluated because elevated copper concentrations in surface water may be associated with elevated concentrations of copper in soil or sediment. Blue Mountain copper concentrations are high relative to the U.S. in general but are similar to Oregon-wide copper concentrations. The U.S.-wide median, first quartile, third quartile, and maximum concentrations are 14.8, 9.1, 21.8, and 5,090 milligrams per kilogram (mg/kg) dry weight (dw), respectively (Smith et al., 2013, A-horizon soils). Oregon statewide mean, median, and maximum are 41, 34, and 131 mg/kg dw, respectively (Smith et al., 2013, Appendix A).

The DEQ reports that the mean copper detection is 41.41 mg/kg and the maximum is 195.5 mg/kg for the Blue Mountains ecoregion (DEQ, 2013).

A local farmer in the Grande Ronde Basin was contacted about copper in soil tests; they stated that they typically see 0.5 mg/kg copper in soil tests, which is very low compared to DEQ Blue Mountain background data.

Don Butcher, Basin Coordinator with DEQ, stated that “high” copper could be a background issue rather than anthropogenic. Specific metals data were retrieved from the DEQ soil database for the Grande Ronde Basin. The closest three copper concentrations were averaged for each location where a copper exceedance occurred. The average concentrations ranged from 45.5 mg/kg to 12.33 mg/kg. These values were low relative to regional background concentrations, suggesting background copper in the soils is not the cause of elevated concentrations of copper in water. Additional insight into the potential for copper in soils to contribute to exceedances could be gained by sampling soils from the vicinity of the exceedance locations. Copper transport to surface water from soil erosion and groundwater could also be modeled from regional or site-specific data using standard risk assessment practices.

County Roadside Spraying Practices

Surface water runoff can be a source of contaminants to streams; therefore, nonpoint sources of pollution were reviewed to evaluate potential copper contributions. The Union County weed control department was contacted regarding roadside spraying. The County does not use chemicals that contain copper. Roadside spraying is most commonly done in the fall (late September to early November) and spring/summer (late April to mid-July), depending on which weeds are being treated, wind, and moisture for the year. In spring/summer 2021, the County did not spray many roads due to lack of rain. The list of herbicides used by the County for different areas and target species is included as Appendix H. The County weed manager stated that copper sulphate is a common algicide.

Union County Vector Control was contacted regarding copper in mosquito sprays. They stated that no mosquito control products used in recent years have contained copper.

Oregon Department of Fish and Wildlife Previous Assessments

ODFW was contacted to determine what information was available from research related to copper presence in the Grande Ronde Basin and impact on fish health. The following is a summary of this correspondence:

ODFW was contacted about a fish-lip tumor study conducted approximately 15 years ago to see if it was determined that the occurrence of fish-lip tumors was associated with water quality issues (copper exceedances). ODFW staff were unable to locate this fish-lip tumor study information. ODFW was contacted about Catherine Creek fish pathology. ODFW indicated that the existing fish pathology data are unlikely to be helpful in the assessment of high mortality in Catherine Creek outmigrant Chinook salmon smolt because a review of the past few years of data indicated that there are no indications of toxicity. ODFW provided the following information related to the collection of chemistry toxicity data in fish:

- ODFW has not been collecting statistically significant numbers of fish or randomized samples. Instead, mortalities are opportunistically collected. These mortalities were typically subjected to net strike or overdosed on MS-222 (tricaine mesylate). There are lower numbers of samples from the Elgin screw trap, so any data provided may prove limited in usefulness to this study. Reporting a cause of death as toxicity from water contaminants has not occurred in the ODFW lab. This diagnosis would be difficult to make due to multiple other factors fish are exposed to that could contribute to mortality. The information ODFW gathers, such as clinical signs seen on a gross exam or microscopic exam, are usually non-specific signs that do not point toward toxicity or poor water quality (with a few exceptions). Most clinical signs found could actually have various causes. Copper toxicity can damage gills, though not in a way during standard exams that would stand out from other gill damage causes, such as infectious organisms, high ammonia, inappropriate pH, high sediments in the water, etc. Histopathology tests could be done to more accurately determine whether copper toxicity is present, such as a special stained histopathology test to show sequestered excess copper in the liver. That specific test has not been done at the ODFW lab.
- A couple of water quality issues can be detected from a standard exam, such as how high nitrite will cause the blood and gills to appear brown, and supersaturation would cause bubbles to appear in the gill capillaries. There are many causes of general gill damage.
- A further complication of signs that indicate poor water quality is that when fish are frozen, those signs, such as brown blood or gas bubbles, are no longer appreciable (and many of the samples ODFW receives are frozen or get frozen).
- Organophosphate toxicity can cause vertebral fractures but more typically causes behavioral abnormalities or death. If fry are chronically exposed, they could have poor growth and deformities.
- Regarding heavy metals, they are generally more toxic at lower pH, higher temperatures, in soft water, and at low alkalinity levels. ODFW fish pathologists do not

know of pathognomonic signs or clinical signs that particularly indicate toxicity of these metals.

- ODFW does not collect data on water quality testing or toxins detected in the water.

Conclusion

Based on the observed elevated concentrations of copper at locations throughout the Grande Ronde Valley and low DO at LCPL and CCML, it is possible that these chemicals may contribute to Chinook salmon smolt mortality. Additional sampling to characterize timing, duration, and spatial extent of exceedances relative to fish occurrence within the Grande Ronde Basin is needed to better understand the impact and risk from these chemicals.

The following conclusions may be drawn about the possible contributions of water chemistry to outmigrating Chinook salmon smolt mortality during the months of February through May in the Grande Ronde Valley:

- This assessment found evidence that low DO occurs during the months of February to May.
- Low DO and elevated copper concentrations at the LCPL and CCML locations may have an acute adverse impact on Chinook salmon smolt survival.
- This assessment found elevated copper concentrations throughout the assessment area, including in the most upstream location, GRFC, which was anticipated to be a reference location; this indicates copper may be pervasive in the Grande Ronde Basin.
- Based on the elevated concentrations of copper observed at six locations and other analytes detected at elevated concentrations, it is possible that one or more of the analyzed chemicals is the cause of, or is contributing to, smolt mortality. However, additional sampling is needed, and other environmental and biological factors should be considered.

Data Gaps and Next Steps

Potential additional future work to integrate the findings of the water quality sampling with other efforts to understand the causes of outmigrant Chinook salmon smolt mortality may include:

- Conducting additional water quality sampling at selected locations to investigate the link between stormwater runoff, turbidity, and copper exceedances. Duplicate samples could potentially be sent to different labs to compare results.
- Collecting 24-hour composite surface water samples over a longer duration at selected locations to evaluate whether select chemical or conventional parameters have potentially more toxic levels than observed in grab samples.
- Characterizing the spatial extent of low DO at LCPL and CCML by installing DO loggers upstream and downstream. Additional information regarding fish habitat and population is needed to better understand the impact of low DO events at these locations. Additional information regarding the duration and spatial extent of low DO is also needed.

- Collecting sediment samples at each of the ten sampling locations and testing for metals. These data will help determine if the source of the high copper levels in select water grab samples is linked to high copper levels in the soil. This task was recommended at the State of the Science meeting due to historical mining operations in the Grande Ronde Basin.
- Collecting macroinvertebrate samples to test for heavy metal concentrations. These data can provide an integrated look at the various stressors impacting the aquatic community.
- Engaging with the Oregon Department of Fish and Wildlife (ODFW) biologist who conducted a pit tagging study to discuss observations of fish health that may provide insight into potential water quality stressors.
- Collecting a representative sample of the outmigrant Chinook salmon smolt population to determine fish health including the incidence of deformities, erosions, lesions, tumors, parasites, and gill pathologies indicative of copper and other stressors.
- Testing fish tissue for presence of copper in existing mortalities, or potentially conducting a new study of smolts.
- Conducting a caged fish study to further evaluate linkages between mortality and water quality.
- Acquiring additional funding to continue this water quality assessment. Potential sources of funding include the EPA Clean Water Act Section 123 Columbia River Basin Restoration Program grants and the Oregon Department of Agriculture Water Quality Support Grant.

There is still significant uncertainty regarding the elevated copper concentrations, especially because exceedances occurred at different locations in the various sampling events. If locations of copper exceedances could be predicted, a longer-term integrated sampling event could be utilized to further understand the duration of the exceedances.

This assessment provides new information (timing and location) of potential water chemistry issues (copper and low DO) in the Grande Ronde Basin; found no evidence that PAHs, pesticides/herbicides, and non-detect metals contributed to potential water chemistry issues in the Grande Ronde Basin; addressed questions relative to water chemistry; and provides a starting point for future work, when funding allows for additional investigation.

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TABLES

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
SAMPLING LOCATIONS AND RATIONALES

Location No.	Latitude/ Longitude	Location Description	Phase	Location Rational/Notes
1	45°9'9.54"N -117°44'30.55"W	Catherine Creek State Park (CCSP)	Phase 2	Location selected as reference location (no sources are currently known). This is the most upstream location in Catherine Creek.
2	45°12'35.12"N -117°51'55.75"W	Catherine Creek below the City of Union WWTP outfall (CCUB)	Phase 1 and Phase 2	Location selected due to proximity to the City of Union WWTP. It is also downstream of the City of Union and agricultural land, capturing agricultural and municipal runoff. High mortality has been observed in this reach of Catherine Creek (reach 3 of tributary assessment).
3	45°16'31.63"N -117°55'55.84"W	Catherine Creek at Wilkinson Lane (CCWL)	Phase 1 and Phase 2	Location selected due to proximity to agricultural land (capturing agricultural runoff and irrigation return water).
4	45°16'35.22"N -117°57'10.36"W	Ladd Creek at Peach Lane (LCPL)	Phase 1 (conventionals only) and Phase 2	Location selected due to proximity to agricultural land and Ladd Marsh (capturing agricultural runoff and treated wastewater inputs). Low DO has been observed in this location.
5	45°20'39.62"N -118° 2'43.27"W	Grande Ronde River in Island City (GRIC)	Phase 1 and Phase 2	Location selected due to proximity to Island City, Boise Cascade, and Hexion (capturing agricultural, industrial, and municipal runoff).
6	45°23'3.36"N -117°55'47.42"W	Grande Ronde River at Market Lane (GRML)	Phase 2	Location selected due to proximity to agricultural land.
7	45°23'23.69"N -117°53'18.41"W	Catherine Creek Market Lane Bridge (CCML)	Phase 2	Location selected due to proximity to agricultural land.
8	45°29'35.27"N -117°58'44.53"W	Willow Creek at Courtney Lane (WCCL)	Phase 2	Location selected due to proximity to agricultural land.
9	45°33'8.58"N -117°55'0.75"W	Grande Ronde River - Highway 82 near Indian Creek (GR82)	Phase 1 and Phase 2	Location selected due to proximity to agricultural land. This is the most downstream location of the basin where sampling occurred.
10	45°12'34.58"N -118°23'42.50"W	Grande Ronde River near confluence with Fly Creek (GRFC)	Phase 2	Location selected as reference location (forested location, no sources are currently known). This is the most upstream location of the Grande Ronde Basin (Upper Grande Ronde River).

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
SAMPLING EVENT PRECIPITATION AND WATER DEPTH

Sampling Event Precipitation			Water Depth (ft)									
Date	Union, Oregon, Weather Station Rainfall	Anderson Perry Rain Gauge, La Grande, Oregon	CCUB	CCWL	LCPL	GR82	GRIC	WCCL	CCML	GRML	CCSP	GRFC
Thursday, November 5, 2020	0	0.23										
Friday, November 6, 2020	0.05		1	2	2.5	2	2.5	-	-	-	-	-
Tuesday, January 12, 2021	0.02	0.35										
Wednesday, January 13, 2021	0.61		1	2	2.5	3	2.5	-	-	-	-	-
Monday, March 8, 2021	0.04	0.02*										
Tuesday, March 9, 2021	0.09		1.5	3	3	3	4	3	3	4	1	1.5
Saturday, April 24, 2021	0	0.45										
Sunday, April 25, 2021	0.45		1	NR	NR	NR	3.5	NR	NR	NR	1.5	2
Sunday, August 1, 2021	0.45	0.2										
Monday, August 2, 2021	0.29		0.5	2	0.3	1	2	4	3	1.5	0.5	0.5
Friday, October 22, 2021	0	0.5										
Saturday, October 23, 2021	0.65		1	3	-	1	3	5	5	2	1	1.5
Thursday, January 20, 2022	0.24	0.6										
Friday, January 21, 2022	0		1	2	0.5	2	3	5	6	6	1	2
Monday, April 4, 2022	0	0.25										
Tuesday, April 5, 2022	0.09		1.5	5	4	3	3	5	6	6	1	1.5
Friday, May 27, 2022	0.11	0.7										
Saturday, May 28, 2022	0.34		3	6	5	3	2.5	4	5	5	2	2.5
Thursday, September 29, 2022	0	0.45										
Friday, September 30, 2022	0.30		1	3	-	1	2	5	4	2.5	1	1

Notes:
Precipitation data from the Union, Oregon, weather station were obtained from the AgACIS National Water and Climate Center, Portland, Oregon.
Sampling event occured on **bold** dates.
*Did not meet precipitation goal of 0.25 inch, but temperatures were very warm, producing snowmelt runoff.
Depths were estimated.
ft = feet
NR = not recorded
- = not sampled

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GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT
DATA REPORT

SAMPLING EVENT PRECIPITATION AND WATER DEPTH

TABLE 2

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
WATER QUALITY EXCEEDANCES

Site	Site Description	Parameter	Sampling Date									
			11/6/20	1/13/21	3/9/21	4/25/21	8/2/21	10/23/21	1/21/22	4/5/22	5/28/22	9/30/22
1	Catherine Creek State Park (CCSP)	Conventionals										
		Metals										Cu
		PAHs										
		Pesticide/Herbicide										
2	Catherine Creek below the Union Wastewater Treatment Plant Outfall (CCUB)	Conventionals										
		Metals	Cu									
		PAHs										
		Pesticide/Herbicide										
3	Catherine Creek at Wilkinson Lane (CCWL)	Conventionals										
		Metals										
		PAHs										
		Pesticide/Herbicide										
4	Ladd Creek at Peach Lane (LCPL)	Conventionals	DO			DO					DO	
		Metals			Cu							
		PAHs										
		Pesticide/Herbicide										
5	Grande Ronde River in Island City (GRIC)	Conventionals										
		Metals		Cu							Cu	
		PAHs										
		Pesticide/Herbicide										
6	Grande Ronde River at Market Lane (GRML)	Conventionals										
		Metals					Cu			Zn		
		PAHs										
		Pesticide/Herbicide										
7	Catherine Creek Market Lane Bridge (CCML)	Conventionals						DO				DO
		Metals										
		PAHs										
		Pesticide/Herbicide										
8	Willow Creek at Courtney Lane (WCCL)	Conventionals										
		Metals									Cr, Ni	
		PAHs										
		Pesticide/Herbicide										
9	Grande Ronde River - Highway 82 near Indian Creek (GR82)	Conventionals										
		Metals										
		PAHs										
		Pesticide/Herbicide										
10	Grande Ronde River near Confluence with Fly Creek (GRFC)	Conventionals										
		Metals			Cu							
		PAHs										
		Pesticide/Herbicide										

	Not sampled
	Sampled with no parameters exceeding screening values
Cu	Sampled with indicated parameters exceeding screening values

Cr = Chromium
Cu = Copper
Ni = Nickel
PAH = Polyaromatic hydrocarbons

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GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT

WATER QUALITY EXCEEDANCES

TABLE 3

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-CCUB-11062020	Result Detection Limit GRMW-CCUB-11062020	Result GRMW-CCUB-11062020	Qualifier GRMW-CCUB-11062020	Result Reporting Limit GRMW-CCWL-11062020	Result Detection Limit GRMW-CCWL-11062020	Result GRMW-CCWL-11062020	Qualifier GRMW-CCWL-11062020	Result Reporting Limit GRMW-GR82-11062020	Result Detection Limit GRMW-GR82-11062020	Result GRMW-GR82-11062020
Metals Dissolved) (µg/L)																	
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.5000	0.1830	0.5000	U	0.5000	0.1830	0.5000	U	0.5000	0.1830	0.5000
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	0.2000	0.0136	0.2000	U	0.2000	0.0136	0.2000	U	0.2000	0.0136	0.2000
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	1.0000	0.0219	1.0000	U	1.0000	0.0219	1.0000	U	1.0000	0.0219	1.0000
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.0000	0.2030	**14.6000**	--	1.0000	0.2030	**1.0500**	--	1.0000	0.2030	**1.2800**
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	0.0500	0.0028	0.0500	U	0.0500	0.0028	0.0500	U	0.0500	0.0028	0.0500
Iron		1000.0000	EPA200.8		100.0000	27.4000	100.0000	2.9700	100.0000	U	100.0000	2.9700	100.0000	U	100.0000	2.9700	100.0000
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	0.5000	0.0213	0.5000	U	0.5000	0.0213	0.5000	U	0.5000	0.0213	0.5000
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	2.5000	0.1900	2.5000	U	2.5000	0.1900	2.5000	U	2.5000	0.1900	2.5000
Selenium		4.6000	EPA200.8		5.0000	1.2700	5.0000	0.2280	5.0000	U	5.0000	0.2280	5.0000	U	5.0000	0.2280	5.0000
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	0.2500	0.0171	0.2500	U	0.2500	0.0171	0.2500	U	0.2500	0.0171	0.2500
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	2.5000	0.4750	**2.7800**	--	2.5000	0.4750	**2.7800**	--	2.5000	0.4750	2.5000
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	0.1000	0.0075	0.1000	U	0.1000	0.0075	0.1000	U	0.1000	0.0075	0.1000
PAHs - Priority (µg/L)																	
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	0.0999	0.0198	0.0999	U	0.0995	0.0197	0.0995	U	0.1000	0.0198	0.1000
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	0.0995	0.0218	0.0995	U,Q	0.0993	0.0218	0.0993	U,Q	0.0987	0.0216	0.0987
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	0.0995	0.0150	0.0995	U,Q	0.0993	0.0149	0.0993	U,Q	0.0987	0.0148	0.0987
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	0.0995	0.0140	0.0995	U,Q	0.0993	0.0139	0.0993	U,Q	0.0987	0.0138	0.0987
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	0.0995	0.0246	0.0995	U,Q	0.0993	0.0245	0.0993	U,Q	0.0987	0.0244	0.0987
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	0.0995	0.0288	0.0995	U,Q	0.0993	0.0288	0.0993	U,Q	0.0987	0.0286	0.0987
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	0.0995	0.0462	0.0995	U,Q	0.0993	0.0461	0.0993	U,Q	0.0987	0.0458	0.0987
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	0.0999	0.0107	0.0999	U	0.0995	0.0106	0.0995	U	0.1000	0.0107	0.1000
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	0.0999	0.0319	0.0999	U	0.0995	0.0317	0.0995	U	0.1000	0.0319	0.1000
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	0.0999	0.0027	0.0999	U	0.0995	0.0027	0.0995	U	0.1000	0.0027	0.1000
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	0.0999	0.0321	0.0999	U	0.0995	0.0320	0.0995	U	0.1000	0.0321	0.1000
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	0.0999	0.0198	0.0999	U	0.0995	0.0197	0.0995	U	0.1000	0.0198	0.1000
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	0.0999	0.0071	0.0999	U	0.0995	0.0071	0.0995	U	0.1000	0.0071	0.1000
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	0.0999	0.0299	0.0999	U	0.0995	0.0298	0.0995	U	0.1000	0.0300	0.1000
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	0.0999	0.0276	0.0999	U	0.0995	0.0275	0.0995	U	0.1000	0.0276	0.1000
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	0.0995	0.0275	0.0995	U,Q	0.0993	0.0274	0.0993	U,Q	0.0987	0.0273	0.0987
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	0.0999	0.0448	0.0999	U	0.0995	0.0447	0.0995	U	0.1000	0.0389	0.1000
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	0.0999	0.0389	0.0999	U	0.0995	0.0388	0.0995	U	0.1000	0.0449	0.1000
Conventionals (mg/L)																	
Ammonia			SM4500NH3G		0.1000	0.0058	0.1000	0.0109	0.1000	U	0.1000	0.0109	0.1000	U	0.1000	0.0109	0.1000
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5000	1.2500	**45.1000**	--	2.5000	1.2500	**50.0000**	--	2.5000	1.2500	**65.3000**
Sulfide			SM4500S2F		0.5000	0.3060	0.5000	0.3060	0.5000	U	0.5000	0.3060	0.5000	U	0.5000	0.3060	0.5000
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.2000	0.0718	**1.6600**	D	0.2000	0.0718	**2.4500**	D	0.2000	0.0718	**2.3800**
Total Phosphorus			EPA365.3		0.2000	0.0763	0.2000	0.0763	0.2000	U	0.2000	0.0763	0.2000	U	0.2000	0.0763	0.2000
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	--	--	--	--	--	--	--	--	--	--	--
YSI/Hatch Parameters																	
Temperature					--	--	--	--	7.9	--	--	--	8.7	--	--	--	8.5
Conductivity (spc)					--	--	--	--	96.2	--	--	--	107.9	--	--	--	136.7
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	10.43	--	--	--	9.66	--	--	--	12.16
pH		6.5-9			--	--	--	--	7.54	--	--	--	7.53	--	--	--	8.34
ORP (mV)					--	--	--	--	236.3	--	--	--	255.2	--	--	--	205
Turbidity					--	--	--	--	--	--	--	--	--	--	--	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum.
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Qualifier GRMW-GR82-11062020	Result Reporting Limit GRMW-GRIC-11062020	Result Detection Limit GRMW-GRIC-11062020	Result GRMW-GRIC-11062020	Qualifier GRMW-GRIC-11062020	Result Reporting Limit GRMW-LCPL-11062020	Result Detection Limit GRMW-LCPL-11062020	Result GRMW-LCPL-11062020	Qualifier GRMW-LCPL-11062020	Result Reporting Limit GRMW-CCUB-01132021	Result Detection Limit GRMW-CCUB-01132021	Result GRMW-CCUB-01132021
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	U	0.5000	0.1830	0.5000	U	--	--	--	--	0.5000	0.1830	0.5
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	U	0.2000	0.0136	0.2000	U	--	--	--	--	0.2000	0.0136	0.2000
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	U	1.0000	0.0219	1.0000	U	--	--	--	--	1.0000	0.0219	**1.1400**
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	--	1.0000	0.2030	1.0000	U	--	--	--	--	1.0000	0.2030	**1.1000**
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	U	0.0500	0.0028	0.0500	U	0.0500	0.0028	0.0500	U	0.0500	0.0173	0.0500
Iron		1000.0000	EPA200.8		100.0000	27.4000	U	100.0000	2.9700	100.0000	U	--	--	--	--	100.0000	2.9700	100.0000
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	U	0.5000	0.0213	0.5000	U	--	--	--	--	0.5000	0.0213	0.5000
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	U	2.5000	0.1900	**4.0600**	--	--	--	--	--	2.5000	0.1900	**5.3000**
Selenium		4.6000	EPA200.8		5.0000	1.2700	U	5.0000	0.2280	5.0000	U	--	--	--	--	5.0000	0.2280	5.0000
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	U	0.2500	0.0171	0.2500	U	--	--	--	--	0.2500	0.0171	0.2500
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	U	2.5000	0.4750	**3.1900**	--	--	--	--	--	2.5000	0.4750	2.5000
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	U	0.1000	0.0075	0.1000	U	--	--	--	--	0.1000	0.0075	0.1000
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	U	0.0989	0.0196	0.0989	U	--	--	--	--	0.0999	0.0198	0.0999
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	U,Q	0.0992	0.0217	0.0992	U,Q	--	--	--	--	0.0995	0.0218	0.0995
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	U,Q	0.0992	0.0149	0.0992	U,Q	--	--	--	--	0.0995	0.0150	0.0995
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	U,Q	0.0992	0.0139	0.0992	U,Q	--	--	--	--	0.0995	0.0140	0.0995
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	U,Q	0.0992	0.0245	0.0992	U,Q	--	--	--	--	0.0995	0.0246	0.0995
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	U,Q	0.0992	0.0288	0.0992	U,Q	--	--	--	--	0.0995	0.0288	0.0995
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	U,Q	0.0992	0.0460	0.0992	U,Q	--	--	--	--	0.0995	0.0462	0.0995
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	U	0.0989	0.0106	0.0989	U	--	--	--	--	0.0999	0.0107	0.0999
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	U	0.0989	0.0315	0.0989	U	--	--	--	--	0.0999	0.0319	0.0999
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	U	0.0989	0.0027	0.0989	U	--	--	--	--	0.0999	0.0027	0.0999
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	U	0.0989	0.0318	0.0989	U	--	--	--	--	0.0999	0.0321	0.0999
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	U	0.0989	0.0196	0.0989	U	--	--	--	--	0.0999	0.0198	0.0999
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	U	0.0989	0.0070	0.0989	U	--	--	--	--	0.0999	0.0071	0.0999
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	U	0.0989	0.0296	0.0989	U	--	--	--	--	0.0999	0.0299	0.0999
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	U	0.0989	0.0273	0.0989	U	--	--	--	--	0.0999	0.0276	0.0999
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	U,Q	0.0992	0.0274	0.0992	U,Q	--	--	--	--	0.0995	0.0275	0.0995
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	U	0.0989	0.0444	0.0989	U	--	--	--	--	0.0999	0.0448	0.0999
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	U	0.0989	0.0385	0.0989	U	--	--	--	--	0.0999	0.0389	0.0999
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	U	0.1000	0.0109	0.1000	U	0.1000	0.0109	0.1000	U	0.1000	0.0081	**0.2990**
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	--	2.5000	1.2500	**55.5000**	--	2.5000	1.2500	**147.0000**	--	2.5000	1.2500	**42.8000**
Sulfide			SM4500S2F		0.5000	0.3060	U,S	0.5000	0.3060	0.5000	U	0.5000	0.3060	**0.8000**	--	0.5000	0.1630	0.5000
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	D	0.2000	0.0718	**2.5200**	D	1.0000	0.3590	**12.2000**	--	0.2000	0.0718	**2.0000**
Total Phosphorus			EPA365.3		0.2000	0.0763	U	0.2000	0.0763	0.2000	U	0.2000	0.0763	**0.2330**	--	0.2500	0.0995	0.2500
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	--	--	--	--	--	--	--	--	--	0.8000	0.0239	**30.4000**
YSI/Hatch Parameters																		
Temperature					--	--	--	--	--	7.8	--	--	--	8.3	--	--	--	2.7
Conductivity (spc)					--	--	--	--	--	120.6	--	--	--	171.6	--	--	--	91.6
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	--	11.12	--	--	--	5.26	--	--	--	12.06
pH		6.5-9			--	--	--	--	--	7.72	--	--	--	7.11	--	--	--	7.7
ORP (mV)					--	--	--	--	--	180.4	--	--	--	255.6	--	--	--	165.4
Turbidity					--	--	--	--	--	--	--	--	--	--	--	--	--	4.09

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Qualifier GRMW-CCUB-01132021	Result Reporting Limit GRMW-CCWL-01132021	Result Detection Limit GRMW-CCWL-01132021	Result GRMW-CCWL-01132021	Qualifier GRMW-CCWL-01132021	Result Reporting Limit GRMW-GR82-01132021	Result Detection Limit GRMW-GR82-01132021	Result GRMW-GR82-01132021	Qualifier GRMW-GR82-01132021	Result Reporting Limit GRMW-GRIC-01132021	Result Detection Limit GRMW-GRIC-01132021	Result GRMW-GRIC-01132021	Qualifier GRMW-GRIC-01132021
Metals Dissolved) (µg/L)																			
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	U	0.5000	0.1830	**0.6560**	--	0.5000	0.1830	0.5000	U	0.5000	0.1830	0.5000	U
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	U	0.2000	0.0136	0.2000	U	0.2000	0.0136	0.2000	U	0.2000	0.0136	0.2000	U
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	--	1.0000	0.0219	**1.1500**	--	1.0000	0.0219	1.0000	U	1.0000	0.0219	1.0000	U
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	--	1.0000	0.2030	**1.9300**	--	1.0000	0.2030	**1.1900**	--	1.0000	0.2030	**22.2000**	--
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	U	0.0500	0.0173	0.0500	U	0.0500	0.0173	0.0500	U	0.0500	0.0173	0.0500	U
Iron		1000.0000	EPA200.8		100.0000	27.4000	U	100.0000	2.9700	100.0000	U	100.0000	2.9700	**172.0000**	--	100.0000	2.9700	100.0000	U
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	U	0.5000	0.0213	0.5000	U	0.5000	0.0213	0.5000	U	0.5000	0.0213	0.5000	U
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	--	2.5000	0.1900	2.5000	U	2.5000	0.1900	2.5000	U	2.5000	0.1900	2.5000	U
Selenium		4.6000	EPA200.8		5.0000	1.2700	U	5.0000	0.2280	5.0000	U	5.0000	0.2280	5.0000	U	5.0000	0.2280	5.0000	U
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	U	0.2500	0.0171	0.2500	U,S	0.2500	0.0171	0.2500	U	0.2500	0.0171	0.2500	U
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	U	2.5000	0.4750	**6.5100**	--	2.5000	0.4750	**5.5700**	--	2.5000	0.4750	**2.8700**	--
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	U	0.1000	0.0075	0.1000	U	0.1000	0.0075	0.1000	U	0.1000	0.0075	0.1000	U
PAHs - Priority (µg/L)																			
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	U	0.0995	0.0197	0.0995	U	0.1000	0.0198	0.1000	U	0.0989	0.0196	0.0989	U
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	U	0.0993	0.0218	0.0993	U	0.0987	0.0216	0.0987	U	0.0992	0.0217	0.0992	U
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	U	0.0993	0.0149	0.0993	U	0.0987	0.0148	0.0987	U	0.0992	0.0149	0.0992	U
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	U	0.0993	0.0139	0.0993	U	0.0987	0.0138	0.0987	U	0.0992	0.0139	0.0992	U
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	U	0.0993	0.0245	0.0993	U	0.0987	0.0244	0.0987	U	0.0992	0.0245	0.0992	U
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	U	0.0993	0.0288	0.0993	U	0.0987	0.0286	0.0987	U	0.0992	0.0288	0.0992	U
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	U	0.0993	0.0461	0.0993	U	0.0987	0.0458	0.0987	U	0.0992	0.0460	0.0992	U
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	U	0.0995	0.0106	0.0995	U	0.1000	0.0107	0.1000	U	0.0989	0.0106	0.0989	U
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	U	0.0995	0.0317	0.0995	U	0.1000	0.0319	0.1000	U	0.0989	0.0315	0.0989	U
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	U	0.0995	0.0027	0.0995	U	0.1000	0.0027	0.1000	U	0.0989	0.0027	0.0989	U
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	U	0.0995	0.0320	0.0995	U	0.1000	0.0321	0.1000	U	0.0989	0.0318	0.0989	U
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	U	0.0995	0.0197	0.0995	U	0.1000	0.0198	0.1000	U	0.0989	0.0196	0.0989	U
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	U	0.0995	0.0071	0.0995	U	0.1000	0.0071	0.1000	U	0.0989	0.0070	0.0989	U
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	U	0.0995	0.0298	0.0995	U	0.1000	0.0300	0.1000	U	0.0989	0.0296	0.0989	U
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	U	0.0995	0.0275	0.0995	U	0.1000	0.0276	0.1000	U	0.0989	0.0273	0.0989	U
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	U	0.0993	0.0274	0.0993	U	0.0987	0.0273	0.0987	U	0.0992	0.0274	0.0992	U
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	U	0.0995	0.0447	0.0995	U	0.1000	0.0389	0.1000	U	0.0989	0.0444	0.0989	U
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	U	0.0995	0.0388	0.0995	U	0.1000	0.0449	0.1000	U	0.0989	0.0385	0.0989	U
Conventionals (mg/L)																			
Ammonia			SM4500NH3G		0.1000	0.0058	--	0.1000	0.0081	0.1000	U	0.1000	0.0081	0.1000	U	0.1000	0.0081	0.1000	U
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	--	2.5000	1.2500	**49.0000**	--	2.5000	1.2500	**37.9000**	--	2.5000	1.2500	**37.6000**	--
Sulfide			SM4500S2F		0.5000	0.3060	U	0.5000	0.1630	0.5000	U	0.5000	0.1630	**0.8000**	--	0.5000	0.1630	0.5000	U
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	D	0.2000	0.0718	**3.1000**	D	0.2000	0.0718	**3.0600**	D	1.0000	0.3590	**9.9800**	D,Q
Total Phosphorus			EPA365.3		0.2000	0.0763	U	0.2500	0.0995	0.2500	U	0.2500	0.0995	0.2500	U	0.2500	0.0995	0.2500	U
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	--	0.8000	0.0239	**41.3000**	--	0.8000	0.0239	**36.8000**	--	0.8000	0.0239	**37.9000**	--
YSI/Hatch Parameters																			
Temperature					--	--	--	--	--	2.2	--	--	--	2.4	--	--	--	2.6	--
Conductivity (spc)					--	--	--	--	--	116	--	--	--	100.7	--	--	--	115.8	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	--	12.43	--	--	--	12.25	--	--	--	13.22	--
pH		6.5-9			--	--	--	--	--	7.59	--	--	--	7.66	--	--	--	7.81	--
ORP (mV)					--	--	--	--	--	163.8	--	--	--	248.5	--	--	--	280.6	--
Turbidity					--	--	--	--	--	9.97	--	--	--	50.7	--	--	--	10.3	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-LCPL-01132021	Result Detection Limit GRMW-LCPL-01132021	Result GRMW-LCPL-01132021	Qualifier GRMW-LCPL-01132021	Result Reporting Limit GRMW-CCML-03092021	Result Detection Limit GRMW-CCML-03092021	Result GRMW-CCML-03092021	Qualifier GRMW-CCML-03092021	Result Reporting Limit GRMW-CCSP-03092021	Result Detection Limit GRMW-CCSP-03092021	Result GRMW-CCSP-03092021	Qualifier GRMW-CCSP-03092021
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	--	--	--	--	1	0.519	**3.3300**		1	0.519	1.0000	U
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	--	--	--	--	0.75	0.244	**0.9180**		0.75	0.244	0.7500	U
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	--	--	--	--	2	1.060	2.0000	U	2	1.060	2.0000	U
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	0.0500	0.0173	0.0500	U	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	--	--	--	--	100	15.5	**169**		100	15.5000	**115**	
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	--	--	--	--	1.3	0.652	1.3000	U	1.3	0.652	1.300	U
Selenium		4.6000	EPA200.8		5.0000	1.2700	--	--	--	--	1.9	0.942	1.90000	U	1.9	0.942	1.90000	U
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	--	--	--	--	3.8	1.900	3.80000	U	3.8	1.900	3.80000	U
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198			--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219			--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150			--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140			--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247			--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290			--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464			--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107			--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319			--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027			--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321			--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198			--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071			--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300			--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276			--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276			--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449			--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389			--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	0.1000	0.0081	0.1000	U	0.1	0.0303	0.1	U	0.1	0.0303	0.1	U
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5000	1.2500	**115.0000**	--	2.5	0.788	**52.5000**	--	2.5	0.788	**41.4000**	--
Sulfide			SM4500S2F		0.5000	0.3060	0.5000	0.1630	**1.0000**	--	0.5	0.2	0.5	U	0.5	0.163	0.5	U
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	5.0000	1.7900	**92.8000**	D	0.50	0.156	**6.48000**	D	0.1	0.031	**1.09000**	--
Total Phosphorus			EPA365.3		0.2000	0.0763	0.2500	0.0995	**0.2710**	--	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	0.8000	0.0239	**80.9000**	--	1	0.337	**48.00**	--	1	0.337	**29.30**	--
YSI/Hatch Parameters																		
Temperature					--	--	--	--	2.4	--	--	--	4.2	--	--	--	4.6	--
Conductivity (spc)					--	--	--	--	642	--	--	--	151.7	--	--	--	82.7	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	10.87	--	--	--	11.62	--	--	--	11.56	--
pH		6.5-9			--	--	--	--	7.54	--	--	--	7.76	--	--	--	8.1	--
ORP (mV)					--	--	--	--	158	--	--	--	211.1	--	--	--	225.7	--
Turbidity					--	--	--	--	25.9	--	--	--	44.6	--	--	--	16.7	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-CCUB-03092021	Result Detection Limit GRMW-CCUB-03092021	Result GRMW-CCUB-03092021	Qualifier GRMW-CCUB-03092021	Result Reporting Limit GRMW-CCWL-03092021	Result Detection Limit GRMW-CCWL-03092021	Result GRMW-CCWL-03092021	Qualifier GRMW-CCWL-03092021	Result Reporting Limit GRMW-GR82-03092021	Result Detection Limit GRMW-GR82-03092021	Result GRMW-GR82-03092021	Qualifier GRMW-GR82-03092021
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	0.519	1.0000	U	1	0.519	1.0000	U	1	0.519	**2.1800**	
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	0.244	0.7500	U	0.75	0.244	0.750	U	0.75	0.244	**1.100**	
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	1.060	2.0000	U	2	1.060	2.0000	U	2	1.060	**2.4700**	
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	15.5	100	U	100	15.5	**115**		100	15.5	**200**	
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	0.652	1.300	U	1.3	0.652	1.300	U	1.3	0.652	**1.370**	
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	0.942	1.90000	U	1.9	0.942	1.90000	U	1.9	0.942	1.90000	U
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	1.900	3.80000	U	3.8	1.900	3.80000	U	3.8	1.900	3.80000	U
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	0.0303	**0.152**		0.1	0.0303	0.1	U	0.1	0.0303	0.1	U
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5	0.788	**41.400**	--	2.5	0.788	**50.9000**	--	2.5	0.788	**47.8000**	--
Sulfide			SM4500S2F		0.5000	0.3060	0.5	0.163	0.5	U	0.5	0.163	0.5	U	0.5	0.163	0.5	U
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.1	0.031	**2.14000**	--	0.1	0.031	**2.98000**	--	0.20	0.063	**4.68000**	D
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	1	0.337	**32.90**	--	1	0.337	**38.80**	--	1	0.337	**7.96**	--
YSI/Hatch Parameters																		
Temperature					--	--	--	--	4.4	--	--	--	3.8	--	--	--	3.1	--
Conductivity (spc)					--	--	--	--	94.1	--	--	--	114.5	--	--	--	110.8	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	12.74	--	--	--	12.38	--	--	--	11.7	--
pH		6.5-9			--	--	--	--	8.59	--	--	--	7.91	--	--	--	7.55	--
ORP (mV)					--	--	--	--	251.7	--	--	--	263.5	--	--	--	244.5	--
Turbidity					--	--	--	--	11	--	--	--	21.5	--	--	--	54.6	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-GRFC-03092021	Result Detection Limit GRMW-GRFC-03092021	Result GRMW-GRFC-03092021	Qualifier GRMW-GRFC-03092021	Result Reporting Limit GRMW-GRIC-03092021	Result Detection Limit GRMW-GRIC-03092021	Result GRMW-GRIC-03092021	Qualifier GRMW-GRIC-03092021	Result Reporting Limit GRMW-GRML-03092021	Result Detection Limit GRMW-GRML-03092021	Result GRMW-GRML-03092021	Qualifier GRMW-GRML-03092021	Result Reporting Limit GRMW-LCPL-03092021
Metals Dissolved) (µg/L)																			
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	0.519	1.0000	U	1	0.519	1.000	U	1	0.519	1.000	U	1.000
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	0.244	0.7500	U	0.75	0.244	0.7500	U	0.75	0.244	0.750	U	0.750
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	1.060	**7.2000**		2	1.060	2.0000	U	2	1.060	2.000	U	2.000
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	15.5	100	U	100	15.5	**238**		100	15.5	**238**		100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	0.652	1.300	U	1.3	0.652	1.300	U	1.3	0.652	1.300	U	1.300
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	0.942	1.90000	U	1.9	0.942	1.90000	U	1.9	0.942	1.900	U	1.900
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	1.900	3.80000	U	3.8	1.900	3.80000	U	3.8	1.900	3.800	U	3.800
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																			
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																			
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5	0.788	**66.800**	--	2.5	0.788	**31.800**	--	2.5	0.788	**44.600**	--	2.500
Sulfide			SM4500S2F		0.5000	0.3060	0.5	0.163	0.5	U	0.5	0.163	0.5	U	0.5	0.2	0.5	U	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.1	0.031	**0.77300**	--	0.4	0.125	**5.43000**	D	0.4	0.125	**5.300**	D	5.000
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	0.1	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	**0.522**	--	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	1	0.3	**38.10**	--	1	0.337	**29.40**	--	1	0.337	**32.2**	--	1
YSI/Hatch Parameters																			
Temperature					--	--	--	--	1.6	--	--	--	2.3	--	--	--	2.1	--	--
Conductivity (spc)					--	--	--	--	101.9	--	--	--	87.9	--	--	--	91	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	11.85	--	--	--	12.93	--	--	--	12.07	--	--
pH		6.5-9			--	--	--	--	7.93	--	--	--	7.69	--	--	--	7.82	--	--
ORP (mV)					--	--	--	--	179.8	--	--	--	287.6	--	--	--	242.4	--	--
Turbidity					--	--	--	--	8.34	--	--	--	16	--	--	--	43.1	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Detection Limit GRMW-LCPL-03092021	Result GRMW-LCPL-03092021	Qualifier GRMW-LCPL-03092021	Result Reporting Limit GRMW-WCCL-03092021	Result Detection Limit GRMW-WCCL-03092021	Result GRMW-WCCL-03092021	Qualifier GRMW-WCCL-03092021	Result Reporting Limit GRMW-CCML-04252021	Result Detection Limit GRMW-CCML-04252021	Result GRMW-CCML-04252021	Qualifier GRMW-CCML-04252021	Result Reporting Limit GRMW-CCSP-04252021
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.519	**1.9100**		1	0.519	**2.33**		1	0.519	1	U	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.244	0.7500	U	0.8	0.2	**0.8**		0.75	0.244	0.75	U	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.060	**33.7000**		2	1.06	2	U	2	1.06	2	U	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	15.5	100.00000	U	100	15.5	**121**		100	15.5	100	U	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	0.652	1.300	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	0.942	1.90000	U	1.900	0.942	1.900	U	1.9	0.942	1.9	U	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	1.900	3.80000	U	3.800	1.900	3.800	U	3.8	1.9	3.8	U	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--		--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--		--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--		--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--		--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--		--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--		--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--		--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--		--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--		--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--		--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--		--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--		--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--		--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--		--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--		--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--		--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--		--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--		--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	0.788	**90.7000**	--	2.500	0.788	**41.400**	--	2.5	0.788	**36.3**	--	2.5
Sulfide			SM4500S2F		0.5000	0.3060	0.2	**0.8**	--	0.5	0.163	**0.6**	--	0.5	0.163	0.5	U	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	1.560	**86.20000**	D	0.100	0.031	**2.240**	--	0.5	0.156	**2.54**	D	0.1
Total Phosphorus			EPA365.3		0.2000	0.0763	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	0.337	**89.30**	--	1	0.337	**9.45**	--	1	0.337	**29.3**	--	1
YSI/Hatch Parameters																		
Temperature					--	--	--	3.8	--	--	--	2.6	--	--	--	9.8	--	--
Conductivity (spc)					--	--	--	528	--	--	--	134.1	--	--	--	81.5	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	7.25	--	--	--	11.09	--	--	--	9.59	--	--
pH		6.5-9			--	--	--	7.24	--	--	--	7.43	--	--	--	7.59	--	--
ORP (mV)					--	--	--	226.7	--	--	--	253.4	--	--	--	208	--	--
Turbidity					--	--	--	49.4	--	--	--	55.2	--	--	--	21.1	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Detection Limit GRMW-CCSP-04252021	Result GRMW-CCSP-04252021	Qualifier GRMW-CCSP-04252021	Result Reporting Limit GRMW-CCUB-04252021	Result Detection Limit GRMW-CCUB-04252021	Result GRMW-CCUB-04252021	Qualifier GRMW-CCUB-04252021	Result Reporting Limit GRMW-CCWL-04252021	Result Detection Limit GRMW-CCWL-04252021	Result GRMW-CCWL-04252021	Qualifier GRMW-CCWL-04252021	Result Reporting Limit GRMW-GR82-04252021
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.519	1	U	1	0.519	1	U	1	0.519	1	U	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.06	2	U	2	1.06	2	U	2	1.06	2	U	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	15.5	100	U	100	15.5	100	U	100	15.5	100	U	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	0.788	**28**	--	2.5	0.788	**30.6**	--	2.5	0.788	**28.6**	--	2.5
Sulfide			SM4500S2F		0.5000	0.3060	0.163	0.5	U	0.5	0.163	0.5	U	0.5	0.163	0.5	U	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.0313	**0.408**	--	0.1	0.0313	**0.554**	--	0.1	0.0313	**0.633**	--	0.2
Total Phosphorus			EPA365.3		0.2000	0.0763	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	0.337	**23.8**	--	1	0.337	**24**	--	1	0.337	**23.6**	--	1
YSI/Hatch Parameters																		
Temperature					--	--	--	6.2	--	--	--	7	--	--	--	5.9	--	--
Conductivity (spc)					--	--	--	56.2	--	--	--	59.2	--	--	--	59.9	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	10.92	--	--	--	10.99	--	--	--	11.36	--	--
pH		6.5-9			--	--	--	7.69	--	--	--	7.72	--	--	--	7.72	--	--
ORP (mV)					--	--	--	303.2	--	--	--	304.2	--	--	--	173.2	--	--
Turbidity					--	--	--	11	--	--	--	11	--	--	--	20.3	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Detection Limit GRMW-GR82-04252021	Result GRMW-GR82-04252021	Qualifier GRMW-GR82-04252021	Result Reporting Limit GRMW-GRFC-04252021	Result Detection Limit GRMW-GRFC-04252021	Result GRMW-GRFC-04252021	Qualifier GRMW-GRFC-04252021	Result Reporting Limit GRMW-GRIC-04252021	Result Detection Limit GRMW-GRIC-04252021	Result GRMW-GRIC-04252021	Qualifier GRMW-GRIC-04252021	Result Reporting Limit GRMW-GRML-04252021	Result Detection Limit GRMW-GRML-04252021	Result GRMW-GRML-04252021
Metals Dissolved) (µg/L)																				
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.519	1	U	1	0.519	1	U	1	0.519	1	U	1	0.519	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.06	2	U	2	1.06	2	U	2	1.06	2	U	2	1.06	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	15.5	100	U	100	15.5	**111**		100	15.5	**161**		100	15.5	**164**
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																				
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																				
Ammonia			SM4500NH3G		0.1000	0.0058	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1	0.0303	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	0.788	**28.6**	--	2.5	0.788	**29**	--	2.5	0.788	**26.7**	--	2.5	0.788	**26.7**
Sulfide			SM4500S2F		0.5000	0.3060	0.163	0.5	U,S	0.5	0.163	0.5	U	0.5	0.163	0.5	U	0.5	0.163	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.0625	**1.32**	D	0.1	0.0313	**0.563**		0.5	0.156	**1.26**	D	0.5	0.156	**1.28**
Total Phosphorus			EPA365.3		0.2000	0.0763	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	0.337	**24.1**	--	1	0.337	**25.3**		1	0.337	**20.3**	--	1	0.337	**21.4**
YSI/Hatch Parameters																				
Temperature					--	--	--	8.1	--	--	--	7.5	--	--	--	6.1	--	--	--	6.5
Conductivity (spc)					--	--	--	63.3	--	--	--	65.8	--	--	--	52.9	--	--	--	53.1
Dissolved Oxygen (mg/L)		6.5			--	--	--	10.5	--	--	--	10.32	--	--	--	11.06	--	--	--	10.97
pH		6.5-9			--	--	--	8.02	--	--	--	7.81	--	--	--	7.68	--	--	--	7.49
ORP (mV)					--	--	--	216.7	--	--	--	252	--	--	--	250.8	--	--	--	235.8
Turbidity					--	--	--	22.7	--	--	--	24.4	--	--	--	17.8	--	--	--	17.1

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Qualifier GRMW-GRML-04252021	Result Reporting Limit GRMW-LCPL-04252021	Result Detection Limit GRMW-LCPL-04252021	Result GRMW-LCPL-04252021	Qualifier GRMW-LCPL-04252021	Result Reporting Limit GRMW-WCCL-04252021	Result Detection Limit GRMW-WCCL-04252021	Result GRMW-WCCL-04252021	Qualifier GRMW-WCCL-04252021	Result Reporting Limit GRMW-CCML-08022021	Result Detection Limit GRMW-CCML-08022021	Result GRMW-CCML-08022021	Qualifier GRMW-CCML-08022021
Metals Dissolved) (µg/L)																			
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	U	1	0.519	1	U	1	0.519	1	U	1	0.519	**1.3**	T
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U,T
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	U	2	1.06	2	U	2	1.06	2	U	2	1.06	2	U,T
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000		100	15.5	100	U	100	15.5	100	U	100	15.5	100	U,T
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U,T
Selenium		4.6000	EPA200.8		5.0000	1.2700	U	1.9	0.942	1.9	U	1.9	0.942	**2.35**		1.9	0.942	1.9	U,T
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	U	3.8	1.9	3.8	U	3.8	1.9	**9.05**		3.8	1.9	**4.19**	T
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																			
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																			
Ammonia			SM4500NH3G		0.1000	0.0058	U	0.1	0.0303	0.1	U	0.1	0.0303	0.1	U	0.1	0.0203	0.1	U,T
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	--	2.5	0.788	**93.6**	--	2.5	0.788	**30.6**	--	2.5	0.788	**96**	T
Sulfide			SM4500S2F		0.5000	0.3060	U	0.5	0.163	**0.8**	--	0.5	0.163	0.5	U	0.5	0.163	0.5	U,Q,T
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	D	2	0.625	**31.8**	D	0.1	0.0313	**0.622**		0.1	0.0313	**1.61**	T
Total Phosphorus			EPA365.3		0.2000	0.0763	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U,T
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	--	1	0.337	**74.4**	--	1	0.337	**29**		1	0.337	**72.8**	T
YSI/Hatch Parameters																			
Temperature					--	--	--	--	--	12	--	--	--	6.5	--	--	--	24.4	--
Conductivity (spc)					--	--	--	--	--	304.3	--	--	--	71.6	--	--	--	221.7	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	--	5.72	--	--	--	10.26	--	--	--	6.05	--
pH		6.5-9			--	--	--	--	--	7.19	--	--	--	7.44	--	--	--	6.96	--
ORP (mV)					--	--	--	--	--	280.8	--	--	--	208.9	--	--	--	258	--
Turbidity					--	--	--	--	--	3.57	--	--	--	17.2	--	--	--	10.9	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-CCSP-08022021	Result Detection Limit GRMW-CCSP-08022021	Result GRMW-CCSP-08022021	Qualifier GRMW-CCSP-08022021	Result Reporting Limit GRMW-CCUB-08022021	Result Detection Limit GRMW-CCUB-08022021	Result GRMW-CCUB-08022021	Qualifier GRMW-CCUB-08022021	Result Reporting Limit GRMW-CCWL-08022021	Result Detection Limit GRMW-CCWL-08022021	Result GRMW-CCWL-08022021	Qualifier GRMW-CCWL-08022021	Result Reporting Limit GRMW-GR82-08022021
Metals Dissolved) (µg/L)																			
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	0.519	1	U,T	1	0.519	1	U,T	1	0.519	1	U,T	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	0.244	0.75	U,T	0.75	0.244	0.75	U,T	0.75	0.244	0.75	U,T	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	1.06	2	U,T	2	1.06	2	U,T	2	1.06	2	U,T	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	15.5	100	U,T	100	15.5	100	U,T	100	15.5	100	U,T	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	0.652	1.3	U,T	1.3	0.652	1.3	U,T	1.3	0.652	1.3	U,T	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	0.942	1.9	U,T	1.9	0.942	1.9	T	1.9	0.942	1.9	U,T	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	1.9	3.8	U,T	3.8	1.9	3.8	U,T	3.8	1.9	3.8	U,T	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																			
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																			
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5	0.788	**27.9**	T	2.5	0.788	**31.3**	T	0.1	0.788	**43.6**	T	2.5
Sulfide			SM4500S2F		0.5000	0.3060	0.5	0.163	**0.6**	Q,T	0.5	0.163	0.5	U,Q,T	0.5	0.163	0.5	U,Q,T	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.1	0.0313	**0.461**	T	0.1	0.0313	**0.792**	T	0.1	0.0313	**1.3**	T	0.1
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	1	0.337	**26.6**	T	1	0.337	**29.8**	T	1	0.337	**40.7**	T	1
YSI/Hatch Parameters																			
Temperature					--	--	--	--	15.2	--	--	--	18.4	--	--	--	23.6	--	--
Conductivity (spc)					--	--	--	--	66	--	--	--	68.8	--	--	--	101.8	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	9.17	--	--	--	8.96	--	--	--	7.84	--	--
pH		6.5-9			--	--	--	--	7.78	--	--	--	7.72	--	--	--	7.69	--	--
ORP (mV)					--	--	--	--	251.9	--	--	--	213.6	--	--	--	160.9	--	--
Turbidity					--	--	--	--	2.09	--	--	--	3.26	--	--	--	3.52	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Detection Limit GRMW-GR82-08022021	Result GRMW-GR82-08022021	Qualifier GRMW-GR82-08022021	Result Reporting Limit GRMW-GRFC-08022021	Result Detection Limit GRMW-GRFC-08022021	Result GRMW-GRFC-08022021	Qualifier GRMW-GRFC-08022021	Result Reporting Limit GRMW-GRIC-08022021	Result Detection Limit GRMW-GRIC-08022021	Result GRMW-GRIC-08022021	Qualifier GRMW-GRIC-08022021	Result Reporting Limit GRMW-GRML-08022021	Result Detection Limit GRMW-GRML-08022021
Metals Dissolved) (µg/L)																			
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.519	**1.5**	T	1	0.519	1	U,T	1	0.519	1	U,T	1	0.519
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.244	0.75	U,T	0.75	0.244	0.75	U,T	0.75	0.244	0.75	U,T	0.75	0.244
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.06	2	U,T	2	1.06	2	U,T	2	1.06	2	U,T	2	1.06
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	15.5	100	U,T	100	15.5	100	U,T	100	15.5	100	U,T	100	15.5
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	0.652	1.3	U,T	1.3	0.652	1.3	U,T	1.3	0.652	1.3	U,T	1.3	0.652
Selenium		4.6000	EPA200.8		5.0000	1.2700	0.942	1.9	U,T	1.9	0.942	1.9	U,T	1.9	0.942	1.9	U,T	1.9	0.942
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	1.9	3.8	U,T	3.8	1.9	3.8	U,T	3.8	1.9	3.8	U,T	3.8	1.9
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																			
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																			
Ammonia			SM4500NH3G		0.1000	0.0058	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T	0.1	0.0203
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	0.788	**51.1**	T	2.5	0.788	**39.3**	T	2.5	0.788	**58.3**	T	2.5	0.788
Sulfide			SM4500S2F		0.5000	0.3060	0.163	0.5	U,Q,T	0.5	0.163	0.5	U,Q,T	0.5	0.163	0.5	U,Q,T	0.5	0.163
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.0313	**0.762**	T	0.1	0.0313	**0.503**	T	0.2	0.0625	**3.93**	T,D	0.2	0.0625
Total Phosphorus			EPA365.3		0.2000	0.0763	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T	0.25	0.0995
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	0.337	**47.6**	T	1	0.337	**38.4**	T	1	0.337	**59**	T	1	0.337
YSI/Hatch Parameters																			
Temperature					--	--	--	27.1	--	--	--	22.2	--	--	--	27	--	--	--
Conductivity (spc)					--	--	--	124	--	--	--	92.4	--	--	--	149.5	--	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	9.27	--	--	--	8.64	--	--	--	12.73	--	--	--
pH		6.5-9			--	--	--	8.43	--	--	--	8.67	--	--	--	8.88	--	--	--
ORP (mV)					--	--	--	156.5	--	--	--	115	--	--	--	193.9	--	--	--
Turbidity					--	--	--	7.3	--	--	--	2.9	--	--	--	1.67	--	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result GRMW-GRML-08022021	Qualifier GRMW-GRML-08022021	Result Reporting Limit GRMW-LCPL-08022021	Result Detection Limit GRMW-LCPL-08022021	Result GRMW-LCPL-08022021	Qualifier GRMW-LCPL-080220211	Result Reporting Limit GRMW-WCCL-08022021	Result Detection Limit GRMW-WCCL-08022021	Result GRMW-WCCL-08022021	Qualifier GRMW-WCCL-08022021	Result Reporting Limit GRMW-CCML-10232021	Result Detection Limit GRMW-CCML-10232021
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	**1.16**	T	1	0.519	**2.75**	T	1	0.519	1	U,T	1	0.519
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	U,T	0.75	0.244	0.75	U,T	0.75	0.244	0.75	U,T	0.75	0.244
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	**5.84**	T	2	1.06	2	U,T	2	1.06	2	U,T	2	1.06
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	U,T	100	15.5	**799**	T	100	15.5	100	U,T	100	15.5
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	U,T	1.3	0.652	1.3	U,T	1.3	0.652	1.3	U,T	1.3	0.652
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	U,T	1.9	0.942	1.9	U,T	1.9	0.942	1.9	U,T	1.9	0.942
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	U,T	3.8	1.9	**3.97**	T	3.8	1.9	**4.99**	T	3.8	1.9
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	U,T	0.1	0.0203	**0.863**	T	0.1	0.0203	0.1	U,T	0.1	0.0203
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	**73.8**	T	2.5	0.788	**213**	T	2.5	0.788	**47**	T	2.5	0.788
Sulfide			SM4500S2F		0.5000	0.3060	0.5	U,Q,T	0.5	0.163	0.5	U,Q,T	0.5	0.163	0.5	U,Q,T	0.5	0.163
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	**3.73**	T,D	5	1.56	**49.6**	T,D	0.1	0.0313	**0.629**	T	0.1	0.0313
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	U,T	0.75	0.298	**4.64**	T,D	0.25	0.0995	0.25	U,T	0.25	0.0995
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	**66.7**	T	1	0.337	**225**	T	1	0.337	**42.4**	T	10	3.37
YSI/Hatch Parameters																		
Temperature					--	--	26.2	--	--	--	26	--	--	--	21.1	--	--	--
Conductivity (spc)					--	--	183.3	--	--	--	577	--	--	--	112.4	--	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	12.39	--	--	--	8.76	--	--	--	10.48	--	--	--
pH		6.5-9			--	--	9.16	--	--	--	7.99	--	--	--	8.36	--	--	--
ORP (mV)					--	--	175.2	--	--	--	163.8	--	--	--	252.1	--	--	--
Turbidity					--	--	3.27	--	--	--	322	--	--	--	7.07	--	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
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GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result GRMW-CCML-10232021	Qualifier GRMW-CCML-10232021	Result Reporting Limit GRMW-CCSP-10232021	Result Detection Limit GRMW-CCSP-10232021	Result GRMW-CCSP-10232021	Qualifier GRMW-CCSP-10232021	Result Reporting Limit GRMW-CCUB-10232021	Result Detection Limit GRMW-CCUB-10232021	Result GRMW-CCUB-10232021	Qualifier GRMW-CCUB-10232021	Result Reporting Limit GRMW-CCWL-10232021	Result Detection Limit GRMW-CCWL-10232021	Result GRMW-CCWL-10232021
Metals Dissolved) (µg/L)																			
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	U	1	0.519	1	U	1	0.519	1	U	1	0.519	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	U	2	1.06	2	U	2	1.06	2	U	2	1.06	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	U	100	15.5	100	U	100	15.5	100	U	100	15.5	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	**10.9**		3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																			
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																			
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	**58.9**	--	2.5	0.788	**35.3**	--	2.5	0.788	**38.6**	--	2.5	0.788	**44.8**
Sulfide			SM4500S2F		0.5000	0.3060	0.5	U	0.5	0.163	0.5	U	0.5	0.163	0.5	U,S	0.5	0.163	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	**2.92**	--	0.1	0.0313	**1.01**	--	0.1	0.0313	**2.15**	--	0.1	0.0313	**1.59**
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	**43.1**	--	10	3.37	**32.3**	D		3.37	**36.3**	D	10	3.37	**43.3**
YSI/Hatch Parameters																			
Temperature					--	--	9.6	--	--	--	8.3	--	--	--	9.4	--	--	--	10.6
Conductivity (spc)					--	--	121.5	--	--	--	71.7	--	--	--	90	--	--	--	95.4
Dissolved Oxygen (mg/L)		6.5			--	--	7.12	--	--	--	10.33	--	--	--	10.36	--	--	--	9.95
pH		6.5-9			--	--	7.13	--	--	--	7.79	--	--	--	7.59	--	--	--	7.58
ORP (mV)					--	--	271.5	--	--	--	269.8	--	--	--	288.9	--	--	--	271.6
Turbidity					--	--	9.84	--	--	--	1.98	--	--	--	4.09	--	--	--	3.2

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
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GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Qualifier GRMW-CCWL-10232021	Result Reporting Limit GRMW-GR82-10232021	Result Detection Limit GRMW-GR82-10232021	Result GRMW-GR82-10232021	Qualifier GRMW-GR82-10232021	Result Reporting Limit GRMW-GRFC-10232021	Result Detection Limit GRMW-GRFC-10232021	Result GRMW-GRFC-10232021	Qualifier GRMW-GRFC-10232021	Result Reporting Limit GRMW-GRIC-10232021
Metals Dissolved) (µg/L)																
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	U	1	0.519	1	U	1	0.519	1	U	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	U	2	1.06	2	U	2	1.06	2	U	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	U	100	15.5	100	U	100	15.5	100	U	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																
Ammonia			SM4500NH3G		0.1000	0.0058	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	--	2.5	0.788	**69.2**	--	2.5	0.788	**39.4**	--	2.5
Sulfide			SM4500S2F		0.5000	0.3060	U	0.5	0.163	0.5	U,S	0.5	0.163	0.5	U	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	--	0.1	0.0313	**2.07**	--	0.1	0.0313	**0.8**		0.2
Total Phosphorus			EPA365.3		0.2000	0.0763	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	D	10	3.37	**64.4**	D	10	3.37	**38.2**	D	10
YSI/Hatch Parameters																
Temperature					--	--	--	--	--	9.4	--	--	--	7	--	--
Conductivity (spc)					--	--	--	--	--	148.3	--	--	--	87.3	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	--	9.34	--	--	--	10.54	--	--
pH		6.5-9			--	--	--	--	--	7.61	--	--	--	7.83	--	--
ORP (mV)					--	--	--	--	--	249.5	--	--	--	265.6	--	--
Turbidity					--	--	--	--	--	6.84	--	--	--	8.37	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Detection Limit GRMW-GRIC-10232021	Result GRMW-GRIC-10232021	Qualifier GRMW-GRIC-10232021	Result Reporting Limit GRMW-GRML-10232021	Result Detection Limit GRMW-GRML-10232021	Result GRMW-GRML-10232021	Qualifier GRMW-GRML-10232021	Result Reporting Limit GRMW-WCCL-10232021	Result Detection Limit GRMW-WCCL-10232021	Result GRMW-WCCL-10232021
Metals Dissolved) (µg/L)																
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.519	1	U	1	0.519	1	U	1	0.519	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.06	2	U	2	1.06	2	U	2	1.06	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	15.5	100	U	100	15.5	100	U	100	15.5	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																
Ammonia			SM4500NH3G		0.1000	0.0058	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	0.788	**56.8**	--	2.5	0.788	**65.1**	--	2.5	0.788	**54**
Sulfide			SM4500S2F		0.5000	0.3060	1.9	0.5	U	0.5	0.163	0.5	U	0.5	0.163	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.0625	**4.49**	D	0.1	0.0313	**2.93**	E	0.1	0.0313	**0.799**
Total Phosphorus			EPA365.3		0.2000	0.0763	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	3.37	**56.8**	D	10	3.37	**61.1**	D	10	3.37	**52.3**
YSI/Hatch Parameters																
Temperature					--	--	--	9.2	--	--	--	9.7	--	--	--	9.7
Conductivity (spc)					--	--	--	132	--	--	--	140.1	--	--	--	112.6
Dissolved Oxygen (mg/L)		6.5			--	--	--	10.51	--	--	--	9.76	--	--	--	9.3
pH		6.5-9			--	--	--	7.55	--	--	--	7.71	--	--	--	7.18
ORP (mV)					--	--	--	256.1	--	--	--	269.2	--	--	--	247
Turbidity					--	--	--	3.85	--	--	--	2.21	--	--	--	9.52

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Qualifier GRMW-WCCL-10232021	Result Reporting Limit GRMW-CCML-01212022	Result Detection Limit GRMW-CCML-01212022	Result GRMW-CCML-01212022	Qualifier GRMW-CCML-01212022	Result Reporting Limit GRMW-CCSP-01212022	Result Detection Limit GRMW-CCSP-01212022	Result GRMW-CCSP-01212022	Qualifier GRMW-CCSP-01212022	Result Reporting Limit GRMW-CCUB-01212022	Result Detection Limit GRMW-CCUB-01212022	Result GRMW-CCUB-01212022
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	U	1	0.519	1	U	1	0.519	1	U	1	0.519	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	U	2	1.06	2	U	2	1.06	2	U	2	1.06	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	U	100	15.5	100	U	100	15.5	100	U	100	15.5	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	--	2.5	0.788	**44.9**	--	2.5	0.788	**33.7**	--	2.5	0.788	**38.3**
Sulfide			SM4500S2F		0.5000	0.3060	U	0.5	0.163	0.5	U	0.5	0.163	**0.8**	--	0.5	0.163	**1.8**
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359		0.2	0.0625	**2.78**	D	0.1	0.0313	**0.863**		0.1	0.0313	**2.76**
Total Phosphorus			EPA365.3		0.2000	0.0763	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--		2	0.674	**29.9**	D	2	0.674	**24.7**	D	2	0.674	**31.6**
YSI/Hatch Parameters																		
Temperature					--	--	--	--	--	0	--	--	--	1.9	--	--	--	0.4
Conductivity (spc)					--	--	--	--	--	113.3	--	--	--	75.1	--	--	--	95.5
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	--	12.5	--	--	--	12.39	--	--	--	12.13
pH		6.5-9			--	--	--	--	--	7.13	--	--	--	7.58	--	--	--	7.55
ORP (mV)					--	--	--	--	--	153.5	--	--	--	332.4	--	--	--	309.4
Turbidity					--	--	--	--	--	9	--	--	--	2.89	--	--	--	2.68

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Qualifier GRMW-CCUB-01212022	Result Reporting Limit GRMW-CCUB-01212022 Field Duplicate	Result Detection Limit GRMW-CCUB-01212022 Field Duplicate	Result GRMW-CCUB-01212022 Field Duplicate	Qualifier GRMW-CCUB-01212022 Field Duplicate	Result Reporting Limit GRMW-CCWL-01212022	Result Detection Limit GRMW-CCWL-01212022	Result GRMW-CCWL-01212022	Qualifier GRMW-CCWL-01212022	Result Reporting Limit GRMW-GR82-01212022	Result Detection Limit GRMW-GR82-01212022	Result GRMW-GR82-01212022	Qualifier GRMW-GR82-01212022	Result Reporting Limit GRMW-GRFC-01212022
Metals Dissolved) (µg/L)																				
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	U	1	0.519	1	U	1	0.519	1	U	1	0.519	1	U	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	U	2	1.06	2	U	2	1.06	2	U	2	1.06	2	U	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	U	100	15.5	100	U	100	15.5	100	U	100	15.5	100	U	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																				
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																				
Ammonia			SM4500NH3G		0.1000	0.0058	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	--	2.5	0.788	**37.2**	--	2.5	0.788	**41.5**	--	2.5	0.788	**38.8**	--	2.5
Sulfide			SM4500S2F		0.5000	0.3060	--	0.5	0.163	**1.6**	--	0.5	0.163	**1.6**	--	0.5	0.163	**0.6**	--	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	--	0.1	0.0313	**2.67**	--	0.2	0.0625	**3.16**	D	0.2	0.0625	**4.27**	D	0.1
Total Phosphorus			EPA365.3		0.2000	0.0763	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	D	2	0.674	**31.3**	D	2	0.674	**34.9**	D	2	0.674	**31.7**	D	2
YSI/Hatch Parameters																				
Temperature					--	--	--	--	--	0.4	--	--	--	0.1	--	--	--	0.2	--	--
Conductivity (spc)					--	--	--	--	--	95.5	--	--	--	106	--	--	--	108.9	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	--	13.12	--	--	--	12.54	--	--	--	12.33	--	--
pH		6.5-9			--	--	--	--	--	7.55	--	--	--	7.71	--	--	--	7.37	--	--
ORP (mV)					--	--	--	--	--	309.4	--	--	--	289.2	--	--	--	334.6	--	--
Turbidity					--	--	--	--	--	2.68	--	--	--	14.4	--	--	--	14	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Detection Limit GRMW-GRFC-01212022	Result GRMW-GRFC-01212022	Qualifier GRMW-GRFC-01212022	Result Reporting Limit GRMW-GRIC-01212022	Result Detection Limit GRMW-GRIC-01212022	Result GRMW-GRIC-01212022	Qualifier GRMW-GRIC-01212022	Result Reporting Limit GRMW-GRML-01212022	Result Detection Limit GRMW-GRML-01212022	Result GRMW-GRML-01212022	Qualifier GRMW-GRML-01212022	Result Reporting Limit GRMW-LCPL-01212022	Result Detection Limit GRMW-LCPL-01212022	Result GRMW-LCPL-01212022	Qualifier GRMW-LCPL-01212022
Metals Dissolved) (µg/L)																					
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.519	1	U	1	0.519	1	U	1	0.519	1	U	1	0.519	**2.08**	
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.06	2	U	2	1.06	2	U	2	1.06	2	U	2	1.06	**2.48**	
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	15.5	100	U	100	15.5	100	U	100	15.5	100	U	100	15.5	100	U
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U
Selenium		4.6000	EPA200.8		5.0000	1.2700	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	**8.02**		3.8	1.9	**10.8**	
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																					
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																					
Ammonia			SM4500NH3G		0.1000	0.0058	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.3	0.061	**1.72**	D
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	0.788	**39.2**	--	2.5	0.788	**30.6**	--	2.5	0.788	**32.3**	--	2.5	0.788	**131**	--
Sulfide			SM4500S2F		0.5000	0.3060	0.163	**1**	--	0.5	0.163	**10.4**	Q	0.5	0.163	**5.6**	--	0.5	0.163	**1.4**	--
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.0313	**0.728**	--	0.5	0.156	**9.28**	D	1	0.313	**11.2**	D	2	0.625	**38.9**	D
Total Phosphorus			EPA365.3		0.2000	0.0763	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.5	0.199	**2.47**	D
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	0.674	**30.3**	D	2	0.674	**33.3**	D,H	2	0.674	**30.9**	D	20	6.74	**110**	D
YSI/Hatch Parameters																					
Temperature					--	--	--	0.1	--	--	--	1.6	--	--	--	0	--	--	--	2.1	--
Conductivity (spc)					--	--	--	91.2	--	--	--	101.9	--	--	--	112.4	--	--	--	488.4	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	12.18	--	--	--	11.85	--	--	--	13.02	--	--	--	10.9	--
pH		6.5-9			--	--	--	7.73	--	--	--	7.93	--	--	--	7.17	--	--	--	7.26	--
ORP (mV)					--	--	--	296.8	--	--	--	179.8	--	--	--	336.6	--	--	--	287.3	--
Turbidity					--	--	--	3.06	--	--	--	21	--	--	--	11	--	--	--	4	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-WCCL-01212022	Result Detection Limit GRMW-WCCL-01212022	Result GRMW-WCCL-01212022	Qualifier GRMW-WCCL-01212022	Result Reporting Limit GRMW-CCML-04052022	Result Detection Limit GRMW-CCML-04052022	Result GRMW-CCML-04052022	Qualifier GRMW-CCML-04052022	Result Reporting Limit GRMW-CCSP-04052022	Result Detection Limit GRMW-CCSP-04052022	Result GRMW-CCSP-04052022	Qualifier GRMW-CCSP-04052022	Result Reporting Limit GRMW-CCUB-04052022	Result Detection Limit GRMW-CCUB-04052022	Result GRMW-CCUB-04052022
Metals Dissolved) (µg/L)																					
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	0.519	1	U	1	0.519	1	U	1	0.519	1	U	1	0.519	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	0.244	0.75	U	0.75	0.244	**2.03**		0.75	0.244	**2.11**		0.75	0.244	**2.56**
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	1.06	2	U	2	1.06	2	U	2	1.06	2	U	2	1.06	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	15.5	100	U	100	15.5	100	U	100	15.5	100	U	100	15.5	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	0.652	1.3	U	1.3	0.652	**1.65**		1.3	0.652	**1.66**		1.3	0.652	2.03
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																					
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																					
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5	0.788	**36.4**	--	2.5	0.788	**40.9**	--	2.5	0.788	**30.6**	--	2.5	0.788	**30.2**
Sulfide			SM4500S2F		0.5000	0.3060	0.5	0.163	**6**	--	0.5	0.163	**1.4**	--	0.5	0.163	0.5	U	0.5	0.163	0.5
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.1	0.0313	**1.87**	--	0.2	0.0625	**3.49**	D	0.1	0.0313	**0.567**		0.1	0.0313	**0.655**
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	2	0.674	**29.6**	D	5	1.69	**26.2**	D	5	1.69	**24**	D	5	1.69	**25.2**
YSI/Hatch Parameters																					
Temperature					--	--	--	--	2.4	--	--	--	7	--	--	--	3.8	--	--	--	4.2
Conductivity (spc)					--	--	--	--	104.4	--	--	--	92.6	--	--	--	62.4	--	--	--	63.4
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	11.58	--	--	--	10.86	--	--	--	11.59	--	--	--	12.24
pH		6.5-9			--	--	--	--	7.05	--	--	--	7.39	--	--	--	7.55	--	--	--	7.63
ORP (mV)					--	--	--	--	324.1	--	--	--	301.9	--	--	--	259.6	--	--	--	282.9
Turbidity					--	--	--	--	36	--	--	--	17.3	--	--	--	3.88	--	--	--	3.28

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Qualifier GRMW-CCUB-04052022	Result Reporting Limit GRMW-CCUB-04052022-FD	Result Detection Limit GRMW-CCUB-04052022- FD	Result GRMW-CCUB-04052022- FD	Qualifier GRMW-CCUB-04052022- FD	Result Reporting Limit GRMW-CCWL-04052022	Result Detection Limit GRMW-CCWL-04052022	Result GRMW-CCWL-04052022	Qualifier GRMW-CCWL-04052022	Result Reporting Limit GRMW-GR82-04052022	Result Detection Limit GRMW-GR82-04052022	Result GRMW-GR82-04052022	Qualifier GRMW-GR82-04052022	Result Reporting Limit GRMW-GRFC-04052022	Result Detection Limit GRMW-GRFC-04052022
Metals Dissolved) (µg/L)																					
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	U	1	0.519	1	U	1	0.519	1	U	1	0.519	1	U	1	0.519
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080		0.75	0.244	**1.69**		0.75	0.244	**2.85**		0.75	0.244	**1.95**		0.75	0.244
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	U	2	1.06	2	U	2	1.06	2	U	2	1.06	2	U	2	1.06
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	U	100	15.5	100	U	100	15.5	100	U	100	15.5	100	U	100	15.5
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820		1.3	0.652	1.3	U	1.3	0.652	**2.18**		1.3	0.652	**1.39**		1.3	0.652
Selenium		4.6000	EPA200.8		5.0000	1.2700	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9	3.8	U	3.8	1.9
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																					
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																					
Ammonia			SM4500NH3G		0.1000	0.0058	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	--	2.5	0.788	**30.1**	--	2.5	0.788	**33.8**		2.5	0.788	**31.7**	--	2.5	0.788
Sulfide			SM4500S2F		0.5000	0.3060	U	0.5	0.163	0.5	U	0.5	0.163	0.5	U	0.5	0.163	0.5	U	0.5	0.163
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359		0.1	0.0313	**0.653**		0.2	0.0625	**0.936**	D	0.2	0.0625	**1.84**	D	0.1	0.0313
Total Phosphorus			EPA365.3		0.2000	0.0763	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	D	5	1.69	**24.5**	D	5	1.69	**25.3**	D	5	1.69	**24**	D	5	1.69
YSI/Hatch Parameters																					
Temperature					--	--	--	--	--	4.2	--	--	--	5.4	--	--	--	6.7	--	--	--
Conductivity (spc)					--	--	--	--	--	63.4	--	--	--	69.9	--	--	--	72.7	--	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	--	12.24	--	--	--	12.18	--	--	--	11.2	--	--	--
pH		6.5-9			--	--	--	--	--	7.63	--	--	--	7.57	--	--	--	7.27	--	--	--
ORP (mV)					--	--	--	--	--	282.9	--	--	--	330.8	--	--	--	231.4	--	--	--
Turbidity					--	--	--	--	--	3.28	--	--	--	8.29	--	--	--	11.3	--	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result GRMW-GRFC-04052022	Qualifier GRMW-GRFC-04052022	Result Reporting Limit GRMW-GRIC-04052022	Result Detection Limit GRMW-GRIC-04052022	Result GRMW-GRIC-04052022	Qualifier GRMW-GRIC-04052022	Result Reporting Limit GRMW-GRML-04052022	Result Detection Limit GRMW-GRML-04052022	Result GRMW-GRML-04052022	Qualifier GRMW-GRML-04052022	Result Reporting Limit GRMW-LCPL-04052022	Result Detection Limit GRMW-LCPL-04052022
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	U	1	0.519	1	U	1	0.519	1	U	1	0.519
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	**2.1**		0.75	0.244	**2.09**		0.75	0.244	**1.84**		0.75	0.244
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	U	2	1.06	2	U	2	1.06	**2.16**		2	1.06
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	U	100	15.5	100	U	100	15.5	100	U	100	15.5
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	**1.67**		1.3	0.652	1.3	U	1.3	0.652	**1.41**		1.3	0.652
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	U	3.8	1.9	3.8	U	3.8	1.9	**33.9**		3.8	1.9
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	**32.1**	--	2.5	0.788	**26.2**	--	2.5	0.788	**26.2**	--	2.5	0.788
Sulfide			SM4500S2F		0.5000	0.3060	0.5	U	0.5	0.163	**0.8**	--	0.5	0.163	0.5	U,S	0.5	0.163
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	**0.732**	--	0.55	0.156	**1.78**	D	1	0.313	**2.08**	D	2	0.625
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	**24.2**	D	5	1.69	**19.7**	D	5	1.69	**18.5**	D	5	1.69
YSI/Hatch Parameters																		
Temperature					--	--	5.3	--	--	--	4.2	--	--	--	4.9	--	--	--
Conductivity (spc)					--	--	71.6	--	--	--	58.3	--	--	--	57.5	--	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	11.32	--	--	--	12.01	--	--	--	11.6	--	--	--
pH		6.5-9			--	--	7.62	--	--	--	7.52	--	--	--	6.96	--	--	--
ORP (mV)					--	--	178.2	--	--	--	206.1	--	--	--	218.2	--	--	--
Turbidity					--	--	8.68	--	--	--	8.11	--	--	--	8	--	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result GRMW-LCPL-04052022	Qualifier GRMW-LCPL-04052022	Result Reporting Limit GRMW-WCCL-04052022	Result Detection Limit GRMW-WCCL-04052022	Result GRMW-WCCL-04052022	Qualifier GRMW-WCCL-04052022	Result Reporting Limit GRMW-CCML-05282022	Result Detection Limit GRMW-CCML-05282022	Result GRMW-CCML-05282022	Qualifier GRMW-CCML-05282022	Result Reporting Limit GRMW-CCSP-05282022	Result Detection Limit GRMW-CCSP-05282022	Result GRMW-CCSP-05282022	Qualifier GRMW-CCSP-05282022
Metals Dissolved) (µg/L)																				
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	**1.41**		1	0.519	1	U	1	0.519	1	U,T	1	0.519	1	U,T
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	**1.84**		0.75	0.244	**2.82**		0.75	0.244	0.75	U,T	0.75	0.244	0.75	U,T
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	U	2	1.06	2	U	2	1.06	2	U,T	2	1.06	2	U,T
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	U	100	15.5	100	U	100	15.5	100	U,T	100	15.5	100	U,T
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	**1.86**		1.3	0.652	**1.95**		1.3	0.652	1.3	U,T	1.3	0.652	1.3	U,T
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U,T,H	109	0.942	1.9	U,T
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	**8.33**		3.8	1.9	3.8	U	3.8	1.9	3.8	U,T	3.8	1.9	**7.24**	T
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																				
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																				
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	**80.7**	--	2.5	0.788	**34.3**		2.5	0.788	**29.1**	T	2.5	0.788	**21.8**	T
Sulfide			SM4500S2F		0.5000	0.3060	**0.8**	--	0.5	0.163	**6.4**	--	--	0.05	0.05	T	--	0.05	0.05	T
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	**46.2**	D	0.1	0.0313	**0.976**	--	0.2	0.0625	**0.846**	T,D	0.2	0.0625	**0.358**	T,D
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	**60.1**	D	5	1.69	**25.8**	D	1	0.337	21.2	E,T	1	0.337	**17.7**	T
YSI/Hatch Parameters																				
Temperature					--	--	8	--	--	--	3.7	--	--	--	11.7	--	--	--	6.5	--
Conductivity (spc)					--	--	327.7	--	--	--	79.2	--	--	--	60	--	--	--	44.7	--
Dissolved Oxygen (mg/L)		6.5			--	--	8.38	--	--	--	11.6	--	--	--	9.01	--	--	--	10.98	--
pH		6.5-9			--	--	6.86	--	--	--	7.26	--	--	--	7.1	--	--	--	7.43	--
ORP (mV)					--	--	332.9	--	--	--	320.9	--	--	--	237.9	--	--	--	310	--
Turbidity					--	--	3.76	--	--	--	13.3	--	--	--	10.8	--	--	--	5.97	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-CCUB-05282022	Result Detection Limit GRMW-CCUB-05282022	Result GRMW-CCUB-05282022	Qualifier GRMW-CCUB-05282022	Result Reporting Limit GRMW-CCUB-05282022-Field Duplicate	Result Detection Limit GRMW-CCUB-05282022- Field Duplicate	Result GRMW-CCUB-05282022-Field Duplicate	Qualifier GRMW-CCUB-05282022-Field Duplicate	Result Reporting Limit GRMW-CCWL-05282022	Result Detection Limit GRMW-CCWL-05282022	Result GRMW-CCWL-05282022	Qualifier GRMW-CCWL-05282022	Result Reporting Limit GRMW-GR82-05282022	Result Detection Limit GRMW-GR82-05282022	Result GRMW-GR82-05282022
Metals Dissolved) (µg/L)																					
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	0.519	1	U,T	1	0.519	1	U,T	1	0.519	1	U,T	1	0.519	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	0.244	0.75	U,T,B	0.75	0.244	**1.47**	B,T	0.75	0.244	**1.69**	B,T	0.75	0.244	**1.2**
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	1.06	2	U,T	2	1.06	2	U,T	2	1.06	2	U,T	2	1.06	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	15.5	100	U,T	100	15.5	100	U,T	100	15.5	100	U,T	100	15.5	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	0.652	1.3	U,T	1.3	1.3	0.652	U,T	1.3	0.652	1.3	U,T	1.3	0.652	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	0.942	1.9	U,T,H	1.9	0.942	1.9	U,T,H	1.9	0.942	1.9	U,T	1.9	0.942	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	1.9	3.8	U,T	3.8	1.9	3.8	U,T	3.8	1.9	3.8	U,T	3.8	1.9	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																					
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																					
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5	0.788	**23.8**	T	2.5	0.788	**22.2**	T	2.5	0.788	**22.5**	T	2.5	0.788	**27.3**
Sulfide			SM4500S2F		0.5000	0.3060	--	0.05	0.05	T	--	0.05	0.05	T	--	0.05	0.05	T	--	0.05	0.05
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.2	0.0625	**0.412**	T,D	0.2	0.0625	**0.41**	T,D	0.2	0.0625	**0.466**	T,D	0.2	0.0625	**1.04**
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	1	0.337	**17.6**	T	1	0.337	**16.7**	T	1	0.337	**18.5**	T	1	0.337	19.9
YSI/Hatch Parameters																					
Temperature					--	--	--	--	7	--	--	--	7	--	--	--	6.8	--	--	--	11.2
Conductivity (spc)					--	--	--	--	44.8	--	--	--	44.8	--	--	--	47.3	--	--	--	57.9
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	11.04	--	--	--	11.04	--	--	--	10.91	--	--	--	9.63
pH		6.5-9			--	--	--	--	7.37	--	--	--	7.37	--	--	--	7.06	--	--	--	7.4
ORP (mV)					--	--	--	--	229.3	--	--	--	229.3	--	--	--	260.7	--	--	--	224.6
Turbidity					--	--	--	--	7.57	--	--	--	7.57	--	--	--	14.1	--	--	--	9.21

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Qualifier GRMW-GR82-05282022	Result Reporting Limit GRMW-GRFC-05282022	Result Detection Limit GRMW-GRFC-05282022	Result GRMW-GRFC-05282022	Qualifier GRMW-GRFC-05282022	Result Reporting Limit GRMW-GRIC-05282022	Result Detection Limit GRMW-GRIC-05282022	Result GRMW-GRIC-05282022	Qualifier GRMW-GRIC-05282022	Result Reporting Limit GRMW-GRML-05282022	Result Detection Limit GRMW-GRML-05282022	Result GRMW-GRML-05282022	Qualifier GRMW-GRML-05282022
Metals Dissolved) (µg/L)																			
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	U,T	1	0.519	1	U,T	1	0.519	1	U,T	1	0.519	1	U,T
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	B,T	0.75	0.244	**0.962**	B,T	0.75	0.244	0.75	U,T	0.75	0.244	**1.08**	B,T
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	U,T	2	1.06	2	U,T	2	1.06	**6.51**	T	2	1.06	2	U,T
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	U,T	100	15.5	100	U,T	100	15.5	100	U,T	100	15.5	100	U,T
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	U,T	1.3	0.652	1.3	U,T	1.3	0.652	1.3	U,T	1.3	0.652	1.3	U,T
Selenium		4.6000	EPA200.8		5.0000	1.2700	U,T,H	1.9	0.942	1.9	U,T,H	1.9	0.942	1.9	U,T	1.9	0.942	1.9	U,T,H
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	U,T	3.8	1.9	3.8	U,T	3.8	1.9	3.8	U,T	3.8	1.9	**6.45**	T
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																			
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																			
Ammonia			SM4500NH3G		0.1000	0.0058	U,T	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	T	2.5	0.788	**20.5**	T	2.5	0.788	**23.9**	T	2.5	0.788	**24.5**	T
Sulfide			SM4500S2F		0.5000	0.3060	T	--	0.05	0.05	T	--	0.05	0.05	T	--	0.05	0.05	T
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	T,D	0.2	0.0625	**0.45**	T,D	0.2	0.0625	**0.866**	T,D	0.2	0.0625	**0.904**	T,D
Total Phosphorus			EPA365.3		0.2000	0.0763	U,T	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	E,T	1	0.337	**15.8**	T	1	0.337	**18**	T	1	0.337	**18.3**	T
YSI/Hatch Parameters																			
Temperature					--	--	--	--	--	7.3	--	--	--	8.9	--	--	--	9.7	--
Conductivity (spc)					--	--	--	--	--	43.7	--	--	--	51.7	--	--	--	52.4	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	--	10.52	--	--	--	10.26	--	--	--	10.24	--
pH		6.5-9			--	--	--	--	--	7.36	--	--	--	7.58	--	--	--	7.29	--
ORP (mV)					--	--	--	--	--	293.7	--	--	--	282.2	--	--	--	228.5	--
Turbidity					--	--	--	--	--	10.1	--	--	--	6.92	--	--	--	7.47	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-LCPL-05282022	Result Detection Limit GRMW-LCPL-05282022	Result GRMW-LCPL-05282022	Qualifier GRMW-LCPL-05282022	Result Reporting Limit GRMW-WCCL-05282021	Result Detection Limit GRMW-WCCL-05282022	Result GRMW-WCCL-05282022	Qualifier GRMW-WCCL-05282022	Result Reporting Limit GRMW-CCML-09302022	Result Detection Limit GRMW-CCML-09302022	Result GRMW-CCML-09302022	Qualifier GRMW-CCML-09302022
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	0.519	1	U,T	1	0.519	1	U,T	1	0.519	1	U
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	0.244	0.75	U,T	0.75	0.244	**55.5**	T	0.75	0.244	0.75	U
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	1.06	2	U,T	2	1.06	2	U,T	2	1.06	2	U
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	15.5	**129**	T	100	15.5	**267**	T	100	15.5	100	U
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	0.652	1.3	U,T	1.3	0.652	**26.1**	T	1.3	0.652	1.3	U
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	0.942	1.9	U,T	1.9	0.942	1.9	U,T,H	1.9	0.942	1.9	U
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	1.9	3.8	U,T	3.8	1.9	3.8	U,T	3.8	1.9	3.8	U
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U,T	0.1	0.0203	0.1	U
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5	0.788	**85.7**	T	2.5	0.788	**43**	T	2.5	0.788	**58.8**	
Sulfide			SM4500S2F		0.5000	0.3060	--	0.05	0.05	T	--	0.05	0.05	T	0.05	0.05	0.05	U
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	2	0.625	**27.9**	T,D	2	0.0625	**0.738**	T,D	1	0.313	**3**	D
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U,T	0.25	0.0995	0.25	U
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	1	0.337	69.2	E,T	1	0.337	35	E,T	1	0.337	41	
YSI/Hatch Parameters																		
Temperature					--	--	--	--	15	--	--	--	9.9	--	--	--	15.4	--
Conductivity (spc)					--	--	--	--	285.9	--	--	--	91.6	--	--	--	134.7	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	3.66	--	--	--	9.78	--	--	--	5.7	--
pH		6.5-9			--	--	--	--	6.79	--	--	--	7.21	--	--	--	7.2	--
ORP (mV)					--	--	--	--	217.8	--	--	--	274	--	--	--	210.7	--
Turbidity					--	--	--	--	9.3	--	--	--	7.33	--	--	--	3.04	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

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GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Reporting Limit GRMW-CCSP-09302022	Result Detection Limit GRMW-CCSP-09302022	Result GRMW-CCSP-09302022	Qualifier GRMW-CCSP-09302022	Result Reporting Limit GRMW-CCUB-09302022	Result Detection Limit GRMW-CCUB-09302022	Result GRMW-CCUB-09302022	Qualifier GRMW-CCUB-09302022	Result Reporting Limit GRMW-CCWL-09302022	Result Detection Limit GRMW-CCWL-09302022	Result GRMW-CCWL-09302022	Qualifier GRMW-CCWL-09302022	Result Reporting Limit GRMW-GR82-09302022
Metals Dissolved) (µg/L)																			
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	1	0.519	1	U	1	0.519	1	U	1	0.519	1	U	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	2	1.06	**51.6**	--	2	1.06	2	U	2	1.06	2	U	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	100	15.5	100	U	100	15.5	100	U	100	15.5	100	U	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	3.8	1.9	**57.3**	--	3.8	1.9	**5.88**		3.8	1.9	**12.8**		3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																			
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																			
Ammonia			SM4500NH3G		0.1000	0.0058	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	2.5	0.788	**34.4**		2.5	0.788	**37.7**		2.5	0.788	**48.6**		2.5
Sulfide			SM4500S2F		0.5000	0.3060	0.05	0.05	0.05	U	0.05	0.05	0.05	U	0.05	0.05	0.05	U	0.05
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.5	0.156	**0.73**	D	0.5	0.156	**1.28**	D	0.5	0.156	**1.9**	D	1
Total Phosphorus			EPA365.3		0.2000	0.0763	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	1	0.337	**33.1**		1	0.337	**33.9**		1	0.337	**45.1**		1
YSI/Hatch Parameters																			
Temperature					--	--	--	--	11.7	--	--	--	13.5	--	--	--	14.7	--	--
Conductivity (spc)					--	--	--	--	38.9	--	--	--	78.7	--	--	--	108.2	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	--	10.02	--	--	--	10.13	--	--	--	8.79	--	--
pH		6.5-9			--	--	--	--	7.82	--	--	--	7.83	--	--	--	7.55	--	--
ORP (mV)					--	--	--	--	224.4	--	--	--	202	--	--	--	228.7	--	--
Turbidity					--	--	--	--	1.41	--	--	--	1.62	--	--	--	2.43	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Detection Limit GRMW-GR82-09302022	Result GRMW-GR82-09302022	Qualifier GRMW-GR82-09302022	Result Reporting Limit GRMW-GRFC-09302022	Result Detection Limit GRMW-GRFC-09302022	Result GRMW-GRFC-09302022	Qualifier GRMW-GRFC-09302022	Result Reporting Limit GRMW-GRIC-09302022	Result Detection Limit GRMW-GRIC-09302022	Result GRMW-GRIC-09302022	Qualifier GRMW-GRIC-09302022	Result Reporting Limit GRMW-GRML-09302022
Metals Dissolved) (µg/L)																		
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.519	1	U	1	0.519	1	U	1	0.519	1	U	1
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.244	0.75	U	0.75	0.244	0.75	U	0.75	0.244	0.75	U	0.75
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.06	2	U	2	1.06	2	U	2	1.06	2	U	2
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	15.5	100	U	100	15.5	100	U	100	15.5	100	U	100
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	0.652	1.3	U	1.3	0.652	1.3	U	1.3	0.652	1.3	U	1.3
Selenium		4.6000	EPA200.8		5.0000	1.2700	0.942	1.9	U	1.9	0.942	1.9	U	1.9	0.942	1.9	U	1.9
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	1.9	3.8	U	3.8	1.9	**18.2**		3.8	1.9	3.8	U	3.8
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--	--	--	--	--	--
PAHs - Priority (µg/L)																		
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--	--	--	--	--	--
Conventionals (mg/L)																		
Ammonia			SM4500NH3G		0.1000	0.0058	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1	0.0203	0.1	U	0.1
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	0.788	69		2.5	0.788	**42.3**		2.5	0.788	**58.4**		2.5
Sulfide			SM4500S2F		0.5000	0.3060	0.05	0.05	U	0.05	0.05	0.05	U	0.05	0.05	0.05	U	0.05
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.313	**1.63**	D	0.5	0.156	**0.775**	D	1	0.313	**2.9**	D	0.5
Total Phosphorus			EPA365.3		0.2000	0.0763	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25	0.0995	0.25	U	0.25
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	0.337	**63.3**		1	0.337	**35.4**		1	0.337	**51.8**		1
YSI/Hatch Parameters																		
Temperature					--	--	--	14.4	--	--	--	13	--	--	--	13.6	--	--
Conductivity (spc)					--	--	--	150.9	--	--	--	88.2	--	--	--	131.2	--	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	7.95	--	--	--	10.19	--	--	--	7.93	--	--
pH		6.5-9			--	--	--	7.88	--	--	--	8.4	--	--	--	7.31	--	--
ORP (mV)					--	--	--	148.5	--	--	--	136.9	--	--	--	200.5	--	--
Turbidity					--	--	--	2.95	--	--	--	0.64	--	--	--	1	--	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4A - CHEMISTRY RESULTS - ANALYTES

Chemical Parameter ANALYTE	Aquatic Life Water Quality Criteria (Acute)1	Aquatic Life Water Quality Criteria (Chronic)2	Analytical (Extraction Method)	Reference	Reporting Limit (PQL)	Detection Limit (MDL)	Result Detection Limit GRMW-GRML-09302022	Result GRMW-GRML-09302022	Qualifier GRMW-GRML-09302022	Result Reporting Limit GRMW-WCCL-09302022	Result Detection Limit GRMW-WCCL-09302022	Result GRMW-WCCL-09302022	Qualifier GRMW-WCCL-09302022
Metals Dissolved) (µg/L)													
Arsenic	340.0000	150.0000	EPA200.8		1.0000	0.4550	0.519	1	U	1	0.519	1	U
Cadmium	0.2258	0.0415	EPA200.8		0.2000	0.0140	--	--	--	--	--	--	--
Chromium	226.9109	10.8456	EPA200.8		1.0000	0.4080	0.244	0.75	U	0.75	0.244	0.75	U
Copper	5.5000	4.1000	EPA200.8		2.0000	0.6140	1.06	2	U	2	1.06	2	U
Cyanide	0.0220	0.0052	SM4500CNE		0.0500	0.0028	--	--	--	--	--	--	--
Iron		1000.0000	EPA200.8		100.0000	27.4000	15.5	100	U	100	15.5	100	U
Lead	3.2568	0.1269	EPA200.8		0.5000	0.1600	--	--	--	--	--	--	--
Nickel	55.1450	6.1311	EPA200.8		3.0000	0.9820	0.652	1.3	U	1.3	0.652	1.3	U
Selenium		4.6000	EPA200.8		5.0000	1.2700	0.942	1.9	U	1.9	0.942	1.9	U
Silver	0.0487	0.1000	EPA200.8		0.2500	0.0859	--	--	--	--	--	--	--
Zinc	14.0365	14.0365	EPA200.8		2.5000	0.4750	1.9	**7.89**		3.8	1.9	3.8	U
Mercury	2.4000	0.0120	EPA245.1		0.1000	0.0075	--	--	--	--	--	--	--
PAHs - Priority (µg/L)													
1-Methylnaphthalene		75.37**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--
2-Methylnaphthalene		72.16**	SW8270ESIM		0.1000	0.0219	--	--	--	--	--	--	--
Acenaphthene	411.0000	4.9600	SW8270ESIM		0.1000	0.0150	--	--	--	--	--	--	--
Acenaphthylene		306.9**	SW8270ESIM		0.1000	0.0140	--	--	--	--	--	--	--
Anthracene	<2.1	4.7800	SW8270ESIM		0.1000	0.0247	--	--	--	--	--	--	--
Benz[a]anthracene		2.227**	SW8270ESIM		0.1000	0.0290	--	--	--	--	--	--	--
Benzo(a)pyrene		0.9573**	SW8270ESIM		0.1000	0.0464	--	--	--	--	--	--	--
Benzo(ghi)perylene		0.4391**	SW8270ESIM		0.1000	0.0107	--	--	--	--	--	--	--
Chrysene		2.042**	SW8270ESIM		0.1000	0.0319	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene		0.2825**	SW8270ESIM		0.1000	0.0027	--	--	--	--	--	--	--
Fluoranthene	15.0000	4.6000	SW8270ESIM		0.1000	0.0321	--	--	--	--	--	--	--
Fluorene		39.3**	SW8270ESIM		0.1000	0.0198	--	--	--	--	--	--	--
IUeno(1,2,3-cd)pyrene		0.275**	SW8270ESIM		0.1000	0.0071	--	--	--	--	--	--	--
Naphthalene		193.5**	SW8270ESIM		0.1000	0.0300	--	--	--	--	--	--	--
Phenanthrene	6.3200	7.9000	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--
Pyrene	4.5300	6.2400	SW8270ESIM		0.1000	0.0276	--	--	--	--	--	--	--
Benzo(k)fluoranthene		0.6415**	SW8270ESIM		0.1000	0.0449	--	--	--	--	--	--	--
Benzo(b)fluoranthene		0.6774**	SW8270ESIM		0.1000	0.0389	--	--	--	--	--	--	--
Conventionals (mg/L)													
Ammonia			SM4500NH3G		0.1000	0.0058	0.0203	0.1	U	0.1	0.0203	0.1	U
Alkalinity, Total (As CaCO3)			SM2320B		2.5000	1.2500	0.788	**64**		2.5	0.788	**52.2**	
Sulfide			SM4500S2F		0.5000	0.3060	0.05	0.05	U	0.05	0.05	0.05	U
Chloride	860.0000	230.0000	EPA300.0		0.1000	0.0359	0.156	**2.92**	D	0.1	0.0313	**0.62**	
Total Phosphorus			EPA365.3		0.2000	0.0763	0.0995	0.25	U	0.25	0.0995	0.25	U
Total Hardness (As CaCO3)			EPA Method 200.8/SM 2340B		--	--	0.337	**54.9**		1	0.337	**48.3**	
YSI/Hatch Parameters													
Temperature					--	--	--	15.3	--	--	--	12.8	--
Conductivity (spc)					--	--	--	139.8	--	--	--	110.4	--
Dissolved Oxygen (mg/L)		6.5			--	--	--	8.51	--	--	--	9.61	--
pH		6.5-9			--	--	--	7.92	--	--	--	7.62	--
ORP (mV)					--	--	--	236	--	--	--	192.9	--
Turbidity					--	--	--	1.67	--	--	--	7.86	--

1 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Acute Criterion (Criterion Maximum Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L $CaCO_3$, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

2 - DEQ Table 30 Aquatic Life Water Quality Criteria for Toxic Pollutants 340-041-8033 - Chronic Criterion (Criterion Continuous Concentration) Freshwater. Copper criterion is hardness adjusted based on BLM method assuming 30 mg/L CaCO3, lowest salmon SMAV = 19 µg/L LC50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.

B - Analyte detected in the associated method blank.
E - Value above quantitation range.
Q - Hold time exceeded.
H - Associated calibration verification is above acceptance criteria. Result may be biased.
T - Shipping temperature was exceeded.
D - Dilution was required.
S - Outlying spike recovery.
U - Non-detect.
*Water Quality Standards for Surface Waters of the State of Washington WAC 173-201A-240.
**Screening level (from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks [ESBs] for the Protection of Benthic Organisms: PAH Mixtures).
*** Added by the lab as a spike.
Bold = Detected result.
Totals are calculated as the sum of all detected results (U=1/2). Half of the detection limit is included in the sum of results. If all results are not detected, the highest reporting limit value is reported as the sum
Green = Exceeded chronic water quality criteria.
Yellow = Exceeded acute water quality criteria.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result GRMW-CCUB-11062020	Qualifier GRMW-CCUB-11062020	Result Reporting Limit GRMW-CCWL-11062020	Result GRMW-CCWL-11062020	Qualifier GRMW-CCWL-11062020	Result Reporting Limit GRMW-GR82-11062020	Result GRMW-GR82-11062020	Qualifier GRMW-GR82-11062020	Result Reporting Limit GRMW-GRIC-11062020	Result GRMW-GRIC-11062020	Qualifier GRMW-GRIC-11062020	Result Reporting Limit GRMW-CCUB-04252021	Result GRMW-CCUB-0425202	Qualifier GRMW-CCUB-04252021	Result Reporting Limit GRMW-CCWL-04252021	Result GRMW-CCWL-04252021	Qualifier GRMW-CCWL-04252021
Abamectin		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Acetamiprid		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Acibenzolar-S-methyl		Modified EPA 8321B (LC-MS/MS)	0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Aldicarb		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Allethrin		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ametoctradin		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Atrazine		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Azinphos-ethyl		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Azinphos-methyl		Modified EPA 8321B (LC-MS/MS)	0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Azoxystrobin		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bendiocarb		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bensulide		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bitertanol		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Boscalid		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bromacil		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Carbaryl		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Carbendazim		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Carbofuran		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Carfentrazone-ethyl		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorantraniliprole		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Clethodim		'Modified EPA 8321B (LC-MS/MS)	'0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Clofentezine		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyanazine		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyantraniliprole		'Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyazofamid		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cycloate		Modified EPA 8321B (LC-MS/MS)	0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Cyflufenamid		'Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyflumetofen		'Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cymoxanil		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyprodinil		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
DCPMU		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diazoxon		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Difenoconazole		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diflubenzuron		'Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dimethoate		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dimethomorph		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Disulfoton sulfone		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diuron		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
d-Phenothrin		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ethion		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Famoxadone		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Famphur		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenamidone		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenamiphos sulfone		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenamiphos sulfoxide		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenazaquin		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenbuconazole		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenbutatin oxide		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenhexamid		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenobucarb		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenpropathrin		'Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenpyroximate		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenuron		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluazinam		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flubendiamide		Modified EPA 8321B (LC-MS/MS)	0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Flumioxazin		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluometuron		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluopicolide		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluopyram		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluoxastrobin		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flupyradifurone		'Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluridone		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flutriafol		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluvalinate		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluxapyroxad		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fonofos		'Modified EPA 8321B (LC-MS/MS)	'0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Hexythiazox		'Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Imazalil		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Imidacloprid		'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	
Indaziflam		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result GRMW-CCUB-11062020	Qualifier GRMW-CCUB-11062020	Result Reporting Limit GRMW-CCWL-11062020	Result GRMW-CCWL-11062020	Qualifier GRMW-CCWL-11062020	Result Reporting Limit GRMW-GR82-11062020	Result GRMW-GR82-11062020	Qualifier GRMW-GR82-11062020	Result Reporting Limit GRMW-GRIC-11062020	Result GRMW-GRIC-11062020	Qualifier GRMW-GRIC-11062020	Result Reporting Limit GRMW-CCUB-04252021	Result GRMW-CCUB-0425202	Qualifier GRMW-CCUB-04252021	Result Reporting Limit GRMW-CCWL-04252021	Result GRMW-CCWL-04252021	Qualifier GRMW-CCWL-04252021
Indoxacarb		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Iprodione		Modified EPA 8321B (LC-MS/MS)	0.30	U	--	0.30	U		0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Isoxaben		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Linuron		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Malaoxon		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Mandipropamid		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Metconazole		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methidathion		Modified EPA 8321B (LC-MS/MS)	0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methiocarb		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methomyl		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methoxyfenozide		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Metrafenone		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Metribuzin		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Mevinphos		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Norflurazon		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Novaluron		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Oryzalin		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Oxadixyl		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	'0.060	U	--	0.06	U	--	0.06	U	--
Oxamyl		'Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	'0.060	U	--	0.06	U	--	0.06	U	--
Penthiopyrad		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	'0.060	U	--	0.06	U	--	0.06	U	--
Phorate Sulfone		Modified EPA 8321B (LC-MS/MS)	'0.060	U	--	'0.060	U		0.06	U	--	'0.060	U	--	0.06	U	--	0.06	U	--
Phorate Sulfoxide		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phosalone		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phosmet		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phosphamidon		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Piperonyl Butoxide		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pirimicarb		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pirimiphos-methyl		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Prometon		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Prometryn		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Propargite		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Propazine		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Propiconazole		Modified EPA 8321B (LC-MS/MS)	0.12	U	--	'0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Pyraclostrobin		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyraflufen-ethyl		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyrethrin		Modified EPA 8321B (LC-MS/MS)	0.30	U	--	0.30	U		0.3	U	--	0.3	U	--	0.06	U	--	0.06	U	--
Pyridaben		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyrimethanil		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Rotenone		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Saflufenacil		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Sethoxydim		Modified EPA 8321B (LC-MS/MS)	0.12	U	--	'0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Siduron		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Simazine		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Simetryn		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spinetoram		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spinosad		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spiromesifen		Modified EPA 8321B (LC-MS/MS)	'0.12	U	--	'0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Spirotetramat		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spiroxamine		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Sulfentrazone		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Sulfoxaflor		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tebuconazole		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tebufenozide		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tebuthiuron		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Terbacil		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Terbuthylazine		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Terbutryn		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiabendazole		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiacloprid		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiamethoxam		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiobencarb		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiodicarb		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Triadimenol		Modified EPA 8321B (LC-MS/MS)	0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Trifloxystrobin		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Triflumizole		Modified EPA 8321B (LC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Monuron (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Neburon (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Penoxsulam (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Phenmedipham (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	--	U	--	--	U	--
Picoxystrobin (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--

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Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result GRMW-CCUB-11062020	Qualifier GRMW-CCUB-11062020	Result Reporting Limit GRMW-CCWL-11062020	Result GRMW-CCWL-11062020	Qualifier GRMW-CCWL-11062020	Result Reporting Limit GRMW-GR82-11062020	Result GRMW-GR82-11062020	Qualifier GRMW-GR82-11062020	Result Reporting Limit GRMW-GRIC-11062020	Result GRMW-GRIC-11062020	Qualifier GRMW-GRIC-11062020	Result Reporting Limit GRMW-CCUB-04252021	Result GRMW-CCUB-0425202	Qualifier GRMW-CCUB-04252021	Result Reporting Limit GRMW-CCWL-04252021	Result GRMW-CCWL-04252021	Qualifier GRMW-CCWL-04252021
Pyrethroids (cont.)																				
Prallethrin (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Propanil (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Propoxur (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Pyridalyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Pyroxasulfone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Quizalofop-p-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Bicyclopyrone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Thiencarbazone-methyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Triallate (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Trifloxysulfuron-sodium (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Trinexapac-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Triticonazole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Clomazone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Cyclaniliprole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Cyhalofop-butyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.12	U	--	0.12	U	--
Cyprosulfamide (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Afidopyropen (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Diflufenican (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Dioxathion (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Etofenprox (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Fenoxycarb (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Flufenacet (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Flutianil (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Iodosulfuron-methyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Ipconazole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Isofetamid (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Isoxadifen-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Lactofen (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
TPP-d15 (Triphenyl Phosphate) ***		Modified EPA 8321B (LC-MS/MS)	--	2.03	--		2.01			2.09	--		2.04	--	--	1.81	--	--	1.79	--
a-BHC		Modified EPA 8270D (GC-MS/MS)	0.060	U	--	0.060	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Acetochlor		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Alachlor		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Aldrin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ametryn		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Aspon (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
b-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Benfluralin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bifenthrin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bolstar (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Bromopropylate		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Buprofezin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Captan		Modified EPA 8270D (GC-MS/MS)	0.6	U	--	0.6	U		0.6	U	--	0.6	U	--	0.6	U	--	0.6	U	--
Chlordane		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorfenapyr (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Chlorfenvinphos (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Chlorobenzilate (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Chloroneb		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorpropham		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorpyrifos		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorpyrifos-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
cis-Nonachlor		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyfluthrin		Modified EPA 8270D (GC-MS/MS)	0.3	U	--	0.3	U		0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Cypermethrin		Modified EPA 8270D (GC-MS/MS)	0.3	U	--	0.3	U		0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Dacthal		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
d-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Deltamethrin		Modified EPA 8270D (GC-MS/MS)	0.3	U	--	0.3	U		0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Demeton (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Diazinon		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dichlorvos		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diclofop-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dicloran		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.3	U	--	0.3	U	--
Dicofol		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dieldrin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dimethenamid		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diphenamid		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diphenylamine		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Disulfoton		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dithiopyr		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
EUosulfan I		Modified EPA 8270D (GC-MS/MS)	0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
EUosulfan II		Modified EPA 8270D (GC-MS/MS)	0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
EUosulfan sulfate		Modified EPA 8270D (GC-MS/MS)	0.12	U	--	0.12	U		0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--

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Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result GRMW-CCUB-11062020	Qualifier GRMW-CCUB-11062020	Result Reporting Limit GRMW-CCWL-11062020	Result GRMW-CCWL-11062020	Qualifier GRMW-CCWL-11062020	Result Reporting Limit GRMW-GR82-11062020	Result GRMW-GR82-11062020	Qualifier GRMW-GR82-11062020	Result Reporting Limit GRMW-GRIC-11062020	Result GRMW-GRIC-11062020	Qualifier GRMW-GRIC-11062020	Result Reporting Limit GRMW-CCUB-04252021	Result GRMW-CCUB-0425202	Qualifier GRMW-CCUB-04252021	Result Reporting Limit GRMW-CCWL-04252021	Result GRMW-CCWL-04252021	Qualifier GRMW-CCWL-04252021
Semivolatile (µg/L)																				
Endrin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Endrin ketone		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
EPN (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
EPTC (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Esfenvalerate		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ethalfluralin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ethofumesate		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ethoprop		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Etoxazole		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Etridiazole		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenarimol		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenitrothion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Fenoxaprop-ethyl		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenthion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Fenvalerate		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fipronil		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluazifop-p-butyl		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fludioxonil		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluroxypyr-meptyl		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flutolanil		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
g-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Heptachlor		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Heptachlor epoxide		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Hexachlorobenzene		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Kresoxim-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
lambda-Cyhalothrin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Leptophos (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Malathion		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Mefenoxam		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methoxychlor		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Metolachlor		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
MGK-264		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Myclobutanil		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Napropamide		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
o-Phenylphenol		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ovex (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Oxadiazon		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Oxyfluorfen		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
p,p'-DDD		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
p,p'-DDE		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
p,p'-DDT		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Paclobutrazol (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Parathion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Parathion-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
PCA		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
PCB		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
PCNB		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pendimethalin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pentachlorothioanisole		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Permethrin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.12	U	--	0.12	U	--
Phorate (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	--	--	0.06	--	--
Procymidone		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Prodiamine	829^	Modified EPA 8270D (GC-MS/MS)	0.06	0.12	--	0.06	0.12		0.06	0.12	--	0.06	0.11	--	0.06	U	--	0.06	U	--
Pyriproxyfen		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Quinoxyfen		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ronnel (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Spirodiclofen		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Sulfotep (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Tefluthrin (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Terbufos (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Thionazin (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Tokuthion (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Trichloronate (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	--	--	--	--	--	--	--	--	--	--	--	0.06	U	--	0.06	U	--
Tetraconazole		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tetradifon		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
trans-Nonachlor		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Trifluralin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Vinclozalin		Modified EPA 8270D (GC-MS/MS)	0.06	U	--	0.06	U		0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--

^ EPA Pesticide Fact Sheet Number 231 Prodiamine

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GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPO
TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result Reporting Limit GRMW-GR82-04252021	Result GRMW-GR82-04252021	Qualifier GRMW-GR82-04252021	Result Reporting Limit GRMW-GRIC-04252021	Result GRMW-GRIC-04252021	Qualifier GRMW-GRIC-04252021	Result Reporting Limit GRMW-CCUB-04052022	Result GRMW-CCUB-04052022	Qualifier GRMW-CCUB-04052022	Result Reporting Limit GRMW-CCUB-04052022- Field	Result GRMW-CCUB-04052022- Field Duplicate	Qualifier GRMW-CCUB-04052022- Field Duplicate	Result Reporting Limit GRMW-CCWL-04052022	Result GRMW-CCWL-04052022	Qualifier GRMW-CCWL-04052022
Pesticides:																		
Abamectin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Acetamiprid		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Acibenzolar-S-methyl		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Aldicarb		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Allethrin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ametoctradin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Atrazine		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Azinphos-ethyl		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Azinphos-methyl		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Azoxystrobin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bendiocarb		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bensulide		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bitertanol		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Boscalid		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bromacil		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Carbaryl		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Carbendazim		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Carbofuran		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Carfentrazone-ethyl		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorantraniliprole		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Clethodim		'Modified EPA 8321B (LC-MS/MS)	'0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Clofentezine		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyanazine		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyantraniliprole		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyazofamid		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cycloate		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Cyflufenamid		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyflumetofen		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cymoxanil		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyprodinil		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
DCPMU		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diazoxon		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Difenoconazole		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diflubenzuron		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dimethoate		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dimethomorph		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Disulfoton sulfone		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diuron		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
d-Phenothrin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ethion		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Famoxadone		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Famphur		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenamidone		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenamiphos sulfone		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenamiphos sulfoxide		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenazaquin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenbuconazole		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenbutatin oxide		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenhexamid		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenobucarb		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenpropathrin		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenpyroximate		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenuron		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluazinam		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flubendiamide		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Flumioxazin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluometuron		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluopicolide		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluopyram		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluoxastrobin		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flupyradifurone		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluridone		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flutriafol		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluvalinate		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluxapyroxad		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fonofos		'Modified EPA 8321B (LC-MS/MS)	'0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Hexythiazox		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Imazalil		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Imidacloprid		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Indaziflam		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPO
TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result Reporting Limit GRMW-GR82-04252021	Result GRMW-GR82-04252021	Qualifier GRMW-GR82-04252021	Result Reporting Limit GRMW-GRIC-04252021	Result GRMW-GRIC-04252021	Qualifier GRMW-GRIC-04252021	Result Reporting Limit GRMW-CCUB-04052022	Result GRMW-CCUB-04052022	Qualifier GRMW-CCUB-04052022	Result Reporting Limit GRMW-CCUB-04052022- Field	Result GRMW-CCUB-04052022- Field Duplicate	Qualifier GRMW-CCUB-04052022- Field Duplicate	Result Reporting Limit GRMW-CCWL-04052022	Result GRMW-CCWL-04052022	Qualifier GRMW-CCWL-04052022
Fungicides																		
Indoxacarb		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Iprodione		Modified EPA 8321B (LC-MS/MS)	0.30	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Isoxaben		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Linuron		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Malaoxon		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Mandipropamid		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Metconazole		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methidathion		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methiocarb		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methomyl		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methoxyfenozide		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Metrafenone		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Metribuzin		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Mevinphos		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Norflurazon		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Novaluron		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Oryzalin		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Oxadixyl		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Oxamyl		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Penthiopyrad		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phorate Sulfone		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phorate Sulfoxide		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phosalone		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phosmet		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phosphamidon		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Piperonyl Butoxide		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pirimicarb		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pirimiphos-methyl		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Prometon		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Prometryn		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Propargite		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Propazine		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Propiconazole		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Pyraclostrobin		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyraflufen-ethyl		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyrethrin		Modified EPA 8321B (LC-MS/MS)	0.30	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyridaben		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyrimethanil		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Rotenone		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Saflufenacil		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Sethoxydim		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Siduron		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Simazine		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Simetryn		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spinetoram		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spinosad		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spiromesifen		Modified EPA 8321B (LC-MS/MS)	'0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Spirotetramat		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spiroxamine		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Sulfentrazone		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Sulfoxaflor		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tebuconazole		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tebufenozide		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tebuthiuron		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Terbacil		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Terbuthylazine		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Terbutryn		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiabendazole		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiacloprid		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiamethoxam		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiobencarb		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiodicarb		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Triadimenol		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Trifloxystrobin		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Triflumizole		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Monuron (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Neburon (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Penoxsulam (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Phenmedipham (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	U	--	--	U	--	--	--	--	--	U	--	--	--	--
Picoxystrobin (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--

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TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result Reporting Limit GRMW-GR82-04252021	Result GRMW-GR82-04252021	Qualifier GRMW-GR82-04252021	Result Reporting Limit GRMW-GRIC-04252021	Result GRMW-GRIC-04252021	Qualifier GRMW-GRIC-04252021	Result Reporting Limit GRMW-CCUB-04052022	Result GRMW-CCUB-04052022	Qualifier GRMW-CCUB-04052022	Result Reporting Limit GRMW-CCUB-04052022- Field	Result GRMW-CCUB-04052022- Field Duplicate	Qualifier GRMW-CCUB-04052022-Field Duplicate	Result Reporting Limit GRMW-CCWL-04052022	Result GRMW-CCWL-04052022	Qualifier GRMW-CCWL-04052022
Prallethrin (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Propanil (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Propoxur (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyridalyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyroxasulfone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Quizalofop-p-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bicyclopyrone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thiencarbazone-methyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Triallate (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Trifloxysulfuron-sodium (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Trinexapac-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Triticonazole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Clomazone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyclaniliprole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyhalofop-butyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Cyprosulfamide (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Afidopyropen (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diflufenican (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dioxathion (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Etofenprox (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenoxycarb (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flufenacet (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flutianil (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Iodosulfuron-methyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ipconazole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Isofetamid (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Isoxadifen-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Lactofen (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
TPP-d15 (Triphenyl Phosphate) ***		Modified EPA 8321B (LC-MS/MS)	--	--	1.71	--	--	1.78	--	--	2.33	--	--	2.38	--	--	2.42	--
a-BHC		Modified EPA 8270D (GC-MS/MS)	0.060	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Acetochlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Alachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Aldrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ametryn		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Aspon (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
b-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Benfluralin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bifenthrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bolstar (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Bromopropylate		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Buprofezin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Captan		Modified EPA 8270D (GC-MS/MS)	0.6	0.6	U	--	0.6	U	--	0.6	U	--	0.6	U	--	0.6	U	--
Chlordane		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorfenapyr (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorfenvinphos (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorobenzilate (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chloroneb		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorpropham		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorpyrifos		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Chlorpyrifos-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
cis-Nonachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Cyfluthrin		Modified EPA 8270D (GC-MS/MS)	0.3	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Cypermethrin		Modified EPA 8270D (GC-MS/MS)	0.3	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Dacthal		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
d-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Deltamethrin		Modified EPA 8270D (GC-MS/MS)	0.3	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Demeton (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diazinon		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dichlorvos		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diclofop-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dicloran		Modified EPA 8270D (GC-MS/MS)	0.06	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--	0.3	U	--
Dicofol		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dieldrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dimethenamid		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diphenamid		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Diphenylamine		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Disulfoton		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Dithiopyr		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
EUosulfan I		Modified EPA 8270D (GC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
EUosulfan II		Modified EPA 8270D (GC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
EUosulfan sulfate		Modified EPA 8270D (GC-MS/MS)	0.12	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPO
TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result Reporting Limit GRMW-GR82-04252021	Result GRMW-GR82-04252021	Qualifier GRMW-GR82-04252021	Result Reporting Limit GRMW-GRIC-04252021	Result GRMW-GRIC-04252021	Qualifier GRMW-GRIC-04252021	Result Reporting Limit GRMW-CCUB-04052022	Result GRMW-CCUB-04052022	Qualifier GRMW CCUB-04052022	Result Reporting Limit GRMW-CCUB-04052022- Field	Result GRMW-CCUB-04052022- Field Duplicate	Qualifier GRMW-CCUB-04052022-Field Duplicate	Result Reporting Limit GRMW-CCWL-04052022	Result GRMW-CCWL-04052022	Qualifier GRMW-CCWL-04052022
Endosulfan I																		
Endrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Endrin ketone		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
EPN (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
EPTC (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Esfenvalerate		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ethalfluralin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ethofumesate		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ethoprop		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Etoxazole		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Etridiazole		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenarimol		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenitrothion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenoxaprop-ethyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenthion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fenvalerate		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fipronil		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluazifop-p-butyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fludioxonil		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Fluroxypyr-meptyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Flutolanil		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
g-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Heptachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Heptachlor epoxide		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Hexachlorobenzene		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Kresoxim-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
lambda-Cyhalothrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Leptophos (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Malathion		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Mefenoxam		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Methoxychlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Metolachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
MGK-264		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Myclobutanil		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Napropamide		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
o-Phenylphenol		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ovex (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Oxadiazon		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Oxyfluorfen		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
p,p'-DDD		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
p,p'-DDE		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
p,p'-DDT		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Paclobutrazol (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Parathion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Parathion-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
PCA		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
PCB		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
PCNB		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pendimethalin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pentachlorothioanisole		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Permethrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--	0.12	U	--
Phorate (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	--	--	0.06	U	--	0.06	U	--
Procymidone		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Prodiamine	829^	Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Pyriproxyfen		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Quinoxyfen		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Ronnel (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Spirodiclofen		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Sulfotep (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tefluthrin (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Terbufos (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Thionazin (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tokuthion (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Trichloronate (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tetraconazole		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Tetradifon		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
trans-Nonachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Trifluralin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--
Vinclozalin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--	0.06	U	--

^ EPA Pesticide Fact Sheet Number 231 Prodiamine

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GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPO
TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result Reporting Limit GRMW-GR82-04052022	Result GRMW-GR82-04052022	Qualifier GRMW-GR82-04052022	Result Reporting Limit GRMW-GRIC-04052022	Result GRMW-GRIC 04052022	Qualifier GRMW-GRIC-04052022
Abamectin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Acetamiprid		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Acibenzolar-S-methyl		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--
Aldicarb		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Allethrin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Ametoctradin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Atrazine		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Azinphos-ethyl		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Azinphos-methyl		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--
Azoxystrobin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Bendiocarb		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Bensulide		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Bitertanol		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Boscalid		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Bromacil		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Carbaryl		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Carbendazim		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Carbofuran		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Carfentrazone-ethyl		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Chlorantraniliprole		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Clethodim		'Modified EPA 8321B (LC-MS/MS)	'0.12	0.12	U	--	0.12	U	--
Clofentezine		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Cyanazine		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Cyantraniliprole		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Cyazofamid		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Cycloate		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--
Cyflufenamid		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Cyflumetofen		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Cymoxanil		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Cyprodinil		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
DCPMU		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Diazoxon		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Difenoconazole		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Diflubenzuron		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Dimethoate		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Dimethomorph		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Disulfoton sulfone		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Diuron		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
d-Phenothrin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Ethion		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Famoxadone		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Famphur		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenamidone		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenamiphos sulfone		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenamiphos sulfoxide		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenazaquin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenbuconazole		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenbutatin oxide		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenhexamid		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenobucarb		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Fenpropathrin		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenpyroximate		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fenuron		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fluazinam		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Flubendiamide		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--
Flumioxazin		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fluometuron		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fluopicolide		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fluopyram		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Fluoxastrobin		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Flupyradifurone		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fluridone		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Flutriafol		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fluvalinate		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fluxapyroxad		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Fonofos		'Modified EPA 8321B (LC-MS/MS)	'0.12	0.12	U	--	0.12	U	--
Hexythiazox		'Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Imazalil		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Imidacloprid		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Indaziflam		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPO
TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result Reporting Limit GRMW-GR82-04052022	Result GRMW-GR82-04052022	Qualifier GRMW-GR82-04052022	Result Reporting Limit GRMW-GRIC-04052022	Result GRMW-GRIC 04052022	Qualifier GRMW-GRIC-04052022
Compounds:									
Indoxacarb		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Iprodione		Modified EPA 8321B (LC-MS/MS)	0.30	0.3	U	--	0.3	U	--
Isoxaben		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Linuron		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Malaoxon		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Mandipropamid		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Metconazole		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Methidathion		Modified EPA 8321B (LC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Methiocarb		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Methomyl		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Methoxyfenozide		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Metrafenone		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Metribuzin		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Mevinphos		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Norflurazon		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Novaluron		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Oryzalin		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Oxadixyl		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Oxamyl		'Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Penthiopyrad		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Phorate Sulfone		Modified EPA 8321B (LC-MS/MS)	'0.060	0.06	U	--	0.06	U	--
Phorate Sulfoxide		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Phosalone		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Phosmet		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Phosphamidon		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Piperonyl Butoxide		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Pirimicarb		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Pirimiphos-methyl		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Prometon		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Prometryn		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Propargite		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Propazine		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Propiconazole		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--
Pyraclostrobin		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Pyraflufen-ethyl		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Pyrethrin		Modified EPA 8321B (LC-MS/MS)	0.30	0.06	U	--	0.06	U	--
Pyridaben		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Pyrimethanil		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Rotenone		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Saflufenacil		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Sethoxydim		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--
Siduron		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Simazine		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Simetryn		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Spinetoram		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Spinosad		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Spiromesifen		Modified EPA 8321B (LC-MS/MS)	'0.12	0.12	U	--	0.12	U	--
Spirotetramat		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Spiroxamine		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Sulfentrazone		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Sulfoxaflor		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Tebuconazole		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Tebufenozide		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Tebuthiuron		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Terbacil		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Terbuthylazine		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Terbutryn		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Thiabendazole		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Thiacloprid		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Thiamethoxam		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Thiobencarb		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Thiodicarb		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Triadimenol		Modified EPA 8321B (LC-MS/MS)	0.12	0.12	U	--	0.12	U	--
Trifloxystrobin		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Triflumizole		Modified EPA 8321B (LC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Monuron (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Neburon (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Penoxsulam (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Phenmedipham (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	--	--	--	--	--	--
Picoxystrobin (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--

GRANDE RONDE MODEL WATERSHED
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TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result Reporting Limit GRMW-GR82-04052022	Result GRMW-GR82-04052022	Qualifier GRMW-GR82-04052022	Result Reporting Limit GRMW-GRIC-04052022	Result GRMW-GRIC 04052022	Qualifier GRMW-GRIC-04052022
Prallethrin (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Propanil (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Propoxur (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Pyridalyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Pyroxasulfone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Quizalofop-p-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Bicyclopyrone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Thiencarbazone-methyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Triallate (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Trifloxysulfuron-sodium (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Trinexapac-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Triticonazole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Clomazone (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Cyclaniliprole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Cyhalofop-butyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.12	U	--	0.12	U	--
Cyprosulfamide (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Afidopyropen (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Diflufenican (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Dioxathion (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Etofenprox (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Fenoxycarb (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Flufenacet (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Flutianil (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Iodosulfuron-methyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Ipconazole (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Isofetamid (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Isoxadifen-ethyl (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
Lactofen (Added for April event)		Modified EPA 8321B (LC-MS/MS)	--	0.06	U	--	0.06	U	--
TPP-d15 (Triphenyl Phosphate) ***		Modified EPA 8321B (LC-MS/MS)	--	--	U	--	--	2.4	--
a-BHC		Modified EPA 8270D (GC-MS/MS)	0.060	0.06	U	--	0.06	U	--
Acetochlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Alachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Aldrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Ametryn		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Aspon (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
b-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Benfluralin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Bifenthrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Bolstar (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Bromopropylate		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Buprofezin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Captan		Modified EPA 8270D (GC-MS/MS)	0.6	0.6	U	--	0.6	U	--
Chlordane		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Chlorfenapyr (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Chlorfenvinphos (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Chlorobenzilate (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Chloroneb		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Chlorpropham		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Chlorpyrifos		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Chlorpyrifos-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
cis-Nonachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Cyfluthrin		Modified EPA 8270D (GC-MS/MS)	0.3	0.3	U	--	0.3	U	--
Cypermethrin		Modified EPA 8270D (GC-MS/MS)	0.3	0.3	U	--	0.3	U	--
Dacthal		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
d-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Deltamethrin		Modified EPA 8270D (GC-MS/MS)	0.3	0.3	U	--	0.3	U	--
Demeton (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Diazinon		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Dichlorvos		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Diclofop-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Dicloran		Modified EPA 8270D (GC-MS/MS)	0.06	0.3	U	--	0.3	U	--
Dicofol		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Dieldrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Dimethenamid		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Diphenamid		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Diphenylamine		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Disulfoton		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Dithiopyr		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
EUosulfan I		Modified EPA 8270D (GC-MS/MS)	0.12	0.12	U	--	0.12	U	--
EUosulfan II		Modified EPA 8270D (GC-MS/MS)	0.12	0.12	U	--	0.12	U	--
EUosulfan sulfate		Modified EPA 8270D (GC-MS/MS)	0.12	0.12	U	--	0.12	U	--

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TABLE 4B - CHEMISTRY RESULTS - PESTICIDES/HERBICIDES

Pesticide/Herbicide	Screening Level (Acute) ^	Analytical (Extraction Method)	Result Reporting Limit	Result Reporting Limit GRMW-GR82-04052022	Result GRMW-GR82-04052022	Qualifier GRMW-GR82-04052022	Result Reporting Limit GRMW-GRIC-04052022	Result GRMW-GRIC-04052022	Qualifier GRMW-GRIC-04052022
Endrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Endrin ketone		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
EPN (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
EPTC (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Esfenvalerate		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Ethalfluralin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Ethofumesate		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Ethoprop		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Etoxazole		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Etridiazole		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Fenarimol		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Fenitrothion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Fenoxaprop-ethyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Fenthion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Fenvalerate		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Fipronil		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Fluazifop-p-butyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Fludioxonil		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Fluroxypyr-meptyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Flutolanil		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
g-BHC		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Heptachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Heptachlor epoxide		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Hexachlorobenzene		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Kresoxim-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
lambda-Cyhalothrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Leptophos (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Malathion		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Mefenoxam		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Methoxychlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Metolachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
MGK-264		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Myclobutanil		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Napropamide		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
o-Phenylphenol		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Ovex (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Oxadiazon		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Oxyfluorfen		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
p,p'-DDD		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
p,p'-DDE		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
p,p'-DDT		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Paclobutrazol (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Parathion (Added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Parathion-methyl		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
PCA		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
PCB		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
PCNB		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Pendimethalin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Pentachlorothioanisole		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Permethrin		Modified EPA 8270D (GC-MS/MS)	0.06	0.12	U	--	0.12	U	--
Phorate (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Procymidone		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Prodiamine	829^	Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Pyriproxyfen		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Quinoxyfen		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Ronnel (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Spirodiclofen		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Sulfotep (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Tefluthrin (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Terbufos (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Thionazin (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Tokuthion (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Trichloronate (added for April event)		Modified EPA 8270D (GC-MS/MS)	--	0.06	U	--	0.06	U	--
Tetraconazole		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Tetradifon		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
trans-Nonachlor		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Trifluralin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--
Vinclozalin		Modified EPA 8270D (GC-MS/MS)	0.06	0.06	U	--	0.06	U	--

^ EPA Pesticide Fact Sheet Number 231 Prodiamine

U - Non-detect

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
STREAMFLOW DATA DURING COPPER EXCEEDANCES

Date	Location	Station	Mean Daily Flow (cfs)	Instantaneous Stage (ft)	Highest Spring Flows	Median Spring Flows (cfs)[2]
11/6/2020	CCUB	CATHERINE CR AT UNION, OR (13320300)	22.4	1.14	789 cfs (3.5 ft) on 5/21/20	171.5
01/13/2021	GRIC	GRANDE RONDE R NR PERRY, OR (13318960)	193	1.54	1,760 cfs (4.1 ft) on 4/4/2021	762.5
3/9/2021	LCPL	GRANDE RONDE R NR PERRY, OR (13318960)	479	1.29	1,760 cfs (4.1 ft) on 4/4/2021	762.5
3/9/2021	GRFC	GRANDE RONDE R BL CLEAR CR, NR STARKEY, OR (13317850)	9.30	1.4	135 cfs (2.9 ft) on 5/17/2021	15.65
8/2/2021	GRML	GRANDE RONDE R NR PERRY, OR (13318960)	15.6	1.07	1,760 cfs (4.1 ft) on 4/4/2021	762.5
5/28/2022	GRIC	GRANDE RONDE R NR PERRY, OR (13318960)	1,080	3.3	4,410 cfs (6.2 ft) on 6/13/2022	907.5
9/30/2022	CCSP	CATHERINE CR NR UNION, OR (13320000)	26.1	0.96	805 cfs (3.2 ft) on 6/5/2022	123

[1] Flow data retrieved from Oregon Water Resources Department Near Real Time Hydrographics Data: https://apps.wrd.state.or.us/apps/sw/hydro_near_real_time/

[2] Median spring flows were obtained from March, April, and May data.

cfs = cubic feet per second

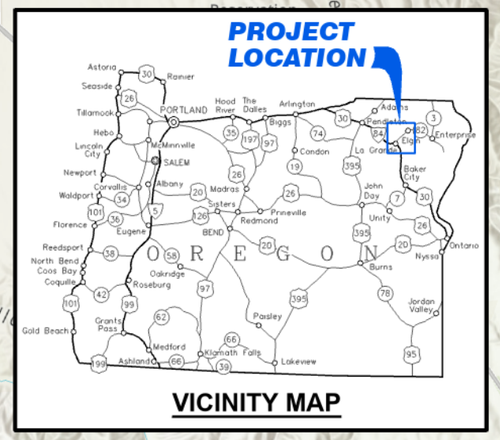
ft = feet

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
TURBIDITY READINGS DURING COPPER EXCEEDANCES

Date	Location	Acute (µg/L)[1]	Chronic (µg/L)	Copper Result (µg/L)	Turbidity Reading (NTU)
11/6/2020	CCUB	5.50	4.10	14.6	--[2]
3/9/2021	LCPL			33.7	49.4
01/13/2021	GRIC			22.2	10.3
3/9/2021	GRFC			7.2	8.34
8/2/2021	GRML			5.84	3.27
5/28/2022	GRIC			6.51	6.92
9/30/2022	CCSP				

[1] Assuming 30 mg/L calcium carbonate ($CaCO_3$), lowest salmon species mean acute value = 19 µg/L legal concentration 50, Chinook = 66 µg/L at 50 mg/L $CaCO_3$.
[2] Turbidity was not recorded during the November 6, 2020, sampling event.
(µg/L) = micrograms per liter
NTU = nephelometric turbidity units

FIGURES



Umatilla
Gulling
Minam
Mountain
Lower Valley
Cricket Flat
Highway 82
Diamond
Wallowa
Prairie
Indian Valley
Elgin
Middle Ridge
Podman Ridge
4954 ft
Thimbleberry Mountain
Gibbon Ridge
Dry Creek
5811 ft
Wilbur Mountain
Drumhill Ridge
Clark Creek
Big Canyon
5356 ft
Evans
Cougar Ridge
Big Sheep Ridge
Little Sheep Ridge
Bear Creek
Summerville
Rhinehart
Imbler
McKay
6105 ft
Walker Ridge
Goat Mountain
7946 ft
Grande Ronde Valley
6307 ft
Perry
Hilgard
Island City
Highway 237
La Grande
Union
Cove
Dark Canyon
Rock Creek
Meadow Creek
Lone Tree
Hwy 237
Hot Lake
Katy Mountain
Camp Elkanah
Glass Mountain
Elk Mountain
Beaver Ridge
Union Junction
High Valley
Highway 244
Craig Mountain
Ramo Flat
Lehman Springs
NF-51
Clark
8671 ft
Highway 203
4749 ft

1 2 3 4 5 6 7 8 9 10

LEGEND
SAMPLING LOCATIONS

4 0 4
Miles

Esri, NASA, NGA, USGS, State of Oregon GEO, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

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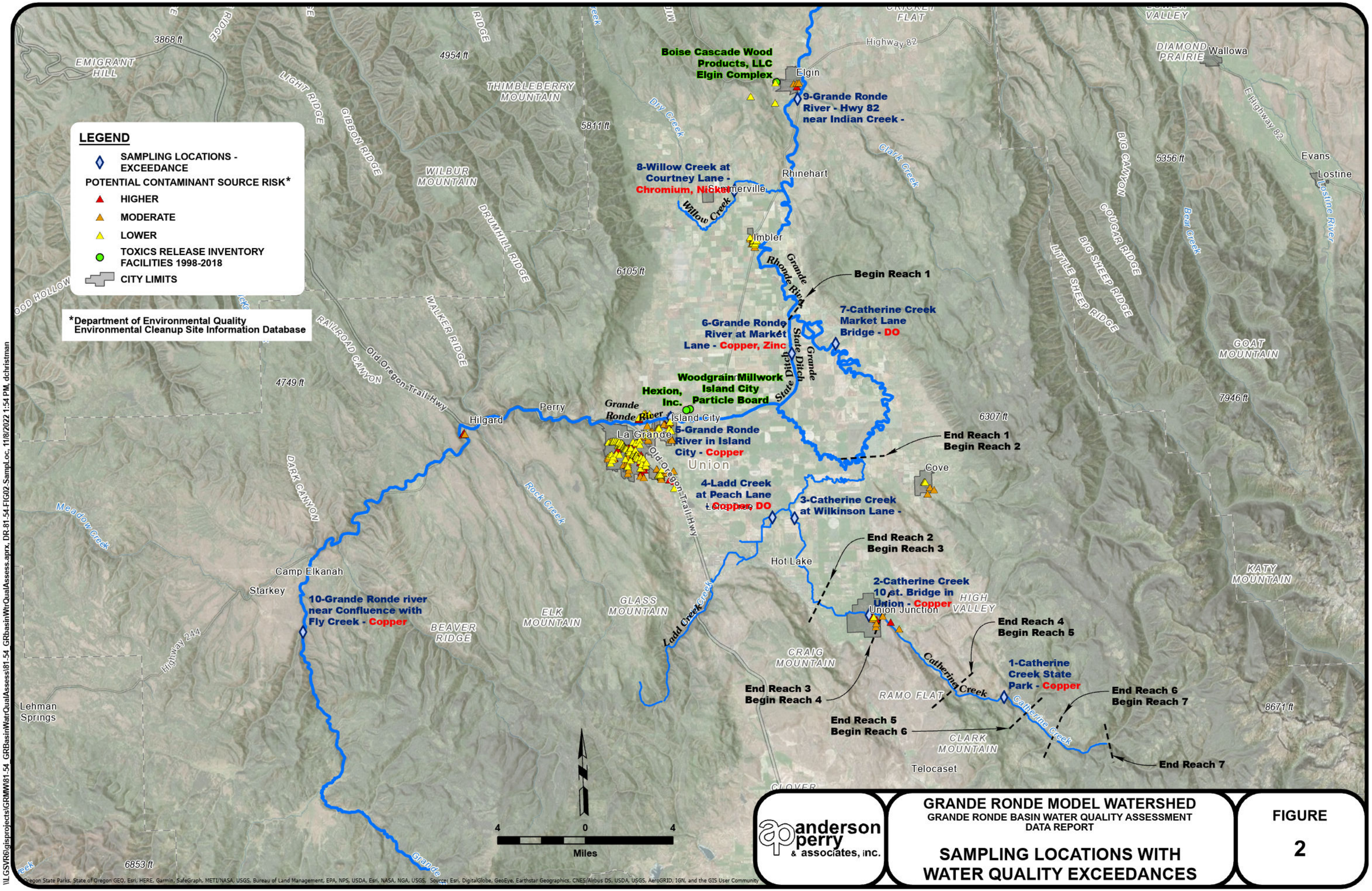
GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT

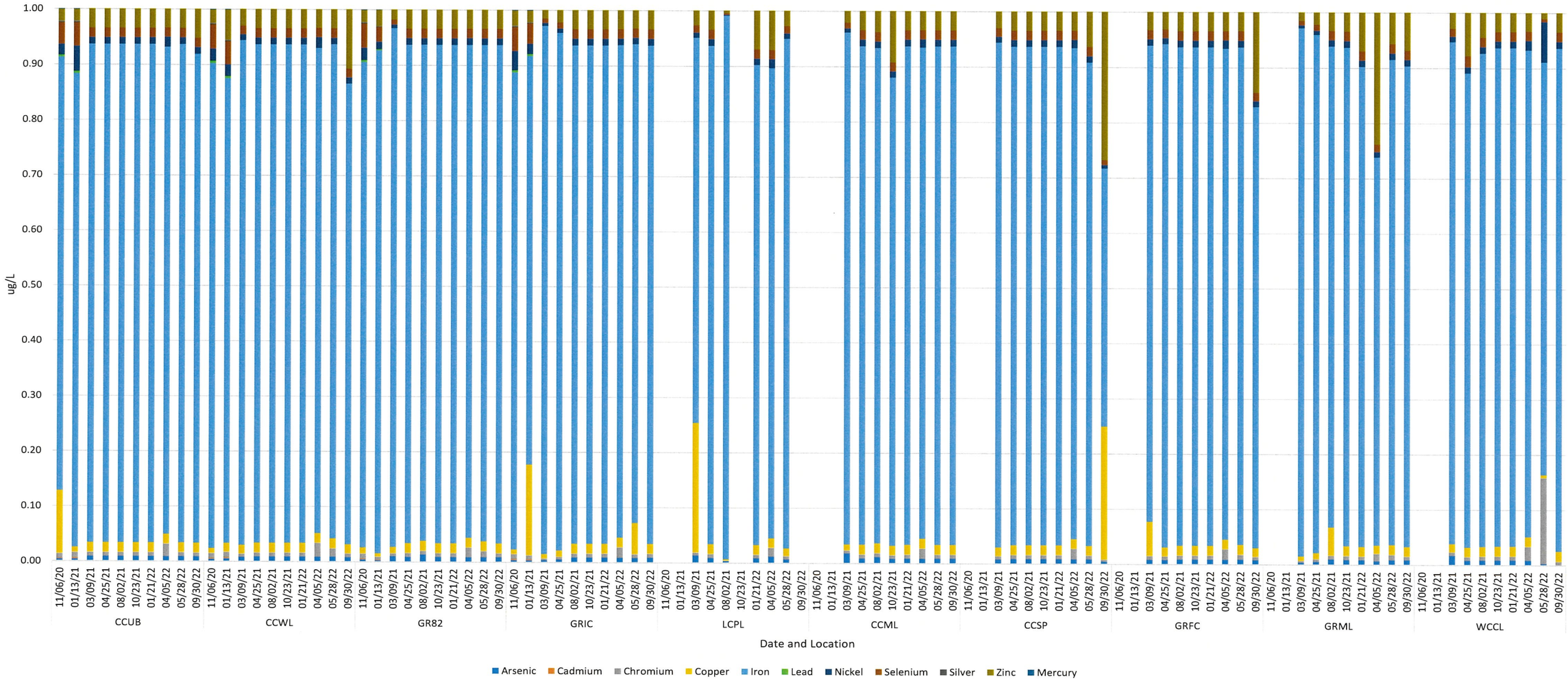
LOCATION AND VICINITY MAPS

FIGURE 1

\\LGSVR6\gisprojects\GRMW\81-54_GRBasinWatrQualAssessi81-54_GRbasinWtrQualAssess.aprx, DR-81-54-FIG01-LocVic, 7/27/2022 2:11 PM, dchristman


LEGEND
SAMPLING LOCATIONS - EXCEEDANCE
POTENTIAL CONTAMINANT SOURCE RISK*
HIGHER
MODERATE
LOWER
TOXICS RELEASE INVENTORY FACILITIES 1998-2018
CITY LIMITS
*Department of Environmental Quality Environmental Cleanup Site Information Database
Boise Cascade Wood Products, LLC Elgin Complex
9-Grande Ronde River - Hwy 82 near Indian Creek -
8-Willow Creek at Courtney Lane - Chromium, Nickel
Begin Reach 1
7-Catherine Creek Market Lane Bridge - DO
6-Grande Ronde River at Market Lane - Copper, Zinc
Woodgrain Millwork
Island City Particle Board
Hexion, Inc.
5-Grande Ronde River in Island City - Copper
End Reach 1
Begin Reach 2
4-Ladd Creek at Peach Lane - Copper, DO
3-Catherine Creek at Wilkinson Lane -
End Reach 2
Begin Reach 3
2-Catherine Creek 10 st. Bridge in Union - Copper
End Reach 4
Begin Reach 5
1-Catherine Creek State Park - Copper
End Reach 3
Begin Reach 4
End Reach 5
Begin Reach 6
End Reach 6
Begin Reach 7
End Reach 7
10-Grande Ronde river near Confluence with Fly Creek - Copper
Elgin
Rhinehart
Somerville
Imbler
Island City
La Grande
Union
Cove
Hot Lake
Union Junction
Telocaset
Perry
Hilgard
Camp Elkanah
Starkey
Lehman Springs
Wallowa
Evans
Lostine
Highway 82
Highway 244
Old Oregon Trail Hwy
Grande Ronde River
Rhonde River
State Ditch
Ladd Creek
Catherine Creek
Dry Creek
Clark Creek
Bear Creek
Lostine River
Rock Creek
Meadow Creek
EMIGRANT HILL
LIGHT RIDGE
GIBBON RIDGE
WILBUR MOUNTAIN
THIMBLEBERRY MOUNTAIN
DRUMHILL RIDGE
WALKER RIDGE
RAILROAD CANYON
DARK CANYON
BEAVER RIDGE
ELK MOUNTAIN
GLASS MOUNTAIN
CRAIG MOUNTAIN
RAMO FLAT
CLARK MOUNTAIN
HIGH VALLEY
DIAMOND PRAIRIE
BIG CANYON
GOUGAR RIDGE
BIG SHEEP RIDGE
LITTLE SHEEP RIDGE
GOAT MOUNTAIN
KATY MOUNTAIN
3868 ft
4954 ft
5811 ft
6105 ft
4749 ft
6853 ft
6307 ft
7946 ft
8671 ft
4 0 4
Miles
anderson perry & associates, inc.
GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT DATA REPORT
SAMPLING LOCATIONS WITH WATER QUALITY EXCEEDANCES
FIGURE
2
\\LGSVR6\gisprojects\GRMW\81-54_GRBasinWatrQualAssess\81-54_GRbasinWtrQualAssess.aprx, DR-81-54-FIG02 SampLoc, 11/8/2022 1:54 PM, dchristman
Oregon State Parks, State of Oregon GEO, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, Esri, NASA, NGA, USGS, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Metals Concentrations by Date and Location



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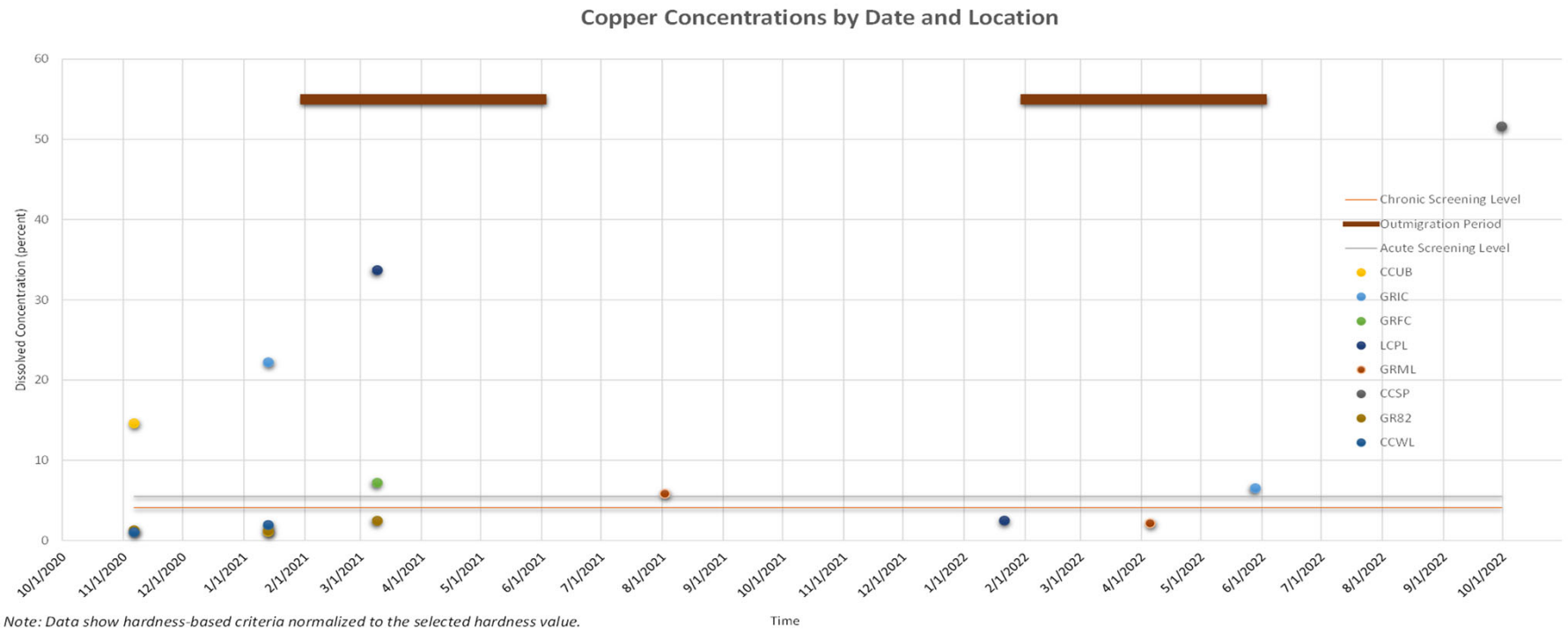
GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT
DATA REPORT
METALS CONCENTRATIONS BY DATE AND LOCATION

FIGURE 3



Note: Data show hardness-based criteria normalized to the selected hardness value.

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GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT
DATA REPORT
COPPER CONCENTRATIONS BY DATE AND LOCATION

FIGURE
4

Appendices Table of Contents

APPENDIX A
Approved Sampling and Analysis Plan

SAMPLING AND ANALYSIS PLAN
FOR THE
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT

OCTOBER 2020

Prepared for:
Grande Ronde Model Watershed

anderson perry

1901 N. Fir Street, La Grande, Oregon
214 E. Birch Street, Suite 1, Walla Walla, Washington
2659 S.W. 4th Street, Suite 200, Redmond, Oregon
243 E. Main, Suite C, Hermiston, Oregon

SAMPLING AND ANALYSIS PLAN

FOR THE

GRANDE RONDE BASIN WATER QUALITY ASSESSMENT

OCTOBER 2020

Prepared for:
Grande Ronde Model Watershed

ANDERSON PERRY & ASSOCIATES, INC.

La Grande, Redmond, and Hermiston, Oregon
Walla Walla, Washington

 Job No. 81-54

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EXHIBITS

TABLES

FIGURES

APPENDICES

Introduction

This Sampling and Analysis Plan (SAP) has been prepared to document the approach for the Grande Ronde Model Watershed's (GRMW) Grande Ronde Basin Water Quality Assessment. This SAP identifies the objectives of data collection and enumerates the field quality assurance/quality control (QA/QC) methods that will occur during field sampling and laboratory analysis.

The GRMW will conduct a two-year water quality assessment to investigate whether poor water quality plays a role in mortality. This assessment will analyze water quality in the Grande Ronde River and Catherine Creek within the Grande Ronde Valley down to Elgin, to encompass the communities and surrounding areas of La Grande, Union, Cove, Summerville, and Elgin. The goal of this assessment is to determine whether there are any chemicals present (and at what levels) in streams in the Grande Ronde Basin that could be contributing to mortality in salmonids (particularly during the months of February to May when outmigrating smolts are experiencing high mortality).

Project Description

The Grande Ronde Valley is located in Union County in northeast Oregon. High mortality rates (60 to 70 percent) for migrating Chinook are hypothesized by Oregon Department of Fish and Wildlife (ODFW) researchers to be caused by novel water cues, predation from herons (one study suggests this could account for up to 10 percent mortality), and poor water quality (Favrot and Sedell, 2018). It has been widely presumed that water temperature was the cause of the remaining losses; however, mortality occurs during smolt migration (February through May), when water temperatures range from 50 to 65° Fahrenheit and are generally below lethal levels (Favrot and Sedell, 2018). Mortality is primarily occurring in reach 3 (near Union, [U.S. Bureau of Reclamation, 2012; p 95]). The in-basin factors limiting spring Chinook salmon populations in the Catherine Creek and middle Grande Ronde River systems are water quality (elevated summer water temperature), excess fine sediment, altered hydrologic function, predation, food, riparian conditions, habitat complexity/diversity, competition with hatchery fish, and pathogens. Altered hydrologic function is primarily a consequence of irrigation water management, which results in reduced in-stream flows during critical summer months, contaminated return water, elevated stream temperatures, and passage barriers. Habitat complexity issues are primarily due to reduced wetted widths and a lack of pools and large woody debris. Additionally, some reaches of Catherine Creek have been channelized and armored to accommodate road construction, homesteads, and irrigated agriculture (U.S. Bureau of Reclamation, 2012; p 57).

This SAP evaluates existing information related to potential current and historical contamination in the basin and describes the selection process, sampling locations, and chemicals for analysis.

Assessment Area Location

The assessment area is the Grande Ronde Valley, located in Union County in northeast Oregon. See Figure 1, Location and Vicinity Maps.

Assessment Area Characteristics and History

The Grande Ronde River and Catherine Creek converge in the Grande Ronde Valley. The landscape is highly altered. Oregon Trail homesteaders drained wetlands and channelized rivers

to create agricultural land through the late 1800s to 1930s. These alterations impacted habitat, both upland and aquatic, for fish and wildlife.

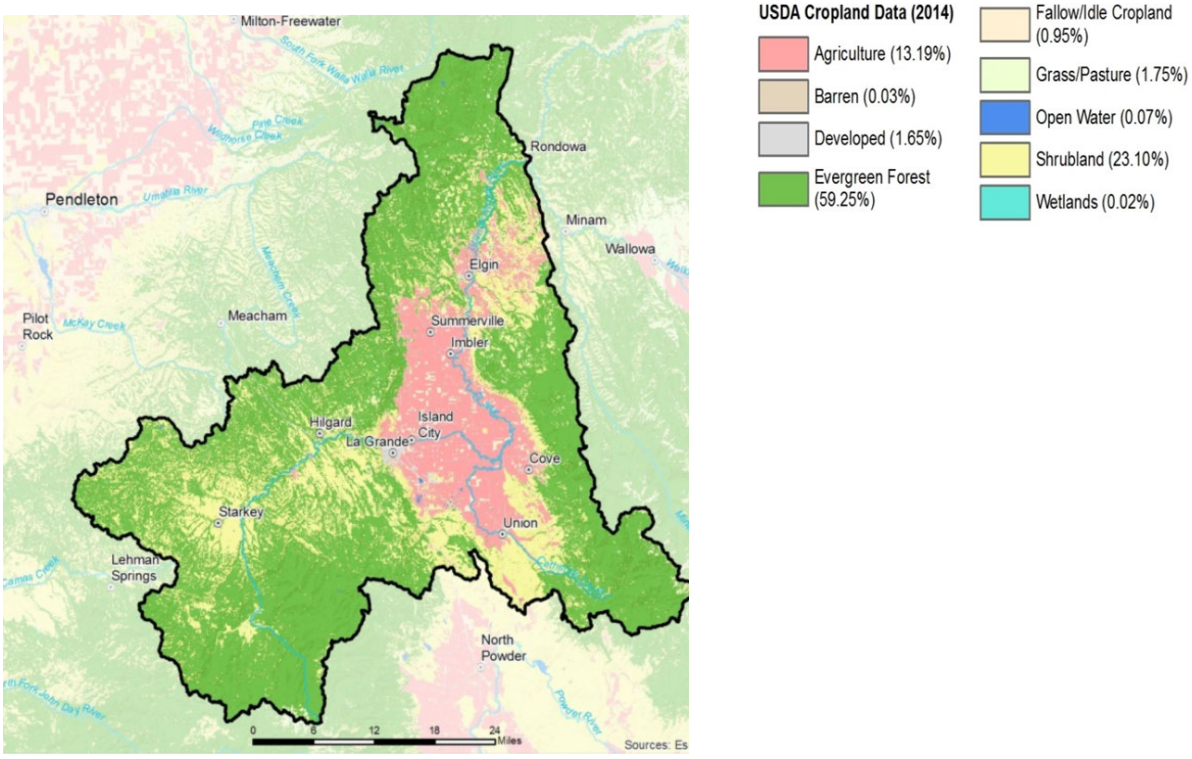
Notably, Catherine Creek's confluence with the Grande Ronde River is 22.4 miles farther downstream than it was historically (Favrot and Sedell, 2018). During low flow periods beginning in the summer, this area (partially including the historic Grande Ronde River channel) is characterized by high water temperatures and low dissolved oxygen, low flows, high fine sediment content, and non-native warm water fish species present.

Additionally, when the State Ditch was completed, it reduced 32.5 miles of natural Grande Ronde River channel to 4.5 miles of artificial channel to provide flood control for the valley (Gildemeister, 1998; Favrot and Sedell, 2018).

Existing and Historical Sources of Potential Contamination

Land use in the area includes agricultural, ranching, forestry, city/residential, and some industrial wood product production. Exhibit 1 below, from a regional water planning effort, identifies land use in the region (Upper Grande Ronde River Watershed Partnership [UGRRW], 2018).

EXHIBIT 1
LAND USE



In general, local municipal concerns include microbes, salts, metals, pesticides, herbicides, organics, radioactive contaminants, and arsenic.

Local agricultural concerns include sediment/turbidity, invasive seeds, bacteria, and weed and algae growth from excessive nutrients.

Local in-stream concerns include temperature, dissolved oxygen, pH, sediment, bacteria, ammonia, and channel and flow regime alterations.

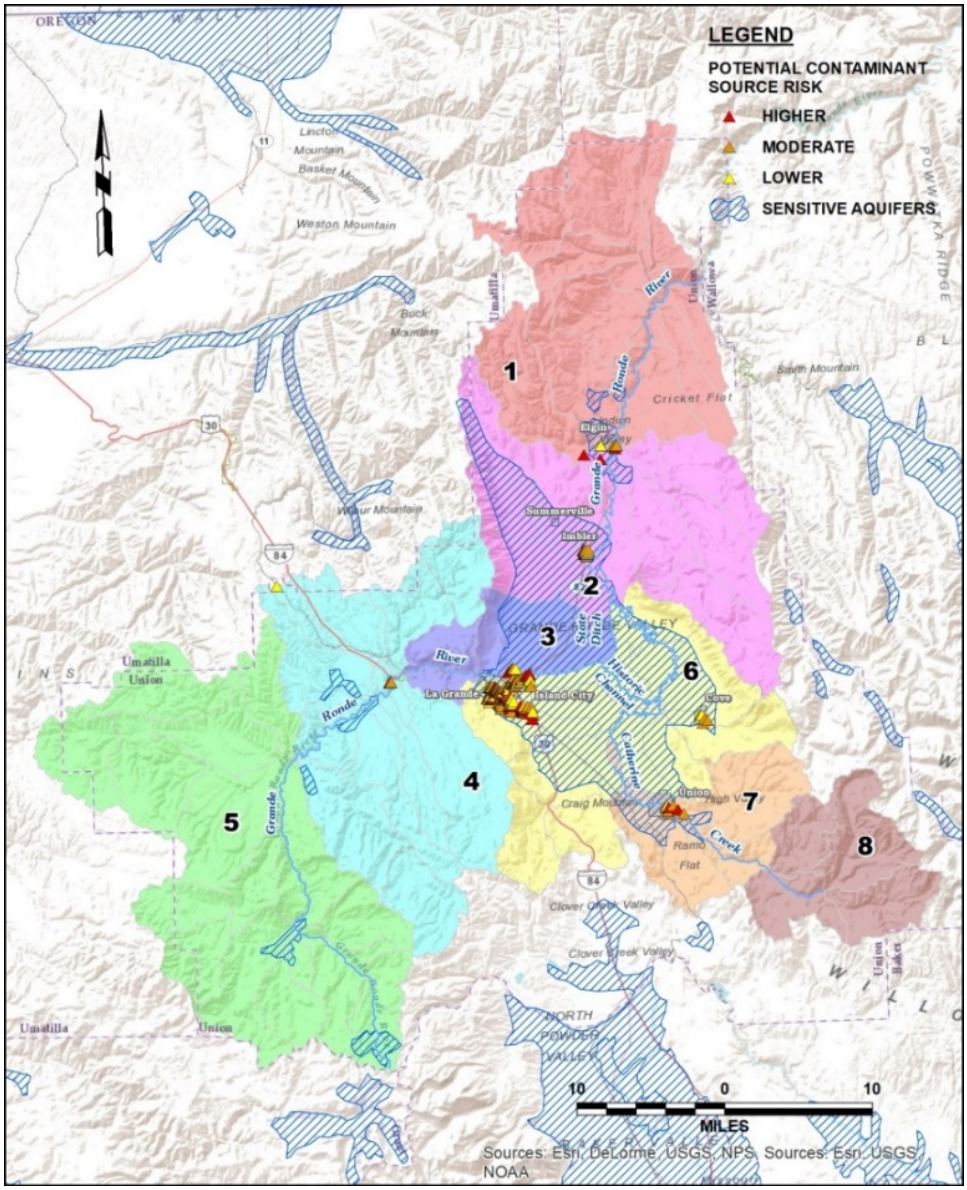
Based on land use in the Grande Ronde Basin, potential contaminants of concern include:

- Industrial production - La Grande Dimensional Lumber/trim boards (Woodgrain), Island City Particleboard (Boise Cascade), and Elgin Plywood (Woodgrain). Chips and logs are stored in yards. Formaldehyde is the principal contaminant of concern associated with plywood production, as well as phenols. These contaminants would likely be a concern only if water quality limits on discharge permits were consistently violated.
- Industrial forestry (herbicides, pesticides, sedimentation) (Kelly et al., 2012)
- Agricultural production (pesticides/herbicides/fertilizers/nitrogen/phosphorus/ sedimentation)
- Ranching (nutrients)
- Mining (heavy metals)
- Stormwater runoff with road salt and particles from tire erosion on paved roads (chlorides/metals/polycyclic aromatic hydrocarbons [PAHs]/suspended solids) (Federal Highway Administration, 2016)
- Publicly owned treatment works wastewater discharge (nutrients/hormones/pharmaceuticals/personal care products/polybrominated diphenyl ethers/pesticides)
- Stormwater runoff along railroad tracks (metals/creosote/herbicides/PAHs) (Rails-to-Trails, Nd.)
- Vector control spray of mosquitos (organophosphate pesticides) (U.S. Environmental Protection Agency [EPA], Nd.)

Environmental Cleanups/Regulatory Actions

The Oregon Department of Environmental Quality (DEQ) lists several environmental cleanup sites in the vicinity of the Grande Ronde Basin with PAH releases. These are related to items such as the railroad yard, municipal dump, and underground storage tanks. For example, Baremore Logging is listed on the confirmed release list for ongoing releases of petroleum products from drums, five-gallon cans, storage tanks, and vehicles approximately 500 feet from Catherine Creek. Waldrop Bulk Plant - Island City is also on the confirmed release list for a leaking aboveground storage tank; it was believed that the tank released 175 to 260 gallons of unleaded gasoline, contaminating soil and groundwater approximately 950 feet from the Grande Ronde River. Leaking underground storage tanks and small petroleum release locations are concentrated in Union and Island City/La Grande. Exhibit 2, from a regional water planning effort, identifies Environmental Cleanup Site Information (ECSI) Database locations (UGRRW, 2018).

EXHIBIT 2
ECSI LOCATIONS



Contaminants are concentrated in urban areas. The sensitive aquifer layer is overlain in blue and indicates that these sites could impact the Upper Grande Ronde aquifer.

Past Spills, Fires, and Other Relevant Information

Several suspected contaminated sites along the Grande Ronde River from past petroleum spills have potentially affected surface water. No significant forest fires affecting the Grande Ronde River or Catherine Creek have occurred in the past several years. Several major roadways that parallel the Grande Ronde River and Catherine Creek have the potential to contaminate the waterways from runoff and spills for short periods of time.

Stormwater Runoff and Wastewater Outfalls

Stormwater

Stormwater is generally discharged into municipal stormwater collection systems and routed to area waterways for disposal. Outside city limits there is potential for stormwater runoff to occur from gravel and paved roads in the area and enter streams.

Wastewater

The City of La Grande's wastewater is treated, disinfected, and discharged to Ladd Marsh. Most of the Union County cities discharge treated wastewater to adjacent waterways. Only the City of Cove uses lined lagoons and land application systems. There are septic systems in the City of Imbler as well as the unincorporated area; these have been reviewed for nitrate contribution to groundwater and are not ranked of high concern by the DEQ.

There are five National Pollutant Discharge Elimination System-designated point sources in the UGRRW:

- Elgin Sewage Treatment Plant (STP)
- La Grande STP (includes Island City)
- Union STP
- Boise Cascade
- Island City Particleboard

Tables 1 and 2 below show the EPA's Toxics Release Inventory data for Union County.

TABLE 1
TOXICS RELEASE INVENTORY 2019 FOR UNION COUNTY, OREGON

Chemical	Total On-site Disposal or Other Releases (pounds)*
Formaldehyde	17,222
Formic Acid	0
Lead Compounds	129
Manganese Compounds	31,714
Methanol	71,782
Nitrate Compounds	0
Phenol	503
Total	**121,350**

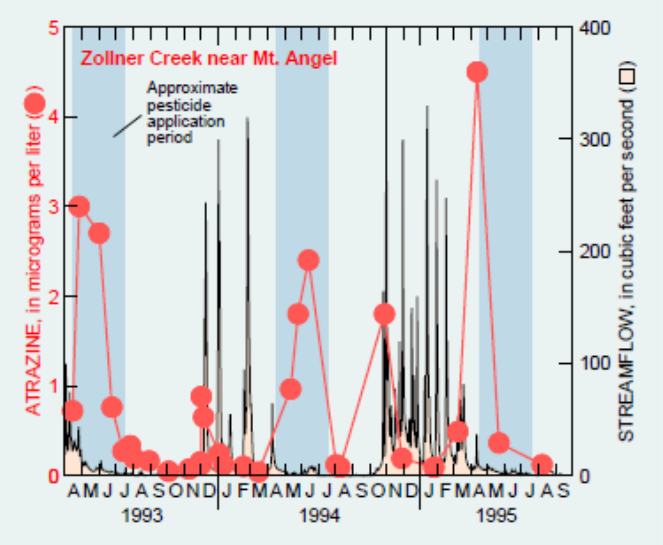
**No off-site disposal or other releases listed.*

TABLE 2
TOXICS RELEASE INVENTORY FACILITIES AND CHEMICALS REPORTED BETWEEN 1998 AND 2018 FOR UNION COUNTY, OREGON

Facility	Chemicals
Boise Cascade Wood Products, LLC, Elgin Complex	Dioxin and dioxin-like compounds
	Lead
	Lead compounds
	Manganese compounds
	Methanol
	Sodium hydroxide (solution)
Woodgrain Millwork Island City Particleboard	Acetaldehyde
	Acrolein
	Formaldehyde
	Hydrochloric acid (acid aerosols after 1995)
	Methanol
	Phenol
	Propionaldehyde
Hexion, Inc.	4,4'-isopropylidenediphenol
	Diethanolamine
	Formaldehyde
	Formic acid
	Methanol
	Nitrate compounds
	Phenol
	Sodium hydroxide (solution)
	Triethylamine

Exhibit 3 (U.S. Geological Survey [USGS], 1998), a graph of atrazine levels in Zollner Creek, Oregon, illustrates the relationship between pesticide application timing and runoff events. Assuming similar timing of fertilizer, pesticide, and herbicide application in the Grande Ronde Basin, peak pesticide levels are likely to be highest during late spring/early summer rainfall events and first flush fall rainfall events.

EXHIBIT 3
RELATIONSHIP BETWEEN PESTICIDE APPLICATION TIMING AND RUNOFF EVENTS



Previous Environmental Sampling

There has been limited environmental sampling (particularly of water quality) in the basin. Following is a list of known sampling events:

- **DEQ 303(d) List Monitoring** - The DEQ performs annual water quality monitoring for 303(d) contaminants at five locations within the Grande Ronde Valley; however, the locations are limited, frequency of samples low, and analyte sets constrained to 303(d) list contaminants. This information is insufficient to address water quality concerns related to salmonid mortality. Exhibit 4 is a summary chart prepared by the GRMW summarizing available data from the DEQ's Oregon Water Quality Index (OWQI) Basin Summary for the Grande Ronde, 2010 to 2019.

EXHIBIT 4
OWQI GRANDE RONDE BASIN SUMMARY

Station	Location Description	Land Use	Water Year Range	OWQI Score	OWQI Status	OWQI Trend and Magnitude		OWQI Trend for Past 10 Reporting Years	Sub-Index Status and Trend							
									Temp	pH	DO	BOD	TS	N	P	Bact
GRANDE RONDE BASIN																
10720	Grande Ronde R at Hilgard St Park	Forest	2010-19	87	Good	NT					↓	↑		↑	↑	
10719	Grande Ronde R at HWY 82 (Elgin)	Mixed	2010-19	84	Fair	↑	2.9			↑	↑		↑			
11521	Grande Ronde R at Peach Ln (Island City)	Agriculture	2010-19	87	Good	NT									↑	
11457	Minam R at Minam	Forest	2010-19	95	Excellent	NT					↑			↑	↑	
10410	Wallowa R at Minam	Forest	2010-19	86	Good	↑	3.7					↑			↑	

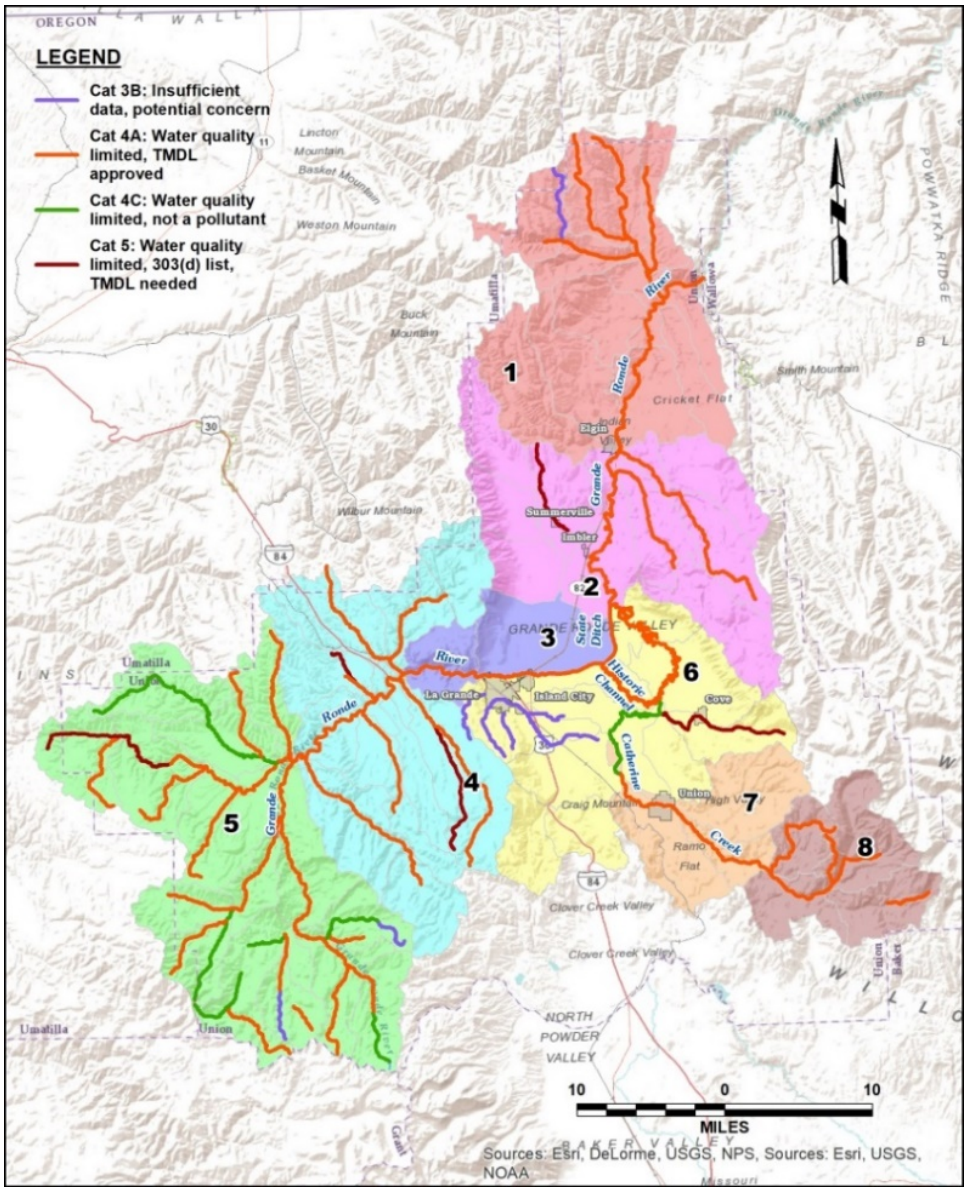
Status
= Excellent (90-100)
= Good (85-89)
= Fair (80-84)
= Poor (60-79)
= Very Poor (10-59)

Trend
↑ = Improving Trend
NT = No Trend
↓ = Declining Trend
NA = Insufficient Data

Sub-Index
Temp = Temperature
pH = pH
DO = Dissolved Oxygen
BOD = Biochemical Oxygen Demand
TS = Total Solids
N = Nitrogen
P = Phosphorus
Bact = Bacteria (e.coli)

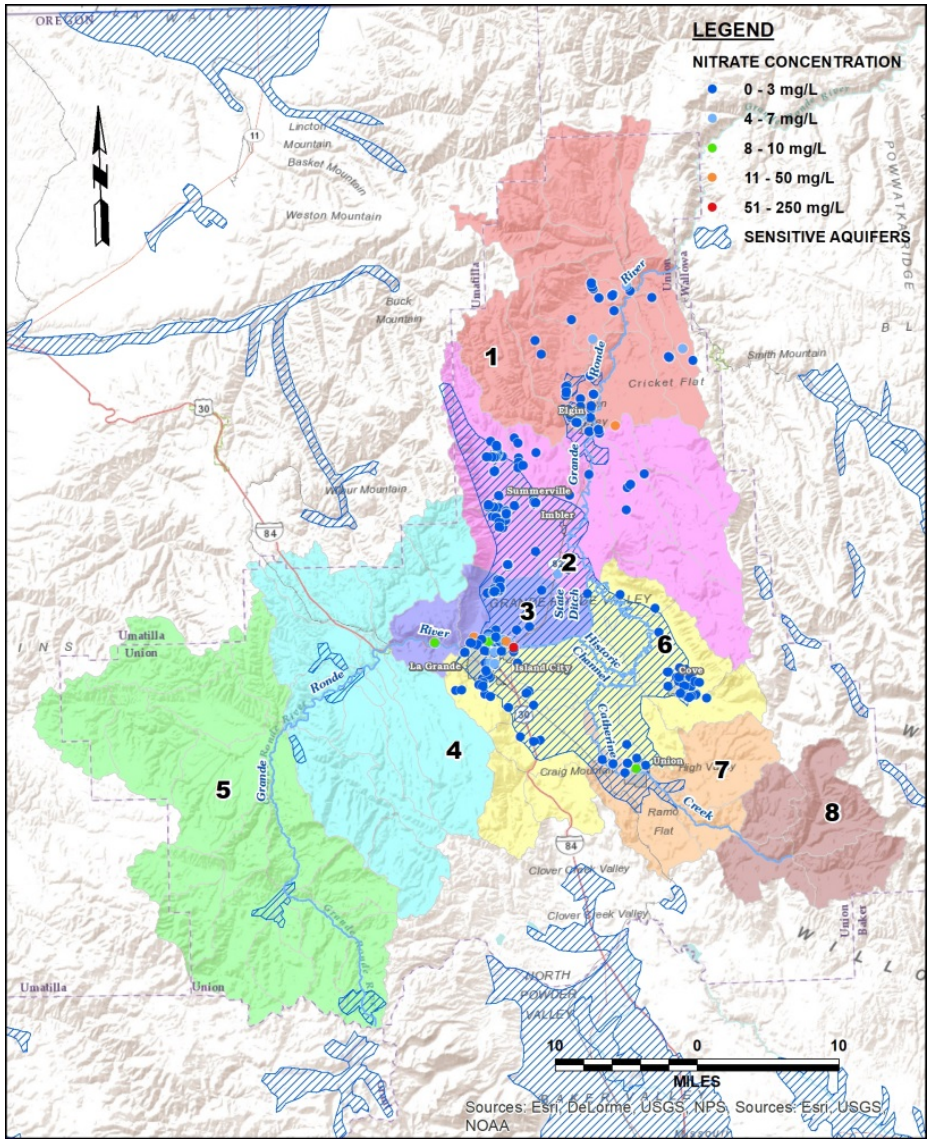
Exhibit 5, from a regional water planning effort, identifies impaired waterbodies (UGRRW, 2018).

EXHIBIT 5
IMPAIRED WATERBODIES



- **ODFW Spawning Ground Surveys** - ODFW conducts annual spawning ground surveys in which some adult salmon fish tissue is collected. However, testing occurs only for viruses and bacteria. There is no known tissue analysis for metals or other chemicals in fish.
- **Nitrate Sampling** - Exhibit 6, from a regional water planning effort, identifies locations for which nitrate data in groundwater are available (collected between 1989 and 2010 related to real estate transactions). Concentrations are generally low (UGRRW, 2018).

EXHIBIT 6
LOCATIONS FOR WHICH NITRATE DATA IN GROUNDWATER IS AVAILABLE



Regional Assessments

Mid-Columbia River Fish Toxics Assessment (EPA, 2017): This assessment sampled water quality and adult fish from the Columbia River to assess risks to human health and aquatic life. Sampling took place during 2008 and 2009. Fish tissue was analyzed for a variety of toxic contaminants. Water samples were analyzed for physical and chemical characteristics and trace elements. The results were also compared to literature screening values (SVs) to put the results in context for interpretation. Multiple contaminants were found to exceed SV concentrations. Mercury, polychlorinated biphenyls (PCBs), and dichlorodiphenyltrichloroethane (DDTs) were responsible for most of the exceedances of human health SVs. Trace elements and DDTs were responsible for most of the exceedances of ecological SVs. Dioxins were below detection levels.

Project Team and Responsibilities

Dana Kurtz, Senior Environmental Scientist, Anderson Perry & Associates, Inc. (AP), is responsible for project management, SAP development, QA/QC, and final reporting.

Shiloh Simrell, Natural Resources Specialist, AP, will collect the water quality samples and coordinate with the laboratories.

Kara Hitchko, an environmental toxicologist at Floyd|Snider, and **Matt Luxon**, an ecotoxicologist specializing in fish biology at Ecozoic Environmental Consulting LLC, have responsibilities to conduct senior reviews and analyses of the SAP and water quality findings to support the investigation of water quality as a potential factor contributing to salmonid mortality.

Freemont Analytical will be responsible for conventionals and metals analysis. Freemont Analytical is an EPA-certified laboratory.

Pacific Agricultural Laboratory (PAL) will be responsible for pesticides and herbicides analysis. PAL is an EPA-certified laboratory.

See Table 3 for project team information.

TABLE 3
PROJECT TEAM

Task/ Responsibility	Name	Contact	Company
Project Management	Dana Kurtz	Office: (541) 963-8309 Cell: (509) 953-1804 Email: dkurtz@andersonperry.com	AP
SAP Development	Dana Kurtz, Kara Hitchko, Matt Luxon	Dana - See above Kara - Office: (206) 292-2078 Cell: (206) 795-0523 Email: Kara.Hitchko@floydsnider.com Matt - Email: matt@ecozoicllc.com	AP, Floyd|Snider, Ecozoic Environmental Consulting LLC
Water Sampling	Shiloh Simrell	Office: (541) 963-8309 Cell: (541) 215-0485 Email: ssimrell@andersonperry.com	AP
Chemical Analysis	Carissa True	Office: (206) 352-3790 Email: ctrue@fremontanalytical.com	Freemont Analytical
Pesticide Analysis	Rick Jordan	Office: (503) 626-7943 Email: rjordan@pacaglab.com	PAL
QA/QC/Data Validation	Dana Kurtz, Kara Hitchko, Matt Luxon	See above	AP, Floyd|Snider, Ecozoic Environmental Consulting LLC
Final Report	Dana Kurtz, Kara Hitchko, Matt Luxon	See above	AP, Floyd|Snider, Ecozoic Environmental Consulting LLC

Project Schedule

The current anticipated project schedule is as follows*:

Kickoff Meeting	October 22, 2020
Submit SAP for GRMW Review	October 22, 2020
GRMW Review	October 27, 2020
SAP Revision Complete	October 30, 2020
GRMW Approval of SAP	October 30, 2020
Sampling Event 1	Week of November 1, 2020
Sampling Event 2	Week of January 15, 2021
Sampling Event 3	Week of March 1, 2021
Sampling Event 4	Week of May 1, 2021
Sampling Event 5	Week of August 15, 2021
Sampling Event 6	Week of September 1, 2021
One Year Update Presentation	October 1, 2021
Sampling Event 7	Week of January 15, 2022
Sampling Event 8	Week of March 1, 2022
State of Science Presentation	April 1, 2022
Sampling Event 9	Week of May 15, 2022
Sampling Event 10	Week of August 15, 2022
Submit Draft Report for GRMW Review	September 15, 2022
Submit Final Report to GRMW	November 15, 2022

*The sampling dates are approximate and will depend on weather events.

Sampling Program

Overall, ten locations are proposed to be sampled over the course of two years and tested for chemical parameters. These locations, parameters, and dates may be modified based on budget, findings, and weather events. Further detail is provided below.

Analyte Selection Methodology

Reviews of literature, existing data, and potential sources of contamination in the basin were conducted to determine analytes for testing (see Assessment Area Characteristics and History section above). The Phase 1 analyte list (see Table 4) includes conventionals, metals, PAHs, and currently used pesticides and herbicides.

Based on the above analysis, review of the DEQ Table 30: Aquatic Life Water Quality Criteria for Toxic Pollutants list, DEQ 303(d) list of water quality concerns present in the Grande Ronde River and Catherine Creek, and literature reviewed, it appears that the chemicals of greatest risk to juvenile salmonids are metals, chlorides, and PAHs (from runoff associated with roads, railroads, urban areas, and contaminated sites) and nutrients and pesticides (from runoff associated with agricultural practices and vector control). The USGS Estimated Annual Agricultural Pesticide Use for Counties of the Conterminous United States, 2013-17 (ver. 2.0, May 2020) lists 202 pesticides/

herbicides used in Union County between 2013 and 2017 (Wieben, 2019). Of those, two are on the DEQ Table 30 list.

Based on this review, a list of chemicals for cost-effective analysis has been developed; see Table 4. Up to 100 samples are anticipated to be collected in this assessment. Table 4 also includes a note discussion of chemicals that were considered but are not currently recommended for analysis. The Table 4 list may be modified based on findings from Phase 1 sampling events.

TABLE 4
PHASE 1 ANALYTES

Type	Analyte	Estimated Cost Per Sample (Dollars)	DEQ Table 30	DEQ 303(d) List for Grande Ronde River and Catherine Creek
Conventionals	Ammonia-N	21.25	x	x
	Alkalinity	18.70	x	x
	Total Phosphorous	29.75	x	x
	Sulfides	25.50	x	x
Metals (dissolved)	Arsenic	11.20	x	x
	Cadmium	11.20	x	x
	Chloride	21.25	x	x
	Chromium	11.20	x	x
	Copper	11.20	x	x
	Cyanide	42.50	x	
	Iron	11.20	x	x
	Lead	11.20	x	x
	Nickel	11.20	x	x
	Selenium	11.20	x	x
	Silver	11.20	x	x
	Zinc	11.20		x
	Mercury	11.20	x	
YSI Parameter	pH	0		x
	Temperature	0		x
	Dissolved Oxygen	0		x
	Conductivity	0		
	Turbidity	0		
PAHs - Priority	PAHs - Priority	161.50		
Pesticide/Herbicide Multi Residue Screen	230 compounds (see SAP Appendix A)	380.00	x	

Note: Although E. coli and PCBs are included on the 303(d) list, there are no known sources of PCBs, and E. coli is not a contaminant of concern to salmonids. Therefore, it is recommended that neither E. coli nor PCBs be tested for. In addition, dioxins/furans are not recommended to be tested for due to lack of high enough concentrations found in Mid-Columbia tissue studies and lack of sources. There are no known sources of tributyltin, organochlorine pesticides, gas range organics, chlorinated phenols, or semi-volatile organic compounds, so they are not recommended for testing. Phenol and formaldehyde are the primary contaminants associated with permitted dischargers in the wood products industry. These chemicals are not likely to be chemicals of concern; however, they may be added to the analyte list in the future.

Sample Location Selection

The GRMW proposed ten locations to collect samples; see Figure 2, Sampling Locations. General rationale is included on Table 5.

TABLE 5
LOCATION SELECTION RATIONALE

Location No.	Latitude/Longitude	Location Description	Phase*	Location Rational/Notes
1	45° 9'9.54"N; -117°44'30.55"W	Catherine Creek State Park	Phase 2	Reference location (no sources known)
2	45°12'35.12"N; -117°51'55.75"W	Catherine Creek 10th Street Bridge in Union	Phase 1 and Phase 2	Urban location (City of Union; agricultural and municipal runoff). High mortality in this reach of Catherine Creek (reach 3 of tributary assessment). Location to be moved to within 10 meters downstream of the Union WWTP outfall if possible.
3	45°16'31.63"N; -117°55'55.84"W	Catherine Creek at Wilkinson Lane	Phase 1 and Phase 2	Agricultural location (agricultural runoff/irrigation return water). To be located within 10 meters downstream of agricultural return if possible.
4	45°16'35.22"N; -117°57'10.36"W	Ladd Creek at Peach Lane	Phase 1 (conventionals only) and Phase 2	Agricultural location, Ladd Marsh location (agricultural and treated wastewater inputs). Low dissolved oxygen observed in this location.
5	45°20'39.62"N; -118° 2'43.27"W	Grande Ronde River in Island City	Phase 1 and Phase 2	Urban location (Island City; agricultural and municipal runoff, Boise Cascade, Hexion).
6	45°23'3.36"N; -117°55'47.42"W	Grande Ronde River at Market Lane	Phase 2	Agricultural location
7	45°23'23.69"N; -117°53'18.41"W	Catherine Creek Market Lane Bridge	Phase 2	Agricultural location
8	45°29'35.27"N; -117°58'44.53"W	Willow Creek at Courtney Lane	Phase 2	Agricultural location
9	45°33'8.58"N; -117°55'0.75"W	Grande Ronde River - Highway 82 near Indian Creek	Phase 1 and Phase 2	Agricultural location, most downstream location of the basin. Location to be moved to within 10 meters of Elgin WWTP outfall if possible.
10	45°12'34.58"N; -118°23'42.50"W	Grande Ronde River near confluence with Fly Creek	Phase 2	Forested location

Notes: Phase 1 analyte list is included on Table 2. Phase 2 analytes will be determined based on Phase 1 results.

Sample Design

Surface water samples will be collected between November 2020 and August 2022 using a phased sampling approach. In Phase 1, surface water samples will be collected from four locations (2, 3, 5,

and 9) and will be analyzed for ammonia-N, alkalinity, phosphorous, sulfides, metals, pesticides, herbicides, and PAHs (see Table 4). Phase 1 chemicals that exceed screening levels or are present at elevated concentrations will be retained for analysis during Phase 2 sampling. In Phase 2, surface water samples will be collected from all ten locations and will be analyzed for a refined analyte list. If chemical exceedances or elevated concentrations are not identified in Phases 1 or 2, a Phase 3 assessment should be considered that includes tests such as a fish health assessment, caged fish studies, standard surface water toxicity tests, and nontarget screening with high-resolution mass spectrometry that can identify contaminants of emerging concern. The sample design for a Phase 3 assessment is not included in this SAP.

At each sample location, water quality parameters including temperature, conductivity, dissolved oxygen, pH/oxidation reduction potential (ORP), depth, and turbidity will also be measured in the field.

The schedule for sampling is shown under the Project Schedule heading above. Phase 1 sampling will include two sampling events, one in November 2020 and one in January 2021. When possible, sample collection will be conducted after a precipitation event to assess potential impacts from stormwater runoff, or when outmigration occurs. Sampling will target precipitation events forecasted to produce greater than 0.25 inch of precipitation. When possible, samples will be collected as water levels rise and before turbidity increases. This sampling strategy maximizes the chances of detecting analytes of concern that may be present in the system. Local knowledge of area activities, including vector control events and source events, will be utilized to further refine the analytes tested in the events over the next two years.

Because the analyte list will be refined after Phase 1, the analytical cost should decrease for Phase 2. Costs will be tracked on a per event basis to ensure budgetary constraints are met.

A field duplicate and a matrix spike/matrix spike duplicate (MS/MSD) will be collected at a rate of 5 percent during each Phase 2 event.

Sample Collection and Handling Procedures

Site Health and Safety

Safety is a priority for this project. A health and safety meeting will occur before each sampling event and will include a discussion of hazards (driving conditions, weather, site access issues, etc.), and strategies to mitigate them (personal protection equipment, appropriate layering, buddy system, etc.).

Site Access

All water quality samples will be collected from bridges or within the road right-of-way. Samples will not be collected from privately owned property.

Site Identification

ARC Collector or a similar tool will be deployed at each event to record the sampling location and photograph the area. This device, when connected to the R2, is generally horizontally accurate to 3 feet.

Sample Collection Techniques

The following describes the methods and procedures that will be used to complete the water sampling program.

Station and Sample Identification and Nomenclature

Each sample will be assigned a unique identifier according to the following method:

Project Name-Location Name-Event Date (example: GRMW-CCSP-11012020)

- The project name will be identified by the four letters GRMW, for Grande Ronde Model Watershed
- The location name will be identified with the waterbody as the first two letters and location reference as the second two letters, as shown on Table 6:

TABLE 6
LOCATION NAMES

Location Number	Location Description	Location Name
1	Catherine Creek State Park	CCSP
2	Catherine Creek 10th Street Bridge in Union	CCUB
3	Catherine Creek at Wilkinson Lane	CCWL
4	Ladd Creek at Peach Lane	LCPL
5	Grande Ronde River in Island City	GRIC
6	Grande Ronde River at Market Lane	GRML
7	Catherine Creek Market Lane Bridge	CCML
8	Willow Creek at Courtney Lane	WCCL
9	Grande Ronde River - Highway 82 near Indian Creek	GR82
10	Grande Ronde River near confluence with Fly Creek	GRFC

Water Sample Collection Protocol

Overall, it is intended that each sampling event will be completed, collected, and shipped within 48 hours. The procedures for sample collection are described below.

Bottles and coolers will be procured from Freemont Analytical (for conventionals, metals and PAHs) and PAL (for pesticides/herbicides) the week before sampling.

On the target week for a sampling event, the weather will be evaluated and sampling will be planned to occur within 24 hours of a precipitation event (if forecasted) to target the maximum potential concentrations of chemicals from stormwater runoff. A precipitation event is defined as greater than 0.25 inch of rain predicted in a 24-hour period. If a precipitation event is not present, best professional judgment will be used to select the optimal sampling date, and this will be documented.

On the day of the sampling event, field staff will travel to the locations from downstream to upstream in the following order:

1. Catherine Creek State Park
2. Catherine Creek 10th Street Bridge in Union
3. Catherine Creek at Wilkinson Lane
4. Ladd Creek at Peach Lane
5. Grande Ronde River in Island City
6. Grande Ronde River at Market Lane
7. Catherine Creek Market Lane Bridge
8. Willow Creek at Courtney Lane
9. Grande Ronde River - Highway 82 near Indian Creek
10. Grande Ronde River near confluence with Fly Creek

Samples will be collected as follows:

- At each location the staff will make an entry in the daily log and photo log and take a GPS point to record the sampling location.
- Prior to sample collection, a water quality instantaneous field measurement will be collected using a YSI Professional Digital Sampling System (ProDSS). Parameters include temperature, conductivity, dissolved oxygen, pH/ORP, depth, and turbidity. The YSI ProDSS will be deployed in situ if possible (cord to be hung off bridges or placed in the water by hand if the site is accessible). If in-situ measurements are not possible, a horizontal Van Dorn water sampler will be deployed from the road or bridge to collect a water sample for measurement in a clean, decontaminated container. A data sheet will be completed for this water quality instantaneous measurement.
- The water sample will be collected in the laboratory-provided sampling bottle in situ by staff (wearing appropriate personal protective gear including nitrile gloves), if possible, or from nearby bridges or roadways using the horizontal Van Dorn water sampler.
- Once collected, the water samples will be sealed with dates and times documented on their labels and logged on the laboratory's chain-of-custody (COC) form. Samples will be preserved with ice and, once all samples are collected, they will be placed in

bubble wrap in coolers and shipped to the laboratories. Ground shipping (two-day) will be used if samples are able to be shipped the day of the sampling event. Overnight shipping will be used if they are shipped the next day.

Field Logs

The following field logs will be used for this project:

- Daily Log
- Water Quality Sampling Form
- COC Form

See SAP Appendix B for a copy of the Daily Log and Water Quality Sampling Form.

Decontamination

All utensils used for sampling will be decontaminated using the following steps:

- Scrub utensil with a brush and in-situ water.
- Rinse with distilled water (analyte-free).
- Scrub with laboratory-grade phosphate-free detergent solution (i.e., Liquinox).
- Rinse thoroughly with distilled water (analyte-free).

Field Quality Assurance Samples

Field QA samples will be analyzed to identify possible problems from sample collection and processing. Field duplicates will be collected at a rate of 5 percent during Phase 2 sampling and will be identified by adding "FD" to the location name of the parent sample. MS/MSD sample will be collected at a rate of 5 percent during the Phase 2 sampling and will be identified with the same sample identifier as the parent sample. All field QA will be documented on the field form.

Sample Handling and Containers

Sample jars will be stored on ice at 4° Celsius until delivery to the laboratory. Instruments and working surfaces will be cleaned, decontaminated, and covered in aluminum foil to reduce opportunities for contamination. Disposable gloves will be discarded between sampling at each location. Sample jars will remain in packaging from the laboratory until use.

The analytical laboratory will provide certified, pre-cleaned, EPA-approved containers for all samples. The analytical laboratory will add a preservative, if required.

Chain of Custody

The COC will be maintained for all samples throughout the sample collection and shipment process. Samples will be shipped in coolers sealed with tape and with enough bagged ice to maintain the

correct temperature. A temperature blank will be enclosed to ensure the temperature was maintained. The coolers will contain a COC form that will be signed by each person who has had custody of the samples to ensure they have been properly attended. The COC form will also contain sampling request information for the laboratory. COC forms will be taped to the inside of the cooler lids before the coolers are sealed. The COC form will be transferred with the coolers via FedEx overnight shipping in the evening after sampling or the next day. The shipping containers will be labeled as fragile and marked to be shipped to the laboratory's address, with the return address of the AP La Grande office. AP will be responsible for the samples until they are submitted for shipping, and the laboratory will be responsible for the samples once they arrive. When samples are delivered to the laboratory, the receiver will record sample conditions on the receipt form. This form will be maintained by the laboratory.

Chemical Testing

The analysis protocol is described in this SAP and will generally consist of submittal of labeled, jarred, and iced samples to an accredited laboratory (Freemont Analytical and PAL) for analytical testing and validation of the data for the report.

Labs will typically provide sampling results within 10 days of submittal. When data packages are received, preliminary review and EPA Stage 2B validation of the data will be completed by the AP team. Data will then be compared to DEQ Table 30 screening levels and ecological health-specific screening levels, if available.

Analytes exceeding screening levels will be further assessed for potential impacts to outmigrating smolt. The analytes sampled will be modified after each event (if needed) to develop the refined list of analytes.

The laboratory is expected to adhere to methods outlined in this document, deliver hard copy and electronic data, meet reporting requirements, follow QA/QC procedures, and notify AP if QA/QC problems are identified.

Refer to Tables 7 and 8 for more information.

TABLE 7
SAMPLE CONTAINER TYPES, ANALYTICAL METHOD, PRESERVATIVE, AND HOLD TIME REQUIREMENTS - SURFACE WATER

Test	Bottle	Preservative	Hold Time
Nitrogen:Ammonia	500 Poly	H_2SO_4	28 Days
Total Phosphorus	500 Poly	H_2SO_4	28 Days
Alkalinity	500 Poly	None	28 Days
Anions:Chloride	250 Poly	None	28 Days
PAHs (EPA 8270-SIM)	1 Liter Amber	None	7 Days
Metals	250 Poly	HNO_3	6 Months
Cyanide, Total	500 Poly	NaOH	14 Days
Sulfide	500 Poly	Zn Ac + NaOH	7 Days
Pesticide/Herbicide Screen	1,000 milliliter Amber Glass	None	7 Days

TABLE 8
DATA QUALITY INDICATORS FOR MEASUREMENTS OF ANALYTICAL METHODOLOGIES

SM4500-NH3	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
Nitrogen, Ammonia	mg/L	0.00575	0.1	85.9	113	20	78.4	111	30
SM 2320B	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
Alkalinity, Total (As CaCO3)	mg/L	1.25	2.5	99.6	108	20	80	120	20
EPA 365.3	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
Phosphorus, Total (As P)	mg/L	0.0763	0.2	65	135	30	65	135	30
SM4500-S2-F	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
Sulfide	mg/L	0.306	0.5	65	135	20	74.9	118	30
EPA 8270E SIM	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
1-Methylnaphthalene	µg/L	0.0198	0.1	36.9	134	30	36.5	133	30
2-Methylnaphthalene	µg/L	0.0219	0.1	48.8	127	30	38.3	133	30
Acenaphthene	µg/L	0.0150	0.1	50.6	128	30	26.4	151	30
Acenaphthylene	µg/L	0.0140	0.1	42.5	137	30	38.8	141	30
Anthracene	µg/L	0.0247	0.1	37.5	137	30	14.8	136	30
Benz(a)anthracene	µg/L	0.0290	0.1	39.4	125	30	8.9	131	30
Benzo(a)pyrene	µg/L	0.0464	0.1	21.5	107	30	12.1	106	30
Benzo(b)fluoranthene	µg/L	0.0389	0.1	25.5	110	30	14.8	118	30
Benzo(g,h,i)perylene	µg/L	0.0107	0.1	15.9	99.7	30	2.27	93.9	30
Benzo(k)fluoranthene	µg/L	0.0449	0.1	27.8	98.4	30	15.9	99.8	30
Chrysene	µg/L	0.0319	0.1	37.9	108	30	7.73	127	30
Dibenz(a,h)anthracene	µg/L	0.0027	0.1	15.9	98.8	30	5	95.6	30
Fluoranthene	µg/L	0.0321	0.1	47.5	140	30	15.2	155	30
Fluorene	µg/L	0.0198	0.1	42.7	142	30	41.6	146	30
Indeno(1,2,3-cd)pyrene	µg/L	0.0071	0.1	16.2	97.5	30	6.73	97.4	30
Naphthalene	µg/L	0.0300	0.1	47.4	117	30	38.9	124	30
Phenanthrene	µg/L	0.0276	0.1	48.1	137	30	38.1	146	30
Pyrene	µg/L	0.0276	0.1	52.3	135	30	8.41	156	30
EPA 200.8	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
Arsenic	µg/L	0.455	1	85	115	20	70	130	30
Cadmium	µg/L	0.0140	0.2	85	115	20	70	130	30
Chromium	µg/L	0.408	1	85	115	20	70	130	30
Copper	µg/L	0.614	2	85	115	20	70	130	30
Iron	µg/L	27.4	100	50	150	20	50	150	30

Lead	µg/L	0.160	0.5	85	115	20	70	130	30
Nickel	µg/L	0.982	3	85	115	20	70	130	30
Selenium	µg/L	1.27	5	85	115	20	70	130	30
Silver	µg/L	0.0859	0.25	85	115	20	70	130	30
Zinc	µg/L	0.475	2.5	85	115	20	70	130	30
SM4500-CN C,E	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
Cyanide, Total	mg/L	0.00284	0.05	74.9	121	20	59.8	143	30
EPA 300.0	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
Chloride	mg/L	0.0359	0.1	90	110	20	80	120	20
EPA 245.1	Units	MDL	PQL	LCS-low	LCS-high	LCS RPD	MS-low	MS-high	MS RPD
Mercury	µg/L	0.00753	0.1	85	115	20	70	130	20
Pesticide/Herbicide Screen	Modified EPA 8321B (LC-MS/MS) and Modified EPA 8270D (GC-MS/MS). See Appendix A.								

LCS = laboratory control sample

MDL = method detection limit

µg/L = micrograms per liter

PQL = practical quantitation limit

RPD = relative percent difference

Quality Assurance/Quality Control

The following QA/QC plan describes the methods and QA/QC procedures that will be followed during data collection and analysis.

- Field duplicates will be collected at a rate of 5 percent during Phase 2 sampling.
- One MS/MSD will be collected for the program.

Laboratory QA/QC measures include initial and continuous calibrations of instruments, matrix replicates, matrix spikes, and method blanks. Laboratory analysts review QA/QC results after each sample group is analyzed. QA/QC results are compared to control limits to determine if they have been exceeded. If exceedances occur, the QA/QC manager is contacted and corrective actions are taken, including reprocessing samples or method modifications, if needed.

Initial calibrations, initial calibration verifications, continuing calibration verifications, calibration blanks, etc., will be performed by the laboratory as specified by the method and laboratory standard operating procedures (SOPs). All compliance issues will be assessed by the laboratory, and analyses will be halted if necessary and/or data will be flagged appropriately per specific methods and/or laboratory SOPs.

Analytical duplicates inform precision of analysis. These analytical duplicates and replicates are reanalyzed subsamples of the parent sample.

MS/MSDs indicate extraction efficiency of a method on the sample matrix. Precision information is also obtained for organic analyses.

Method blanks enable assessment of possible laboratory contamination in all stages of preparation and analysis. The method blank for all analyses must be less than the method reporting limits (RLs) of any analyte. If there is an exceedance for a laboratory method blank, and the concentration of the analyte in any of the samples is less than five times the concentration found in the blank, or ten times for common contaminants, data will be assessed by the laboratory, appropriately flagged, or reanalyzed as specified by the method and/or laboratory SOPs.

Laboratory control samples assess laboratory bias. These are matrix-dependent spiked samples prepared during sample extraction that provide information on laboratory precision.

The data quality objectives of this project are to ensure collected data are of known and acceptable quality so water quality can be accurately assessed. Laboratory quality is based on precision, accuracy, representativeness, comparability, and completeness.

- Precision is evaluated using relative percent difference values between duplicate sample results.
- Accuracy is analyzed in the laboratory using percent recovery of the target analyte in spiked samples and, if applicable, also the recoveries of the surrogates in all samples and QC samples.
- Representativeness is how well the data represent characteristics of the environmental matrix being tested. The design of this project's sampling scheme ensures that samples are representative of the water matrix.
- Comparability measures the confidence in comparing the results of one sampling event with another dataset. Comparability of data will be ensured by using standard analytical methods, reporting formats, calibration methods, and reference materials.
- Completeness is the percent of valid results obtained compared to the total number of samples taken. Qualified data will be included as complete.

The data will initially be validated at the EPA Stage 2B validation level.

Timeline for Data Reporting

The laboratory will provide AP with results within 10 days of receiving the samples.

Laboratory Final Report

The chemistry laboratory will provide a data package for each sample delivery group or analytical batch that will contain all information required for a complete QA overview, including:

- A cover letter discussing analytical procedures and any difficulties encountered.
- A case narrative referencing or describing the procedure used and discussing any analytical problems and deviations from referenced methods and this SAP.

- COC and cooler receipt forms.
- A summary of analyte concentrations, method RLs, and method detection limits.
- Laboratory data qualifier codes appended to analyte concentration, as appropriate, and a summary of code definitions.
- Sample preparation, extraction, dilution, and cleanup logs.
- Instrument tuning data.
- Initial and continuing calibration data, including instrument printouts and quantification summaries, for all analytes.
- Results for method and calibration blanks.
- Results for all QA/QC checks, including reference materials, surrogate spikes, internal standards, laboratory control samples, matrix spike samples, matrix spike duplicate samples, and laboratory duplicate or triplicate samples.
- Original data quantification reports for all analysis and samples in Excel format.
- All laboratory worksheets and standards preparation logs.

Final Reporting Requirements

Data Report

The Data Report will document all activities associated with collection and analyses of the samples.

The report will include a description of the methods, results, data validation, deviations from the sampling plan, a discussion of the results with respect to potential impacts of water quality on salmonid mortality, and recommendations for next steps. The USGS pesticide investigation tool will be used to calculate the combined pesticide risks to support analysis of additive effects to outmigrating smolts. The draft report will be provided to the GRMW team and partners for review.

If possible, data will be paired with data related to juvenile mortality in salmonids collected by others, if available.

The Data Report will include:

- QA report documenting deviations from the SAP and the effects of QA deviations on the testing results.
- A plan view showing actual and target locations of sampling locations, if significantly different.
- A table with coordinates of actual sampling locations and measured water depth at each location.
- A table with chemical screening levels, method detection limits, and RLs. Any chemicals with exceedances will be highlighted. laboratory and validation qualifiers will be included along with definitions of the meaning of qualifiers.

- QA review and validation results.
- As appendices:
  - Field logs
  - Photos
  - COC forms
  - Chemistry data report including case narrative and raw data
  - Approved SAP

Conclusion

This SAP contains the approach for the GRMW's Grande Ronde Basin Water Quality Assessment. The final report will document any deviations from this SAP.

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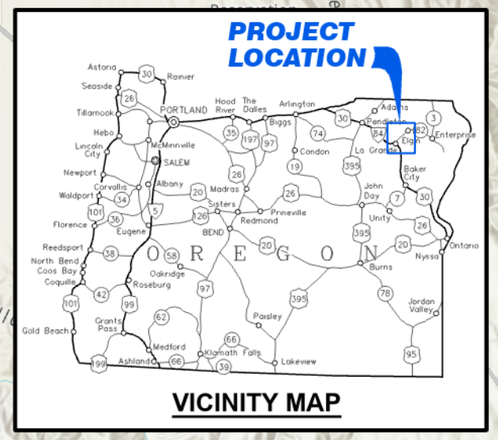
FIGURES



Esri, NASA, NGA, USGS, State of Oregon GEO, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

LEGEND

SAMPLING LOCATIONS

anderson perry & associates, inc.

GRANDE RONDE MODEL WATERSHED

GRANDE RONDE BASIN WATER QUALITY ASSESSMENT
SAMPLING AND ANALYSIS PLAN

LOCATION AND VICINITY MAPS

FIGURE 1

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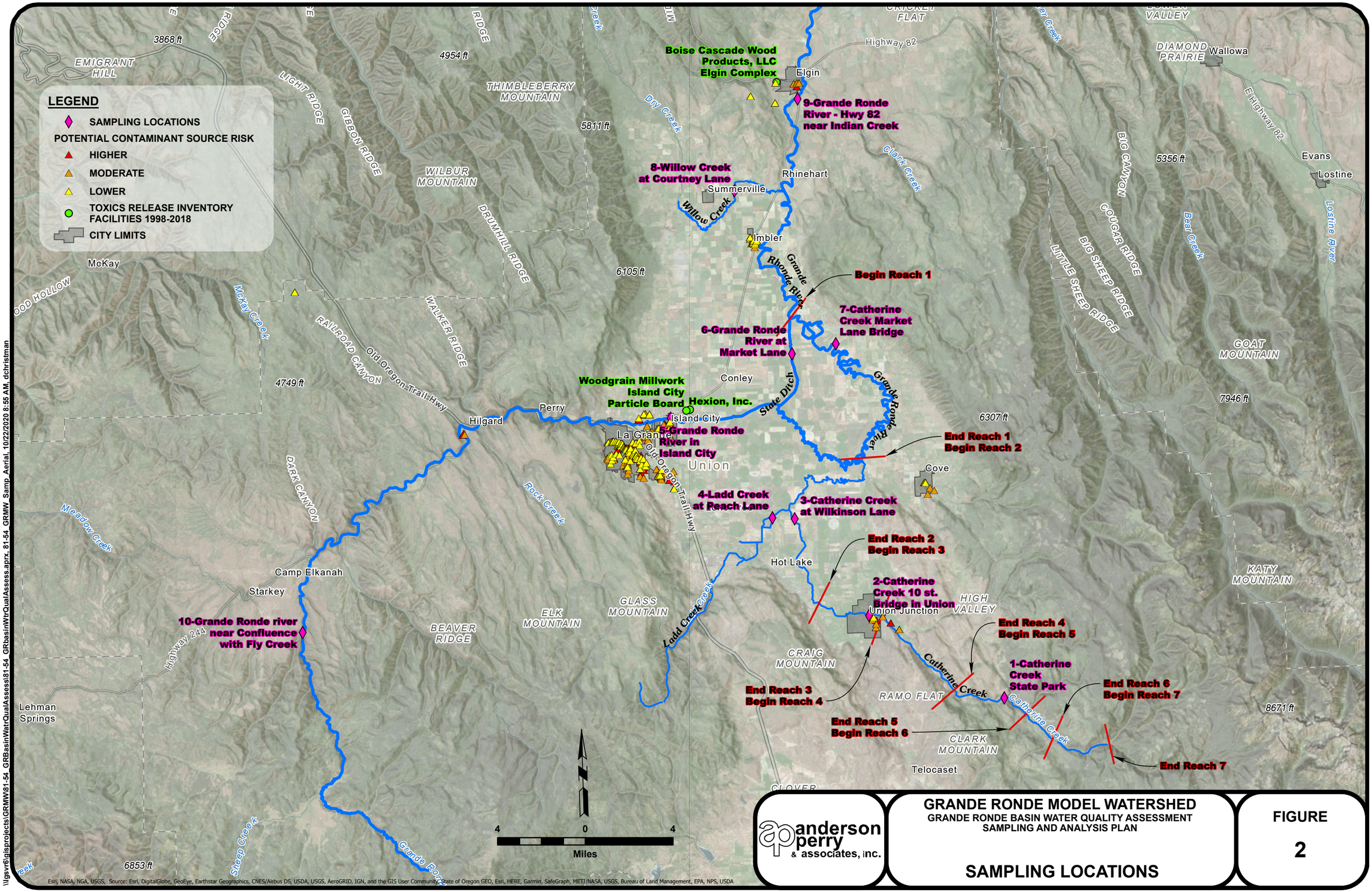
LEGEND
SAMPLING LOCATIONS
POTENTIAL CONTAMINANT SOURCE RISK
HIGHER
MODERATE
LOWER
TOXICS RELEASE INVENTORY FACILITIES 1998-2018
CITY LIMITS
Boise Cascade Wood Products, LLC Elgin Complex
9-Grande Ronde River - Hwy 82 near Indian Creek
8-Willow Creek at Courtney Lane
Begin Reach 1
7-Catherine Creek Market Lane Bridge
6-Grande Ronde River at Market Lane
Woodgrain Millwork Island City Particle Board
Hexion, Inc.
5-Grande Ronde River in Island City
End Reach 1
Begin Reach 2
4-Ladd Creek at Peach Lane
3-Catherine Creek at Wilkinson Lane
End Reach 2
Begin Reach 3
2-Catherine Creek 10 st. Bridge in Union
End Reach 4
Begin Reach 5
1-Catherine Creek State Park
End Reach 3
Begin Reach 4
End Reach 5
Begin Reach 6
End Reach 6
Begin Reach 7
End Reach 7
10-Grande Ronde river near Confluence with Fly Creek
Elgin
Wallowa
Rhinehart
Summerville
Imbler
Conley
Perry
Hilgard
La Grande
Island City
Union
Cove
Hot Lake
Union Junction
Telocaset
Evans
Lostine
McKay
Camp Elkanah
Starkey
Lehman Springs
EMIGRANT HILL
LIGHT RIDGE
GIBBON RIDGE
THIMBLEBERRY MOUNTAIN
WILBUR MOUNTAIN
DRUMHILL RIDGE
WALKER RIDGE
RAILROAD CANYON
DARK CANYON
ELK MOUNTAIN
GLASS MOUNTAIN
BEAVER RIDGE
CRAIG MOUNTAIN
RAMO FLAT
CLARK MOUNTAIN
KATY MOUNTAIN
GOAT MOUNTAIN
DIAMOND PRAIRIE
HIGH VALLEY
CRICKET FLAT
BIG CANYON
COUGAR RIDGE
BIG SHEEP RIDGE
LITTLE SHEEP RIDGE
3868 ft
4954 ft
5811 ft
6105 ft
4749 ft
6853 ft
5356 ft
6307 ft
7946 ft
8671 ft
Highway 82
Highway 244
Old Oregon Trail Hwy
Dry Creek
Clark Creek
Willow Creek
Rhonde River
Grande Ronde River
State Ditch
Bear Creek
Lostine River
McKay Creek
Meadow Creek
Rock Creek
Sheep Creek
Ladd Creek
Catherine Creek
4 0 4
Miles
GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT
SAMPLING AND ANALYSIS PLAN
SAMPLING LOCATIONS
anderson perry & associates, inc.
FIGURE
2
Esri, NASA, NGA, USGS, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, State of Oregon GEO, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA
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SAP APPENDIX A
Water Multiresidue Screen Compound List and Limits of Quantitation

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

Water Multiresidue Screen Compound List and Limits of Quantitation

Modified EPA 8321B (LC-MS/MS) and Modified EPA 8270D (GC-MS/MS)

Compound (LC-MS/MS)	LOQ (ug/L)	Fenamiphos sulfoxide	0.06	Oxadixyl	0.06
Abamectin	0.06	Fenazaquin	0.06	Oxamyl	0.06
Acetamiprid	0.06	Fenbuconazole	0.06	Penthiopyrad	0.06
Acibenzolar-S-methyl	0.12	Fenbutatin oxide	0.06	Phorate Sulfone	0.06
Aldicarb	0.06	Fenhexamid	0.06	Phorate Sulfoxide	0.06
Allethrin	0.06	Fenobucarb	0.06	Phosalone	0.06
Ametoctradin	0.06	Fenpropathrin	0.06	Phosmet	0.06
Atrazine	0.06	Fenpyroximate	0.06	Phosphamidon	0.06
Azinphos-ethyl	0.06	Fenuron	0.06	Piperonyl Butoxide	0.06
Azinphos-methyl	0.12	Fluazinam	0.06	Pirimicarb	0.06
Azoxystrobin	0.06	Flubendiamide	0.12	Pirimiphos-methyl	0.06
Bendiocarb	0.06	Flumioxazin	0.06	Prometon	0.06
Bensulide	0.06	Fluometuron	0.06	Prometryn	0.06
Bitertanol	0.06	Fluopicolide	0.06	Propargite	0.06
Boscalid	0.06	Fluopyram	0.06	Propazine	0.06
Bromacil	0.06	Fluoxastrobin	0.06	Propiconazole	0.12
Carbaryl	0.06	Flupyradifurone	0.06	Pyraclostrobin	0.06
Carbendazim	0.06	Fluridone	0.06	Pyraflufen-ethyl	0.06
Carbofuran	0.06	Flutriafol	0.06	Pyrethrin	0.3
Carfentrazone-ethyl	0.06	Fluvalinate	0.06	Pyridaben	0.06
Chlorantraniliprole	0.06	Fluxapyroxad	0.06	Pyrimethanil	0.06
Clethodim	0.12	Fonofos	0.12	Rotenone	0.06
Clofentezine	0.06	Hexaconazole	0.06	Saflufenacil	0.06
Cyanazine	0.06	Hexazinone	0.06	Sethoxydim	0.12
Cyantraniliprole	0.06	Hexythiazox	0.06	Siduron	0.06
Cyazofamid	0.06	Imazalil	0.06	Simazine	0.06
Cycloate	0.12	Imidacloprid	0.06	Simetryn	0.06
Cyflufenamid	0.06	Indaziflam	0.06	Spinetoram	0.06
Cyflumetofen	0.06	Indoxacarb	0.06	Spinosad	0.06
Cymoxanil	0.06	Iprodione	0.3	Spiromesifen	0.12
Cyprodinil	0.06	Isoxaben	0.06	Spirotetramat	0.06
DCPMU	0.06	Linuron	0.06	Spiroxamine	0.06
Diazoxon	0.06	Malaoxon	0.06	Sulfentrazone	0.06
Difenoconazole	0.06	Mandipropamid	0.06	Sulfoxaflor	0.06
Diflubenzuron	0.06	Metconazole	0.06	Tebuconazole	0.06
Dimethoate	0.06	Methidathion	0.06	Tebufenozide	0.06
Dimethomorph	0.06	Methiocarb	0.06	Tebuthiuron	0.06
Disulfoton sulfone	0.06	Methomyl	0.06	Terbacil	0.06
Diuron	0.06	Methoxyfenozide	0.06	Terbuthylazine	0.06
d-Phenothrin	0.06	Metrafenone	0.06	Terbutryn	0.06
Ethion	0.06	Metribuzin	0.06	Thiabendazole	0.06
Famoxadone	0.06	Mevinphos	0.06	Thiacloprid	0.06
Famphur	0.06	Norflurazon	0.06	Thiamethoxam	0.06
Fenamidone	0.06	Novaluron	0.06	Thiobencarb	0.06
Fenamiphos sulfone	0.06	Oryzalin	0.06	Thiodicarb	0.06

Limit of Quantitation (LOQ) ug/L (ppb) 6/14/19

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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Water Multiresidue Screen Compound List and Limits of Quantitation

Modified EPA 8321B (LC-MS/MS) and Modified EPA 8270D (GC-MS/MS)

Tolfenpyrad	0.06	Endrin	0.06	Pronamide	0.06
Triadimefon	0.06	Endrin aldehyde	0.06	Propachlor	0.06
Triadimenol	0.12	Endrin ketone	0.06	Pyriproxyfen	0.06
Trifloxystrobin	0.06	Esfenvalerate	0.06	Quinoxyfen	0.06
Triflumizole	0.06	Ethalfluralin	0.06	Spirodiclofen	0.06
		Ethofumesate	0.06	Tetraconazole	0.06
Compound (GC-MS/MS)	**LOQ (ug/L)**	Ethoprop	0.06	Tetradifon	0.06
a-BHC	0.06	Etoxazole	0.06	trans-Nonachlor	0.06
Acetochlor	0.06	Etridiazole	0.06	Trifluralin	0.06
Alachlor	0.06	Fenarimol	0.06	Vinclozalin	0.06
Aldrin	0.06	Fenoxaprop-ethyl	0.06		
Ametryn	0.06	Fenvalerate	0.06		
b-BHC	0.06	Fipronil	0.06		
Benfluralin	0.06	Fluazifop-p-butyl	0.06		
Bifenthrin	0.06	Fludioxonil	0.06		
Bromopropylate	0.06	Fluroxypyr-meptyl	0.06		
Buprofezin	0.06	Flutolanil	0.06		
Captan	0.6	g-BHC	0.06		
Chlordane	0.06	Heptachlor	0.06		
Chloroneb	0.06	Heptachlor epoxide	0.06		
Chlorpropham	0.06	Hexachlorobenzene	0.06		
Chlorpyrifos	0.06	Kresoxim-methyl	0.06		
Chlorpyrifos-methyl	0.06	lambda-Cyhalothrin	0.06		
cis-Nonachlor	0.06	Malathion	0.06		
Cyfluthrin	0.3	Mefenoxam	0.06		
Cypermethrin	0.3	Methoxychlor	0.06		
Dacthal	0.06	Metolachlor	0.06		
d-BHC	0.06	MGK-264	0.06		
Deltamethrin	0.3	Myclobutanil	0.06		
Diazinon	0.06	Napropamide	0.06		
Dichlobenil	0.06	o-Phenylphenol	0.06		
Dichlorofenthion	0.06	Oxadiazon	0.06		
Dichlorvos	0.06	Oxyfluorfen	0.06		
Diclofop-methyl	0.06	p,p'-DDD	0.06		
Dicloran	0.06	p,p'-DDE	0.06		
Dicofol	0.06	p,p'-DDT	0.06		
Dieldrin	0.06	Parathion-methyl	0.06		
Dimethenamid	0.06	PCA	0.06		
Diphenamid	0.06	PCB	0.06		
Diphenylamine	0.06	PCNB	0.06		
Disulfoton	0.06	Pendimethalin	0.06		
Dithiopyr	0.06	Pentachlorothioanisole	0.06		
Endosulfan I	0.12	Permethrin	0.12		
Endosulfan II	0.12	Procymidone	0.06		
Endosulfan sulfate	0.12	Prodiamine	0.06		

Limit of Quantitation (LOQ) ug/L (ppb) 6/14/19

SAP APPENDIX B
Field Logs

Daily Log

PROJECT NAME: **DATE:**

ADDRESS: **PERSONNEL:**

WEATHER: **Wind Direction/speed**

SUNNY	CLOUDY	RAIN	?

TEMPERATURE: ° F

TIME	COMMENTS

Water Quality Sampling Form

Date: _____ Project: _____
Name of Person Sampling: _____

Date of last calibration for YSI Meter: _____
Activity Description: _____ Activity Start Time: _____ Activity Stop Time: _____

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	Cond	DO	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)

APPENDIX B
Field Logs

Daily Log

PROJECT NAME: Grande Ronde basin water quality assessment DATE: 1/13/2021

ADDRESS: PERSONNEL: Shiloh Simrell

WEATHER: Wind Direction/speed SUNNY CLOUDY RAIN ? TEMPERATURE: °F 41

TIME	COMMENTS
0745	Leave AP
0815	Arrived at union WWTP (Location #2)
0845	Collected Water Samples / YSI / Turbidity (location #2)
0915	Leave Location #2
0930	Arrived at Wilkinson Lane (Location #3)
0945	Collected Water Samples / YSI / Turbidity (Location #3)
1010	leave Location #3
1015	Arrived at Peach Lane (Location #4)
1030	Collected Water Samples / YSI / Turbidity (Location #4)
1045	Leave Location #4
1115	Arrived HW82 Bridge (Location #9)
1130	Collected Water Samples / YSI / Turbidity (Location #9)
1145	Leave Location #9
1215	Arrive at Island City Bridge (Location #5)
1230	Collected Water Samples / YSI / Turbidity (Location #5)
1245	leave Location #5
1315	Arrived back at AP
	end of day

55

Water Quality Sampling Form

Date: 1/13/2021 Project: Grande Ronde Basin Water Quality Assessment
Name of Person Sampling: Shiloh Simrell

Date of last calibration for YSI Meter: 1/12/2021
Activity Description: Water Sampling Activity Start Time: 0745 Activity Stop Time: 1315

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp °C	Cond SPC uS/cm	DO mg/L	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
GRMW-CCMB 01132021	CC moderate flow	0845	45.211933, -117.884120	Ipad	2.7	91.6	12.06 96.7%	7.70/ 165.4	4.09	1ft	insitu	Sunny cobble collected mid column mid channe
GRMW-CCWL 01132021	CC Low flow	0945	45.275357, -117.932187	Ipad	2.2	116.0	12.43 97.8%	7.59/ 163.8	9.97	2ft	insitu	silt Collected mid column/ 3ft from ba
GRMW-LCPL 01132021	LC no flow	1030	45.276473, -117.952921	Ipad	2.4	642	10.87 86.2%	7.54/ 158	25.9	2.5ft	insitu	silt greenal ae/oil shee mid column/ char
GRMW-GR02 01132021	GR Moderate flow	1130	45.552688, -117.916828	Ipad	2.4	100.7	12.25 96.8%	7.66/ 248.5	50.7	3ft	insitu	water tou turbid to s substrate mid column
GRMW-GR1C 01132021	GR Low flow	1230	45.344306 -118.045222	Ipad	2.6	115.8	13.22 105.3%	7.81/ 280.6	10.3	2.5ft	insitu	cobble collected 3ft from bank mid column 4ft from bank

Daily Log

PROJECT NAME: Grande Ronde Basin Water Quality Assessment **DATE:** 3/9/2021

ADDRESS: **PERSONNEL:** Shiloh Simrell

WEATHER: **Wind Direction/speed** SUNNY | CLOUDY | RAIN | ? **TEMPERATURE:** °F

TIME	COMMENTS
7:15	Left AP
7:50	Arrived at HW82 Bridge (Location #9)
8:10	Collect YSI / water samples / turbidity
8:25	Leave location #9
8:40	Arrived at WWCL (Location #8)
8:50	Collect YSI / water samples / turbidity
9:00	leave location #8
9:30	Arrived at CCML (Location #7)
9:40	Collect YSI / water samples / turbidity
9:50	leave Location # 7
9:55	Arrived at GRML (Location # 6)
10:10	Collect YSI / Water samples / turbidity
10:15	Leave Location #6
10:30	Arrived at GRIC (Location #5)
10:40	Collect YSI / Water Samples / turbidity
10:50	Leave Location #5
11:10	Arrived at LCPL (Location #4)
11:20	Collect YSI / water Samples / turbidity
11:35	Leave Location #4
11:40	Arrived at CCWL (Location # 3)
11:50	Collect YSI / water samples / turbidity
12:00	leave location #3
12:15	Arrived at Union WWTP (Location # 2)
12:25	Collect YSI / water samples / turbidity
12:35	leave Location #2
1:00	Arrived at CC state park (Location # 1)
1:15	Collect YSI / water Samples / turbidity
1:25	Leave Location # 1
2:30	Arrived at GRFC (Location #10)
2:40	Collect YSI / water samples / turbidity
2:50	leave Location #10

Water Quality Sampling Form

Date: 3/9/2021 Project: Grande Ronde Basin Water Quality Assessment
Name of Person Sampling: Shiloh Sinnett

Date of last calibration for YSI Meter: 3/8/2021
Activity Description: Water Sampling Activity Start Time: _____ Activity Stop Time: _____

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	Cond SPC µS/cm	DO mg/L	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
GRMW-GR82 03092021	GR High Flow	0810		IPAD	3.1°C	110.8	11.70	7.55/ 244.5	54.6	3ft	in situ	Turbid / high flow partly sunny / mid column
GRMW-WCCL 03092021	Willow creek moderate flow	0850		IPAD	2.6°C	134.1	11.09	7.43/ 253.4	55.2	3ft	insitu	2 ft from bank/mid Turbid / moderate flow
GRMW-CCML 03092021	CC No Flow	0940		IPAD	4.2°C	151.7	11.62	7.76/ 211.1	44.6	3ft	in situ	2 ft From bank/mid Turbid / sunny
GRMW-GRML 03092021	GR low flow	1010		IPAD	2.1°C	91.0	12.07	7.82/ 242.4	43.1	4ft	in situ	Turbid / mid column 2 ft from bank
GRMW-GRIC 03092021	GR moderate flow	1040		IPAD	2.3°C	87.9	12.93	7.69/ 287.6	16	3ft	in situ	4 ft from bank mid column
GRMW-LCPL 03092021	Ladd Creek No Flow	1120		IPAD	3.8°C	528	7.25	7.24/ 226.7	49.4	3ft	in situ	turbid / mid column 5ft From bank / mid channel
GRMW-CCWL 03092021	CC moderate flow	1150		IPAD	3.8°C	114.5	12.38	7.91/ 263.5	21.5	3ft	in situ	3 ft from bank windy / wind CCPS
GRMW-CCMB 03092021	CC mod to high flow	1225		IPAD	4.4°C	94.1	12.74	8.59/ 251.7	11	1.5ft	in situ	mid channel mid column / windy
GRMW-CCSP 03092021	CC high flow	1315		IPAD	4.6°C	82.7	11.56	8.10/ 225.7	16.7	1 ft	in situ	windy mid channel / mid column
GRMW-GRFC 03092021	GR mod to high flow	1440		IPAD	1.6°C	101.9	11.85	7.93/ 179.8	8.34	1.5ft	insitu	mid channel mid column Cobble

4ft from bank

Slightly snowy / overcast

Snow melting / running over roadway

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Daily Log

PROJECT NAME: Grande Ronde Basin Water Quality Assessment DATE: 4/25/21

ADDRESS: PERSONNEL: Shiloh Simrell

WEATHER: Wind Direction/Speed SUNNY CLOUDY RAIN ? TEMPERATURE: °F

TIME	COMMENTS
07:00	Start of day
08:00	Arrived at GR82 (Location #9)
0815	Collected YSI / Water Samples / turbidity
0830	Left GR82
0845	Arrived at WCCL (Location # 8)
0900	Collected YSI / Water samples / turbidity
0920	Left WCCL
0945	Arrived at CCML (Location #7)
1000	Collected YSI / Water Samples / turbidity
1030	Left CCML
1035	Arrived at GRML (Location #6)
1050	Collected YSI / water samples / turbidity
1105	Left GRML
1125	Arrived at GRIC (Location #5)
1140	Collected YSI / water samples / turbidity
1150	Left GRIC
1230	Arrived at LCPL (Location #4)
1245	Collected YSI / Water Samples / turbidity
1310	Left LCPL
1315	Arrived at CCWL (Location #3)
1330	Collected YSI / Water Samples / turbidity
1355	Left CCWL
1430	Arrived at CCSP (Location # 2)
1445	Collected YSI / Water Samples / turbidity
1500	Left CCSP
1515	Arrived at CCUB (Location # 2)
1530	Collected YSI / water samples / turbidity
1540	Left CCUB
1630	Arrived at GRFC (Location # 10)
1645	Collected YSI / Water Samples / turbidity
1700	Left GRFC
1730	End of day

Water Quality Sampling Form

Date: 4/25/2021 Project: Grande Ronde Basin Water Quality Assessment
Name of Person Sampling: Shiloh Simrell

Date of last calibration for YSI Meter: 4/23/21
Activity Description: Water Sampling Activity Start Time: 8am Activity Stop Time: 5pm

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	Cond	DO	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
GRMW-GRB2	Grande Ronde	0815	45.552608 -117.916881	IPad	8.1°C	63.3 spc-us/cm	97.9% 10.50 mg/L	8.02/ 216.7	22.7		in situ Sampling pole	rain/ Sample 12ft from bank Cloudy
GRMW-WCCL	willow creek	0900	45.493073 -117.978881	IPad	6.5°C	71.6 spc-us/cm	92.2% 10.26 mg/L	7.44/ 208.9	17.2		in situ Sampling pole	Cloudy/sample 6ft from bank mid channel
GRMW-CCML	Catherine Creek	1000	45.390000 -117.888316	IPad	9.8°C	81.5 spc-us/cm	93.4% 9.59 mg/L	7.59/ 208.0	21.1		in situ Sampling pole	partly sunny sample mid channel off Bridge
GRMW-GRML	Grande Ronde	1050	45.384397 -117.929965	IPad	6.5°C	53.1 spc-us/cm	98.7% 10.97 mg/L	7.49/ 235.8	17.1		in situ Sampling pole	sunny Clouds sample 8ft from bank
GRMW-GRLC	Grande Ronde	1140	45.344314 -118.045098	IPad	6.1°C	52.9 spc-us/cm	98.4% 11.06 mg/L	7.68/ 250.8	17.8	3.5ft	in situ	Cloudy Sample 5ft from bank in flowing channel
GRMW-LCPL	Ladd Creek	1245	45.276462 -117.952879	IPad	12.0°C	304.3 spc-us/cm	58.8% 5.72 mg/L	7.19/ 280.8	3.57		in situ Sampling pole	Cloudy Sample mid channel off Bridge
GRMW-CCWL	CatherineCreek	1330	45.275255 -117.932039	IPad	5.9°C	59.9 spc-us/cm	100.5% 11.36mg/L	7.72/ 173.2	20.3		in situ Sampling pole	raining hard sample mid channel off Bridge
GRMW-CCSP	Catherine Creek	1445	45.152616 -117.741810	IPad	6.2°C	56.2 spc-us/cm	99.4% 10.92mg/L	7.69/ 303.2	11.0	1.5ft	in situ	Cloudy/ Sprinkling sample 6ft from bank in flowing channel
GRMW-CCUB	Catherine Creek	1530	45.211903 -117.884173	IPad	7.0°C	59.2 spc-us/cm	100.3% 10.99 mg/L	7.72/ 304.2	11.0	1ft	in situ	Cloudy/sample 3ft from bank in flowing channel
GRMW-GRFC	Grande Ronde	1645	45.210552 -118.393844	IPad	7.5°C	65.8 spc-us/cm	98.0% 10.32mg/L	7.81/ 252.0	24.4	2ft	in situ	Partly sunny Sample 3ft from bank in flowing channel

Daily Log

PROJECT NAME: Grande Ronde Basin Water Quality Assessment **DATE:** 8/2/2021

ADDRESS: **PERSONNEL:** Shiloh Simrell

WEATHER: **Wind Direction/speed** | (SUNNY) | CLOUDY | RAIN | ? | **TEMPERATURE:** °F 72

TIME	COMMENTS
7:15	left AP / Start of day
8:00	Arrived at CCSP (Location # 1)
8:15	Collected
8:30	Left CCSP
8:50	Arrived at CCUB (Location # 2) (MS/MSD)
9:00	Collected
9:30	Left CCUB
9:55	Arrived at CCWL (location # 3)
10:05	Collected
10:10	Left CCWL
10:20	Arrived at LCPL (location # 4)
10:45	Collected
11:00	Left LCPL
12:05	Arrived at GRFC (Location # 10)
12:15	Collected
12:30	Left GRFC
13:35	Arrived at GR82 (Location # 9)
13:45	Collected
14:00	Left GR82
14:10	Arrived at WCCL (Location # 8)
14:20	Collected
14:45	Left WCCL
15:05	Arrived at CCML (Location # 7)
15:15	Collected
15:35	Left CCML
15:45	Arrived at GRML (Location # 6)
16:00	Collected
16:10	Left GRML
16:15	Arrived at GRIC (location # 5
16:20	Collected
16:30	Left GRIC
16:45	End of day

Water Quality Sampling Form

Date: 8/2/2021 Project: Grande Ronde Basin Water Quality Assessment
Name of Person Sampling: Shiloh Simrell

Date of last calibration for YSI Meter: 7/31/2021 (ORP 7/20/2021)
Activity Description: Water Sampling Activity Start Time: 0715 Activity Stop Time: 1645

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	Cond SPC us/cm	DO	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
CCSP08022021	CC	0815	45.152616, -117.741810	IPad	15.2°c	66	101 % 9.17 mg/L	7.78/ 251.9	2.09	.5ft	insitu	Sunny/smoke med flow mid channel mid column
CCMB08022021	CC	0900	45.211963, -117.884173	IPad	18.4°c	68.8	103.8 % 8.96 mg/L	7.72/ 213.6	3.26	.5ft	insitu	mid channel med flow mid column
CCWL08022021	CC	1005	45.275255, -117.932039	IPad	23.6°c	101.8	100.5 % 7.84 mg/L	7.69/ 160.9	3.52	2 ft	insitu	mid column low flow mid channel
LCPL08022021	LC	1045	45.276462, -117.952879	IPad	26°c	577	117.4 % 8.76 mg/L	7.99/ 163.8	322	.3ft	insitu	mid column/channel/ no flow/ sampled in pool
GRFC08022021	GR	1215	45.210552, -118.393844	IPad	22.2°c	92.4	111 % 8.64 mg/L	8.67/ 115	2.90	.5ft	insitu	mid column/ channel med flow
GRBR08022021	GR	1345	45.552608, -117.916881	IPad	27.1°c	124	126.7 % 9.27 mg/L	8.43/ 156.5	7.30	1ft	insitu	mid column/ channel med flow
WCCL08022021	WC	1420	45.493073, -117.978881	IPad	21.1°c	112.4	128.4 % 10.48 mg/L	8.36/ 252.1	7.07	4ft	insitu/ sampling pole	mid column/ channel low flow
CCML08022021	CC	1515	45.390000, -117.888316	IPad	24.4°c	221.7	79 % 6.05 mg/L	6.96/ 258	10.9	3ft	insitu/ sampling pole	mid column/ channel low flow
GRML08022021	GR	1600	45.384397, -117.929965	IPad	26.2°c	183.3	167 % 12.39 mg/L	9.16/ 175.2	3.27	1.5ft	insitu	3ft from left bank mid column low flow
GRIC08022021	GR	1620	45.344314, -118.045098	IPad	27°c	149.5	174.4 % 12.73 mg/L	8.88/ 193.9	1.67	2ft	insitu	4ft from left bank mid column med flow

Daily Log

PROJECT NAME: Grande Ronde Basin Water Quality Assessment **DATE:** 10/23/2021

ADDRESS: Grande Ronde Basin **PERSONNEL:** Shiloh Simrell

WEATHER: **Wind Direction/speed** SUNNY | CLOUDY | RAIN | ? **TEMPERATURE:** °F 50

TIME	COMMENTS
0730	Start of day
0810	Arrived at GR82
0820	Collected
0830	Left GR82
0845	Arrived at WCCL
0855	Collected
0915	Left WCCL
0930	Arrived at CCML
0940	Collected
1000	Left CCML
1005	Arrived at GRML
1015	Collected
1030	Left GRML
1045	Arrived at GRIC
1100	Collected
1110	Left GRIC
1145	Arrived at GRFC
1155	Collected
1205	Left GRFC
1310	Arrived at CCSP
1320	Collected
1330	Left CCSP
1350	Arrived at CCUB
1400	Collected
1410	Left CCUB
1430	Arrived at CCWL
1440	Collected
1450	Left CCWL
1500	Arrived at LCPL (no water)
1502	Took Photos
1505	Left LCPL
1530	end of day

SS

Water Quality Sampling Form

Date: 10/23/2021 Project: Grande Ronde Basin Water Quality Assessment
Name of Person Sampling: Shiloh Simrell

Date of last calibration for YSI Meter: 10/22/2021
Activity Description: Water Sampling Activity Start Time: 0700 Activity Stop Time: 1530

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	uc/cm Cond	DO	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
GRMW-GRBZ-10232021	GR	0820	IPad	322, 323, 324, 325	9.4	148.3	89.6%/ 9.34 mg/L	7.61/ 249.5	6.84	1ft	insitu	fog/medium flow sample taken 4ft from bank/muscles observed
GRMW-WCCL-10232021	WC	0855	IPad	326, 327, 328	9.7	112.6	90.2%/ 9.30mg/L	7.18/ 247	9.52	5ft	insitu/ Sampling pole	cloudy/low to med flow mid column/channel
GRMW-CCML-10232021	CC	0940	IPad	329, 330, 331,	9.6	121.5	68.9%/ 7.12 mg/L	7.13/ 271.5	9.84	5ft	insitu/ Sampling pole	cloudy/low flow/no flow mid column/channel/tip in
GRMW-GRML-10232021	GR	1015	IPad	332, 333, 334, 335	9.7	140.1	94.6%/ 9.76 mg/L	7.71/ 269.2	2.21	2ft	insitu	cloudy low to med flow creek 3ft from bank mid column
GRMW-GRIC-10232021	GR	1100	IPad	336, 337, 338, 339	9.2	132	100.8%/ 10.5/mg/L	7.55/ 256.1	3.85	3ft	insitu	cloudy 3ft from bank med flow mid column
GRMW-GRFC-10232021	GR	1155	IPad	340, 341, 342, 343	7.0	87.3	98.6%/ 10.54 mg/L	7.83/ 265.6	8.37	1.5ft	insitu	med flow/high muscles mid channel/ column close
GRMW-CCSP-10232021	CC	1320	IPad	344, 345 346, 347	8.3	71.7	98.6%/ 10.38mg/L	7.79/ 269.8	1.98	1ft	insitu	mid column/channel med/high flow/cloudy
GRMW-CCMB-10232021	CC	1400	IPad	348, 349, 350, 351	9.4	90	100%/ 10.36mg/	7.59/ 288.9	4.09	1ft	insitu	mid column/channel med/high flow/cloudy
GRMW-CCWL-10232021	CC	1440	IPad	352, 353, 354, 355	10.6	95.4	98.7%/ 9.95mg/	7.58/ 271.6	3.20	3ft	insitu	low/med flow/cloudy 4ft from bank mid column
GRMW-LCPL-10232021	LC	1502	IPad	356, 357, 358, 359	—	—	—	—	—	—	—	no water metal in creek (camera) cloudy

Daily Log

PROJECT NAME: Grande Ronde Basin Water Quality Assessment **DATE:** 1/21/2022

ADDRESS: **PERSONNEL:** Shiloh Simrey

WEATHER: **Wind Direction/speed** (SUNNY) CLOUDY RAIN ? **TEMPERATURE:** °F 40

TIME	COMMENTS
0800	Left HP
0810	Arrived at GRIC
0820	Collected (MS/MSD)
0830	Left GRIC
0850	Arrived at CCML
0915	Collected
0935	Left CCML
0945	Arrived at GRML
0955	Collected
1015	Left GRML
1040	Arrived at GR82
1050	Collected
1100	Left GR82
1115	Arrived at WCCL
1125	Collected
1135	Left WCCL
1205	Arrived at LCPL
1215	Collected
1225	Left LCPL
1230	Arrived at CCWL
1235	Collected
1240	Left CCWL
1255	Arrived at CCUB
1305	Collected (FD)
1315	Left CCUB
1330	Arrived at CCSP
1340	Collected
1350	Left CCSP
1500	Arrived at GRFC
1510	Collected
1520	Left GRFC
1600	end of Day

Water Quality Sampling Form

Date: 1/21/2022 Project: Grande Ronde Basin Water Quality Assessment
Name of Person Sampling: Shiloh Simrell

Date of last calibration for YSI Meter: 1/20/2022
Activity Description: Water Sampling Activity Start Time: 0800 Activity Stop Time: 1600

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	Cond SPC uS/cm	DO	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
GRMW-GRIC	GR high flow	0820	IPad	419-422	1.6	101.9	95.8% 11.85 mg/L	7.93/ 179.8	21	3ft	in situ	Sunny collect 3ft from bank
GRMW-CCML	CC med flow	0915	IPad	423-425	-0.0	113.3	91.9% 12.50 mg/L	7.13 153.5	9	≈6ft	insitu pole	Sunny Iced over, collected under Bridge in open
GRMW-GRML	GR med high flow	0955	IPad	426-428	-0.0	112.4	95.8 13.02	7.17 336.6	11	≈6ft	exsitu Van dorn	Sunny Iced over 8ft from bank
GRMW-GR82	GR med flow	1050	IPad	430-433	0.2	108.9	91.1 12.33	7.37 334.6	14	2ft	insitu	mid column 5ft from bank mid column/channel
GRMW-WCCL	WC med flow	1125	IPad	435-437	2.4	104.4	91.1 11.58	7.05 324.1	36	≈5ft	insitu pole	mid column/channel
GRMW-LCPL	LC no flow	1215	IPad	438-443	2.1	488.4	85.2 10.90	7.26 287.3	4	.5ft	insitu	mid column channel
GRMW-CCWL	CC low flow	1235	IPad	444-447	0.1	106.0	92.6 12.54	7.71 289.2	14.4	2ft	insitu	mid column ICE 3ft from bank
GRMW-CCUB	CC high flow	1305	IPad	448-451	0.4	95.5	97.9 13.12	7.55 309.4	2.68	1 ft	insitu	mid column/channel
GRMW-CCSP	CC high flow	1340	IPad	452-455	1.9	75.1	98.1 12.39	7.58 332.4	2.89	1ft	insitu	mid column 3ft from bank
GRMW-GRFC	GR high flow	1510	IPad	456-459	0.1	91.2	92.5 12.18	7.73 296.8	3.06	2ft	insitu	Ice mid column 2ft from bank

Daily Log

PROJECT NAME: Grande Ronde Basin Water Quality Assessment DATE: 4/5/22

ADDRESS: PERSONNEL: Shiloh Simrell

WEATHER: Wind Direction/speed SUNNY CLOUDY RAIN ? TEMPERATURE: °F 44

TIME	COMMENTS
0715	Left AP
0730	Arrived at GRLC
0745	Collected / FD / Pest-herb
0800	Left GRLC
0825	Arrived at GR82
0840	Collected / Pest-herb / Pest-herb duplicate
0855	Left GR82
0910	Arrived at WCCL
0920	Collected
0935	Left WCCL
1000	Arrived at CCML
1020	Collected
1040	Left CCML
1045	Arrived at GRML
1100	Collected
1120	Left GRML
1145	Arrived at LCPL
1155	Collected
1205	Left LCPL
1210	Arrived at CCWL
1220	Collected / Pest-herb
1235	Left CCWL
1310	Arrived at CCSP
1315	Collected
1325	Left CCSP
1345	Arrived at CCUB
1355	Collected / MS/MSD / Pest-herb
1405	Left CCUB
1450	Arrived at GRFC
1500	Collected
1510	Left GRFC
1600	end of day

SS

Water Quality Sampling Form

Date: 4/5/2022 Project: Grande Ronde Basin Water Quality Assessment
Name of Person Sampling: Shiloh Simrell

Date of last calibration for YSI Meter: 4/4/2022
Activity Description: Water Sampling Activity Start Time: 0715 Activity Stop Time: 1600

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	Cond SPC µS/cm	DO	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
GRIC	GR med flow	0745	IPad	0586–0589	4.2	58.3	100.3% 12.01mg/L	7.52/ 206.1	8.11	3ft	insitu	4ft from bank cloudy
GR82	GR med flow	0840	IPad	0590–0593	6.7	72.7	99.5% 11.20mg/L	7.27/ 231.4	11.3	3ft	insitu	5ft from bank partly sunny
WCCL	WC med flow	0920	IPad	0594–0596	3.7	79.2	95.3% 11.60mg/L	7.26/ 320.9	13.3	≈5ft	insitu sampling pole	mid channel windy / partly sunny
CCML	CC low flow	1020	IPad	0597–0599	7.0	92.6	97.2% 10.86mg/L	7.39/ 301.9	17.3	≈6ft	insitu sampling pole	mid channel windy/partly sunny
GRML	GR high flow	1100	IPad	0600–0602	4.9	57.5	98.4% 11.60mg/L	6.96/ 218.2	8.0	≈6ft	exsitu vandorn	mid channel snow windy / partly sunny
LCPL	LC low flow	1155	IPad	0603–0605	8.0	327.7	76.9% 8.38mg/L	6.86/ 332.9	3.76	≈4ft	insitu sampling pole	mid channel / column
CCWL	CC med flow	1220	IPad	0606–0608	5.4	69.9	104.5% 12.18mg/L	7.57/ 330.8	8.29	≈5ft	insitu sampling pole	mid channel
CCSP	CC high flow	1315	IPad	0609–0612	3.8	62.4	97.2% 11.59mg/L	7.55/ 259.6	3.88	1ft	insitu	4ft from bank mid column
CCUB	CC high flow	1355	IPad	0613–0616	4.2	63.4	102.1% 12.24mg/L	7.63/ 282.9	3.28	1.5ft	insitu	4ft from bank mid column
GRFC	GR high flow	1500	IPad	0617–0620	5.3	71.6	99.6% 11.32mg/L	7.62/ 178.2	8.68	1.5ft	insitu	3ft from bank mid column

Daily Log

PROJECT NAME: Grande Ronde Basin Water Quality Assessment

DATE: 5/28/2022

ADDRESS:

PERSONNEL: Shiloh Simrell

WEATHER: Wind Direction/speed

SUNNY | CLOUDY | RAIN | ?

TEMPERATURE: °F 63

TIME	COMMENTS
0715	Start of day
0730	Arrived at GRIC
0740	Collected
0745	Left GRIC
0810	Arrived at GR82
0815	Collected
0825	Left GR82
0840	Arrived at WCCL
0850	Collected
0900	Left WCCL
0925	Arrived at CCML
0935	Collected
0945	Left CCML
0950	Arrived at GRML
1000	Collected
1020	Left GRML
1045	Arrived at LCPL
1055	Collected
1105	Left LCPL
1110	Arrived at CCWL
1120	Collected
1130	Left CCWL
1200	Arrived at CCSP
1210	Collected
1220	Left CCSP
1235	Arrived at CCUB
1245	Collected
1255	Left CCUB
1340	Arrived at GRFC
1345	Collected
1355	Left GRFC
1430	end of day

55

Water Quality Sampling Form

Date: 5/28/2022 Project: Grande Ronde Basin Water Quality Assessment
Name of Person Sampling: Shiloh Simmell

Date of last calibration for YSI Meter: 5/27/22
Activity Description: Water Sampling Activity Start Time: 0715 Activity Stop Time: 1430

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	Cond SPC us/cm	DO mg/L/%	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
GRMW-GRIC	GR/high flow	0740	IPad	0717-0720	8.9	51.7	10.26/97.5	7.58/282.2	6.92	2.5ft	insitu	Cloudy Collected 4ft mid column from bank
GRMW-GR82	GR/high flow	0815	IPad	0721-0724	11.2	57.9	9.63/96.5	7.40/224.6	9.21	3ft	insitu	collected 2ft from bank
GRMW-WCCL	WC/med flow	0850	IPad	0725-0727	9.9	91.6	9.78/95.1	7.21/274.0	7.33	~4ft	insitu sample pole	mid column/channel
GRMW-CCML	CC/med flow	0935	IPad	0728-0730	11.7	60.0	9.01/91.5	7.10/237.9	10.8	~5ft	insitu pole	mid column/channel
GRMW-GRML	GR/high flow	1000	IPad	0731-0733	9.7	52.4	10.24/99.2	7.29/228.5	7.47	~5ft	Exsitu wanderm	Mid column/channel
GRMW-LCPL	LC/no flow	1055	IPad	0734-0736	15.0	285.9	3.66/40.0	6.79/217.8	9.30	~5ft	insitu pole	mid column/channel
GRMW-CCWL	CC/med flow	1120	IPad	0737-0739	6.8	47.3	10.91/98.6	7.06/260.7	14.1	~6ft	insitu pole	rain mid column/channel
GRMW-CCSP	CC/high flow	1210	IPad	0740-0745	6.5	44.7	10.98/100.2	7.43/310.0	5.97	2ft	insitu	4ft from bank mid column
GRMW-CCUB	CC/high flow	1245	IPad	0746-0751	7.0	44.8	11.04/100.5	7.37/229.3	7.57	3ft	insitu	5ft from bank mid column
GRMW-GRFC	GR/high flow	1345	IPad	0752-0755	7.3	43.7	10.52/99.2	7.36/293.7	10.1	2.5ft	insitu	1 ft from bank / Mid column

Daily Log

PROJECT NAME: Grande Ronde Basin Water Quality Assessment

DATE: 9/30/2022

ADDRESS:

PERSONNEL: Shiloh Simrell

WEATHER: Wind Direction/speed

SUNNY / CLOUDY / RAIN / ?

TEMPERATURE: °F 60

TIME	COMMENTS
0700	Left AP
0720	Arrived at GRIC
0725	Collected / YSI
0735	Left GRIC
0755	Arrived at GR82
0805	Collected / YSI
0822	Left GR82
0834	Arrived at WCCL
0845	Collected / YSI
0900	Left WCCL
0930	Arrived at CCML
0940	Collected / YSI
0953	Left CCML
0959	Arrived at GRML
1010	Collected / YSI
1020	Left GRML
1045	Arrived at LCPL (no water)
1050	Left LCPL
1056	Arrived at CCWL
1105	Collected / YSI
1111	Left CCWL
1140	Arrived at CCSP
1150	Collected / YSI
1200	Left CCSP
1215	Arrived at CCUB
1225	Collected / YSI (MS/MSD)
1235	Left CCUB
1317	Arrived at GRFC
1325	Collected / YSI
1335	Left GRFC
1410	end of day

SS

Water Quality Sampling Form

Date: 9/30/2022 Project: Grande Ronde
Name of Person Sampling: Shiloh Simrell

Date of last calibration for YSI Meter: 9/29/22
Activity Description: Water Sampling Activity Start Time: 0700 Activity Stop Time: 1410

Sample Location ID	Waterbody	Collection Time	Coordinates	Photo numbers	Temp	Cond uS/cm	DO % / mg/L	PH/ORP	Turbidity	Depth	Collection Method	Notes (weather; sources; substrate)
GRMW-GRIC 09302022	GR low flow	0725	IPad	1058-1061	13.6	131.2	83.1% / 7.93	7.31 / 200.5	1.00	≈2 ft	insitu	Cloudy water clear small fish sampled 4ft from bank mid column
GRMW-GR82 09302022	GR low flow	0805	IPad	1062-1065	14.4	150.9	84.4% / 7.95	7.88 / 148.5	2.95	≈1ft	insitu	6ft from bank mid clear/cobble gravel column
GRMW-WCCL 09302022	WC low flow	0845	IPad	1066-1068	12.8	110.4	98.9% / 9.61	7.62 / 192.9	7.86	≈5ft	insitu sampling pole	mid column /Channe slightly turbid
GRMW-CCML 09302022	CC no flow	0940	IPad	1069-1071	15.4	134.7	62.0% / 5.70	7.20 / 210.7	3.04	≈4ft	insitu sampling pole	mid column/Channe partly sunny
GRMW-GRML 09302022	GR low flow	1010	IPad	1072-1075	15.3	139.8	92.4 / 8.51	7.92 / 236.0	1.67	≈2.5 ft	insitu	Cloudy / clear water algae observed small fish mid
GRMW-LCPL 09302022	LC no water	—	IPad	1077-1081	—	—	—	—	—	no water	—	cans/garbage 3ft fr in creek bottom bank
GRMW-CCWL 09302022	CC low flow	1105	IPad	1082-1085	14.7	108.2	94.3 / 8.79	7.55 / 228.7	2.43	≈3ft	insitu	3ft from bank sunny mid column log jam garbage
GRMW-CCSP 09302022	CC med flow	1150	IPad	1086-1089	11.7	38.9	102.2 / 10.02	7.82 / 224.4	1.41	≈1ft	insitu	sunny collected mid column/chan
GRMW-CCMB 09302022	CC med flow	1225	IPad	1090-1093	13.5	78.7	105.9 / 10.13	7.83 / 202.0	1.62	≈1ft	insitu	Cloudy collected mid column/ channe
GRMW-GRFC 09302022	GR med flow	1325	IPad	1094-1097	13.0	88.2	108.4 / 10.19	8.40 / 136.9	0.64	≈1ft	insitu	Cloudy collected mid channel, column

APPENDIX C
Photographs

PHOTOGRAPH 1 - Sampling event 3, Catherine Creek below the Union Wastewater Treatment Plant Outfall (CCUB) location, looking across Catherine Creek. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 2 - Sampling event 3, Catherine Creek below the Union Wastewater Treatment Plant Outfall (CCUB) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 3 - Sampling event 3, Catherine Creek below the Union Wastewater Treatment Plant Outfall (CCUB) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 4 - Sampling event 3, Catherine Creek at Wilkinson Lane (CCWL) location, looking across Catherine Creek. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 5 - Sampling event 3, Catherine Creek at Wilkinson Lane (CCWL) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 6 - Sampling event 3, Catherine Creek at Wilkinson Lane (CCWL) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

anderson perry & associates, inc.

GRANDE RONDE MODEL WATERSHED
GRANDE RONDE BASIN WATER QUALITY ASSESSMENT
DATA REPORT

SITE PHOTOGRAPHS 1

APPENDIX
C

PHOTOGRAPH 7 - Sampling event 3, Grande Ronde River - Highway 82 near Indian Creek (GR82) location, looking across the Grande Ronde River. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 8 - Sampling event 3, Grande Ronde River - Highway 82 near Indian Creek (GR82) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 9 - Sampling event 3, Grande Ronde River - Highway 82 near Indian Creek (GR82) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 10 - Sampling event 3, Grande Ronde River in Island City (GRIC) location, looking across Catherine Creek. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 11 - Sampling event 3, Grande Ronde River in Island City (GRIC) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 12 - Sampling event 3, Grande Ronde River in Island City (GRIC) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 13 - Sampling event 3, Ladd Creek at Peach Lane (LCPL) location, looking across Ladd Creek. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 14 - Sampling event 3, Ladd Creek at Peach Lane (LCPL) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 15 - Sampling event 3, Ladd Creek at Peach Lane (LCPL) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 16 - Sampling event 3, Catherine Creek Market Lane Bridge (CCML) location, looking across Catherine Creek. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 17 - Sampling event 3, Catherine Creek Market Lane Bridge (CCML) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 18 - Sampling event 3, Catherine Creek Market Lane Bridge (CCML) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 19 - Sampling event 3, Catherine Creek State Park (CCSP) location, looking across Catherine Creek. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 20 - Sampling event 3, Catherine Creek State Park (CCSP) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 21 - Sampling event 3, Catherine Creek State Park (CCSP) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 22 - Sampling event 3, Grande Ronde River near the confluence with Fly Creek (GRFC) location, looking across the Grande Ronde River. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 23 - Sampling event 3, Grande Ronde River near the confluence with Fly Creek (GRFC) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 24 - Sampling event 3, Grande Ronde River near the confluence with Fly Creek (GRFC) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 25 - Sampling event 3, Grande Ronde River at Market Lane (GRML) location, looking across the Grande Ronde River. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 26 - Sampling event 3, Grande Ronde River at Market Lane (GRML) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 27 - Sampling event 3, Grande Ronde River at Market Lane (GRML) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 28 - Sampling event 3, Willow Creek at Courtney Lane (WCCL) location, looking across Willow Creek. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 29 - Sampling event 3, Willow Creek at Courtney Lane (WCCL) location, looking upstream. Photo taken by Shiloh Simrell on March 9, 2021.

PHOTOGRAPH 30 - Sampling event 3, Willow Creek at Courtney Lane (WCCL) location, looking downstream. Photo taken by Shiloh Simrell on March 9, 2021.

APPENDIX D
Chain of Custody Forms

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 11/6/20 Page: 1 of: 1

Laboratory Project No (internal): 2011202

Project Name: Grande Ronde Basin Water Quality Assessment

Special Remarks:

Client: Anderson Perry and Associates, Inc.

Project No: 81-54

Address: 1901 N Fir Street

Collected by: Shiloh Simrell

City, State, Zip: LaGrande, OR, 97850

Location: Union County

Telephone: 541-963-8309

Report To (PM): Shiloh Simrell

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax: 541-963-5456

PM Email: SSimrell@andersonperry.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) | Dissolved (D)	Anions (IC)***	~~EDB (8011)~~	Total Phosphorus	Nitrogen, Ammonia	Alkalinity	Total Cyanide	Sulfide	Comments
1	GRMW-CCUB-11062020	11/6	9:30	W							X		X	X	X	X	X	X	X	X		
2	GRMW-CCWL-11062020	11/6	10:45	W							X		X	X	X	X	X	X	X	X		
3	GRMW-LCPL-11062020	11/6	11:20	W										X	X	X	X	X	X	X		Conventionals Only
4	GRMW-GRIC-11062020	11/6	1:45	W							X		X	X	X	X	X	X	X	X		
5	GRMW-GR82-11062020	11/6	12:40	W							X		X	X	X	X	X	X	X	X		
6																						
7																						
8																						
9																						
10																						

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* (Ag) Al (As) B Ba Be Ca (Cd) Co (Cr) (Cu) (Fe) (Hg) K Mg Mn Mo Na (Ni) (Pb) Sb (Se) Sr Sn Ti Tl U V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x Shiloh Simrell	11/9/20 8:30am	x	11/11/20 10:30
Relinquished	Date/Time	Received	Date/Time
x		x	

Turn-around Time:

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

ANALYTICAL REQUEST/CHAIN OF CUSTODY

Pacific Agricultural Laboratory
21830 S.W. Alexander Ln. • Sherwood, OR 97140
Tel 503.626.7943 • pacaglab.com

PAL Project # 203144

CLIENT INFO

Company Anderson Perry and Associates, Inc
Contact Shiloh Simrell
Address 1901 N Fir Street
City La Grande State OR Zip 97850
Telephone 541-963-8309 Mobile Phone
Email(s) ssimrell@andersonperry.com
Project # 81-54 Purchase Order #

Requested Analysis

PAL ID (Lab use only)	Client Sample ID	Sample Date	Sample Time	Sample Type	Container Type	No. of Containers	Pesticide/Herbicide Multi Residue screen					Comments
203144-01	GRMW-CCWB-11062020	11/6	9:30	Water	1L Amber	1	X					
" -02	GRMW-CCWL-11062020	11/6	10:45	water	1L Amber	1	X					
" -03	GRMW-GRIC-11062020	11/6	1:45	Water	1L Amber	1	X					
" -04	GRMW-GR82-11062020	11/6	12:40	Water	1L Amber	1	X					

Requested Turnaround Time

☒ Standard
☐ Rush _____ please specify

	DATE	TIME		DATE	TIME
Relinquished by: Shiloh Simrell SIGNATURE	11/9/20	8:30am	Received by Sedeno West SIGNATURE	11-11-20	2:47P
Relinquished by: SIGNATURE			Received by SIGNATURE		

Lab Comments:

All services performed by PAL are subject to the Standard Terms and Conditions on reverse side of this form.

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 1/13/2021 Page: 1 of: 1

Laboratory Project No (internal): 210125

Special Remarks:

Project Name: Grande Ronde Basin Water Quality Assessment

Project No: 81-54

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

City, State, Zip: LaGrande, OR 97850

Telephone: 541-963-8309

Fax: 541-963-5456

Collected by: Shiloh Simrell

Location: Union County

Report To (PM): Shiloh Simrell

PM Email: ssimrell@andersonperry.com

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) | Dissolved (D)	Anions (IC)***	Nitrogen: Ammonia	Total Phosphorus	Alkalinity	Total Cyanide	Sulfide	Comments
1 GRMW-CCUB-01132021	1/13/21	0845	W										X	X	X	X	X	X	X	Add hardness
2 GRMW-CCWL-01132021	1/13/21	0945	W										X	X	X	X	X	X	X	Add hardness
3 GRMW-LCPL-01132021	1/13/21	1030	W											X	X	X	X	X	X	Add hardness
4 GRMW-GRB2-01132021	1/13/21	1130	W										X	X	X	X	X	X	X	Add hardness
5 GRMW-GRIC-01132021	1/13/21	1230	W										X	X	X	X	X	X	X	Add hardness
6																				
7																				
8																				
9																				
10																				

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: (Ag) Al (As) B Ba Be Ca (Cd) Co (Cr) (Cu) (Fe) (Hg) K Mg Mn Mo Na (Ni) (Pb) Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	1/13/21 1:30pm	x	Carter Johnson	1/15/21 0938
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 3/10/2021 Page: 1 of: 1

Laboratory Project No (internal): 2103211

Project Name: Grande Ronde Basin Water Quality Assessment

Special Remarks:
Lab Filter

Changes per SS 3/12/21- gac

Client: Anderson Perry & Associates, Inc.

Project No: 81-54

Address: 1901 N Fir Street

Collected by: Shiloh Simrell

City, State, Zip: LaGrande, OR 97850

Location: Union County

Telephone: 541-963-8309

Report To (PM): Shiloh Simrell

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

Fax: 541-963-5456

PM Email: ssimrell@andersonperry.com

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) | Dissolved (D)	Anions (IC)***	EPA 8044	Total Phosphorus	Nitrogen: Ammonia	Alkalinity	Sulfide	Total Hardness	Comments
1 GRMW-GR82-03092021	3/9/21	0810	W	5								X		X	X	X	X	X	X	X	
2 GRMW-WCCL-03092021	3/9/21	0850	W	5								X		X	X	X	X	X	X	X	
3 GRMW-CCML-03092021	3/9/21	0940	W	5								X		X	X	X	X	X	X	X	
4 GRMW-GRML-03092021	3/9/21	1010	W	5								X		X	X	X	X	X	X	X	
5 GRMW-GRIC-03092021	3/9/21	1040	W	5								X		X	X	X	X	X	X	X	
6 GRMW-LCPL-03092021	3/9/21	1120	W	5								X		X	X	X	X	X	X	X	
7 GRMW-CCWL-03092021	3/9/21	1150	W	5								X		X	X	X	X	X	X	X	
8 GRMW-CCUB-03092021	3/9/21	1225	W	5								X		X	X	X	X	X	X	X	
9 GRMW-CCSP-03092021	3/9/21	1315	W	5								X		X	X	X	X	X	X	X	
10 GRMW-GRFC-03092021	3/9/21	1440	W	5								X		X	X	X	X	X	X	X	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day ☐ (specify)

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	3/10/21 11:45am	x	Carter Johnson	3/12/21 @0933
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 4/26/2021 Page: 1 of: 1

Laboratory Project No (internal): 2104388

Special Remarks: edit per DK 4/28/21 -CG

Project Name: Grande Ronde Basin Water Quality Assessment

Client: Anderson Perry & Associates, Inc.

Project No: 81-54

Address: 1901 N Fir Street

Collected by: Shiloh Simrell

City, State, Zip: LaGrande, OR 97850

Location: Union County

Telephone: 541-963-8309

Report To (PM): Shiloh Simrell

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

Fax: 541-963-5456

PM Email: ssimrell@andersonperry.com

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) | Dissolved (D)	Anions (IC)***	~~SPA (9045)~~	Sulfide	Nitrogen, Ammonia	Total Phosphorus	Alkalinity	Total Hardness	Comments
1 GRMW-GR82-04252021	4/25/21	0815	W	5								X	D	X	X	X	X	X	X	X	
2 GRMW-WCCL-04252021	4/25/21	0900	W	5								X		X	X	X	X	X	X	X	
3 GRMW-CCML-04252021	4/25/21	1000	W	5								X		X	X	X	X	X	X	X	
4 GRMW-GRML-04252021	4/25/21	1050	W	5								X		X	X	X	X	X	X	X	
5 GRMW-GRIC-04252021	4/25/21	1140	W	5								X		X	X	X	X	X	X	X	
6 GRMW-LCPL-04252021	4/25/21	1245	W	5								X		X	X	X	X	X	X	X	
7 GRMW-CCWL-04252021	4/25/21	1330	W	5								X		X	X	X	X	X	X	X	
8 GRMW-CCUB-04252021	4/25/21	1530	W	5								X		X	X	X	X	X	X	X	
9 GRMW-CCSP-04252021	4/25/21	1445	W	5								X		X	X	X	X	X	X	X	
10 GRMW-GRFC-04252021	4/25/21	1645	W	5								X		X	X	X	X	X	X	X	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	4/26/21 9:00am	x	Carter Johnson	4/28/21 @ 1105
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

ANALYTICAL REQUEST/CHAIN OF CUSTODY

Pacific Agricultural Laboratory
21830 S.W. Alexander Ln. • Sherwood, OR 97140
Tel 503.626.7943 • pacaglab.com

Form F011, Rev 04

Page 1 of 1

PAL Project # 210479

CLIENT INFO

Company Anderson Perry & Associates, Inc.
Contact Shiloh Simrell
Address 1901 N Fir Street
City LaGrande State OR Zip 97850
Telephone 541-963-8309 Mobile Phone
Email(s) ssimrell@andersonperry.com
Project # 81-54 Purchase Order #

Requested Analysis

PAL ID (Lab use only)	Client Sample ID	Sample Date	Sample Time	Sample Type	Container Type	No. of Containers	Pesticide/Herbicide multi Residue Screen					Comments
210479-01	GRMW-CCUB-04252021	4/25/21	1530	Water	1L Amber	1	X					
" -02	GRMW-CCWL-04252021	4/25/21	1330	Water	1L Amber	1	X					
" -03	GRMW-GRIC-04252021	4/25/21	1140	Water	1L Amber	1	X					
" -04	GRMW-GR82-04252021	4/25/21	0815	Water	1L Amber	1	X					

Requested Turnaround Time

☒ Standard
☐ Rush _____ please specify

Relinquished by: Shiloh Simrell SIGNATURE DATE 4/26/21 TIME 9:00 am
Received by _____ SIGNATURE DATE 4-28-21 TIME 1000

Relinquished by: _____ SIGNATURE DATE _____ TIME _____
Received by _____ SIGNATURE DATE _____ TIME _____

Lab Comments: _____

All services performed by PAL are subject to the Standard Terms and Conditions on reverse side of this form.

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: ~~4/26/2021~~ 8/3/2021 Page: 1 of: 2

Laboratory Project No (internal): 2108063

Special Remarks: collected MS/MSD sample at CCUB.

Edit per SS 8/5/21- gac

Project Name: Grande Ronde Basin Water Quality Assessment

Project No: 81-54

Collected by: Shiloh Simrell

Location: Union County

Report To (PM): Shiloh Simrell

PM Email: ssimrell@andersonperry.com

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

City, State, Zip: LaGrande, OR 97850

Telephone: 541-963-8309

Fax: 541-963-5456

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T)	Metals** (EPA 6020 / 200.8) Dissolved (D)	Anions (IC)***	~~EDB (8011)~~	Sulfide	Nitrogen: Ammonia	Total Phosphorus	Alkalinity	Total Hardness	Comments
1 GRMW-GR82-08022021	8/2/21	1345	W	5									X		X	X	X	X	X	X	X	
2 GRMW-WCCL-08022021	8/2/21	1420	W	5									X		X	X	X	X	X	X	X	
3 GRMW-CCML-08022021	8/2/21	1515	W	5									X		X	X	X	X	X	X	X	
4 GRMW-GRML-08022021	8/2/21	1600	W	5									X		X	X	X	X	X	X	X	
5 GRMW-GRIC-08022021	8/2/21	1620	W	5									X		X	X	X	X	X	X	X	
6 GRMW-LCPL-08022021	8/2/21	1045	W	5									X		X	X	X	X	X	X	X	
7 GRMW-CCWL-08022021	8/2/21	1005	W	5									X		X	X	X	X	X	X	X	
8 GRMW-CCUB-08022021	8/2/21	0900	W	5 10									X		X	X	X	X	X	X	X	MS/MSD
9 ~~GRMW-CCUB-MS/MSD-08022021~~	8/2/21	0900	W	5									X		X	X	X	X	X	X	X	MS/MSD
10 GRMW-CCSP-08022021	8/2/21	0815	W	5									X		X	X	X	X	X	X	X	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time: ☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day ____ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	8/3/21 8:00am	x Justine Mantz	Justine Mantz	8/5 9:10
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: ~~4/26/2021~~ 8/3/2021 | Page: 2 of: 2 | Laboratory Project No (internal): 2108063

Special Remarks: collected MS/MSD sample at CCUB.

Project Name: Grande Ronde Basin Water Quality Assessment

Project No: 81-54

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

City, State, Zip: LaGrande, OR 97850

Telephone: 541-963-8309

Fax: 541-963-5456

Collected by: Shiloh Simrell

Location: Union County

Report To (PM): Shiloh Simrell

PM Email: ssimrell@andersonperry.com

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	~~EPA 300.1~~	Nitrogen, Ammonia	Sulfide	Total Phosphorus	Alkalinity	Total Hardness	Comments
1 GRMW-GRFC-08022021	8/2/21	1215	W	5									X		X	X	X	X	X	X	X	
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	8/3/21 8:00am	x Justine Mantz	Justine Mantz	8/5 9:10
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Cooler 1 of 2

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 10/25/2021 Page: 1 of: 1

Laboratory Project No (internal): 2110391

Project Name: Grande Ronde Basin Water Quality Assessment

Special Remarks:

Client: Anderson Perry & Associates, Inc.

Project No: 81-54

Address: 1901 N Fir Street

Collected by: Shiloh Simrell

City, State, Zip: LaGrande, OR 97850

Location: Union County

Telephone: 541-963-8309

Report To (PM): Shiloh Simrell

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax: 541-963-5456

PM Email: ssimrell@andersonperry.com

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Dissolved (D)	Total (T)	Anions (IC)	Nitrate+Nitrite	Sulfide	Total Phosphorus	Alkalinity	Total Hardness	Comments
1 GRMW-GR82-10232021	10/23/21	0820	W	5									X	X	X	X	X	X	X	X	
2 GRMW-WCCL-10232021	10/23/21	0855	W	5									X	X	X	X	X	X	X	X	
3 GRMW-CCML-10232021	10/23/21	0940	W	5									X	X	X	X	X	X	X	X	
4 GRMW-GRML-10232021	10/23/21	1015	W	10									X	X	X	X	X	X	X	X	Field Duplicate
5 GRMW-GRIC-10232021	10/23/21	1100	W	5									X	X	X	X	X	X	X	X	
6 GRMW-GRFC-10232021	10/23/21	1155	W	5									X	X	X	X	X	X	X	X	
7 GRMW-CCSP-10232021	10/23/21	1320	W	5									X	X	X	X	X	X	X	X	
8 GRMW-CCUB-10232021	10/23/21	1400	W	5									X	X	X	X	X	X	X	X	
9 GRMW-CCWL-10232021	10/23/21	1440	W	5									X	X	X	X	X	X	X	X	
10			~~W~~																		

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day ____ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Dana Kurtz	Dana Kurtz	10/25/21 12:30	x	Clare Gregg	10/27/21 930
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Cooler 1 of 2

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 01/21/2022 Page: 1 of: 1

Laboratory Project No (internal): 2201356

Special Remarks:

Project Name: Grande Ronde Basin Water Quality Assessment

Project No: 81-54

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

Collected by: Shiloh Simrell

City, State, Zip: LaGrande, OR 97850

Location: Union County, Oregon

Telephone: 541-963-8309

Report To (PM): Shiloh Simrell

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax: 541-963-5456

PM Email: ssimrell@andersonperry.com

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) Dissolved (D)	Anions (IC)*** ~~EPA 300.1~~	Sulfide	Nitrogen: Ammonia	Total Phosphorus	Alkalinity	Total Hardness	Comments
1 GRMW-GRIC-01212022	1/21/22	0820	W	10									X	X	X	X	X	X	X	X	MS/MSD
2 GRMW-CCML-01212022	1/21/22	0915	W	5									X	X	X	X	X	X	X	X	
3 GRMW-GRML-01212022	1/21/22	0955	W	5									X	X	X	X	X	X	X	X	
4 GRMW-GR82-01212022	1/21/22	1050	W	5									X	X	X	X	X	X	X	X	
5 GRMW-WCCL-01212022	1/21/22	1125	W	5									X	X	X	X	X	X	X	X	
6 GRMW-LCPL-01212022	1/21/22	1215	W	5									X	X	X	X	X	X	X	X	
7 GRMW-CCWL-01212022	1/21/22	1235	W	5									X	X	X	X	X	X	X	X	
8 GRMW-CCUB-01212022	1/21/22	1305	W	10									X	X	X	X	X	X	X	X	Field Duplicate
9 GRMW-CCSP-01212022	1/21/22	1340	W	5									X	X	X	X	X	X	X	X	
10 GRMW-GRFC-01212022	1/21/22	1510	W	5									X	X	X	X	X	X	X	X	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, (W = Water) DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	1/24/22 0800	x Justine Mantz	Justine Mantz	1/25/22 10:23
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

ANALYTICAL REQUEST/CHAIN OF CUSTODY

Pacific Agricultural Laboratory
21830 S.W. Alexander Ln. • Sherwood, OR 97140
Tel 503.626.7943 • pacaglab.com

Form F011, Rev 04

Page 1 of 1

PAL Project # 220410

CLIENT INFO

Company Anderson Perry & Associates, Inc.
Contact Shiloh Simrell
Address 1901 N Fir Street
City LaGrande State OR Zip 97850
Telephone 541-963-8309 Mobile Phone
Email(s) ssimrell@andersonperry.com
Project # 81-54 Purchase Order #

Requested Analysis

Pesticide/Herbicide multi residue screen

Requested Turnaround Time

☒ Standard
☐ Rush _____ please specify

PAL ID (Lab use only)	Client Sample ID	Sample Date	Sample Time	Sample Type	Container Type	No. of Containers	Pesticide/Herbicide multi residue screen	Comments
220410-01	GRMW-GRIC-04052022	4/5/22	0745	Water	1L Amber	1	X	
" -02	GRMW-GRB2-04052022	4/5/22	0840	Water	1L Amber	~~2~~ 1	X	
" -03	GRMW-CCWL-04052022	4/5/22	1220	Water	1L Amber	1	X	
" -04	GRMW-CCUB-04052022	4/5/22	1355	Water	1L Amber	1	X	
" -05	GRMW-GRB2-04052022-FD	4/5/22	0840	Water	1L Amber	1	X	

Relinquished by: Shiloh Simrell SIGNATURE DATE 4/6/22 TIME 1315

Relinquished by: _____ SIGNATURE DATE _____ TIME _____

Lab Comments: _____

Received by _____ SIGNATURE DATE 4.8.22 TIME 1002

Received by _____ SIGNATURE DATE _____ TIME _____

All services performed by PAL are subject to the Standard Terms and Conditions on reverse side of this form.

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 4/6/2022 Page: 1 of: X2 DLC

Laboratory Project No (internal): 2204119

Special Remarks:

Project Name: Grande Ronde Basin Water Quality Assessment

Project No: 81-54

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

City, State, Zip: LaGrande, OR 97850

Telephone: 541-963-8309

Fax:

Collected by: Shiloh Simrell

Location: Union County, Oregon

Report To (PM): Shiloh Simrell

PM Email: ssimrell@andersonperry.com

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) / Dissolved (D)	Anions (IC)*** EPA 300.1	Sulfide	Nitrogen: Ammonia	Total Phosphorus	Alkalinity	Total Hardness	Comments
1 GRMW-GRIC-04052022	4/5/22	0745	W	10									X	X	X	X	X	X	X	X	MS/MSD
2 GRMW-GR82-04052022	4/5/22	0840	W	5									X	X	X	X	X	X	X	X	
3 GRMW-WCCL-04052022	4/5/22	0920	W	5									X	X	X	X	X	X	X	X	
4 GRMW-CCML-04052022	4/5/22	1020	W	5									X	X	X	X	X	X	X	X	
5 GRMW-GRML-04052022	4/5/22	1100	W	5									X	X	X	X	X	X	X	X	
6 GRMW-LCPL-04052022	4/5/22	1155	W	5									X	X	X	X	X	X	X	X	
7 GRMW-CCWL-04052022	4/5/22	1220	W	5									X	X	X	X	X	X	X	X	
8 GRMW-CCSP-04052022	4/5/22	1315	W	5									X	X	X	X	X	X	X	X	
9 GRMW-CCUB-04052022	4/5/22	1355	W	~~10~~ 5 DLC									X	X	X	X	X	X	X	X	~~Field Duplicate~~ DLC
10 GRMW-GRFC-04052022	4/5/22	1500	W	5									X	X	X	X	X	X	X	X	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, (W = Water), DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day _____ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	4/6/22 1315	x Alex Trejo	Alex Trejo	4/7/22 10:09
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Cooler 1 of 2

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 4/6/2022 Page: 2 of: 2

Laboratory Project No (internal): 2204119

Project Name: Grande Ronde Basin Water Quality Assessment

Special Remarks:

Project No: 81-54

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

City, State, Zip: La Grande, OR 97850

Telephone: 541-963-8309

Fax:

Collected by: Shiloh Simrell

Location: Union County, Oregon

Report To (PM): Shiloh Simrell

PM Email: ssimrell@andersonperry.com

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) / Dissolved (D)	Anions (IC)***	TDS (EPA 160.1)	Nitrogen, Ammonia	Sulfide	Total Phosphorus	Alkalinity	Total Hardness	Comments
1	GRMW-CCUB-04052022-FD	4/5/22	1355	W	5									X	X	X	X	X	X	X	X	
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, (W = Water), DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day ____ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	4/6/22 1315	x Alex Trejo	Alex Trejo	4/7/22 10:09
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Cooler 1 of 2

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 5/31/2022 Page: 1 of: 2

Laboratory Project No (internal): ~~220611~~ 2206010 cg 6/1/22

Special Remarks:

Project Name: Grande Ronde Basin Water Quality Assessment

Project No: 81-54

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

City, State, Zip: LaGrande, OR 97850

Telephone: 541-963-8309

Collected by: Shiloh Simrell

Location: Union County, Oregon

Report To (PM): Shiloh Simrell

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: SSimrell@andersonperry.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) (Dissolved (D))	Anions (IC)***	EPA 300.0	Sum Nitrogen: Ammonia	Total Phosphorus	Alkalinity	Total Hardness	Comments
1	GRMW-CCSP-05282022	5/28/22	1210	W	5									X	X	X	X	X	X	X	X	
2	GRMW-CCUB-05282022	5/28/22	1245	W	5									X	X	X	X	X	X	X	X	
3	GRMW-CCWL-05282022	5/28/22	1120	W	5									X	X	X	X	X	X	X	X	
4	GRMW-LCPL-05282022	5/28/22	1055	W	5									X	X	X	X	X	X	X	X	
5	GRMW-GRIC-05282022	5/28/22	0740	W	5									X	X	X	X	X	X	X	X	
6	GRMW-GRML-05282022	5/28/22	1000	W	5									X	X	X	X	X	X	X	X	
7	GRMW-CCML-05282022	5/28/22	0935	W	5									X	X	X	X	X	X	X	X	
8	GRMW-WCCL-05282022	5/28/22	0850	W	5									X	X	X	X	X	X	X	X	
9	GRMW-GR82-05282022	5/28/22	0815	W	5									X	X	X	X	X	X	X	X	
10	GRMW-GRFC-05282022	5/28/22	1345	W	5									X	X	X	X	X	X	X	X	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, (W = Water), DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al (As) B Ba Be Ca Cd Co (Cr) (Cu) (Fe) Hg K Mg Mn Mo Na (Ni) Pb Sb (Se) Sr Sn Ti Tl V (Zn)

***Anions (Circle): Nitrate Nitrite (Chloride) Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	5/31/22 1000	x Yeyi Chen	Yeyi	6/1/22 10:08
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

Cooler 1 of 2

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 5/31/2022 Page: 2 of: 2

Laboratory Project No (internal): ~~220611~~ 2206010 cg 6/1/22

Project Name: Grande Ronde Basin Water Quality Assessment

Special Remarks:

Project No: 81-54

Collected by: Shiloh Simrell

Location: Union County, Oregon

Report To (PM): Shiloh Simrell

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

PM Email: SSimrell@andersonperry.com

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

City, State, Zip: LaGrande, OR 97850

Telephone: 541-963-8309

Fax:

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) Dissolved (D)	Anions (IC)***	EDB (504.1) Nitrogen: Ammonia	Sulfide	Total Phosphorus	Alkalinity	Total Hardness	Comments
1	GRMW-CCUB-FD-05282022	5/28/22	1245	W	5									X	X	X	X	X	X	X	X
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:

☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	5/31/22 1000	x Yeyi Chen	Yeyi	6/1/22 10:08
Relinquished (Signature) x	Print Name	Date/Time	Received (Signature) x	Print Name	Date/Time

CHAIN OF CUSTODY RECORD

Omega COCID 1389 | PAGE: 1 | OF: 2

ADDRESS
Fremont Analytical, Inc.
3600 Fremont Ave. N.
Seattle, WA 98103
TEL: 206-352-3790
FAX: 206-352-7178
Website: www.fremontanalytical.com

SUB CONTRATOR: **AmTest** COMPANY: **AmTest**

ADDRESS: **13600 NE 126th Place**

CITY, STATE, ZIP: **Kirkland, WA 98034**

PHONE: FAX: EMAIL:

ACCOUNT #:

SPECIAL INSTRUCTIONS / COMMENTS:

Standard TAT. Please note hold time. Email results to Brianna Barnes at bbarnes@fremontanalytical.com and Matt Langston at mlangston@fremontanalytical.com.

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
8940 1	2206010-001D	GRMW-CCSP-0528	500 ML HDPE Z	Water	5/28/2022 12:10:00 PM	1	
	C-SULFIDE						
41 2	2206010-002D	GRMW-CCU8-0528	500 ML HDPE Z	Water	5/28/2022 12:45:00 PM	1	
	C-SULFIDE						
42 3	2206010-003D	GRMW-CCWL-0528	500 ML HDPE Z	Water	5/28/2022 11:20:00 AM	1	
	C-SULFIDE						
43 4	2206010-004D	GRMW-LCPL-05282	500 ML HDPE Z	Water	5/28/2022 10:55:00 AM	1	
	C-SULFIDE						
44 5	2206010-005D	GRMW-GRIC-05282	500 ML HDPE Z	Water	5/28/2022 7:50:00 AM	1	
	C-SULFIDE						
45 6	2206010-006D	GRMW-GRML-0528	500 ML HDPE Z	Water	5/28/2022 10:00:00 AM	1	
	C-SULFIDE						
46 7	2206010-007D	GRMW-CCML-0528	500 ML HDPE Z	Water	5/28/2022 9:35:00 AM	1	
	C-SULFIDE						
47 8	2206010-008D	GRMW-WCCL-0528	500 ML HDPE Z	Water	5/28/2022 8:50:00 AM	1	
	C-SULFIDE						
48 9	2206010-009D	GRMW-GR82-0528	500 ML HDPE Z	Water	5/28/2022 8:15:00 AM	1	
	C-SULFIDE						

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Yeyi Chen	6/2/22	9:16	F.G.	6/2/22	11:41
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 4.0 °C Attempt to Cool ? _____

Comments: _____

CHAIN OF CUSTODY RECORD

Omega COCID 1389 | PAGE: 2 | OF: 2

ADDRESS
Fremont Analytical, Inc.
3600 Fremont Ave. N.
Seattle, WA 98103
TEL: 206-352-3790
FAX: 206-352-7178
Website: www.fremontanalytical.com

SUB CONTRATOR: **AmTest** COMPANY: **AmTest**	SPECIAL INSTRUCTIONS / COMMENTS:
ADDRESS: **13600 NE 126th Place**	Standard TAT. Please note hold time. Email results to Brianna Barnes at bbarnes@fremontanalytical.com and Matt Langston at mlangston@fremontanalytical.com.
CITY, STATE, ZIP: **Kirkland, WA 98034**	
PHONE: FAX: EMAIL:	
ACCOUNT #:	

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
10	2206010-010D	GRMW-GRFC-0528	500 ML HDPE Z	Water	5/28/2022 1:45:00 PM	1	
	C-SULFIDE						
11	2206010-011D	GRMW-CCU8-FD-0	500 ML HDPE Z	Water	5/28/2022 12:45:00 PM	1	
	C-SULFIDE						

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Yiqi Chen	6/2/22	9:16	F.G.	6/2/22	11:41
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 4.8 °C Attempt to Cool ? _____

Comments: _____

Cooler 1 of 2

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 10/3/2022 Page: 1 of: 1

Laboratory Project No (internal): ~~2205~~ 2210050

Special Remarks:

Project Name: Grande Ronde Basin Water Quality Assessment

Project No: 81-54

Client: Anderson Perry & Associates, Inc.

Address: 1901 N Fir Street

City, State, Zip: LaGrande, OR 97850

Telephone: 541-963-8309

Fax:

Collected by: Shiloh Simrell

Location: Union County, Oregon

Report To (PM): Shiloh Simrell

PM Email: ssimrell@andersonperry.com

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Dissolved (D)	Total (T)	Anions (IC)***	~~EDB (504.1)~~ Nitrogen: Ammonia	Sulfide	Total Phosphorus	Alkalinity	Total Hardness	Comments
1 GRMW-GRIC-09302022	9/30/22	0725	W	5									X	X	X	X	X	X	X	X	
2 GRMW-GRB2-09302022	9/30/22	0805	W	5									X	X	X	X	X	X	X	X	
3 GRMW-WCCL-09302022	9/30/22	0845	W	5									X	X	X	X	X	X	X	X	
4 GRMW-CCML-09302022	9/30/22	0940	W	5									X	X	X	X	X	X	X	X	
5 GRMW-GRML-09302022	9/30/22	1010	W	5									X	X	X	X	X	X	X	X	
6 GRMW-CCWL-09302022	9/30/22	1105	W	5									X	X	X	X	X	X	X	X	
7 GRMW-CCSP-09302022	9/30/22	1150	W	5									X	X	X	X	X	X	X	X	
8 GRMW-CCUB-09302022	9/30/22	1225	W	10									X	X	X	X	X	X	X	X	MS/MSD
9 GRMW-GRFC-09302022	9/30/22	1325	W	5									X	X	X	X	X	X	X	X	
10																					

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day ☐ 3 Day ☐ Same Day ☐ 2 Day (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x Shiloh Simrell	Shiloh Simrell	10/3/22 - 1045	x Katherine Porter	Katherine Porter	10/4 9:19
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

CHAIN OF CUSTODY RECORD

Omega COCID 1501 | PAGE: 1 | OF: 1

22J0054

ADDRESS
Fremont Analytical, Inc.
3600 Fremont Ave. N.
Seattle, WA 98103
TEL: 206-352-3790
FAX: 206-352-7178
Website: www.fremontanalytical.com

SUB CONTRATOR: **ARI** COMPANY: **Analytical Resources Inc.**

ADDRESS: **4611 South 134th Place, Suite 100**

CITY, STATE, ZIP: **Tukwila, WA 98168**

PHONE: **(206) 695-6200** FAX: EMAIL:

ACCOUNT #:

SPECIAL INSTRUCTIONS / COMMENTS:

Standard TAT. Please email results to Brianna Barnes at bbarnes@fremontanalytical.com and Matt Langston at mlangston@fremontanalytical.com.

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	2210050-001D	GRMW-GRIC-0930	500 ML HDPE Z	Water	9/30/2022 7:25:00 AM	1	
	C-SULFIDE (A4500-S2-F)						
2	2210050-002D	GRMW-GRB2-0930	500 ML HDPE Z	Water	9/30/2022 8:05:00 AM	1	
	C-SULFIDE (A4500-S2-F)						
3	2210050-003D	GRMW-WCCL-0930	500 ML HDPE Z	Water	9/30/2022 8:45:00 AM	1	
	C-SULFIDE (A4500-S2-F)						
4	2210050-004D	GRMW-CCML-0930	500 ML HDPE Z	Water	9/30/2022 9:40:00 AM	1	
	C-SULFIDE (A4500-S2-F)						
5	2210050-005D	GRMW-GRML-0930	500 ML HDPE Z	Water	9/30/2022 10:10:00 AM	1	
	C-SULFIDE (A4500-S2-F)						
6	2210050-006D	GRMW-CCWL-0930	500 ML HDPE Z	Water	9/30/2022 11:05:00 AM	1	
	C-SULFIDE (A4500-S2-F)						
7	2210050-007D	GRMW-CCSP-0930	500 ML HDPE Z	Water	9/30/2022 11:50:00 AM	1	
	C-SULFIDE (A4500-S2-F)						
8	2210050-008D	GRMW-CCUB-0930	500 ML HDPE Z	Water	9/30/2022 12:25:00 PM	2	MS/MSD
	C-SULFIDE (A4500-S2-F)						
9	2210050-009D	GRMW-GRFC-0121	500 ML HDPE Z	Water	9/30/2022 1:25:00 PM	1	
	C-SULFIDE (A4500-S2-F)						

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
			[signature]	10/4/22	13:17
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ **RUSH** Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

APPENDIX E
Chemistry Data Report Including Case Narrative and Raw Data

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assessment
Work Order Number: 2011202

November 19, 2020

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 5 sample(s) on 11/11/2020 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Cyanide by SM 4500-CN C, E
Dissolved Mercury by EPA Method 245.1
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *11/19/2020*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess
Work Order: 2011202

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2011202-001	GRMW-CCUB-11062020	11/06/2020 9:30 AM	11/11/2020 10:30 AM
2011202-002	GRMW-CCWL-11062020	11/06/2020 10:45 AM	11/11/2020 10:30 AM
2011202-003	GRMW-LCPL-11062020	11/06/2020 11:20 AM	11/11/2020 10:30 AM
2011202-004	GRMW-GRIC-11062020	11/06/2020 1:45 PM	11/11/2020 10:30 AM
2011202-005	GRMW-GR82-11062020	11/06/2020 12:40 PM	11/11/2020 10:30 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2011202**
Date: **11/19/2020**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assessment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2011202**
Date Reported: **11/19/2020**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 11/6/2020 9:30:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-001 **Matrix:** Water
Client Sample ID: GRMW-CCUB-11062020

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 30412		Analyst: SB
Naphthalene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
2-Methylnaphthalene	ND	0.0995	H	µg/L	1	11/18/2020 1:50:17 PM
1-Methylnaphthalene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Acenaphthylene	ND	0.0995	H	µg/L	1	11/18/2020 1:50:17 PM
Acenaphthene	ND	0.0995	H	µg/L	1	11/18/2020 1:50:17 PM
Fluorene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Phenanthrene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Anthracene	ND	0.0995	H	µg/L	1	11/18/2020 1:50:17 PM
Fluoranthene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Pyrene	ND	0.0995	H	µg/L	1	11/18/2020 1:50:17 PM
Benz(a)anthracene	ND	0.0995	H	µg/L	1	11/18/2020 1:50:17 PM
Chrysene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Benzo(b)fluoranthene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Benzo(k)fluoranthene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Benzo(a)pyrene	ND	0.0995	H	µg/L	1	11/18/2020 1:50:17 PM
Indeno(1,2,3-cd)pyrene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Dibenz(a,h)anthracene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Benzo(g,h,i)perylene	ND	0.0999		µg/L	1	11/16/2020 6:07:29 PM
Surr: 2-Fluorobiphenyl	95.9	50.8 - 146		%Rec	1	11/16/2020 6:07:29 PM
Surr: Terphenyl-d14	113	26.1 - 145		%Rec	1	11/16/2020 6:07:29 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 30425		Analyst: TN
Chloride	1.66	0.200	D	mg/L	2	11/16/2020 3:56:00 PM
Dissolved Mercury by EPA Method 245.1				Batch ID: 30440		Analyst: WF
Mercury	ND	0.100		µg/L	1	11/17/2020 3:39:47 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 30417		Analyst: CO
Arsenic	ND	0.500		µg/L	1	11/16/2020 9:11:18 PM
Cadmium	ND	0.200		µg/L	1	11/16/2020 9:11:18 PM
Chromium	ND	1.00		µg/L	1	11/16/2020 9:11:18 PM
Copper	14.6	1.00		µg/L	1	11/17/2020 5:54:53 PM
Iron	ND	100		µg/L	1	11/16/2020 9:11:18 PM
Lead	ND	0.500		µg/L	1	11/16/2020 9:11:18 PM
Nickel	ND	2.50		µg/L	1	11/16/2020 9:11:18 PM
Selenium	ND	5.00		µg/L	1	11/16/2020 9:11:18 PM

Analytical Report

Work Order: **2011202**
Date Reported: **11/19/2020**

Client: Anderson Perry & Associates, Inc.
Collection Date: 11/6/2020 9:30:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-001
Matrix: Water
Client Sample ID: GRMW-CCUB-11062020

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 30417		Analyst: CO
Silver	ND	0.250		µg/L	1	11/16/2020 9:11:18 PM
Zinc	2.78	2.50		µg/L	1	11/17/2020 5:54:53 PM
Total Alkalinity by SM 2320B				Batch ID: R63481		Analyst: WF
Alkalinity, Total (As CaCO3)	45.1	2.50		mg/L	1	11/17/2020 3:16:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 30408		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/13/2020 4:30:00 PM
Cyanide by SM 4500-CN C, E				Batch ID: 30441		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	11/18/2020 3:46:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 30395		Analyst: SS
Phosphorus, Total (As P)	ND	0.200		mg/L	1	11/13/2020 9:50:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R63397		Analyst: SS
Sulfide	ND	0.500		mg/L	1	11/13/2020 3:35:26 PM

Client: Anderson Perry & Associates, Inc. **Collection Date:** 11/6/2020 10:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-002 **Matrix:** Water
Client Sample ID: GRMW-CCWL-11062020

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 30412		Analyst: SB
Naphthalene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
2-Methylnaphthalene	ND	0.0993	H	µg/L	1	11/18/2020 2:11:39 PM
1-Methylnaphthalene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Acenaphthylene	ND	0.0993	H	µg/L	1	11/18/2020 2:11:39 PM
Acenaphthene	ND	0.0993	H	µg/L	1	11/18/2020 2:11:39 PM
Fluorene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Phenanthrene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Anthracene	ND	0.0993	H	µg/L	1	11/18/2020 2:11:39 PM
Fluoranthene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Pyrene	ND	0.0993	H	µg/L	1	11/18/2020 2:11:39 PM
Benz(a)anthracene	ND	0.0993	H	µg/L	1	11/18/2020 2:11:39 PM
Chrysene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Benzo(b)fluoranthene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Benzo(k)fluoranthene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Benzo(a)pyrene	ND	0.0993	H	µg/L	1	11/18/2020 2:11:39 PM
Indeno(1,2,3-cd)pyrene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Dibenz(a,h)anthracene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Benzo(g,h,i)perylene	ND	0.0995		µg/L	1	11/16/2020 6:28:47 PM
Surr: 2-Fluorobiphenyl	77.7	50.8 - 146		%Rec	1	11/16/2020 6:28:47 PM
Surr: Terphenyl-d14	94.3	26.1 - 145		%Rec	1	11/16/2020 6:28:47 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 30425		Analyst: TN
Chloride	2.45	0.200	D	mg/L	2	11/16/2020 4:19:00 PM
Dissolved Mercury by EPA Method 245.1				Batch ID: 30440		Analyst: WF
Mercury	ND	0.100		µg/L	1	11/17/2020 3:46:36 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 30417		Analyst: CO
Arsenic	ND	0.500		µg/L	1	11/16/2020 9:16:52 PM
Cadmium	ND	0.200		µg/L	1	11/16/2020 9:16:52 PM
Chromium	ND	1.00		µg/L	1	11/16/2020 9:16:52 PM
Copper	1.05	1.00		µg/L	1	11/17/2020 6:00:27 PM
Iron	ND	100		µg/L	1	11/16/2020 9:16:52 PM
Lead	ND	0.500		µg/L	1	11/16/2020 9:16:52 PM
Nickel	ND	2.50		µg/L	1	11/16/2020 9:16:52 PM
Selenium	ND	5.00		µg/L	1	11/16/2020 9:16:52 PM

Analytical Report

Work Order: **2011202**
Date Reported: **11/19/2020**

Client: Anderson Perry & Associates, Inc.
Collection Date: 11/6/2020 10:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-002
Matrix: Water
Client Sample ID: GRMW-CCWL-11062020

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 30417		Analyst: CO
Silver	ND	0.250		µg/L	1	11/16/2020 9:16:52 PM
Zinc	2.79	2.50		µg/L	1	11/17/2020 6:00:27 PM
Total Alkalinity by SM 2320B				Batch ID: R63481		Analyst: WF
Alkalinity, Total (As CaCO3)	50.0	2.50		mg/L	1	11/17/2020 3:16:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 30408		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/13/2020 4:36:00 PM
Cyanide by SM 4500-CN C, E				Batch ID: 30441		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	11/18/2020 3:59:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 30395		Analyst: SS
Phosphorus, Total (As P)	ND	0.200		mg/L	1	11/13/2020 9:52:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R63397		Analyst: SS
Sulfide	ND	0.500		mg/L	1	11/13/2020 3:35:26 PM

Analytical Report

Work Order: **2011202**
Date Reported: **11/19/2020**

Client: Anderson Perry & Associates, Inc.
Collection Date: 11/6/2020 11:20:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-003
Matrix: Water
Client Sample ID: GRMW-LCPL-11062020

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 30425		Analyst: TN
Chloride	12.2	1.00	D	mg/L	10	11/17/2020 11:17:00 AM
Total Alkalinity by SM 2320B				Batch ID: R63481		Analyst: WF
Alkalinity, Total (As CaCO3)	147	2.50		mg/L	1	11/17/2020 3:16:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 30408		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/13/2020 4:41:00 PM
Cyanide by SM 4500-CN C, E				Batch ID: 30441		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	11/18/2020 4:03:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 30395		Analyst: SS
Phosphorus, Total (As P)	0.233	0.200		mg/L	1	11/13/2020 9:55:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R63397		Analyst: SS
Sulfide	0.800	0.500		mg/L	1	11/13/2020 3:35:26 PM

Client: Anderson Perry & Associates, Inc. **Collection Date:** 11/6/2020 1:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-004 **Matrix:** Water
Client Sample ID: GRMW-GRIC-11062020

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 30412		Analyst: SB
Naphthalene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
2-Methylnaphthalene	ND	0.0992	H	µg/L	1	11/18/2020 2:33:01 PM
1-Methylnaphthalene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Acenaphthylene	ND	0.0992	H	µg/L	1	11/18/2020 2:33:01 PM
Acenaphthene	ND	0.0992	H	µg/L	1	11/18/2020 2:33:01 PM
Fluorene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Phenanthrene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Anthracene	ND	0.0992	H	µg/L	1	11/18/2020 2:33:01 PM
Fluoranthene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Pyrene	ND	0.0992	H	µg/L	1	11/18/2020 2:33:01 PM
Benz(a)anthracene	ND	0.0992	H	µg/L	1	11/18/2020 2:33:01 PM
Chrysene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Benzo(b)fluoranthene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Benzo(k)fluoranthene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Benzo(a)pyrene	ND	0.0992	H	µg/L	1	11/18/2020 2:33:01 PM
Indeno(1,2,3-cd)pyrene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Dibenz(a,h)anthracene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Benzo(g,h,i)perylene	ND	0.0989		µg/L	1	11/16/2020 6:50:01 PM
Surr: 2-Fluorobiphenyl	98.0	50.8 - 146		%Rec	1	11/16/2020 6:50:01 PM
Surr: Terphenyl-d14	97.4	26.1 - 145		%Rec	1	11/16/2020 6:50:01 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 30425		Analyst: TN
Chloride	2.52	0.200	D	mg/L	2	11/16/2020 5:05:00 PM
Dissolved Mercury by EPA Method 245.1				Batch ID: 30440		Analyst: WF
Mercury	ND	0.100		µg/L	1	11/17/2020 3:48:17 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 30417		Analyst: CO
Arsenic	ND	0.500		µg/L	1	11/16/2020 9:22:25 PM
Cadmium	ND	0.200		µg/L	1	11/16/2020 9:22:25 PM
Chromium	ND	1.00		µg/L	1	11/16/2020 9:22:25 PM
Copper	ND	1.00		µg/L	1	11/17/2020 6:06:00 PM
Iron	ND	100		µg/L	1	11/16/2020 9:22:25 PM
Lead	ND	0.500		µg/L	1	11/16/2020 9:22:25 PM
Nickel	4.06	2.50		µg/L	1	11/16/2020 9:22:25 PM
Selenium	ND	5.00		µg/L	1	11/16/2020 9:22:25 PM

Analytical Report

Work Order: **2011202**
Date Reported: **11/19/2020**

Client: Anderson Perry & Associates, Inc.
Collection Date: 11/6/2020 1:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-004
Matrix: Water
Client Sample ID: GRMW-GRIC-11062020

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 30417		Analyst: CO
Silver	ND	0.250		µg/L	1	11/16/2020 9:22:25 PM
Zinc	3.19	2.50		µg/L	1	11/17/2020 6:06:00 PM
Total Alkalinity by SM 2320B				Batch ID: R63481		Analyst: WF
Alkalinity, Total (As CaCO3)	55.5	2.50		mg/L	1	11/17/2020 3:16:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 30408		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/13/2020 4:46:00 PM
Cyanide by SM 4500-CN C, E				Batch ID: 30441		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	11/18/2020 4:06:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 30395		Analyst: SS
Phosphorus, Total (As P)	ND	0.200		mg/L	1	11/13/2020 10:03:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R63397		Analyst: SS
Sulfide	ND	0.500		mg/L	1	11/13/2020 3:35:26 PM

Client: Anderson Perry & Associates, Inc. **Collection Date:** 11/6/2020 12:40:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-005 **Matrix:** Water
Client Sample ID: GRMW-GR82-11062020

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 30412		Analyst: SB
Naphthalene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
2-Methylnaphthalene	ND	0.0987	H	µg/L	1	11/18/2020 2:54:23 PM
1-Methylnaphthalene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Acenaphthylene	ND	0.0987	H	µg/L	1	11/18/2020 2:54:23 PM
Acenaphthene	ND	0.0987	H	µg/L	1	11/18/2020 2:54:23 PM
Fluorene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Phenanthrene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Anthracene	ND	0.0987	H	µg/L	1	11/18/2020 2:54:23 PM
Fluoranthene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Pyrene	ND	0.0987	H	µg/L	1	11/18/2020 2:54:23 PM
Benz(a)anthracene	ND	0.0987	H	µg/L	1	11/18/2020 2:54:23 PM
Chrysene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Benzo(b)fluoranthene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Benzo(k)fluoranthene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Benzo(a)pyrene	ND	0.0987	H	µg/L	1	11/18/2020 2:54:23 PM
Indeno(1,2,3-cd)pyrene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Dibenz(a,h)anthracene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Benzo(g,h,i)perylene	ND	0.100		µg/L	1	11/16/2020 7:11:15 PM
Surr: 2-Fluorobiphenyl	104	50.8 - 146		%Rec	1	11/16/2020 7:11:15 PM
Surr: Terphenyl-d14	114	26.1 - 145		%Rec	1	11/16/2020 7:11:15 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 30425		Analyst: TN
Chloride	2.38	0.200	D	mg/L	2	11/16/2020 5:28:00 PM
Dissolved Mercury by EPA Method 245.1				Batch ID: 30440		Analyst: WF
Mercury	ND	0.100		µg/L	1	11/17/2020 3:49:58 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 30417		Analyst: CO
Arsenic	ND	0.500		µg/L	1	11/16/2020 9:27:59 PM
Cadmium	ND	0.200		µg/L	1	11/16/2020 9:27:59 PM
Chromium	ND	1.00		µg/L	1	11/16/2020 9:27:59 PM
Copper	1.28	1.00		µg/L	1	11/17/2020 6:11:34 PM
Iron	ND	100		µg/L	1	11/16/2020 9:27:59 PM
Lead	ND	0.500		µg/L	1	11/16/2020 9:27:59 PM
Nickel	ND	2.50		µg/L	1	11/16/2020 9:27:59 PM
Selenium	ND	5.00		µg/L	1	11/16/2020 9:27:59 PM

Analytical Report

Work Order: **2011202**
Date Reported: **11/19/2020**

Client: Anderson Perry & Associates, Inc.
Collection Date: 11/6/2020 12:40:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2011202-005
Matrix: Water
Client Sample ID: **GRMW-GR82-11062020**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals by EPA Method 200.8				Batch ID: 30417		Analyst: CO
Silver	ND	0.250		µg/L	1	11/16/2020 9:27:59 PM
Zinc	ND	2.50		µg/L	1	11/16/2020 9:27:59 PM
Total Alkalinity by SM 2320B				Batch ID: R63481		Analyst: WF
Alkalinity, Total (As CaCO3)	65.3	2.50		mg/L	1	11/17/2020 3:16:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 30408		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/13/2020 4:51:00 PM
Cyanide by SM 4500-CN C, E				Batch ID: 30441		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	11/18/2020 4:10:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 30395		Analyst: SS
Phosphorus, Total (As P)	ND	0.200		mg/L	1	11/13/2020 10:13:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R63397		Analyst: SS
Sulfide	ND	0.500		mg/L	1	11/13/2020 3:35:26 PM

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R63481**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **11/17/2020**	RunNo: **63481**
Client ID: **MBLKW**	Batch ID: **R63481**		Analysis Date: **11/17/2020**	SeqNo: **1274218**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R63481**	SampType: **LCS**	Units: **mg/L**	Prep Date: **11/17/2020**	RunNo: **63481**
Client ID: **LCSW**	Batch ID: **R63481**		Analysis Date: **11/17/2020**	SeqNo: **1274219**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102	2.50	100.0	0	102	99.6	108				

Sample ID: **2011202-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/17/2020**	RunNo: **63481**
Client ID: **GRMW-CCUB-1106202**	Batch ID: **R63481**		Analysis Date: **11/17/2020**	SeqNo: **1274221**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	43.1	2.50						45.08	4.44	20	

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-30408**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/13/2020**			RunNo: **63403**		
Client ID: **MBLKW**	Batch ID: **30408**					Analysis Date: **11/13/2020**			SeqNo: **1272399**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.240	0.100									

Sample ID: **LCS-30408**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/13/2020**			RunNo: **63403**		
Client ID: **LCSW**	Batch ID: **30408**					Analysis Date: **11/13/2020**			SeqNo: **1272400**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.413	0.100	0.5000	0	82.6	74.1	109				B

Sample ID: **2011194-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/13/2020**			RunNo: **63403**		
Client ID: **BATCH**	Batch ID: **30408**					Analysis Date: **11/13/2020**			SeqNo: **1272404**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2011194-001AMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/13/2020**			RunNo: **63403**		
Client ID: **BATCH**	Batch ID: **30408**					Analysis Date: **11/13/2020**			SeqNo: **1272405**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.511	0.100	0.5000	0.02800	96.6	38.8	131				B

Sample ID: **2011194-001AMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/13/2020**			RunNo: **63403**		
Client ID: **BATCH**	Batch ID: **30408**					Analysis Date: **11/13/2020**			SeqNo: **1272406**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.515	0.100	0.5000	0.02800	97.4	38.8	131	0.5110	0.780	30	B

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Cyanide by SM 4500-CN C, E

Sample ID: **MB-30441** SampType: **MBLK** Units: **mg/L** Prep Date: **11/17/2020** RunNo: **63501**
Client ID: **MBLKW** Batch ID: **30441** Analysis Date: **11/18/2020** SeqNo: **1274561**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	ND	0.0500									

Sample ID: **LCS-30441** SampType: **LCS** Units: **mg/L** Prep Date: **11/17/2020** RunNo: **63501**
Client ID: **LCSW** Batch ID: **30441** Analysis Date: **11/18/2020** SeqNo: **1274562**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.245	0.0500	0.2500	0	98.0	74.9	121				

Sample ID: **2011202-001DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/17/2020** RunNo: **63501**
Client ID: **GRMW-CCUB-1106202** Batch ID: **30441** Analysis Date: **11/18/2020** SeqNo: **1274564**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	ND	0.0500						0		20	

Sample ID: **2011202-001DMS** SampType: **MS** Units: **mg/L** Prep Date: **11/17/2020** RunNo: **63501**
Client ID: **GRMW-CCUB-1106202** Batch ID: **30441** Analysis Date: **11/18/2020** SeqNo: **1274565**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.217	0.0500	0.2500	0	86.9	59.8	143				

Sample ID: **2011202-001DMSD** SampType: **MSD** Units: **mg/L** Prep Date: **11/17/2020** RunNo: **63501**
Client ID: **GRMW-CCUB-1106202** Batch ID: **30441** Analysis Date: **11/18/2020** SeqNo: **1274566**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.214	0.0500	0.2500	0	85.7	59.8	143	0.2172	1.34	30	

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-30425**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/16/2020**			RunNo: **63445**		
Client ID: **MBLKW**	Batch ID: **30425**					Analysis Date: **11/16/2020**			SeqNo: **1273322**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-30425**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/16/2020**			RunNo: **63445**		
Client ID: **LCSW**	Batch ID: **30425**					Analysis Date: **11/16/2020**			SeqNo: **1273323**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.781	0.100	0.7500	0	104	90	110				

Sample ID: **2011227-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/16/2020**			RunNo: **63445**		
Client ID: **BATCH**	Batch ID: **30425**					Analysis Date: **11/16/2020**			SeqNo: **1273325**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	13.7	1.00						14.18	3.52	20	D

Sample ID: **2011227-001CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/16/2020**			RunNo: **63445**		
Client ID: **BATCH**	Batch ID: **30425**					Analysis Date: **11/16/2020**			SeqNo: **1273326**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	21.8	1.00	7.500	14.18	101	80	120				D

Sample ID: **2011227-001CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/16/2020**			RunNo: **63445**		
Client ID: **BATCH**	Batch ID: **30425**					Analysis Date: **11/16/2020**			SeqNo: **1273327**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	21.9	1.00	7.500	14.18	103	80	120	21.79	0.549	20	D

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **MB-30395**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/12/2020**			RunNo: **63391**		
Client ID: **MBLKW**	Batch ID: **30395**					Analysis Date: **11/13/2020**			SeqNo: **1272177**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.200									

Sample ID: **LCS-30395**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/12/2020**			RunNo: **63391**		
Client ID: **LCSW**	Batch ID: **30395**					Analysis Date: **11/13/2020**			SeqNo: **1272178**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.541	0.200	0.5000	0	108	65	135				

Sample ID: **2011202-004BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/12/2020**			RunNo: **63391**		
Client ID: **GRMW-GRIC-11062020**	Batch ID: **30395**					Analysis Date: **11/13/2020**			SeqNo: **1272165**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.200						0		30	

Sample ID: **2011202-004BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/12/2020**			RunNo: **63391**		
Client ID: **GRMW-GRIC-11062020**	Batch ID: **30395**					Analysis Date: **11/13/2020**			SeqNo: **1272166**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.558	0.200	0.5000	0	112	65	135				

Sample ID: **2011202-004BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/12/2020**			RunNo: **63391**		
Client ID: **GRMW-GRIC-11062020**	Batch ID: **30395**					Analysis Date: **11/13/2020**			SeqNo: **1272167**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.577	0.200	0.5000	0	115	65	135	0.5584	3.31	30	

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R63397** SampType: **MBLK** Units: **mg/L** Prep Date: **11/13/2020** RunNo: **63397**
Client ID: **MBLKW** Batch ID: **R63397** Analysis Date: **11/13/2020** SeqNo: **1272231**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R63397** SampType: **LCS** Units: **mg/L** Prep Date: **11/13/2020** RunNo: **63397**
Client ID: **LCSW** Batch ID: **R63397** Analysis Date: **11/13/2020** SeqNo: **1272232**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.60	0.500	2.000	0	80.0	74.9	118				

Sample ID: **2011202-005CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/13/2020** RunNo: **63397**
Client ID: **GRMW-GR82-11062020** Batch ID: **R63397** Analysis Date: **11/13/2020** SeqNo: **1272238**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2011202-005CMS** SampType: **MS** Units: **mg/L** Prep Date: **11/13/2020** RunNo: **63397**
Client ID: **GRMW-GR82-11062020** Batch ID: **R63397** Analysis Date: **11/13/2020** SeqNo: **1272239**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.40	0.500	2.000	0	270	74.9	118				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2011202-005CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **11/13/2020** RunNo: **63397**
Client ID: **GRMW-GR82-11062020** Batch ID: **R63397** Analysis Date: **11/13/2020** SeqNo: **1272240**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.60	0.500	2.000	0	280	74.9	118	5.400	3.64	30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-30417** SampType: **MBLK** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **MBLKW** Batch ID: **30417** Analysis Date: **11/16/2020** SeqNo: **1273433**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	1.00									
Copper	ND	1.00									
Iron	ND	100									
Lead	ND	0.500									
Nickel	ND	2.50									
Selenium	ND	5.00									
Silver	ND	0.250									
Zinc	ND	2.50									

Sample ID: **LCS-30417** SampType: **LCS** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **LCSW** Batch ID: **30417** Analysis Date: **11/16/2020** SeqNo: **1273434**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	111	0.500	100.0	0	111	85	115				
Cadmium	5.36	0.200	5.000	0	107	85	115				
Iron	1,040	100	1,000	0	104	50	150				
Silver	5.64	0.250	5.000	0	113	85	115				
Zinc	114	2.50	100.0	0	114	85	115				

Sample ID: **2011221-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **BATCH** Batch ID: **30417** Analysis Date: **11/16/2020** SeqNo: **1273436**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.82	0.500						2.364	25.7	30	R
Cadmium	ND	0.200						0		30	
Chromium	ND	1.00						0		30	
Iron	ND	100						0		30	

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2011221-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **BATCH** Batch ID: **30417** Analysis Date: **11/16/2020** SeqNo: **1273436**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.500						0		30	
Nickel	ND	2.50						0		30	
Selenium	ND	5.00						0		30	
Silver	ND	0.250						0		30	
Zinc	4.77	2.50						41.38	159	30	R

NOTES:
R - High RPD observed. The method is in control as indicated by the LCS.

Sample ID: **2011221-001BMS** SampType: **MS** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **BATCH** Batch ID: **30417** Analysis Date: **11/16/2020** SeqNo: **1273437**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	539	0.500	500.0	2.364	107	70	130				
Cadmium	29.8	0.200	25.00	0.02100	119	70	130				
Chromium	521	1.00	500.0	0.3565	104	70	130				
Iron	4,700	100	5,000	78.84	92.5	50	150				
Nickel	532	2.50	500.0	0	106	70	130				
Selenium	55.5	5.00	50.00	1.458	108	70	130				
Silver	28.8	0.250	25.00	0.08700	115	70	130				
Zinc	643	2.50	500.0	41.38	120	70	130				

Sample ID: **2011221-001BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **BATCH** Batch ID: **30417** Analysis Date: **11/16/2020** SeqNo: **1273440**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	544	0.500	500.0	2.364	108	70	130	538.9	0.996	30	
Cadmium	28.7	0.200	25.00	0.02100	115	70	130	29.80	3.86	30	
Chromium	536	1.00	500.0	0.3565	107	70	130	521.3	2.87	30	
Iron	4,800	100	5,000	78.84	94.4	50	150	4,705	1.95	30	
Nickel	528	2.50	500.0	0	106	70	130	532.3	0.731	30	

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2011221-001BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **BATCH** Batch ID: **30417** Analysis Date: **11/16/2020** SeqNo: **1273440**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	57.7	5.00	50.00	1.458	112	70	130	55.52	3.85	30	
Silver	27.4	0.250	25.00	0.08700	109	70	130	28.79	4.92	30	

Sample ID: **MB-30410FB** SampType: **MBLK** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **MBLKW** Batch ID: **30417** Analysis Date: **11/16/2020** SeqNo: **1273442**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	1.00									
Copper	ND	1.00									
Iron	ND	100									
Lead	ND	0.500									
Nickel	ND	2.50									
Selenium	ND	5.00									
Silver	ND	0.250									
Zinc	ND	2.50									

NOTES:
Filter Blank

Sample ID: **LCS-30417** SampType: **LCS** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **LCSW** Batch ID: **30417** Analysis Date: **11/17/2020** SeqNo: **1274060**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	101	1.00	100.0	0	101	85	115				
Copper	92.2	1.00	100.0	0	92.2	85	115				
Lead	53.3	0.500	50.00	0	107	85	115				
Nickel	99.3	2.50	100.0	0	99.3	85	115				
Selenium	10.4	5.00	10.00	0	104	85	115				

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2011221-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **BATCH** Batch ID: **30417** Analysis Date: **11/17/2020** SeqNo: **1274062**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	1.14	1.00						1.137	0.701	30	

Sample ID: **2011221-001BMS** SampType: **MS** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **BATCH** Batch ID: **30417** Analysis Date: **11/17/2020** SeqNo: **1274063**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	494	1.00	500.0	1.137	98.6	70	130				
Lead	253	0.500	250.0	0.1425	101	70	130				

Sample ID: **2011221-001BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **11/16/2020** RunNo: **63448**
Client ID: **BATCH** Batch ID: **30417** Analysis Date: **11/17/2020** SeqNo: **1274064**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	459	1.00	500.0	1.137	91.5	70	130	493.9	7.37	30	
Lead	242	0.500	250.0	0.1425	96.7	70	130	252.6	4.28	30	
Zinc	496	2.50	500.0	5.456	98.0	70	130	519.8	4.75	30	

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Mercury by EPA Method 245.1

Sample ID: **MB-30440** SampType: **MBLK** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63485**
Client ID: **MBLKW** Batch ID: **30440** Analysis Date: **11/17/2020** SeqNo: **1274325**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100									

Sample ID: **LCS-30440** SampType: **LCS** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63485**
Client ID: **LCSW** Batch ID: **30440** Analysis Date: **11/17/2020** SeqNo: **1274326**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.51	0.100	2.500	0	100	85	115				

Sample ID: **2011202-001EDUP** SampType: **DUP** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63485**
Client ID: **GRMW-CCUB-1106202** Batch ID: **30440** Analysis Date: **11/17/2020** SeqNo: **1274328**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100						0		20	

Sample ID: **2011202-001EMS** SampType: **MS** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63485**
Client ID: **GRMW-CCUB-1106202** Batch ID: **30440** Analysis Date: **11/17/2020** SeqNo: **1274329**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.37	0.100	2.500	0.008000	94.5	70	130				

Sample ID: **2011202-001EMSD** SampType: **MSD** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63485**
Client ID: **GRMW-CCUB-1106202** Batch ID: **30440** Analysis Date: **11/17/2020** SeqNo: **1274330**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.39	0.100	2.500	0.008000	95.3	70	130	2.370	0.840	20	

Date: *11/19/2020*

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Mercury by EPA Method 245.1

Sample ID: **MB-30410FB** SampType: **MBLK** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63485**
Client ID: **MBLKW** Batch ID: **30440** Analysis Date: **11/17/2020** SeqNo: **1274334**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100									

NOTES:
Filter Blank

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-30412** SampType: **MBLK** Units: **µg/L** Prep Date: **11/13/2020** RunNo: **63450**
Client ID: **MBLKW** Batch ID: **30412** Analysis Date: **11/16/2020** SeqNo: **1273505**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	0.0993									
1-Methylnaphthalene	ND	0.0993									
Fluorene	ND	0.0993									
Phenanthrene	ND	0.0993									
Fluoranthene	ND	0.0993									
Chrysene	ND	0.0993									
Benzo(b)fluoranthene	ND	0.0993									
Benzo(k)fluoranthene	ND	0.0993									
Indeno(1,2,3-cd)pyrene	ND	0.0993									
Dibenz(a,h)anthracene	ND	0.0993									
Benzo(g,h,i)perylene	ND	0.0993									
Surr: 2-Fluorobiphenyl	1.86		1.985		93.5	50.8	146				
Surr: Terphenyl-d14	2.08		1.985		105	26.1	145				

Sample ID: **LCS-30412** SampType: **LCS** Units: **µg/L** Prep Date: **11/13/2020** RunNo: **63450**
Client ID: **LCSW** Batch ID: **30412** Analysis Date: **11/16/2020** SeqNo: **1273506**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	3.21	0.0999	3.997	0	80.3	47.4	117				
1-Methylnaphthalene	0.634	0.0999	3.997	0	15.9	36.9	134				S
Fluorene	3.16	0.0999	3.997	0	79.0	42.7	142				
Phenanthrene	1.79	0.0999	3.997	0	44.8	48.1	137				S
Fluoranthene	2.80	0.0999	3.997	0	70.1	47.5	140				
Chrysene	1.25	0.0999	3.997	0	31.1	37.9	108				S
Benzo(b)fluoranthene	4.78	0.0999	3.997	0	120	25.5	110				S
Benzo(k)fluoranthene	5.16	0.0999	3.997	0	129	27.8	98.4				S
Indeno(1,2,3-cd)pyrene	2.20	0.0999	3.997	0	55.0	16.2	97.5				
Dibenz(a,h)anthracene	1.91	0.0999	3.997	0	47.9	15.9	98.8				
Benzo(g,h,i)perylene	1.56	0.0999	3.997	0	38.9	15.9	99.7				
Surr: 2-Fluorobiphenyl	2.01		1.999		101	50.8	146				

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-30412** SampType: **LCS** Units: **µg/L** Prep Date: **11/13/2020** RunNo: **63450**
Client ID: **LCSW** Batch ID: **30412** Analysis Date: **11/16/2020** SeqNo: **1273506**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Terphenyl-d14	1.78		1.999		89.0	26.1	145				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID: **LCSD-30412** SampType: **LCSD** Units: **µg/L** Prep Date: **11/13/2020** RunNo: **63450**
Client ID: **LCSW02** Batch ID: **30412** Analysis Date: **11/16/2020** SeqNo: **1273507**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	2.84	0.0999	3.996	0	71.0	47.4	117	3.209	12.3	30	
1-Methylnaphthalene	2.41	0.0999	3.996	0	60.4	36.9	134	0.6338	117	30	R
Fluorene	3.34	0.0999	3.996	0	83.5	42.7	142	3.158	5.49	30	
Phenanthrene	3.00	0.0999	3.996	0	75.1	48.1	137	1.789	50.5	30	R
Fluoranthene	3.78	0.0999	3.996	0	94.6	47.5	140	2.803	29.7	30	
Chrysene	2.78	0.0999	3.996	0	69.5	37.9	108	1.245	76.2	30	R
Benzo(b)fluoranthene	3.70	0.0999	3.996	0	92.6	25.5	110	4.779	25.5	30	
Benzo(k)fluoranthene	2.33	0.0999	3.996	0	58.3	27.8	98.4	5.164	75.7	30	R
Indeno(1,2,3-cd)pyrene	3.02	0.0999	3.996	0	75.5	16.2	97.5	2.199	31.3	30	R
Dibenz(a,h)anthracene	2.67	0.0999	3.996	0	66.9	15.9	98.8	1.914	33.1	30	R
Benzo(g,h,i)perylene	2.62	0.0999	3.996	0	65.6	15.9	99.7	1.555	51.0	30	R
Surr: 2-Fluorobiphenyl	1.57		1.998		78.8	50.8	146		0	0	
Surr: Terphenyl-d14	1.88		1.998		93.9	26.1	145		0	0	

NOTES:
R - High RPD observed, spike recovery is within range.

Sample ID: **2011193-001CMS** SampType: **MS** Units: **µg/L** Prep Date: **11/13/2020** RunNo: **63450**
Client ID: **BATCH** Batch ID: **30412** Analysis Date: **11/16/2020** SeqNo: **1273509**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	3.61	0.0996	3.985	0.03201	89.8	38.9	124				
1-Methylnaphthalene	3.82	0.0996	3.985	0.04394	94.8	36.5	133				
Fluorene	3.17	0.0996	3.985	0	79.5	41.6	146				

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2011193-001CMS** SampType: **MS** Units: **µg/L** Prep Date: **11/13/2020** RunNo: **63450**
Client ID: **BATCH** Batch ID: **30412** Analysis Date: **11/16/2020** SeqNo: **1273509**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	3.53	0.0996	3.985	0	88.5	38.1	146				
Fluoranthene	3.62	0.0996	3.985	0	90.9	15.2	155				
Chrysene	2.38	0.0996	3.985	0	59.8	7.73	127				
Benzo(b)fluoranthene	2.04	0.0996	3.985	0	51.2	14.8	118				
Benzo(k)fluoranthene	1.51	0.0996	3.985	0	37.9	15.9	99.8				
Indeno(1,2,3-cd)pyrene	1.62	0.0996	3.985	0	40.7	6.73	97.4				
Dibenz(a,h)anthracene	1.50	0.0996	3.985	0	37.7	5	95.6				
Benzo(g,h,i)perylene	1.40	0.0996	3.985	0	35.2	2.27	93.9				
Surr: 2-Fluorobiphenyl	1.92		1.992		96.2	50.8	146				
Surr: Terphenyl-d14	1.40		1.992		70.3	26.1	145				

Sample ID: **MB-30445** SampType: **MBLK** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63495**
Client ID: **MBLKW** Batch ID: **30445** Analysis Date: **11/18/2020** SeqNo: **1274455**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	0.0984									
Acenaphthylene	ND	0.0984									
Acenaphthene	ND	0.0984									
Anthracene	ND	0.0984									
Pyrene	ND	0.0984									
Benz(a)anthracene	ND	0.0984									
Benzo(a)pyrene	ND	0.0984									
Surr: 2-Fluorobiphenyl	1.91		1.968		97.0	50.8	146				
Surr: Terphenyl-d14	2.20		1.968		112	26.1	145				

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-30445** SampType: **LCS** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63495**
Client ID: **LCSW** Batch ID: **30445** Analysis Date: **11/18/2020** SeqNo: **1274456**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	3.26	0.0998	3.991	0	81.7	48.8	127				
Acenaphthylene	3.33	0.0998	3.991	0	83.5	42.5	137				
Acenaphthene	3.19	0.0998	3.991	0	79.9	50.6	128				
Anthracene	3.21	0.0998	3.991	0	80.4	37.5	137				
Pyrene	3.99	0.0998	3.991	0	99.9	52.3	135				
Benz(a)anthracene	3.63	0.0998	3.991	0	91.0	39.4	125				
Benzo(a)pyrene	2.95	0.0998	3.991	0	73.9	21.5	107				
Surr: 2-Fluorobiphenyl	1.93		1.995		96.9	50.8	146				
Surr: Terphenyl-d14	1.96		1.995		98.1	26.1	145				

Sample ID: **LCSD-30445** SampType: **LCSD** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63495**
Client ID: **LCSW02** Batch ID: **30445** Analysis Date: **11/18/2020** SeqNo: **1274457**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	3.13	0.0987	3.948	0	79.3	48.8	127	3.259	3.96	30	
Acenaphthylene	3.17	0.0987	3.948	0	80.3	42.5	137	3.333	4.99	30	
Acenaphthene	3.17	0.0987	3.948	0	80.3	50.6	128	3.189	0.646	30	
Anthracene	3.26	0.0987	3.948	0	82.7	37.5	137	3.209	1.69	30	
Pyrene	3.40	0.0987	3.948	0	86.2	52.3	135	3.986	15.7	30	
Benz(a)anthracene	3.11	0.0987	3.948	0	78.7	39.4	125	3.630	15.5	30	
Benzo(a)pyrene	3.03	0.0987	3.948	0	76.8	21.5	107	2.950	2.74	30	
Surr: 2-Fluorobiphenyl	1.73		1.974		87.7	50.8	146		0	0	
Surr: Terphenyl-d14	1.57		1.974		79.5	26.1	145		0	0	

Sample ID: **2011276-001CMS** SampType: **MS** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63495**
Client ID: **BATCH** Batch ID: **30445** Analysis Date: **11/18/2020** SeqNo: **1274694**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	3.63	0.0997	3.988	0	90.9	38.3	133				

Work Order: 2011202
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **2011276-001CMS** SampType: **MS** Units: **µg/L** Prep Date: **11/17/2020** RunNo: **63495**
Client ID: **BATCH** Batch ID: **30445** Analysis Date: **11/18/2020** SeqNo: **1274694**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	3.53	0.0997	3.988	0	88.5	38.8	141				
Acenaphthene	3.46	0.0997	3.988	0	86.7	26.4	151				
Anthracene	3.21	0.0997	3.988	0	80.6	14.8	136				
Pyrene	3.72	0.0997	3.988	0	93.4	8.41	156				
Benz(a)anthracene	2.21	0.0997	3.988	0	55.5	8.9	131				
Benzo(a)pyrene	1.38	0.0997	3.988	0	34.7	12.1	106				
Surr: 2-Fluorobiphenyl	2.27		1.994		114	50.8	146				
Surr: Terphenyl-d14	1.11		1.994		55.6	26.1	145				

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2011202**
Logged by:	**Clare Griggs**	Date Received:	**11/11/2020 10:30:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	Client				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No	☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☑	No	☐	NA ☐

Person Notified:	Dana Kurtz	Date:	11/11/2020
By Whom:	Clare Griggs	Via:	☑ eMail ☑ Phone ☐ Fax ☐ In Person
Regarding:	Confirming COC.		
Client Instructions:	See Additional Remarks		

19. Additional remarks:

Analyze for dissolved metals for all samples. Analyze for all conventionals (including Chloride & Cyanide) for sample GRMW-LCPL-11062020.

Item Information

Item #	Temp ºC
Sample 1	3.3
Sample 2	1.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-11062020
Matrix: water

PAL Sample ID: P203144-01
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
11/11/20	11/12/20	a-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Acetochlor	ND	0.060 ug/L	
11/11/20	11/12/20	Alachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Aldrin	ND	0.060 ug/L	
11/11/20	11/12/20	Ametryn	ND	0.060 ug/L	
11/11/20	11/12/20	b-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Benfluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Bifenthrin	ND	0.060 ug/L	
11/11/20	11/12/20	Bromopropylate	ND	0.060 ug/L	
11/11/20	11/12/20	Buprofezin	ND	0.060 ug/L	
11/11/20	11/12/20	Captan	ND	0.60 ug/L	
11/11/20	11/12/20	Chlordane	ND	0.060 ug/L	
11/11/20	11/12/20	Chloroneb	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpropham	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpyrifos	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpyrifos-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	cis-Nonachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Cyfluthrin	ND	0.30 ug/L	
11/11/20	11/12/20	Cypermethrin	ND	0.30 ug/L	
11/11/20	11/12/20	Dacthal	ND	0.060 ug/L	
11/11/20	11/12/20	d-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Deltamethrin	ND	0.30 ug/L	
11/11/20	11/12/20	Diazinon	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlobenil	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlorofenthion	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlorvos	ND	0.060 ug/L	
11/11/20	11/12/20	Diclofop-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	Dicloran	ND	0.060 ug/L	
11/11/20	11/12/20	Dicofol	ND	0.060 ug/L	
11/11/20	11/12/20	Dieldrin	ND	0.060 ug/L	
11/11/20	11/12/20	Dimethenamid	ND	0.060 ug/L	
11/11/20	11/12/20	Diphenamid	ND	0.060 ug/L	
11/11/20	11/12/20	Diphenylamine	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-11062020
Matrix: water

PAL Sample ID: P203144-01
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	Disulfoton	ND	0.060 ug/L	
11/11/20	11/12/20	Dithiopyr	ND	0.060 ug/L	
11/11/20	11/12/20	Endosulfan I	ND	0.12 ug/L	
11/11/20	11/12/20	Endosulfan II	ND	0.12 ug/L	
11/11/20	11/12/20	Endosulfan sulfate	ND	0.12 ug/L	
11/11/20	11/12/20	Endrin	ND	0.060 ug/L	
11/11/20	11/12/20	Endrin ketone	ND	0.060 ug/L	
11/11/20	11/12/20	Esfenvalerate	ND	0.060 ug/L	
11/11/20	11/12/20	Ethalfluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Ethofumesate	ND	0.060 ug/L	
11/11/20	11/12/20	Ethoprop	ND	0.060 ug/L	
11/11/20	11/12/20	Etoxazole	ND	0.060 ug/L	
11/11/20	11/12/20	Etridiazole	ND	0.060 ug/L	
11/11/20	11/12/20	Fenarimol	ND	0.060 ug/L	
11/11/20	11/12/20	Fenoxaprop-ethyl	ND	0.060 ug/L	
11/11/20	11/12/20	Fenvalerate	ND	0.060 ug/L	
11/11/20	11/12/20	Fipronil	ND	0.060 ug/L	
11/11/20	11/12/20	Fluazifop-p-butyl	ND	0.060 ug/L	
11/11/20	11/12/20	Fludioxonil	ND	0.060 ug/L	
11/11/20	11/12/20	Fluroxypyr-meptyl	ND	0.060 ug/L	
11/11/20	11/12/20	Flutolanil	ND	0.060 ug/L	
11/11/20	11/12/20	g-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Heptachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Heptachlor epoxide	ND	0.060 ug/L	
11/11/20	11/12/20	Hexachlorobenzene	ND	0.060 ug/L	
11/11/20	11/12/20	Kresoxim-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	lambda-Cyhalothrin	ND	0.060 ug/L	
11/11/20	11/12/20	Malathion	ND	0.060 ug/L	
11/11/20	11/12/20	Mefenoxam	ND	0.060 ug/L	
11/11/20	11/12/20	Methoxychlor	ND	0.060 ug/L	
11/11/20	11/12/20	Metolachlor	ND	0.060 ug/L	
11/11/20	11/12/20	MGK-264	ND	0.060 ug/L	
11/11/20	11/12/20	Myclobutanil	ND	0.060 ug/L	
11/11/20	11/12/20	Napropamide	ND	0.060 ug/L	
11/11/20	11/12/20	o-Phenylphenol	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-11062020
Matrix: water

PAL Sample ID: P203144-01
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	Oxadiazon	ND	0.060 ug/L	
11/11/20	11/12/20	Oxyfluorfen	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDD	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDE	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDT	ND	0.060 ug/L	
11/11/20	11/12/20	Parathion-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	PCA	ND	0.060 ug/L	
11/11/20	11/12/20	PCB	ND	0.060 ug/L	
11/11/20	11/12/20	PCNB	ND	0.060 ug/L	
11/11/20	11/12/20	Pendimethalin	ND	0.060 ug/L	
11/11/20	11/12/20	Pentachlorothioanisole	ND	0.060 ug/L	
11/11/20	11/12/20	Permethrin	ND	0.12 ug/L	
11/11/20	11/12/20	Procymidone	ND	0.060 ug/L	
11/11/20	11/12/20	Prodiamine	0.12 ug/L	0.060 ug/L	
11/11/20	11/12/20	Pronamide	ND	0.060 ug/L	
11/11/20	11/12/20	Propachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Pyriproxyfen	ND	0.060 ug/L	
11/11/20	11/12/20	Quinoxyfen	ND	0.060 ug/L	
11/11/20	11/12/20	Spirodiclofen	ND	0.060 ug/L	
11/11/20	11/12/20	Tetraconazole	ND	0.060 ug/L	
11/11/20	11/12/20	Tetradifon	ND	0.060 ug/L	
11/11/20	11/12/20	trans-Nonachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Trifluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Vinclozalin	ND	0.060 ug/L	

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-11062020
Matrix: water

PAL Sample ID: P203144-01
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Abamectin	ND	0.060 ug/L	
11/11/20	11/13/20	Acetamiprid	ND	0.060 ug/L	
11/11/20	11/13/20	Acibenzolar-S-methyl	ND	0.12 ug/L	
11/11/20	11/13/20	Aldicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Allethrin	ND	0.060 ug/L	
11/11/20	11/13/20	Ametoctradin	ND	0.060 ug/L	
11/11/20	11/13/20	Atrazine	ND	0.060 ug/L	
11/11/20	11/13/20	Azinphos-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Azinphos-methyl	ND	0.12 ug/L	
11/11/20	11/13/20	Azoxystrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Bendiocarb	ND	0.060 ug/L	
11/11/20	11/13/20	Bensulide	ND	0.060 ug/L	
11/11/20	11/13/20	Bitertanol	ND	0.060 ug/L	
11/11/20	11/13/20	Boscalid	ND	0.060 ug/L	
11/11/20	11/13/20	Bromacil	ND	0.060 ug/L	
11/11/20	11/13/20	Carbaryl	ND	0.060 ug/L	
11/11/20	11/13/20	Carbendazim	ND	0.060 ug/L	
11/11/20	11/13/20	Carbofuran	ND	0.060 ug/L	
11/11/20	11/13/20	Carfentrazone-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Chlorantraniliprole	ND	0.060 ug/L	
11/11/20	11/13/20	Clethodim	ND	0.12 ug/L	
11/11/20	11/13/20	Clofentezine	ND	0.060 ug/L	
11/11/20	11/13/20	Cyanazine	ND	0.060 ug/L	
11/11/20	11/13/20	Cyantraniliprole	ND	0.060 ug/L	
11/11/20	11/13/20	Cyazofamid	ND	0.060 ug/L	
11/11/20	11/13/20	Cycloate	ND	0.12 ug/L	
11/11/20	11/13/20	Cyflufenamid	ND	0.060 ug/L	
11/11/20	11/13/20	Cyflumetofen	ND	0.060 ug/L	
11/11/20	11/13/20	Cymoxanil	ND	0.060 ug/L	
11/11/20	11/13/20	Cyprodinil	ND	0.060 ug/L	
11/11/20	11/13/20	DCPMU	ND	0.060 ug/L	
11/11/20	11/13/20	Diazoxon	ND	0.060 ug/L	
11/11/20	11/13/20	Difenoconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Diflubenzuron	ND	0.060 ug/L	
11/11/20	11/13/20	Dimethoate	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-11062020
Matrix: water

PAL Sample ID: P203144-01
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Dimethomorph	ND	0.060 ug/L	
11/11/20	11/13/20	Disulfoton sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Diuron	ND	0.060 ug/L	
11/11/20	11/13/20	d-Phenothrin	ND	0.060 ug/L	
11/11/20	11/13/20	Ethion	ND	0.060 ug/L	
11/11/20	11/13/20	Famoxadone	ND	0.060 ug/L	
11/11/20	11/13/20	Famphur	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamidone	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamiphos sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamiphos sulfoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Fenazaquin	ND	0.060 ug/L	
11/11/20	11/13/20	Fenbuconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Fenbutatin oxide	ND	0.060 ug/L	
11/11/20	11/13/20	Fenhexamid	ND	0.060 ug/L	
11/11/20	11/13/20	Fenobucarb	ND	0.060 ug/L	
11/11/20	11/13/20	Fenpropathrin	ND	0.060 ug/L	
11/11/20	11/13/20	Fenpyroximate	ND	0.060 ug/L	
11/11/20	11/13/20	Fenuron	ND	0.060 ug/L	
11/11/20	11/13/20	Fluazinam	ND	0.060 ug/L	
11/11/20	11/13/20	Flubendiamide	ND	0.12 ug/L	
11/11/20	11/13/20	Flumioxazin	ND	0.060 ug/L	
11/11/20	11/13/20	Fluometuron	ND	0.060 ug/L	
11/11/20	11/13/20	Fluopicolide	ND	0.060 ug/L	
11/11/20	11/13/20	Fluopyram	ND	0.060 ug/L	
11/11/20	11/13/20	Fluoxastrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Flupyradifurone	ND	0.060 ug/L	
11/11/20	11/13/20	Fluridone	ND	0.060 ug/L	
11/11/20	11/13/20	Flutriafol	ND	0.060 ug/L	
11/11/20	11/13/20	Fluvalinate	ND	0.060 ug/L	
11/11/20	11/13/20	Fluxapyroxad	ND	0.060 ug/L	
11/11/20	11/13/20	Fonofos	ND	0.12 ug/L	
11/11/20	11/13/20	Hexaconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Hexazinone	ND	0.060 ug/L	
11/11/20	11/13/20	Hexythiazox	ND	0.060 ug/L	
11/11/20	11/13/20	Imazalil	ND	0.060 ug/L	

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11/11/20	11/13/20	Imidacloprid	ND	0.060 ug/L	
11/11/20	11/13/20	Indaziflam	ND	0.060 ug/L	
11/11/20	11/13/20	Indoxacarb	ND	0.060 ug/L	
11/11/20	11/13/20	Iprodione	ND	0.30 ug/L	
11/11/20	11/13/20	Isoxaben	ND	0.060 ug/L	
11/11/20	11/13/20	Linuron	ND	0.060 ug/L	
11/11/20	11/13/20	Malaoxon	ND	0.060 ug/L	
11/11/20	11/13/20	Mandipropamid	ND	0.060 ug/L	
11/11/20	11/13/20	Metconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Methidathion	ND	0.060 ug/L	
11/11/20	11/13/20	Methiocarb	ND	0.060 ug/L	
11/11/20	11/13/20	Methomyl	ND	0.060 ug/L	
11/11/20	11/13/20	Methoxyfenozide	ND	0.060 ug/L	
11/11/20	11/13/20	Metrafenone	ND	0.060 ug/L	
11/11/20	11/13/20	Metribuzin	ND	0.060 ug/L	
11/11/20	11/13/20	Mevinphos	ND	0.060 ug/L	
11/11/20	11/13/20	Norflurazon	ND	0.060 ug/L	
11/11/20	11/13/20	Novaluron	ND	0.060 ug/L	
11/11/20	11/13/20	Oryzalin	ND	0.060 ug/L	
11/11/20	11/13/20	Oxadixyl	ND	0.060 ug/L	
11/11/20	11/13/20	Oxamyl	ND	0.060 ug/L	
11/11/20	11/13/20	Penthiopyrad	ND	0.060 ug/L	
11/11/20	11/13/20	Phorate Sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Phorate Sulfoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Phosalone	ND	0.060 ug/L	
11/11/20	11/13/20	Phosmet	ND	0.060 ug/L	
11/11/20	11/13/20	Phosphamidon	ND	0.060 ug/L	
11/11/20	11/13/20	Piperonyl Butoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Pirimicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Pirimiphos-methyl	ND	0.060 ug/L	
11/11/20	11/13/20	Prometon	ND	0.060 ug/L	
11/11/20	11/13/20	Prometryn	ND	0.060 ug/L	
11/11/20	11/13/20	Propargite	ND	0.060 ug/L	
11/11/20	11/13/20	Propazine	ND	0.060 ug/L	
11/11/20	11/13/20	Propiconazole	ND	0.12 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Pyraclostrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Pyraflufen-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Pyrethrin	ND	0.30 ug/L	
11/11/20	11/13/20	Pyridaben	ND	0.060 ug/L	
11/11/20	11/13/20	Pyrimethanil	ND	0.060 ug/L	
11/11/20	11/13/20	Rotenone	ND	0.060 ug/L	
11/11/20	11/13/20	Saflufenacil	ND	0.060 ug/L	
11/11/20	11/13/20	Sethoxydim	ND	0.12 ug/L	
11/11/20	11/13/20	Siduron	ND	0.060 ug/L	
11/11/20	11/13/20	Simazine	ND	0.060 ug/L	
11/11/20	11/13/20	Simetryn	ND	0.060 ug/L	
11/11/20	11/13/20	Spinetoram	ND	0.060 ug/L	
11/11/20	11/13/20	Spinosad	ND	0.060 ug/L	
11/11/20	11/13/20	Spiromesifen	ND	0.12 ug/L	
11/11/20	11/13/20	Spirotetramat	ND	0.060 ug/L	
11/11/20	11/13/20	Spiroxamine	ND	0.060 ug/L	
11/11/20	11/13/20	Sulfentrazone	ND	0.060 ug/L	
11/11/20	11/13/20	Sulfoxaflor	ND	0.060 ug/L	
11/11/20	11/13/20	Tebuconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Tebufenozide	ND	0.060 ug/L	
11/11/20	11/13/20	Tebuthiuron	ND	0.060 ug/L	
11/11/20	11/13/20	Terbacil	ND	0.060 ug/L	
11/11/20	11/13/20	Terbuthylazine	ND	0.060 ug/L	
11/11/20	11/13/20	Terbutryn	ND	0.060 ug/L	
11/11/20	11/13/20	Thiabendazole	ND	0.060 ug/L	
11/11/20	11/13/20	Thiacloprid	ND	0.060 ug/L	
11/11/20	11/13/20	Thiamethoxam	ND	0.060 ug/L	
11/11/20	11/13/20	Thiobencarb	ND	0.060 ug/L	
11/11/20	11/13/20	Thiodicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Tolfenpyrad	ND	0.060 ug/L	
11/11/20	11/13/20	Triadimefon	ND	0.060 ug/L	
11/11/20	11/13/20	Triadimenol	ND	0.12 ug/L	
11/11/20	11/13/20	Trifloxystrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Triflumizole	ND	0.060 ug/L	

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PAL Sample ID: P203144-01
Sample Date: 11/6/20
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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes

Surrogate Recovery: 85 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Analytical Report

Client Sample ID: GRMW-CCWL-11062020
Matrix: water

PAL Sample ID: P203144-02
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes

Method: Modified EPA 8270D (GC-MS/MS)

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Matrix: water

PAL Sample ID: P203144-02
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	a-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Acetochlor	ND	0.060 ug/L	
11/11/20	11/12/20	Alachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Aldrin	ND	0.060 ug/L	
11/11/20	11/12/20	Ametryn	ND	0.060 ug/L	
11/11/20	11/12/20	b-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Benfluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Bifenthrin	ND	0.060 ug/L	
11/11/20	11/12/20	Bromopropylate	ND	0.060 ug/L	
11/11/20	11/12/20	Buprofezin	ND	0.060 ug/L	
11/11/20	11/12/20	Captan	ND	0.60 ug/L	
11/11/20	11/12/20	Chlordane	ND	0.060 ug/L	
11/11/20	11/12/20	Chloroneb	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpropham	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpyrifos	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpyrifos-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	cis-Nonachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Cyfluthrin	ND	0.30 ug/L	
11/11/20	11/12/20	Cypermethrin	ND	0.30 ug/L	
11/11/20	11/12/20	Dacthal	ND	0.060 ug/L	
11/11/20	11/12/20	d-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Deltamethrin	ND	0.30 ug/L	
11/11/20	11/12/20	Diazinon	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlobenil	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlorofenthion	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlorvos	ND	0.060 ug/L	
11/11/20	11/12/20	Diclofop-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	Dicloran	ND	0.060 ug/L	
11/11/20	11/12/20	Dicofol	ND	0.060 ug/L	
11/11/20	11/12/20	Dieldrin	ND	0.060 ug/L	
11/11/20	11/12/20	Dimethenamid	ND	0.060 ug/L	
11/11/20	11/12/20	Diphenamid	ND	0.060 ug/L	
11/11/20	11/12/20	Diphenylamine	ND	0.060 ug/L	
11/11/20	11/12/20	Disulfoton	ND	0.060 ug/L	
11/11/20	11/12/20	Dithiopyr	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	Endosulfan I	ND	0.12 ug/L	
11/11/20	11/12/20	Endosulfan II	ND	0.12 ug/L	
11/11/20	11/12/20	Endosulfan sulfate	ND	0.12 ug/L	
11/11/20	11/12/20	Endrin	ND	0.060 ug/L	
11/11/20	11/12/20	Endrin ketone	ND	0.060 ug/L	
11/11/20	11/12/20	Esfenvalerate	ND	0.060 ug/L	
11/11/20	11/12/20	Ethalfluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Ethofumesate	ND	0.060 ug/L	
11/11/20	11/12/20	Ethoprop	ND	0.060 ug/L	
11/11/20	11/12/20	Etoxazole	ND	0.060 ug/L	
11/11/20	11/12/20	Etridiazole	ND	0.060 ug/L	
11/11/20	11/12/20	Fenarimol	ND	0.060 ug/L	
11/11/20	11/12/20	Fenoxaprop-ethyl	ND	0.060 ug/L	
11/11/20	11/12/20	Fenvalerate	ND	0.060 ug/L	
11/11/20	11/12/20	Fipronil	ND	0.060 ug/L	
11/11/20	11/12/20	Fluazifop-p-butyl	ND	0.060 ug/L	
11/11/20	11/12/20	Fludioxonil	ND	0.060 ug/L	
11/11/20	11/12/20	Fluroxypyr-meptyl	ND	0.060 ug/L	
11/11/20	11/12/20	Flutolanil	ND	0.060 ug/L	
11/11/20	11/12/20	g-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Heptachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Heptachlor epoxide	ND	0.060 ug/L	
11/11/20	11/12/20	Hexachlorobenzene	ND	0.060 ug/L	
11/11/20	11/12/20	Kresoxim-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	lambda-Cyhalothrin	ND	0.060 ug/L	
11/11/20	11/12/20	Malathion	ND	0.060 ug/L	
11/11/20	11/12/20	Mefenoxam	ND	0.060 ug/L	
11/11/20	11/12/20	Methoxychlor	ND	0.060 ug/L	
11/11/20	11/12/20	Metolachlor	ND	0.060 ug/L	
11/11/20	11/12/20	MGK-264	ND	0.060 ug/L	
11/11/20	11/12/20	Myclobutanil	ND	0.060 ug/L	
11/11/20	11/12/20	Napropamide	ND	0.060 ug/L	
11/11/20	11/12/20	o-Phenylphenol	ND	0.060 ug/L	
11/11/20	11/12/20	Oxadiazon	ND	0.060 ug/L	
11/11/20	11/12/20	Oxyfluorfen	ND	0.060 ug/L	

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Matrix: water

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	p,p'-DDD	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDE	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDT	ND	0.060 ug/L	
11/11/20	11/12/20	Parathion-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	PCA	ND	0.060 ug/L	
11/11/20	11/12/20	PCB	ND	0.060 ug/L	
11/11/20	11/12/20	PCNB	ND	0.060 ug/L	
11/11/20	11/12/20	Pendimethalin	ND	0.060 ug/L	
11/11/20	11/12/20	Pentachlorothioanisole	ND	0.060 ug/L	
11/11/20	11/12/20	Permethrin	ND	0.12 ug/L	
11/11/20	11/12/20	Procymidone	ND	0.060 ug/L	
11/11/20	11/12/20	Prodiamine	0.12 ug/L	0.060 ug/L	
11/11/20	11/12/20	Pronamide	ND	0.060 ug/L	
11/11/20	11/12/20	Propachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Pyriproxyfen	ND	0.060 ug/L	
11/11/20	11/12/20	Quinoxyfen	ND	0.060 ug/L	
11/11/20	11/12/20	Spirodiclofen	ND	0.060 ug/L	
11/11/20	11/12/20	Tetraconazole	ND	0.060 ug/L	
11/11/20	11/12/20	Tetradifon	ND	0.060 ug/L	
11/11/20	11/12/20	trans-Nonachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Trifluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Vinclozalin	ND	0.060 ug/L	

Method: Modified EPA 8321B (LC-MS/MS)

Rick Jordan, Laboratory Director

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCWL-11062020
Matrix: water

PAL Sample ID: P203144-02
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Abamectin	ND	0.060 ug/L	
11/11/20	11/13/20	Acetamiprid	ND	0.060 ug/L	
11/11/20	11/13/20	Acibenzolar-S-methyl	ND	0.12 ug/L	
11/11/20	11/13/20	Aldicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Allethrin	ND	0.060 ug/L	
11/11/20	11/13/20	Ametoctradin	ND	0.060 ug/L	
11/11/20	11/13/20	Atrazine	ND	0.060 ug/L	
11/11/20	11/13/20	Azinphos-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Azinphos-methyl	ND	0.12 ug/L	
11/11/20	11/13/20	Azoxystrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Bendiocarb	ND	0.060 ug/L	
11/11/20	11/13/20	Bensulide	ND	0.060 ug/L	
11/11/20	11/13/20	Bitertanol	ND	0.060 ug/L	
11/11/20	11/13/20	Boscalid	ND	0.060 ug/L	
11/11/20	11/13/20	Bromacil	ND	0.060 ug/L	
11/11/20	11/13/20	Carbaryl	ND	0.060 ug/L	
11/11/20	11/13/20	Carbendazim	ND	0.060 ug/L	
11/11/20	11/13/20	Carbofuran	ND	0.060 ug/L	
11/11/20	11/13/20	Carfentrazone-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Chlorantraniliprole	ND	0.060 ug/L	
11/11/20	11/13/20	Clethodim	ND	0.12 ug/L	
11/11/20	11/13/20	Clofentezine	ND	0.060 ug/L	
11/11/20	11/13/20	Cyanazine	ND	0.060 ug/L	
11/11/20	11/13/20	Cyantraniliprole	ND	0.060 ug/L	
11/11/20	11/13/20	Cyazofamid	ND	0.060 ug/L	
11/11/20	11/13/20	Cycloate	ND	0.12 ug/L	
11/11/20	11/13/20	Cyflufenamid	ND	0.060 ug/L	
11/11/20	11/13/20	Cyflumetofen	ND	0.060 ug/L	
11/11/20	11/13/20	Cymoxanil	ND	0.060 ug/L	
11/11/20	11/13/20	Cyprodinil	ND	0.060 ug/L	
11/11/20	11/13/20	DCPMU	ND	0.060 ug/L	
11/11/20	11/13/20	Diazoxon	ND	0.060 ug/L	
11/11/20	11/13/20	Difenoconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Diflubenzuron	ND	0.060 ug/L	
11/11/20	11/13/20	Dimethoate	ND	0.060 ug/L	

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11/11/20	11/13/20	Dimethomorph	ND	0.060 ug/L	
11/11/20	11/13/20	Disulfoton sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Diuron	ND	0.060 ug/L	
11/11/20	11/13/20	d-Phenothrin	ND	0.060 ug/L	
11/11/20	11/13/20	Ethion	ND	0.060 ug/L	
11/11/20	11/13/20	Famoxadone	ND	0.060 ug/L	
11/11/20	11/13/20	Famphur	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamidone	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamiphos sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamiphos sulfoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Fenazaquin	ND	0.060 ug/L	
11/11/20	11/13/20	Fenbuconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Fenbutatin oxide	ND	0.060 ug/L	
11/11/20	11/13/20	Fenhexamid	ND	0.060 ug/L	
11/11/20	11/13/20	Fenobucarb	ND	0.060 ug/L	
11/11/20	11/13/20	Fenpropathrin	ND	0.060 ug/L	
11/11/20	11/13/20	Fenpyroximate	ND	0.060 ug/L	
11/11/20	11/13/20	Fenuron	ND	0.060 ug/L	
11/11/20	11/13/20	Fluazinam	ND	0.060 ug/L	
11/11/20	11/13/20	Flubendiamide	ND	0.12 ug/L	
11/11/20	11/13/20	Flumioxazin	ND	0.060 ug/L	
11/11/20	11/13/20	Fluometuron	ND	0.060 ug/L	
11/11/20	11/13/20	Fluopicolide	ND	0.060 ug/L	
11/11/20	11/13/20	Fluopyram	ND	0.060 ug/L	
11/11/20	11/13/20	Fluoxastrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Flupyradifurone	ND	0.060 ug/L	
11/11/20	11/13/20	Fluridone	ND	0.060 ug/L	
11/11/20	11/13/20	Flutriafol	ND	0.060 ug/L	
11/11/20	11/13/20	Fluvalinate	ND	0.060 ug/L	
11/11/20	11/13/20	Fluxapyroxad	ND	0.060 ug/L	
11/11/20	11/13/20	Fonofos	ND	0.12 ug/L	
11/11/20	11/13/20	Hexaconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Hexazinone	ND	0.060 ug/L	
11/11/20	11/13/20	Hexythiazox	ND	0.060 ug/L	
11/11/20	11/13/20	Imazalil	ND	0.060 ug/L	

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11/11/20	11/13/20	Imidacloprid	ND	0.060 ug/L	
11/11/20	11/13/20	Indaziflam	ND	0.060 ug/L	
11/11/20	11/13/20	Indoxacarb	ND	0.060 ug/L	
11/11/20	11/13/20	Iprodione	ND	0.30 ug/L	
11/11/20	11/13/20	Isoxaben	ND	0.060 ug/L	
11/11/20	11/13/20	Linuron	ND	0.060 ug/L	
11/11/20	11/13/20	Malaoxon	ND	0.060 ug/L	
11/11/20	11/13/20	Mandipropamid	ND	0.060 ug/L	
11/11/20	11/13/20	Metconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Methidathion	ND	0.060 ug/L	
11/11/20	11/13/20	Methiocarb	ND	0.060 ug/L	
11/11/20	11/13/20	Methomyl	ND	0.060 ug/L	
11/11/20	11/13/20	Methoxyfenozide	ND	0.060 ug/L	
11/11/20	11/13/20	Metrafenone	ND	0.060 ug/L	
11/11/20	11/13/20	Metribuzin	ND	0.060 ug/L	
11/11/20	11/13/20	Mevinphos	ND	0.060 ug/L	
11/11/20	11/13/20	Norflurazon	ND	0.060 ug/L	
11/11/20	11/13/20	Novaluron	ND	0.060 ug/L	
11/11/20	11/13/20	Oryzalin	ND	0.060 ug/L	
11/11/20	11/13/20	Oxadixyl	ND	0.060 ug/L	
11/11/20	11/13/20	Oxamyl	ND	0.060 ug/L	
11/11/20	11/13/20	Penthiopyrad	ND	0.060 ug/L	
11/11/20	11/13/20	Phorate Sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Phorate Sulfoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Phosalone	ND	0.060 ug/L	
11/11/20	11/13/20	Phosmet	ND	0.060 ug/L	
11/11/20	11/13/20	Phosphamidon	ND	0.060 ug/L	
11/11/20	11/13/20	Piperonyl Butoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Pirimicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Pirimiphos-methyl	ND	0.060 ug/L	
11/11/20	11/13/20	Prometon	ND	0.060 ug/L	
11/11/20	11/13/20	Prometryn	ND	0.060 ug/L	
11/11/20	11/13/20	Propargite	ND	0.060 ug/L	
11/11/20	11/13/20	Propazine	ND	0.060 ug/L	
11/11/20	11/13/20	Propiconazole	ND	0.12 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Pyraclostrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Pyraflufen-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Pyrethrin	ND	0.30 ug/L	
11/11/20	11/13/20	Pyridaben	ND	0.060 ug/L	
11/11/20	11/13/20	Pyrimethanil	ND	0.060 ug/L	
11/11/20	11/13/20	Rotenone	ND	0.060 ug/L	
11/11/20	11/13/20	Saflufenacil	ND	0.060 ug/L	
11/11/20	11/13/20	Sethoxydim	ND	0.12 ug/L	
11/11/20	11/13/20	Siduron	ND	0.060 ug/L	
11/11/20	11/13/20	Simazine	ND	0.060 ug/L	
11/11/20	11/13/20	Simetryn	ND	0.060 ug/L	
11/11/20	11/13/20	Spinetoram	ND	0.060 ug/L	
11/11/20	11/13/20	Spinosad	ND	0.060 ug/L	
11/11/20	11/13/20	Spiromesifen	ND	0.12 ug/L	
11/11/20	11/13/20	Spirotetramat	ND	0.060 ug/L	
11/11/20	11/13/20	Spiroxamine	ND	0.060 ug/L	
11/11/20	11/13/20	Sulfentrazone	ND	0.060 ug/L	
11/11/20	11/13/20	Sulfoxaflor	ND	0.060 ug/L	
11/11/20	11/13/20	Tebuconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Tebufenozide	ND	0.060 ug/L	
11/11/20	11/13/20	Tebuthiuron	ND	0.060 ug/L	
11/11/20	11/13/20	Terbacil	ND	0.060 ug/L	
11/11/20	11/13/20	Terbuthylazine	ND	0.060 ug/L	
11/11/20	11/13/20	Terbutryn	ND	0.060 ug/L	
11/11/20	11/13/20	Thiabendazole	ND	0.060 ug/L	
11/11/20	11/13/20	Thiacloprid	ND	0.060 ug/L	
11/11/20	11/13/20	Thiamethoxam	ND	0.060 ug/L	
11/11/20	11/13/20	Thiobencarb	ND	0.060 ug/L	
11/11/20	11/13/20	Thiodicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Tolfenpyrad	ND	0.060 ug/L	
11/11/20	11/13/20	Triadimefon	ND	0.060 ug/L	
11/11/20	11/13/20	Triadimenol	ND	0.12 ug/L	
11/11/20	11/13/20	Trifloxystrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Triflumizole	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P203144-02
Sample Date: 11/6/20
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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes

Surrogate Recovery: 84 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Analytical Report

Client Sample ID: GRMW-GRIC-11062020
Matrix: water

PAL Sample ID: P203144-03
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes

Method: Modified EPA 8270D (GC-MS/MS)

Rick Jordan, Laboratory Director

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Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GRIC-11062020
Matrix: water

PAL Sample ID: P203144-03
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	a-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Acetochlor	ND	0.060 ug/L	
11/11/20	11/12/20	Alachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Aldrin	ND	0.060 ug/L	
11/11/20	11/12/20	Ametryn	ND	0.060 ug/L	
11/11/20	11/12/20	b-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Benfluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Bifenthrin	ND	0.060 ug/L	
11/11/20	11/12/20	Bromopropylate	ND	0.060 ug/L	
11/11/20	11/12/20	Buprofezin	ND	0.060 ug/L	
11/11/20	11/12/20	Captan	ND	0.60 ug/L	
11/11/20	11/12/20	Chlordane	ND	0.060 ug/L	
11/11/20	11/12/20	Chloroneb	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpropham	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpyrifos	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpyrifos-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	cis-Nonachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Cyfluthrin	ND	0.30 ug/L	
11/11/20	11/12/20	Cypermethrin	ND	0.30 ug/L	
11/11/20	11/12/20	Dacthal	ND	0.060 ug/L	
11/11/20	11/12/20	d-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Deltamethrin	ND	0.30 ug/L	
11/11/20	11/12/20	Diazinon	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlobenil	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlorofenthion	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlorvos	ND	0.060 ug/L	
11/11/20	11/12/20	Diclofop-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	Dicloran	ND	0.060 ug/L	
11/11/20	11/12/20	Dicofol	ND	0.060 ug/L	
11/11/20	11/12/20	Dieldrin	ND	0.060 ug/L	
11/11/20	11/12/20	Dimethenamid	ND	0.060 ug/L	
11/11/20	11/12/20	Diphenamid	ND	0.060 ug/L	
11/11/20	11/12/20	Diphenylamine	ND	0.060 ug/L	
11/11/20	11/12/20	Disulfoton	ND	0.060 ug/L	
11/11/20	11/12/20	Dithiopyr	ND	0.060 ug/L	

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Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	Endosulfan I	ND	0.12 ug/L	
11/11/20	11/12/20	Endosulfan II	ND	0.12 ug/L	
11/11/20	11/12/20	Endosulfan sulfate	ND	0.12 ug/L	
11/11/20	11/12/20	Endrin	ND	0.060 ug/L	
11/11/20	11/12/20	Endrin ketone	ND	0.060 ug/L	
11/11/20	11/12/20	Esfenvalerate	ND	0.060 ug/L	
11/11/20	11/12/20	Ethalfluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Ethofumesate	ND	0.060 ug/L	
11/11/20	11/12/20	Ethoprop	ND	0.060 ug/L	
11/11/20	11/12/20	Etoxazole	ND	0.060 ug/L	
11/11/20	11/12/20	Etridiazole	ND	0.060 ug/L	
11/11/20	11/12/20	Fenarimol	ND	0.060 ug/L	
11/11/20	11/12/20	Fenoxaprop-ethyl	ND	0.060 ug/L	
11/11/20	11/12/20	Fenvalerate	ND	0.060 ug/L	
11/11/20	11/12/20	Fipronil	ND	0.060 ug/L	
11/11/20	11/12/20	Fluazifop-p-butyl	ND	0.060 ug/L	
11/11/20	11/12/20	Fludioxonil	ND	0.060 ug/L	
11/11/20	11/12/20	Fluroxypyr-meptyl	ND	0.060 ug/L	
11/11/20	11/12/20	Flutolanil	ND	0.060 ug/L	
11/11/20	11/12/20	g-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Heptachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Heptachlor epoxide	ND	0.060 ug/L	
11/11/20	11/12/20	Hexachlorobenzene	ND	0.060 ug/L	
11/11/20	11/12/20	Kresoxim-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	lambda-Cyhalothrin	ND	0.060 ug/L	
11/11/20	11/12/20	Malathion	ND	0.060 ug/L	
11/11/20	11/12/20	Mefenoxam	ND	0.060 ug/L	
11/11/20	11/12/20	Methoxychlor	ND	0.060 ug/L	
11/11/20	11/12/20	Metolachlor	ND	0.060 ug/L	
11/11/20	11/12/20	MGK-264	ND	0.060 ug/L	
11/11/20	11/12/20	Myclobutanil	ND	0.060 ug/L	
11/11/20	11/12/20	Napropamide	ND	0.060 ug/L	
11/11/20	11/12/20	o-Phenylphenol	ND	0.060 ug/L	
11/11/20	11/12/20	Oxadiazon	ND	0.060 ug/L	
11/11/20	11/12/20	Oxyfluorfen	ND	0.060 ug/L	

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Matrix: water

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Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	p,p'-DDD	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDE	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDT	ND	0.060 ug/L	
11/11/20	11/12/20	Parathion-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	PCA	ND	0.060 ug/L	
11/11/20	11/12/20	PCB	ND	0.060 ug/L	
11/11/20	11/12/20	PCNB	ND	0.060 ug/L	
11/11/20	11/12/20	Pendimethalin	ND	0.060 ug/L	
11/11/20	11/12/20	Pentachlorothioanisole	ND	0.060 ug/L	
11/11/20	11/12/20	Permethrin	ND	0.12 ug/L	
11/11/20	11/12/20	Procymidone	ND	0.060 ug/L	
11/11/20	11/12/20	Prodiamine	0.11 ug/L	0.060 ug/L	
11/11/20	11/12/20	Pronamide	ND	0.060 ug/L	
11/11/20	11/12/20	Propachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Pyriproxyfen	ND	0.060 ug/L	
11/11/20	11/12/20	Quinoxyfen	ND	0.060 ug/L	
11/11/20	11/12/20	Spirodiclofen	ND	0.060 ug/L	
11/11/20	11/12/20	Tetraconazole	ND	0.060 ug/L	
11/11/20	11/12/20	Tetradifon	ND	0.060 ug/L	
11/11/20	11/12/20	trans-Nonachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Trifluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Vinclozalin	ND	0.060 ug/L	

Method: Modified EPA 8321B (LC-MS/MS)

Rick Jordan, Laboratory Director

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GRIC-11062020
Matrix: water

PAL Sample ID: P203144-03
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Abamectin	ND	0.060 ug/L	
11/11/20	11/13/20	Acetamiprid	ND	0.060 ug/L	
11/11/20	11/13/20	Acibenzolar-S-methyl	ND	0.12 ug/L	
11/11/20	11/13/20	Aldicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Allethrin	ND	0.060 ug/L	
11/11/20	11/13/20	Ametoctradin	ND	0.060 ug/L	
11/11/20	11/13/20	Atrazine	ND	0.060 ug/L	
11/11/20	11/13/20	Azinphos-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Azinphos-methyl	ND	0.12 ug/L	
11/11/20	11/13/20	Azoxystrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Bendiocarb	ND	0.060 ug/L	
11/11/20	11/13/20	Bensulide	ND	0.060 ug/L	
11/11/20	11/13/20	Bitertanol	ND	0.060 ug/L	
11/11/20	11/13/20	Boscalid	ND	0.060 ug/L	
11/11/20	11/13/20	Bromacil	ND	0.060 ug/L	
11/11/20	11/13/20	Carbaryl	ND	0.060 ug/L	
11/11/20	11/13/20	Carbendazim	ND	0.060 ug/L	
11/11/20	11/13/20	Carbofuran	ND	0.060 ug/L	
11/11/20	11/13/20	Carfentrazone-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Chlorantraniliprole	ND	0.060 ug/L	
11/11/20	11/13/20	Clethodim	ND	0.12 ug/L	
11/11/20	11/13/20	Clofentezine	ND	0.060 ug/L	
11/11/20	11/13/20	Cyanazine	ND	0.060 ug/L	
11/11/20	11/13/20	Cyantraniliprole	ND	0.060 ug/L	
11/11/20	11/13/20	Cyazofamid	ND	0.060 ug/L	
11/11/20	11/13/20	Cycloate	ND	0.12 ug/L	
11/11/20	11/13/20	Cyflufenamid	ND	0.060 ug/L	
11/11/20	11/13/20	Cyflumetofen	ND	0.060 ug/L	
11/11/20	11/13/20	Cymoxanil	ND	0.060 ug/L	
11/11/20	11/13/20	Cyprodinil	ND	0.060 ug/L	
11/11/20	11/13/20	DCPMU	ND	0.060 ug/L	
11/11/20	11/13/20	Diazoxon	ND	0.060 ug/L	
11/11/20	11/13/20	Difenoconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Diflubenzuron	ND	0.060 ug/L	
11/11/20	11/13/20	Dimethoate	ND	0.060 ug/L	

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11/11/20	11/13/20	Dimethomorph	ND	0.060 ug/L	
11/11/20	11/13/20	Disulfoton sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Diuron	ND	0.060 ug/L	
11/11/20	11/13/20	d-Phenothrin	ND	0.060 ug/L	
11/11/20	11/13/20	Ethion	ND	0.060 ug/L	
11/11/20	11/13/20	Famoxadone	ND	0.060 ug/L	
11/11/20	11/13/20	Famphur	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamidone	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamiphos sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamiphos sulfoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Fenazaquin	ND	0.060 ug/L	
11/11/20	11/13/20	Fenbuconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Fenbutatin oxide	ND	0.060 ug/L	
11/11/20	11/13/20	Fenhexamid	ND	0.060 ug/L	
11/11/20	11/13/20	Fenobucarb	ND	0.060 ug/L	
11/11/20	11/13/20	Fenpropathrin	ND	0.060 ug/L	
11/11/20	11/13/20	Fenpyroximate	ND	0.060 ug/L	
11/11/20	11/13/20	Fenuron	ND	0.060 ug/L	
11/11/20	11/13/20	Fluazinam	ND	0.060 ug/L	
11/11/20	11/13/20	Flubendiamide	ND	0.12 ug/L	
11/11/20	11/13/20	Flumioxazin	ND	0.060 ug/L	
11/11/20	11/13/20	Fluometuron	ND	0.060 ug/L	
11/11/20	11/13/20	Fluopicolide	ND	0.060 ug/L	
11/11/20	11/13/20	Fluopyram	ND	0.060 ug/L	
11/11/20	11/13/20	Fluoxastrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Flupyradifurone	ND	0.060 ug/L	
11/11/20	11/13/20	Fluridone	ND	0.060 ug/L	
11/11/20	11/13/20	Flutriafol	ND	0.060 ug/L	
11/11/20	11/13/20	Fluvalinate	ND	0.060 ug/L	
11/11/20	11/13/20	Fluxapyroxad	ND	0.060 ug/L	
11/11/20	11/13/20	Fonofos	ND	0.12 ug/L	
11/11/20	11/13/20	Hexaconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Hexazinone	ND	0.060 ug/L	
11/11/20	11/13/20	Hexythiazox	ND	0.060 ug/L	
11/11/20	11/13/20	Imazalil	ND	0.060 ug/L	

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Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Imidacloprid	ND	0.060 ug/L	
11/11/20	11/13/20	Indaziflam	ND	0.060 ug/L	
11/11/20	11/13/20	Indoxacarb	ND	0.060 ug/L	
11/11/20	11/13/20	Iprodione	ND	0.30 ug/L	
11/11/20	11/13/20	Isoxaben	ND	0.060 ug/L	
11/11/20	11/13/20	Linuron	ND	0.060 ug/L	
11/11/20	11/13/20	Malaoxon	ND	0.060 ug/L	
11/11/20	11/13/20	Mandipropamid	ND	0.060 ug/L	
11/11/20	11/13/20	Metconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Methidathion	ND	0.060 ug/L	
11/11/20	11/13/20	Methiocarb	ND	0.060 ug/L	
11/11/20	11/13/20	Methomyl	ND	0.060 ug/L	
11/11/20	11/13/20	Methoxyfenozide	ND	0.060 ug/L	
11/11/20	11/13/20	Metrafenone	ND	0.060 ug/L	
11/11/20	11/13/20	Metribuzin	ND	0.060 ug/L	
11/11/20	11/13/20	Mevinphos	ND	0.060 ug/L	
11/11/20	11/13/20	Norflurazon	ND	0.060 ug/L	
11/11/20	11/13/20	Novaluron	ND	0.060 ug/L	
11/11/20	11/13/20	Oryzalin	ND	0.060 ug/L	
11/11/20	11/13/20	Oxadixyl	ND	0.060 ug/L	
11/11/20	11/13/20	Oxamyl	ND	0.060 ug/L	
11/11/20	11/13/20	Penthiopyrad	ND	0.060 ug/L	
11/11/20	11/13/20	Phorate Sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Phorate Sulfoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Phosalone	ND	0.060 ug/L	
11/11/20	11/13/20	Phosmet	ND	0.060 ug/L	
11/11/20	11/13/20	Phosphamidon	ND	0.060 ug/L	
11/11/20	11/13/20	Piperonyl Butoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Pirimicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Pirimiphos-methyl	ND	0.060 ug/L	
11/11/20	11/13/20	Prometon	ND	0.060 ug/L	
11/11/20	11/13/20	Prometryn	ND	0.060 ug/L	
11/11/20	11/13/20	Propargite	ND	0.060 ug/L	
11/11/20	11/13/20	Propazine	ND	0.060 ug/L	
11/11/20	11/13/20	Propiconazole	ND	0.12 ug/L	

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Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Pyraclostrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Pyraflufen-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Pyrethrin	ND	0.30 ug/L	
11/11/20	11/13/20	Pyridaben	ND	0.060 ug/L	
11/11/20	11/13/20	Pyrimethanil	ND	0.060 ug/L	
11/11/20	11/13/20	Rotenone	ND	0.060 ug/L	
11/11/20	11/13/20	Saflufenacil	ND	0.060 ug/L	
11/11/20	11/13/20	Sethoxydim	ND	0.12 ug/L	
11/11/20	11/13/20	Siduron	ND	0.060 ug/L	
11/11/20	11/13/20	Simazine	ND	0.060 ug/L	
11/11/20	11/13/20	Simetryn	ND	0.060 ug/L	
11/11/20	11/13/20	Spinetoram	ND	0.060 ug/L	
11/11/20	11/13/20	Spinosad	ND	0.060 ug/L	
11/11/20	11/13/20	Spiromesifen	ND	0.12 ug/L	
11/11/20	11/13/20	Spirotetramat	ND	0.060 ug/L	
11/11/20	11/13/20	Spiroxamine	ND	0.060 ug/L	
11/11/20	11/13/20	Sulfentrazone	ND	0.060 ug/L	
11/11/20	11/13/20	Sulfoxaflor	ND	0.060 ug/L	
11/11/20	11/13/20	Tebuconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Tebufenozide	ND	0.060 ug/L	
11/11/20	11/13/20	Tebuthiuron	ND	0.060 ug/L	
11/11/20	11/13/20	Terbacil	ND	0.060 ug/L	
11/11/20	11/13/20	Terbuthylazine	ND	0.060 ug/L	
11/11/20	11/13/20	Terbutryn	ND	0.060 ug/L	
11/11/20	11/13/20	Thiabendazole	ND	0.060 ug/L	
11/11/20	11/13/20	Thiacloprid	ND	0.060 ug/L	
11/11/20	11/13/20	Thiamethoxam	ND	0.060 ug/L	
11/11/20	11/13/20	Thiobencarb	ND	0.060 ug/L	
11/11/20	11/13/20	Thiodicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Tolfenpyrad	ND	0.060 ug/L	
11/11/20	11/13/20	Triadimefon	ND	0.060 ug/L	
11/11/20	11/13/20	Triadimenol	ND	0.12 ug/L	
11/11/20	11/13/20	Trifloxystrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Triflumizole	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P203144-03
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes

Surrogate Recovery: 85 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-11062020
Matrix: water

PAL Sample ID: P203144-04
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes

Method: Modified EPA 8270D (GC-MS/MS)

Rick Jordan, Laboratory Director

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-11062020
Matrix: water

PAL Sample ID: P203144-04
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	a-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Acetochlor	ND	0.060 ug/L	
11/11/20	11/12/20	Alachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Aldrin	ND	0.060 ug/L	
11/11/20	11/12/20	Ametryn	ND	0.060 ug/L	
11/11/20	11/12/20	b-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Benfluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Bifenthrin	ND	0.060 ug/L	
11/11/20	11/12/20	Bromopropylate	ND	0.060 ug/L	
11/11/20	11/12/20	Buprofezin	ND	0.060 ug/L	
11/11/20	11/12/20	Captan	ND	0.60 ug/L	
11/11/20	11/12/20	Chlordane	ND	0.060 ug/L	
11/11/20	11/12/20	Chloroneb	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpropham	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpyrifos	ND	0.060 ug/L	
11/11/20	11/12/20	Chlorpyrifos-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	cis-Nonachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Cyfluthrin	ND	0.30 ug/L	
11/11/20	11/12/20	Cypermethrin	ND	0.30 ug/L	
11/11/20	11/12/20	Dacthal	ND	0.060 ug/L	
11/11/20	11/12/20	d-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Deltamethrin	ND	0.30 ug/L	
11/11/20	11/12/20	Diazinon	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlobenil	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlorofenthion	ND	0.060 ug/L	
11/11/20	11/12/20	Dichlorvos	ND	0.060 ug/L	
11/11/20	11/12/20	Diclofop-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	Dicloran	ND	0.060 ug/L	
11/11/20	11/12/20	Dicofol	ND	0.060 ug/L	
11/11/20	11/12/20	Dieldrin	ND	0.060 ug/L	
11/11/20	11/12/20	Dimethenamid	ND	0.060 ug/L	
11/11/20	11/12/20	Diphenamid	ND	0.060 ug/L	
11/11/20	11/12/20	Diphenylamine	ND	0.060 ug/L	
11/11/20	11/12/20	Disulfoton	ND	0.060 ug/L	
11/11/20	11/12/20	Dithiopyr	ND	0.060 ug/L	

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Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	Endosulfan I	ND	0.12 ug/L	
11/11/20	11/12/20	Endosulfan II	ND	0.12 ug/L	
11/11/20	11/12/20	Endosulfan sulfate	ND	0.12 ug/L	
11/11/20	11/12/20	Endrin	ND	0.060 ug/L	
11/11/20	11/12/20	Endrin ketone	ND	0.060 ug/L	
11/11/20	11/12/20	Esfenvalerate	ND	0.060 ug/L	
11/11/20	11/12/20	Ethalfluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Ethofumesate	ND	0.060 ug/L	
11/11/20	11/12/20	Ethoprop	ND	0.060 ug/L	
11/11/20	11/12/20	Etoxazole	ND	0.060 ug/L	
11/11/20	11/12/20	Etridiazole	ND	0.060 ug/L	
11/11/20	11/12/20	Fenarimol	ND	0.060 ug/L	
11/11/20	11/12/20	Fenoxaprop-ethyl	ND	0.060 ug/L	
11/11/20	11/12/20	Fenvalerate	ND	0.060 ug/L	
11/11/20	11/12/20	Fipronil	ND	0.060 ug/L	
11/11/20	11/12/20	Fluazifop-p-butyl	ND	0.060 ug/L	
11/11/20	11/12/20	Fludioxonil	ND	0.060 ug/L	
11/11/20	11/12/20	Fluroxypyr-meptyl	ND	0.060 ug/L	
11/11/20	11/12/20	Flutolanil	ND	0.060 ug/L	
11/11/20	11/12/20	g-BHC	ND	0.060 ug/L	
11/11/20	11/12/20	Heptachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Heptachlor epoxide	ND	0.060 ug/L	
11/11/20	11/12/20	Hexachlorobenzene	ND	0.060 ug/L	
11/11/20	11/12/20	Kresoxim-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	lambda-Cyhalothrin	ND	0.060 ug/L	
11/11/20	11/12/20	Malathion	ND	0.060 ug/L	
11/11/20	11/12/20	Mefenoxam	ND	0.060 ug/L	
11/11/20	11/12/20	Methoxychlor	ND	0.060 ug/L	
11/11/20	11/12/20	Metolachlor	ND	0.060 ug/L	
11/11/20	11/12/20	MGK-264	ND	0.060 ug/L	
11/11/20	11/12/20	Myclobutanil	ND	0.060 ug/L	
11/11/20	11/12/20	Napropamide	ND	0.060 ug/L	
11/11/20	11/12/20	o-Phenylphenol	ND	0.060 ug/L	
11/11/20	11/12/20	Oxadiazon	ND	0.060 ug/L	
11/11/20	11/12/20	Oxyfluorfen	ND	0.060 ug/L	

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Rick Jordan, Laboratory Director

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-11062020
Matrix: water

PAL Sample ID: P203144-04
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/12/20	p,p'-DDD	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDE	ND	0.060 ug/L	
11/11/20	11/12/20	p,p'-DDT	ND	0.060 ug/L	
11/11/20	11/12/20	Parathion-methyl	ND	0.060 ug/L	
11/11/20	11/12/20	PCA	ND	0.060 ug/L	
11/11/20	11/12/20	PCB	ND	0.060 ug/L	
11/11/20	11/12/20	PCNB	ND	0.060 ug/L	
11/11/20	11/12/20	Pendimethalin	ND	0.060 ug/L	
11/11/20	11/12/20	Pentachlorothioanisole	ND	0.060 ug/L	
11/11/20	11/12/20	Permethrin	ND	0.12 ug/L	
11/11/20	11/12/20	Procymidone	ND	0.060 ug/L	
11/11/20	11/12/20	Prodiamine	0.12 ug/L	0.060 ug/L	
11/11/20	11/12/20	Pronamide	ND	0.060 ug/L	
11/11/20	11/12/20	Propachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Pyriproxyfen	ND	0.060 ug/L	
11/11/20	11/12/20	Quinoxyfen	ND	0.060 ug/L	
11/11/20	11/12/20	Spirodiclofen	ND	0.060 ug/L	
11/11/20	11/12/20	Tetraconazole	ND	0.060 ug/L	
11/11/20	11/12/20	Tetradifon	ND	0.060 ug/L	
11/11/20	11/12/20	trans-Nonachlor	ND	0.060 ug/L	
11/11/20	11/12/20	Trifluralin	ND	0.060 ug/L	
11/11/20	11/12/20	Vinclozalin	ND	0.060 ug/L	

Method: Modified EPA 8321B (LC-MS/MS)

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Client Sample ID: GRMW-GR82-11062020
Matrix: water

PAL Sample ID: P203144-04
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Abamectin	ND	0.060 ug/L	
11/11/20	11/13/20	Acetamiprid	ND	0.060 ug/L	
11/11/20	11/13/20	Acibenzolar-S-methyl	ND	0.12 ug/L	
11/11/20	11/13/20	Aldicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Allethrin	ND	0.060 ug/L	
11/11/20	11/13/20	Ametoctradin	ND	0.060 ug/L	
11/11/20	11/13/20	Atrazine	ND	0.060 ug/L	
11/11/20	11/13/20	Azinphos-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Azinphos-methyl	ND	0.12 ug/L	
11/11/20	11/13/20	Azoxystrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Bendiocarb	ND	0.060 ug/L	
11/11/20	11/13/20	Bensulide	ND	0.060 ug/L	
11/11/20	11/13/20	Bitertanol	ND	0.060 ug/L	
11/11/20	11/13/20	Boscalid	ND	0.060 ug/L	
11/11/20	11/13/20	Bromacil	ND	0.060 ug/L	
11/11/20	11/13/20	Carbaryl	ND	0.060 ug/L	
11/11/20	11/13/20	Carbendazim	ND	0.060 ug/L	
11/11/20	11/13/20	Carbofuran	ND	0.060 ug/L	
11/11/20	11/13/20	Carfentrazone-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Chlorantraniliprole	ND	0.060 ug/L	
11/11/20	11/13/20	Clethodim	ND	0.12 ug/L	
11/11/20	11/13/20	Clofentezine	ND	0.060 ug/L	
11/11/20	11/13/20	Cyanazine	ND	0.060 ug/L	
11/11/20	11/13/20	Cyantraniliprole	ND	0.060 ug/L	
11/11/20	11/13/20	Cyazofamid	ND	0.060 ug/L	
11/11/20	11/13/20	Cycloate	ND	0.12 ug/L	
11/11/20	11/13/20	Cyflufenamid	ND	0.060 ug/L	
11/11/20	11/13/20	Cyflumetofen	ND	0.060 ug/L	
11/11/20	11/13/20	Cymoxanil	ND	0.060 ug/L	
11/11/20	11/13/20	Cyprodinil	ND	0.060 ug/L	
11/11/20	11/13/20	DCPMU	ND	0.060 ug/L	
11/11/20	11/13/20	Diazoxon	ND	0.060 ug/L	
11/11/20	11/13/20	Difenoconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Diflubenzuron	ND	0.060 ug/L	
11/11/20	11/13/20	Dimethoate	ND	0.060 ug/L	

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PAL Sample ID: P203144-04
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Dimethomorph	ND	0.060 ug/L	
11/11/20	11/13/20	Disulfoton sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Diuron	ND	0.060 ug/L	
11/11/20	11/13/20	d-Phenothrin	ND	0.060 ug/L	
11/11/20	11/13/20	Ethion	ND	0.060 ug/L	
11/11/20	11/13/20	Famoxadone	ND	0.060 ug/L	
11/11/20	11/13/20	Famphur	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamidone	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamiphos sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Fenamiphos sulfoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Fenazaquin	ND	0.060 ug/L	
11/11/20	11/13/20	Fenbuconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Fenbutatin oxide	ND	0.060 ug/L	
11/11/20	11/13/20	Fenhexamid	ND	0.060 ug/L	
11/11/20	11/13/20	Fenobucarb	ND	0.060 ug/L	
11/11/20	11/13/20	Fenpropathrin	ND	0.060 ug/L	
11/11/20	11/13/20	Fenpyroximate	ND	0.060 ug/L	
11/11/20	11/13/20	Fenuron	ND	0.060 ug/L	
11/11/20	11/13/20	Fluazinam	ND	0.060 ug/L	
11/11/20	11/13/20	Flubendiamide	ND	0.12 ug/L	
11/11/20	11/13/20	Flumioxazin	ND	0.060 ug/L	
11/11/20	11/13/20	Fluometuron	ND	0.060 ug/L	
11/11/20	11/13/20	Fluopicolide	ND	0.060 ug/L	
11/11/20	11/13/20	Fluopyram	ND	0.060 ug/L	
11/11/20	11/13/20	Fluoxastrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Flupyradifurone	ND	0.060 ug/L	
11/11/20	11/13/20	Fluridone	ND	0.060 ug/L	
11/11/20	11/13/20	Flutriafol	ND	0.060 ug/L	
11/11/20	11/13/20	Fluvalinate	ND	0.060 ug/L	
11/11/20	11/13/20	Fluxapyroxad	ND	0.060 ug/L	
11/11/20	11/13/20	Fonofos	ND	0.12 ug/L	
11/11/20	11/13/20	Hexaconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Hexazinone	ND	0.060 ug/L	
11/11/20	11/13/20	Hexythiazox	ND	0.060 ug/L	
11/11/20	11/13/20	Imazalil	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P203144-04
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Imidacloprid	ND	0.060 ug/L	
11/11/20	11/13/20	Indaziflam	ND	0.060 ug/L	
11/11/20	11/13/20	Indoxacarb	ND	0.060 ug/L	
11/11/20	11/13/20	Iprodione	ND	0.30 ug/L	
11/11/20	11/13/20	Isoxaben	ND	0.060 ug/L	
11/11/20	11/13/20	Linuron	ND	0.060 ug/L	
11/11/20	11/13/20	Malaoxon	ND	0.060 ug/L	
11/11/20	11/13/20	Mandipropamid	ND	0.060 ug/L	
11/11/20	11/13/20	Metconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Methidathion	ND	0.060 ug/L	
11/11/20	11/13/20	Methiocarb	ND	0.060 ug/L	
11/11/20	11/13/20	Methomyl	ND	0.060 ug/L	
11/11/20	11/13/20	Methoxyfenozide	ND	0.060 ug/L	
11/11/20	11/13/20	Metrafenone	ND	0.060 ug/L	
11/11/20	11/13/20	Metribuzin	ND	0.060 ug/L	
11/11/20	11/13/20	Mevinphos	ND	0.060 ug/L	
11/11/20	11/13/20	Norflurazon	ND	0.060 ug/L	
11/11/20	11/13/20	Novaluron	ND	0.060 ug/L	
11/11/20	11/13/20	Oryzalin	ND	0.060 ug/L	
11/11/20	11/13/20	Oxadixyl	ND	0.060 ug/L	
11/11/20	11/13/20	Oxamyl	ND	0.060 ug/L	
11/11/20	11/13/20	Penthiopyrad	ND	0.060 ug/L	
11/11/20	11/13/20	Phorate Sulfone	ND	0.060 ug/L	
11/11/20	11/13/20	Phorate Sulfoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Phosalone	ND	0.060 ug/L	
11/11/20	11/13/20	Phosmet	ND	0.060 ug/L	
11/11/20	11/13/20	Phosphamidon	ND	0.060 ug/L	
11/11/20	11/13/20	Piperonyl Butoxide	ND	0.060 ug/L	
11/11/20	11/13/20	Pirimicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Pirimiphos-methyl	ND	0.060 ug/L	
11/11/20	11/13/20	Prometon	ND	0.060 ug/L	
11/11/20	11/13/20	Prometryn	ND	0.060 ug/L	
11/11/20	11/13/20	Propargite	ND	0.060 ug/L	
11/11/20	11/13/20	Propazine	ND	0.060 ug/L	
11/11/20	11/13/20	Propiconazole	ND	0.12 ug/L	

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Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
11/11/20	11/13/20	Pyraclostrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Pyraflufen-ethyl	ND	0.060 ug/L	
11/11/20	11/13/20	Pyrethrin	ND	0.30 ug/L	
11/11/20	11/13/20	Pyridaben	ND	0.060 ug/L	
11/11/20	11/13/20	Pyrimethanil	ND	0.060 ug/L	
11/11/20	11/13/20	Rotenone	ND	0.060 ug/L	
11/11/20	11/13/20	Saflufenacil	ND	0.060 ug/L	
11/11/20	11/13/20	Sethoxydim	ND	0.12 ug/L	
11/11/20	11/13/20	Siduron	ND	0.060 ug/L	
11/11/20	11/13/20	Simazine	ND	0.060 ug/L	
11/11/20	11/13/20	Simetryn	ND	0.060 ug/L	
11/11/20	11/13/20	Spinetoram	ND	0.060 ug/L	
11/11/20	11/13/20	Spinosad	ND	0.060 ug/L	
11/11/20	11/13/20	Spiromesifen	ND	0.12 ug/L	
11/11/20	11/13/20	Spirotetramat	ND	0.060 ug/L	
11/11/20	11/13/20	Spiroxamine	ND	0.060 ug/L	
11/11/20	11/13/20	Sulfentrazone	ND	0.060 ug/L	
11/11/20	11/13/20	Sulfoxaflor	ND	0.060 ug/L	
11/11/20	11/13/20	Tebuconazole	ND	0.060 ug/L	
11/11/20	11/13/20	Tebufenozide	ND	0.060 ug/L	
11/11/20	11/13/20	Tebuthiuron	ND	0.060 ug/L	
11/11/20	11/13/20	Terbacil	ND	0.060 ug/L	
11/11/20	11/13/20	Terbuthylazine	ND	0.060 ug/L	
11/11/20	11/13/20	Terbutryn	ND	0.060 ug/L	
11/11/20	11/13/20	Thiabendazole	ND	0.060 ug/L	
11/11/20	11/13/20	Thiacloprid	ND	0.060 ug/L	
11/11/20	11/13/20	Thiamethoxam	ND	0.060 ug/L	
11/11/20	11/13/20	Thiobencarb	ND	0.060 ug/L	
11/11/20	11/13/20	Thiodicarb	ND	0.060 ug/L	
11/11/20	11/13/20	Tolfenpyrad	ND	0.060 ug/L	
11/11/20	11/13/20	Triadimefon	ND	0.060 ug/L	
11/11/20	11/13/20	Triadimenol	ND	0.12 ug/L	
11/11/20	11/13/20	Trifloxystrobin	ND	0.060 ug/L	
11/11/20	11/13/20	Triflumizole	ND	0.060 ug/L	

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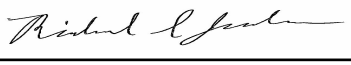
Client Sample ID: GRMW-GR82-11062020
Matrix: water

PAL Sample ID: P203144-04
Sample Date: 11/6/20
Received Date: 11/11/20

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes

Surrogate Recovery: 87 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)



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Report Date: November 23, 2020
Client Project ID: 81-54

Quality Assurance

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BLK1	Abamectin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	a-BHC	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Acetamiprid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Acetochlor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Acibenzolar-S-methyl	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Alachlor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Aldicarb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Aldrin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Allethrin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Ametoctradin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Ametryn	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Atrazine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Azinphos-ethyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Azinphos-methyl	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Azoxystrobin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	b-BHC	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Bendiocarb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Benfluralin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Bensulide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Bifenthrin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Bitertanol	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Boscalid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Bromacil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Bromopropylate	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Buprofezin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Captan	Not Detected	< 0.60 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Carbaryl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Carbendazim	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Carbofuran	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Carfentrazone-ethyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Chlorantraniliprole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Chlordane	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Chloroneb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Chlorpropham	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Chlorpyrifos	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Chlorpyrifos-methyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	cis-Nonachlor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Clethodim	Not Detected	< 0.12 ug/L	

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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BLK1	Clofentezine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cyanazine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cyantraniliprole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cyazofamid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cycloate	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cyflufenamid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cyflumetofen	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cyfluthrin	Not Detected	< 0.30 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cymoxanil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cypermethrin	Not Detected	< 0.30 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Cyprodinil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dacthal	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	d-BHC	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	DCPMU	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Deltamethrin	Not Detected	< 0.30 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Diazinon	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Diazoxon	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dichlobenil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dichlorofenthion	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dichlorvos	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Diclofop-methyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dicloran	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dicofol	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dieldrin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Difenoconazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Diflubenzuron	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dimethenamid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dimethoate	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dimethomorph	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Diphenamid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Diphenylamine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Disulfoton	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Disulfoton sulfone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Dithiopyr	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Diuron	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	d-Phenothrin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Endosulfan I	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Endosulfan II	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Endosulfan sulfate	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Endrin	Not Detected	< 0.060 ug/L	

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BLK1	Endrin ketone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Esfenvalerate	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Ethalfluralin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Ethion	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Ethofumesate	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Ethoprop	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Etoxazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Etridiazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Famoxadone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Famphur	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenamidone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenamiphos sulfone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenamiphos sulfoxide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenarimol	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenazaquin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenbuconazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenbutatin oxide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenhexamid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenobucarb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenoxaprop-ethyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenpropathrin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenpyroximate	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenuron	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fenvalerate	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fipronil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluazifop-p-butyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluazinam	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Flubendiamide	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fludioxonil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Flumioxazin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluometuron	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluopicolide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluopyram	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluoxastrobin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Flupyradifurone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluridone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluroxypyr-meptyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Flutolanil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Flutriafol	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fluvalinate	Not Detected	< 0.060 ug/L	

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BLK1	Fluxapyroxad	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Fonofos	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	g-BHC	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Heptachlor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Heptachlor epoxide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Hexachlorobenzene	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Hexaconazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Hexazinone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Hexythiazox	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Imazalil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Imidacloprid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Indaziflam	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Indoxacarb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Iprodione	Not Detected	< 0.30 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Isoxaben	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Kresoxim-methyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	lambda-Cyhalothrin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Linuron	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Malaoxon	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Malathion	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Mandipropamid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Mefenoxam	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Metconazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Methidathion	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Methiocarb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Methomyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Methoxychlor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Methoxyfenozide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Metolachlor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Metrafenone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Metribuzin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Mevinphos	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	MGK-264	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Myclobutanil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Napropamide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Norflurazon	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Novaluron	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	o-Phenylphenol	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Oryzalin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Oxadiazon	Not Detected	< 0.060 ug/L	

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Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BLK1	Oxadixyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Oxamyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Oxyfluorfen	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	p,p'-DDD	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	p,p'-DDE	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	p,p'-DDT	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Parathion-methyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	PCA	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	PCB	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	PCNB	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pendimethalin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pentachlorothioanisole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Penthiopyrad	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Permethrin	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Phorate Sulfone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Phorate Sulfoxide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Phosalone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Phosmet	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Phosphamidon	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Piperonyl Butoxide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pirimicarb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pirimiphos-methyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Procymidone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Prodiamine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Prometon	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Prometryn	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pronamide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Propachlor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Propargite	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Propazine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Propiconazole	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pyraclostrobin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pyraflufen-ethyl	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pyrethrin	Not Detected	< 0.30 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pyridaben	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pyrimethanil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Pyriproxyfen	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Quinoxyfen	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Rotenone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Saflufenacil	Not Detected	< 0.060 ug/L	

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Report Date: November 23, 2020
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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BLK1	Sethoxydim	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Siduron	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Simazine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Simetryn	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Spinetoram	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Spinosad	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Spirodiclofen	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Spiromesifen	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Spirotetramat	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Spiroxamine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Sulfentrazone	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Sulfoxaflor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Tebuconazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Tebufenozide	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Tebuthiuron	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Terbacil	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Terbuthylazine	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Terbutryn	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Tetraconazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Tetradifon	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Thiabendazole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Thiacloprid	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Thiamethoxam	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Thiobencarb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Thiodicarb	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Tolfenpyrad	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	trans-Nonachlor	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Triadimefon	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Triadimenol	Not Detected	< 0.12 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Trifloxystrobin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Triflumizole	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Trifluralin	Not Detected	< 0.060 ug/L	
11/11/20	11/12/20	20K1102-BLK1	Vinclozalin	Not Detected	< 0.060 ug/L	

Rick Jordan, Laboratory Director

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BS1	a-BHC	80	65-111	
11/11/20	11/12/20	20K1102-BSD1	a-BHC	83	65-111	
11/11/20	11/12/20	20K1102-BS1	Alachlor	86	67-122	
11/11/20	11/12/20	20K1102-BSD1	Alachlor	92	67-122	
11/11/20	11/12/20	20K1102-BS1	Aldrin	82	44-118	
11/11/20	11/12/20	20K1102-BSD1	Aldrin	89	44-118	
11/11/20	11/12/20	20K1102-BS1	b-BHC	83	66-114	
11/11/20	11/12/20	20K1102-BSD1	b-BHC	87	66-114	
11/11/20	11/12/20	20K1102-BS1	Benfluralin	85	67-122	
11/11/20	11/12/20	20K1102-BSD1	Benfluralin	89	67-122	
11/11/20	11/12/20	20K1102-BS1	Bifenthrin	91	63-142	
11/11/20	11/12/20	20K1102-BSD1	Bifenthrin	94	63-142	
11/11/20	11/12/20	20K1102-BS1	Boscalid	97	80-113	
11/11/20	11/12/20	20K1102-BSD1	Boscalid	102	80-113	
11/11/20	11/12/20	20K1102-BS1	Bromopropylate	81	61-130	
11/11/20	11/12/20	20K1102-BSD1	Bromopropylate	88	61-130	
11/11/20	11/12/20	20K1102-BS1	Buprofezin	86	70-134	
11/11/20	11/12/20	20K1102-BSD1	Buprofezin	95	70-134	
11/11/20	11/12/20	20K1102-BS1	Captan	95	25-143	
11/11/20	11/12/20	20K1102-BSD1	Captan	104	25-143	
11/11/20	11/12/20	20K1102-BS1	Chlordane	90	71-113	
11/11/20	11/12/20	20K1102-BSD1	Chlordane	92	71-113	
11/11/20	11/12/20	20K1102-BS1	Chloroneb	82	62-111	
11/11/20	11/12/20	20K1102-BSD1	Chloroneb	82	62-111	
11/11/20	11/12/20	20K1102-BS1	Cyfluthrin	89	50-158	
11/11/20	11/12/20	20K1102-BSD1	Cyfluthrin	97	50-158	
11/11/20	11/12/20	20K1102-BS1	Cypermethrin	98	48-163	
11/11/20	11/12/20	20K1102-BSD1	Cypermethrin	106	48-163	
11/11/20	11/12/20	20K1102-BS1	Cyprodinil	86	66-115	
11/11/20	11/12/20	20K1102-BSD1	Cyprodinil	92	66-115	
11/11/20	11/12/20	20K1102-BS1	d-BHC	83	68-116	
11/11/20	11/12/20	20K1102-BSD1	d-BHC	88	68-116	
11/11/20	11/12/20	20K1102-BS1	Dichlobenil	82	60-111	
11/11/20	11/12/20	20K1102-BSD1	Dichlobenil	83	60-111	
11/11/20	11/12/20	20K1102-BS1	Diclofop-methyl	85	59-133	
11/11/20	11/12/20	20K1102-BSD1	Diclofop-methyl	86	59-133	
11/11/20	11/12/20	20K1102-BS1	Dicofol	89	70-129	
11/11/20	11/12/20	20K1102-BSD1	Dicofol	97	70-129	
11/11/20	11/12/20	20K1102-BS1	Dieldrin	91	41-136	
11/11/20	11/12/20	20K1102-BSD1	Dieldrin	96	41-136	
11/11/20	11/12/20	20K1102-BS1	Diphenylamine	85	67-120	
11/11/20	11/12/20	20K1102-BSD1	Diphenylamine	90	67-120	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BS1	Dithiopyr	97	59-129	
11/11/20	11/12/20	20K1102-BSD1	Dithiopyr	99	59-129	
11/11/20	11/12/20	20K1102-BS1	Diuron	90	62-128	
11/11/20	11/12/20	20K1102-BSD1	Diuron	96	62-128	
11/11/20	11/12/20	20K1102-BS1	Endosulfan I	84	72-117	
11/11/20	11/12/20	20K1102-BSD1	Endosulfan I	92	72-117	
11/11/20	11/12/20	20K1102-BS1	Endosulfan II	87	59-119	
11/11/20	11/12/20	20K1102-BSD1	Endosulfan II	91	59-119	
11/11/20	11/12/20	20K1102-BS1	Endosulfan sulfate	83	68-128	
11/11/20	11/12/20	20K1102-BSD1	Endosulfan sulfate	91	68-128	
11/11/20	11/12/20	20K1102-BS1	Endrin	92	58-132	
11/11/20	11/12/20	20K1102-BSD1	Endrin	92	58-132	
11/11/20	11/12/20	20K1102-BS1	Endrin ketone	80	65-126	
11/11/20	11/12/20	20K1102-BSD1	Endrin ketone	95	65-126	
11/11/20	11/12/20	20K1102-BS1	Esfenvalerate	56	36-154	
11/11/20	11/12/20	20K1102-BSD1	Esfenvalerate	65	36-154	
11/11/20	11/12/20	20K1102-BS1	Ethalfluralin	99	66-130	
11/11/20	11/12/20	20K1102-BSD1	Ethalfluralin	94	66-130	
11/11/20	11/12/20	20K1102-BS1	Etoxazole	88	64-137	
11/11/20	11/12/20	20K1102-BSD1	Etoxazole	95	64-137	
11/11/20	11/12/20	20K1102-BS1	Fenarimol	87	70-125	
11/11/20	11/12/20	20K1102-BSD1	Fenarimol	95	70-125	
11/11/20	11/12/20	20K1102-BS1	Fenoxaprop-ethyl	85	37-141	
11/11/20	11/12/20	20K1102-BSD1	Fenoxaprop-ethyl	93	37-141	
11/11/20	11/12/20	20K1102-BS1	Fludioxonil	76	49-143	
11/11/20	11/12/20	20K1102-BSD1	Fludioxonil	83	49-143	
11/11/20	11/12/20	20K1102-BS1	Fluopyram	87	73-114	
11/11/20	11/12/20	20K1102-BSD1	Fluopyram	94	73-114	
11/11/20	11/12/20	20K1102-BS1	g-BHC	88	71-117	
11/11/20	11/12/20	20K1102-BSD1	g-BHC	92	71-117	
11/11/20	11/12/20	20K1102-BS1	Heptachlor	82	33-132	
11/11/20	11/12/20	20K1102-BSD1	Heptachlor	85	33-132	
11/11/20	11/12/20	20K1102-BS1	Heptachlor epoxide	87	64-123	
11/11/20	11/12/20	20K1102-BSD1	Heptachlor epoxide	93	64-123	
11/11/20	11/12/20	20K1102-BS1	Indaziflam	92	69-113	
11/11/20	11/12/20	20K1102-BSD1	Indaziflam	101	69-113	
11/11/20	11/12/20	20K1102-BS1	Kresoxim-methyl	88	70-131	
11/11/20	11/12/20	20K1102-BSD1	Kresoxim-methyl	96	70-131	
11/11/20	11/12/20	20K1102-BS1	lambda-Cyhalothrin	85	61-141	
11/11/20	11/12/20	20K1102-BSD1	lambda-Cyhalothrin	98	61-141	
11/11/20	11/12/20	20K1102-BS1	Mefenoxam	88	69-130	
11/11/20	11/12/20	20K1102-BSD1	Mefenoxam	95	69-130	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P203144
Report Date: November 23, 2020
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
11/11/20	11/12/20	20K1102-BS1	Methoxychlor	83	57-135	
11/11/20	11/12/20	20K1102-BSD1	Methoxychlor	92	57-135	
11/11/20	11/12/20	20K1102-BS1	Myclobutanil	85	61-141	
11/11/20	11/12/20	20K1102-BSD1	Myclobutanil	95	61-141	
11/11/20	11/12/20	20K1102-BS1	o-Phenylphenol	80	57-124	
11/11/20	11/12/20	20K1102-BSD1	o-Phenylphenol	82	57-124	
11/11/20	11/12/20	20K1102-BS1	Oxadiazon	91	73-127	
11/11/20	11/12/20	20K1102-BSD1	Oxadiazon	99	73-127	
11/11/20	11/12/20	20K1102-BS1	p,p'-DDD	88	65-132	
11/11/20	11/12/20	20K1102-BSD1	p,p'-DDD	91	65-132	
11/11/20	11/12/20	20K1102-BS1	p,p'-DDE	85	71-121	
11/11/20	11/12/20	20K1102-BSD1	p,p'-DDE	96	71-121	
11/11/20	11/12/20	20K1102-BS1	p,p'-DDT	86	64-128	
11/11/20	11/12/20	20K1102-BSD1	p,p'-DDT	89	64-128	
11/11/20	11/12/20	20K1102-BS1	Permethrin	89	62-146	
11/11/20	11/12/20	20K1102-BSD1	Permethrin	99	62-146	
11/11/20	11/12/20	20K1102-BS1	Prodiamine	89	58-133	
11/11/20	11/12/20	20K1102-BSD1	Prodiamine	94	58-133	
11/11/20	11/12/20	20K1102-BS1	Propachlor	85	67-117	
11/11/20	11/12/20	20K1102-BSD1	Propachlor	88	67-117	
11/11/20	11/12/20	20K1102-BS1	Pyriproxyfen	90	50-149	
11/11/20	11/12/20	20K1102-BSD1	Pyriproxyfen	97	50-149	
11/11/20	11/12/20	20K1102-BS1	Quinoxyfen	88	63-132	
11/11/20	11/12/20	20K1102-BSD1	Quinoxyfen	91	63-132	
11/11/20	11/12/20	20K1102-BS1	Spirodiclofen	89	57-136	
11/11/20	11/12/20	20K1102-BSD1	Spirodiclofen	95	57-136	
11/11/20	11/12/20	20K1102-BS1	Tebuconazole	92	73-117	
11/11/20	11/12/20	20K1102-BSD1	Tebuconazole	93	73-117	
11/11/20	11/12/20	20K1102-BS1	Tetraconazole	88	58-143	
11/11/20	11/12/20	20K1102-BSD1	Tetraconazole	98	58-143	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assessment
Work Order Number: 2101251

January 22, 2021

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 5 sample(s) on 1/15/2021 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Cyanide by SM 4500-CN C, E
Dissolved Mercury by EPA Method 245.1
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Brianna Barnes
Project Manager

Date: *01/22/2021*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess
Work Order: 2101251

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2101251-001	GRMW-CCUB-01132021	01/13/2021 8:45 AM	01/15/2021 9:38 AM
2101251-002	GRMW-CCWL-01132021	01/13/2021 9:45 AM	01/15/2021 9:38 AM
2101251-003	GRMW-LCPL-01132021	01/13/2021 10:30 AM	01/15/2021 9:38 AM
2101251-004	GRMW-GR82-01132021	01/13/2021 11:30 AM	01/15/2021 9:38 AM
2101251-005	GRMW-GRIC-01132021	01/13/2021 12:30 PM	01/15/2021 9:38 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2101251**
Date: **1/22/2021**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assessment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 1/13/2021 8:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-001 **Matrix:** Water
Client Sample ID: GRMW-CCUB-01132021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31086		Analyst: SS
Chloride	2.00	0.200	D	mg/L	2	1/18/2021 8:47:00 PM
Dissolved Mercury by EPA Method 245.1				Batch ID: 31106		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/21/2021 4:34:38 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31089		Analyst: CO
Total Hardness (as CaCO3)	30.4	0.800		mg/L CaCO3	1	1/21/2021 9:51:51 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31128		Analyst: CO
Arsenic	ND	0.500		µg/L	1	1/22/2021 12:51:19 PM
Cadmium	ND	0.200		µg/L	1	1/21/2021 8:28:17 PM
Chromium	1.14	1.00		µg/L	1	1/21/2021 8:28:17 PM
Copper	1.10	1.00		µg/L	1	1/21/2021 8:28:17 PM
Iron	ND	100		µg/L	1	1/21/2021 8:28:17 PM
Lead	ND	0.500		µg/L	1	1/21/2021 8:28:17 PM
Nickel	5.30	2.50		µg/L	1	1/21/2021 8:28:17 PM
Selenium	ND	5.00		µg/L	1	1/21/2021 8:28:17 PM
Silver	ND	0.250		µg/L	1	1/21/2021 8:28:17 PM
Zinc	ND	2.50		µg/L	1	1/21/2021 8:28:17 PM
Total Alkalinity by SM 2320B				Batch ID: R64796		Analyst: TN
Alkalinity, Total (As CaCO3)	42.8	2.50		mg/L	1	1/20/2021 9:39:31 AM
Ammonia by SM 4500 NH3G				Batch ID: 31099		Analyst: SS
Nitrogen, Ammonia	0.299	0.100		mg/L	1	1/20/2021 11:46:00 AM
Cyanide by SM 4500-CN C, E				Batch ID: 31131		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	1/22/2021 2:05:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 31080		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	1/19/2021 10:00:00 AM

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/13/2021 8:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-001
Matrix: Water
Client Sample ID: **GRMW-CCUB-01132021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sulfide by SM 4500-S2-F				Batch ID: R64779		Analyst: SS
Sulfide	ND	0.500		mg/L	1	1/19/2021 2:33:48 PM

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 1/13/2021 9:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-002 **Matrix:** Water
Client Sample ID: GRMW-CCWL-01132021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31086		Analyst: SS
Chloride	3.10	0.200	D	mg/L	2	1/18/2021 9:57:00 PM
Dissolved Mercury by EPA Method 245.1				Batch ID: 31106		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/21/2021 4:41:26 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31089		Analyst: CO
Total Hardness (as CaCO3)	41.3	0.800		mg/L CaCO3	1	1/21/2021 9:57:25 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31128		Analyst: CO
Arsenic	0.656	0.500		µg/L	1	1/22/2021 12:40:11 PM
Cadmium	ND	0.200		µg/L	1	1/21/2021 7:54:51 PM
Chromium	1.15	1.00		µg/L	1	1/21/2021 7:54:51 PM
Copper	1.93	1.00		µg/L	1	1/21/2021 7:54:51 PM
Iron	ND	100		µg/L	1	1/21/2021 7:54:51 PM
Lead	ND	0.500		µg/L	1	1/21/2021 7:54:51 PM
Nickel	ND	2.50		µg/L	1	1/21/2021 7:54:51 PM
Selenium	ND	5.00		µg/L	1	1/21/2021 7:54:51 PM
Silver	ND	0.250		µg/L	1	1/21/2021 7:54:51 PM
Zinc	6.51	2.50		µg/L	1	1/22/2021 12:40:11 PM
Total Alkalinity by SM 2320B				Batch ID: R64796		Analyst: TN
Alkalinity, Total (As CaCO3)	49.0	2.50		mg/L	1	1/20/2021 9:39:31 AM
Ammonia by SM 4500 NH3G				Batch ID: 31099		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	1/20/2021 11:50:00 AM
Cyanide by SM 4500-CN C, E				Batch ID: 31131		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	1/22/2021 2:18:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 31080		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	1/19/2021 10:00:00 AM

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/13/2021 9:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-002
Matrix: Water
Client Sample ID: **GRMW-CCWL-01132021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sulfide by SM 4500-S2-F				Batch ID: R64779		Analyst: SS
Sulfide	ND	0.500		mg/L	1	1/19/2021 2:33:48 PM

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 1/13/2021 10:30:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-003 **Matrix:** Water
Client Sample ID: GRMW-LCPL-01132021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31086		Analyst: SS
Chloride	92.8	5.00	D	mg/L	50	1/19/2021 11:30:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31089		Analyst: CO
Total Hardness (as CaCO3)	80.9	0.800		mg/L CaCO3	1	1/21/2021 10:02:58 PM
Total Alkalinity by SM 2320B				Batch ID: R64796		Analyst: TN
Alkalinity, Total (As CaCO3)	115	2.50		mg/L	1	1/20/2021 9:39:31 AM
Ammonia by SM 4500 NH3G				Batch ID: 31099		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	1/20/2021 11:55:00 AM
Cyanide by SM 4500-CN C, E				Batch ID: 31131		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	1/22/2021 2:22:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 31080		Analyst: SS
Phosphorus, Total (As P)	0.271	0.250		mg/L	1	1/19/2021 10:00:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R64779		Analyst: SS
Sulfide	1.00	0.500		mg/L	1	1/19/2021 2:33:48 PM

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 1/13/2021 11:30:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-004 **Matrix:** Water
Client Sample ID: GRMW-GR82-01132021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31086		Analyst: SS
Chloride	3.06	0.200	D	mg/L	2	1/18/2021 10:43:00 PM
Dissolved Mercury by EPA Method 245.1				Batch ID: 31106		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/21/2021 4:43:07 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31089		Analyst: CO
Total Hardness (as CaCO3)	36.8	0.800		mg/L CaCO3	1	1/21/2021 10:08:32 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31128		Analyst: CO
Arsenic	ND	0.500		µg/L	1	1/21/2021 8:33:51 PM
Cadmium	ND	0.200		µg/L	1	1/21/2021 8:33:51 PM
Chromium	ND	1.00		µg/L	1	1/21/2021 8:33:51 PM
Copper	1.19	1.00		µg/L	1	1/21/2021 8:33:51 PM
Iron	172	100		µg/L	1	1/21/2021 8:33:51 PM
Lead	ND	0.500		µg/L	1	1/21/2021 8:33:51 PM
Nickel	ND	2.50		µg/L	1	1/21/2021 8:33:51 PM
Selenium	ND	5.00		µg/L	1	1/21/2021 8:33:51 PM
Silver	ND	0.250		µg/L	1	1/21/2021 8:33:51 PM
Zinc	5.57	2.50		µg/L	1	1/21/2021 8:33:51 PM
Total Alkalinity by SM 2320B				Batch ID: R64796		Analyst: TN
Alkalinity, Total (As CaCO3)	37.9	2.50		mg/L	1	1/20/2021 9:39:31 AM
Ammonia by SM 4500 NH3G				Batch ID: 31099		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	1/20/2021 12:00:00 PM
Cyanide by SM 4500-CN C, E				Batch ID: 31131		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	1/22/2021 2:25:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 31080		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	1/19/2021 10:00:00 AM

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/13/2021 11:30:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-004
Matrix: Water
Client Sample ID: **GRMW-GR82-01132021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sulfide by SM 4500-S2-F				Batch ID: R64779		Analyst: SS
Sulfide	0.800	0.500		mg/L	1	1/19/2021 2:33:48 PM

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 1/13/2021 12:30:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-005 **Matrix:** Water
Client Sample ID: GRMW-GRIC-01132021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31086		Analyst: SS
Chloride	9.98	1.00	DH	mg/L	10	1/19/2021 11:53:00 AM
Dissolved Mercury by EPA Method 245.1				Batch ID: 31106		Analyst: WF
Mercury	ND	0.100		µg/L	1	1/21/2021 4:44:48 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31089		Analyst: CO
Total Hardness (as CaCO3)	37.9	0.800		mg/L CaCO3	1	1/21/2021 10:14:06 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31128		Analyst: CO
Arsenic	ND	0.500		µg/L	1	1/21/2021 8:39:25 PM
Cadmium	ND	0.200		µg/L	1	1/21/2021 8:39:25 PM
Chromium	ND	1.00		µg/L	1	1/21/2021 8:39:25 PM
Copper	22.2	1.00		µg/L	1	1/21/2021 8:39:25 PM
Iron	ND	100		µg/L	1	1/21/2021 8:39:25 PM
Lead	ND	0.500		µg/L	1	1/21/2021 8:39:25 PM
Nickel	ND	2.50		µg/L	1	1/21/2021 8:39:25 PM
Selenium	ND	5.00		µg/L	1	1/21/2021 8:39:25 PM
Silver	ND	0.250		µg/L	1	1/21/2021 8:39:25 PM
Zinc	2.87	2.50		µg/L	1	1/21/2021 8:39:25 PM
Total Alkalinity by SM 2320B				Batch ID: R64796		Analyst: TN
Alkalinity, Total (As CaCO3)	37.6	2.50		mg/L	1	1/20/2021 9:39:31 AM
Ammonia by SM 4500 NH3G				Batch ID: 31099		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	1/20/2021 12:05:00 PM
Cyanide by SM 4500-CN C, E				Batch ID: 31131		Analyst: WF
Cyanide, Total	ND	0.0500		mg/L	1	1/22/2021 2:29:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 31080		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	1/19/2021 10:00:00 AM

Analytical Report

Work Order: **2101251**
Date Reported: **1/22/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/13/2021 12:30:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2101251-005
Matrix: Water
Client Sample ID: **GRMW-GRIC-01132021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sulfide by SM 4500-S2-F				Batch ID: R64779		Analyst: SS
Sulfide	ND	0.500		mg/L	1	1/19/2021 2:33:48 PM

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R64796**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **1/20/2021**	RunNo: **64796**
Client ID: **MBLKW**	Batch ID: **R64796**		Analysis Date: **1/20/2021**	SeqNo: **1303352**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R64796**	SampType: **LCS**	Units: **mg/L**	Prep Date: **1/20/2021**	RunNo: **64796**
Client ID: **LCSW**	Batch ID: **R64796**		Analysis Date: **1/20/2021**	SeqNo: **1303353**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102	2.50	100.0	0	102	99.6	108				

Sample ID: **2101251-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **1/20/2021**	RunNo: **64796**
Client ID: **GRMW-CCUB-0113202**	Batch ID: **R64796**		Analysis Date: **1/20/2021**	SeqNo: **1303355**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	41.9	2.50						42.76	2.13	20	

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-31099**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **1/20/2021**		RunNo: **64814**		
Client ID: **MBLKW**	Batch ID: **31099**					Analysis Date: **1/20/2021**		SeqNo: **1303715**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-31099**	SampType: **LCS**			Units: **mg/L**		Prep Date: **1/20/2021**		RunNo: **64814**		
Client ID: **LCSW**	Batch ID: **31099**					Analysis Date: **1/20/2021**		SeqNo: **1303716**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.444	0.100	0.5000	0	88.8	74.1	109				

Sample ID: **2101233-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **1/20/2021**		RunNo: **64814**		
Client ID: **BATCH**	Batch ID: **31099**					Analysis Date: **1/20/2021**		SeqNo: **1303718**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2101233-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **1/20/2021**		RunNo: **64814**		
Client ID: **BATCH**	Batch ID: **31099**					Analysis Date: **1/20/2021**		SeqNo: **1303719**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.513	0.100	0.5000	0	103	38.8	131				

Sample ID: **2101233-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **1/20/2021**		RunNo: **64814**		
Client ID: **BATCH**	Batch ID: **31099**					Analysis Date: **1/20/2021**		SeqNo: **1303720**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.511	0.100	0.5000	0	102	38.8	131	0.5130	0.391	30	

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2101251-005CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/20/2021** RunNo: **64814**
Client ID: **GRMW-GRIC-01132021** Batch ID: **31099** Analysis Date: **1/20/2021** SeqNo: **1303735**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2101251-005CMS** SampType: **MS** Units: **mg/L** Prep Date: **1/20/2021** RunNo: **64814**
Client ID: **GRMW-GRIC-01132021** Batch ID: **31099** Analysis Date: **1/20/2021** SeqNo: **1303736**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.502	0.100	0.5000	0	100	38.8	131				

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Cyanide by SM 4500-CN C, E

Sample ID: **MB-31131**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **1/22/2021**	RunNo: **64867**
Client ID: **MBLKW**	Batch ID: **31131**		Analysis Date: **1/22/2021**	SeqNo: **1304755**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	ND	0.0500									

Sample ID: **LCS-31131**	SampType: **LCS**	Units: **mg/L**	Prep Date: **1/22/2021**	RunNo: **64867**
Client ID: **LCSW**	Batch ID: **31131**		Analysis Date: **1/22/2021**	SeqNo: **1304756**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.247	0.0500	0.2500	0	98.8	78.9	122				

Sample ID: **2101251-001EDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **1/22/2021**	RunNo: **64867**
Client ID: **GRMW-CCUB-0113202**	Batch ID: **31131**		Analysis Date: **1/22/2021**	SeqNo: **1304758**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	ND	0.0500						0		20	

Sample ID: **2101251-001EMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **1/22/2021**	RunNo: **64867**
Client ID: **GRMW-CCUB-0113202**	Batch ID: **31131**		Analysis Date: **1/22/2021**	SeqNo: **1304759**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.237	0.0500	0.2500	0	94.7	64.4	135				

Sample ID: **2101251-001EMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **1/22/2021**	RunNo: **64867**
Client ID: **GRMW-CCUB-0113202**	Batch ID: **31131**		Analysis Date: **1/22/2021**	SeqNo: **1304760**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.230	0.0500	0.2500	0	92.0	64.4	135	0.2367	2.91	30	

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-31089** SampType: **MBLK** Units: **mg/L** Prep Date: **1/19/2021** RunNo: **64860**
Client ID: **MBLKW** Batch ID: **31089** Analysis Date: **1/21/2021** SeqNo: **1304628**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.200									
Magnesium	ND	0.100									
Total Hardness (as CaCO3)	ND	0.800									

Sample ID: **LCS-31089** SampType: **LCS** Units: **mg/L** Prep Date: **1/19/2021** RunNo: **64860**
Client ID: **LCSW** Batch ID: **31089** Analysis Date: **1/21/2021** SeqNo: **1304629**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.03	0.200	1.000	0	103	50	150				
Magnesium	1.05	0.100	1.000	0	105	50	150				

Sample ID: **2101273-001ADUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **1/19/2021** RunNo: **64860**
Client ID: **BATCH** Batch ID: **31089** Analysis Date: **1/21/2021** SeqNo: **1304633**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	56.0	0.800						56.76	1.31	20	

Sample ID: **2101273-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **1/19/2021** RunNo: **64860**
Client ID: **BATCH** Batch ID: **31089** Analysis Date: **1/21/2021** SeqNo: **1304634**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	16.8	0.200	5.000	13.13	72.9	50	150				
Magnesium	10.0	0.100	5.000	5.820	84.0	50	150				

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2101273-001AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/19/2021** RunNo: **64860**
Client ID: **BATCH** Batch ID: **31089** Analysis Date: **1/21/2021** SeqNo: **1304635**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	19.3	0.200	5.000	13.13	124	50	150	16.78	14.2	20	
Magnesium	11.1	0.100	5.000	5.820	105	50	150	10.02	10.1	20	

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-31086** SampType: **MBLK** Units: **mg/L** Prep Date: **1/18/2021** RunNo: **64800**
Client ID: **MBLKW** Batch ID: **31086** Analysis Date: **1/18/2021** SeqNo: **1303427**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-31086** SampType: **LCS** Units: **mg/L** Prep Date: **1/18/2021** RunNo: **64800**
Client ID: **LCSW** Batch ID: **31086** Analysis Date: **1/18/2021** SeqNo: **1303428**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.695	0.100	0.7500	0	92.7	90	110				

Sample ID: **2101242-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/18/2021** RunNo: **64800**
Client ID: **BATCH** Batch ID: **31086** Analysis Date: **1/18/2021** SeqNo: **1303430**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	41.0	1.00						41.01	0.0244	20	DE

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2101242-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **1/18/2021** RunNo: **64800**
Client ID: **BATCH** Batch ID: **31086** Analysis Date: **1/18/2021** SeqNo: **1303431**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.1	1.00	7.500	41.01	108	80	120				DE

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2101242-001AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/18/2021** RunNo: **64800**
Client ID: **BATCH** Batch ID: **31086** Analysis Date: **1/18/2021** SeqNo: **1303432**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.2	1.00	7.500	41.01	109	80	120	49.12	0.163	20	DE

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2101242-001AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/18/2021** RunNo: **64800**
Client ID: **BATCH** Batch ID: **31086** Analysis Date: **1/18/2021** SeqNo: **1303432**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2101251-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/18/2021** RunNo: **64800**
Client ID: **GRMW-CCUB-0113202** Batch ID: **31086** Analysis Date: **1/18/2021** SeqNo: **1303440**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.00	0.200						1.998	0.200	20	D

Sample ID: **2101251-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **1/18/2021** RunNo: **64800**
Client ID: **GRMW-CCUB-0113202** Batch ID: **31086** Analysis Date: **1/18/2021** SeqNo: **1303441**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.54	0.200	1.500	1.998	103	80	120				D

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **MB-31080**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **1/18/2021**			RunNo: **64773**	
Client ID: **MBLKW**	Batch ID: **31080**					Analysis Date: **1/19/2021**			SeqNo: **1302783**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **LCS-31080**	SampType: **LCS**			Units: **mg/L**		Prep Date: **1/18/2021**			RunNo: **64773**	
Client ID: **LCSW**	Batch ID: **31080**					Analysis Date: **1/19/2021**			SeqNo: **1302785**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.470	0.250	0.5000	0	94.1	65	135				

Sample ID: **2101154-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **1/18/2021**			RunNo: **64773**	
Client ID: **BATCH**	Batch ID: **31080**					Analysis Date: **1/19/2021**			SeqNo: **1302789**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2101154-001CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **1/18/2021**			RunNo: **64773**	
Client ID: **BATCH**	Batch ID: **31080**					Analysis Date: **1/19/2021**			SeqNo: **1302793**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.447	0.250	0.5000	0	89.4	65	135				

Sample ID: **2101154-001CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **1/18/2021**			RunNo: **64773**	
Client ID: **BATCH**	Batch ID: **31080**					Analysis Date: **1/19/2021**			SeqNo: **1302797**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.553	0.250	0.5000	0	111	65	135	0.4468	21.2	30	

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R64779**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **1/19/2021**	RunNo: **64779**
Client ID: **MBLKW**	Batch ID: **R64779**		Analysis Date: **1/19/2021**	SeqNo: **1303030**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R64779**	SampType: **LCS**	Units: **mg/L**	Prep Date: **1/19/2021**	RunNo: **64779**
Client ID: **LCSW**	Batch ID: **R64779**		Analysis Date: **1/19/2021**	SeqNo: **1303031**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.60	0.500	2.000	0	80.0	74.9	118				

Sample ID: **2101251-002FDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **1/19/2021**	RunNo: **64779**
Client ID: **GRMW-CCWL-0113202**	Batch ID: **R64779**		Analysis Date: **1/19/2021**	SeqNo: **1303034**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2101251-002FMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **1/19/2021**	RunNo: **64779**
Client ID: **GRMW-CCWL-0113202**	Batch ID: **R64779**		Analysis Date: **1/19/2021**	SeqNo: **1303035**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.80	0.500	2.000	0.4000	70.0	74.9	118				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID: **2101251-002FMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **1/19/2021**	RunNo: **64779**
Client ID: **GRMW-CCWL-0113202**	Batch ID: **R64779**		Analysis Date: **1/19/2021**	SeqNo: **1303036**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	2.00	0.500	2.000	0.4000	80.0	74.9	118	1.800	10.5	30	

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-31128** SampType: **MBLK** Units: **µg/L** Prep Date: **1/21/2021** RunNo: **64854**
Client ID: **MBLKW** Batch ID: **31128** Analysis Date: **1/21/2021** SeqNo: **1304425**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	1.00									
Copper	ND	1.00									
Iron	ND	100									
Lead	ND	0.500									
Nickel	ND	2.50									
Selenium	ND	5.00									
Silver	ND	0.250									
Zinc	ND	2.50									

Sample ID: **LCS-31128** SampType: **LCS** Units: **µg/L** Prep Date: **1/21/2021** RunNo: **64854**
Client ID: **LCSW** Batch ID: **31128** Analysis Date: **1/21/2021** SeqNo: **1304426**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	110	0.500	100.0	0	110	85	115				
Cadmium	5.23	0.200	5.000	0	105	85	115				
Chromium	104	1.00	100.0	0	104	85	115				
Copper	106	1.00	100.0	0	106	85	115				
Iron	1,070	100	1,000	0	107	50	150				
Lead	51.0	0.500	50.00	0	102	85	115				
Nickel	111	2.50	100.0	0	111	85	115				
Selenium	9.68	5.00	10.00	0	96.8	85	115				
Silver	6.97	0.250	5.000	0	139	85	115				S
Zinc	108	2.50	100.0	0	108	85	115				

NOTES:
S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2101251-002DDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/21/2021** RunNo: **64854**
Client ID: **GRMW-CCWL-0113202** Batch ID: **31128** Analysis Date: **1/21/2021** SeqNo: **1304428**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.200						0		30	
Chromium	ND	1.00						1.150	189	30	R
Copper	1.14	1.00						1.932	51.7	30	
Iron	ND	100						0		30	
Lead	ND	0.500						0		30	
Nickel	ND	2.50						0		30	
Selenium	ND	5.00						0		30	
Silver	ND	0.250						0		30	

NOTES:
R - High RPD observed. The method is in control as indicated by the LCS.

Sample ID: **2101251-002DMS** SampType: **MS** Units: **µg/L** Prep Date: **1/21/2021** RunNo: **64854**
Client ID: **GRMW-CCWL-0113202** Batch ID: **31128** Analysis Date: **1/21/2021** SeqNo: **1304429**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	526	0.500	500.0	1.582	105	70	130				
Cadmium	28.9	0.200	25.00	0	116	70	130				
Chromium	623	1.00	500.0	1.150	124	70	130				
Copper	511	1.00	500.0	1.932	102	70	130				
Iron	5,210	100	5,000	85.97	102	50	150				
Lead	269	0.500	250.0	0.05500	108	70	130				
Nickel	643	2.50	500.0	1.791	128	70	130				
Selenium	53.6	5.00	50.00	0.6065	106	70	130				
Silver	36.5	0.250	25.00	0.1120	146	70	130				S
Zinc	574	2.50	500.0	64.82	102	70	130				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2101251-002DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/21/2021** RunNo: **64854**
Client ID: **GRMW-CCWL-0113202** Batch ID: **31128** Analysis Date: **1/21/2021** SeqNo: **1304430**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	547	0.500	500.0	1.582	109	70	130	526.2	3.94	30	
Cadmium	28.6	0.200	25.00	0	115	70	130	28.89	0.883	30	
Chromium	638	1.00	500.0	1.150	127	70	130	622.7	2.37	30	
Copper	542	1.00	500.0	1.932	108	70	130	511.3	5.88	30	
Iron	5,480	100	5,000	85.97	108	50	150	5,210	5.10	30	
Lead	269	0.500	250.0	0.05500	108	70	130	269.4	0.00984	30	
Nickel	661	2.50	500.0	1.791	132	70	130	642.9	2.78	30	S
Selenium	50.1	5.00	50.00	0.6065	99.0	70	130	53.59	6.69	30	
Silver	35.4	0.250	25.00	0.1120	141	70	130	36.49	3.07	30	S
Zinc	571	2.50	500.0	64.82	101	70	130	573.8	0.569	30	

NOTES:
S - Outlying spike recovery(ies) observed for Ag. A duplicate analysis was performed with similar results indicating a possible matrix effect.
S - Outlying spike recovery(ies) observed for Ni. A duplicate analysis was performed and recovered within range.

Sample ID: **MB-31095FB** SampType: **MBLK** Units: **µg/L** Prep Date: **1/21/2021** RunNo: **64854**
Client ID: **MBLKW** Batch ID: **31128** Analysis Date: **1/21/2021** SeqNo: **1304436**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.500									
Cadmium	ND	0.200									
Chromium	ND	1.00									
Copper	ND	1.00									
Iron	ND	100									
Lead	ND	0.500									
Nickel	ND	2.50									
Selenium	ND	5.00									
Silver	ND	0.250									
Zinc	ND	2.50									

NOTES:
Filter Blank

Date: *1/22/2021*

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2101251-002DDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/21/2021** RunNo: **64854**
Client ID: **GRMW-CCWL-0113202** Batch ID: **31128** Analysis Date: **1/22/2021** SeqNo: **1304701**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.500						0.6555	104	30	
Zinc	6.14	2.50						6.510	5.86	30	

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Mercury by EPA Method 245.1

Sample ID: **MB-31106** SampType: **MBLK** Units: **µg/L** Prep Date: **1/20/2021** RunNo: **64839**
Client ID: **MBLKW** Batch ID: **31106** Analysis Date: **1/21/2021** SeqNo: **1304544**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100									

Sample ID: **LCS-31106** SampType: **LCS** Units: **µg/L** Prep Date: **1/20/2021** RunNo: **64839**
Client ID: **LCSW** Batch ID: **31106** Analysis Date: **1/21/2021** SeqNo: **1304545**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.23	0.100	2.500	0	89.2	85	115				

Sample ID: **2101251-001DDUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/20/2021** RunNo: **64839**
Client ID: **GRMW-CCUB-0113202** Batch ID: **31106** Analysis Date: **1/21/2021** SeqNo: **1304547**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100						0		20	

Sample ID: **2101251-001DMS** SampType: **MS** Units: **µg/L** Prep Date: **1/20/2021** RunNo: **64839**
Client ID: **GRMW-CCUB-0113202** Batch ID: **31106** Analysis Date: **1/21/2021** SeqNo: **1304548**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.35	0.100	2.500	0	94.0	70	130				

Sample ID: **2101251-001DMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/20/2021** RunNo: **64839**
Client ID: **GRMW-CCUB-0113202** Batch ID: **31106** Analysis Date: **1/21/2021** SeqNo: **1304549**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.24	0.100	2.500	0	89.6	70	130	2.350	4.79	20	

Date: *1/22/2021*

Work Order: 2101251
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Mercury by EPA Method 245.1

Sample ID: **MB-31095FB** SampType: **MBLK** Units: **µg/L** Prep Date: **1/20/2021** RunNo: **64839**
Client ID: **MBLKW** Batch ID: **31106** Analysis Date: **1/21/2021** SeqNo: **1304553**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.100									

NOTES:
Filter Blank

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2101251**
Logged by:	**Carissa True**	Date Received:	**1/15/2021 9:38:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	UPS		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☑	No ☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ HNO3 to D fractions
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	2.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assesment
Work Order Number: 2103211

March 19, 2021

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 10 sample(s) on 3/12/2021 for the analyses presented in the following report.

Ammonia by SM 4500 NH3 E
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *03/19/2021*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm
Work Order: 2103211

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2103211-001	GRMW-GR82-03092021	03/09/2021 8:10 AM	03/12/2021 9:33 AM
2103211-002	GRMW-WCCL-03092021	03/09/2021 8:50 AM	03/12/2021 9:33 AM
2103211-003	GRMW-CCML-03092021	03/09/2021 9:40 AM	03/12/2021 9:33 AM
2103211-004	GRMW-GRML-03092021	03/09/2021 10:10 AM	03/12/2021 9:33 AM
2103211-005	GRMW-GRIC-03092021	03/09/2021 10:40 AM	03/12/2021 9:33 AM
2103211-006	GRMW-LCPL-03092021	03/09/2021 11:20 AM	03/12/2021 9:33 AM
2103211-007	GRMW-CCWL-03092021	03/09/2021 11:50 AM	03/12/2021 9:33 AM
2103211-008	GRMW-CCUB-03092021	03/09/2021 12:25 PM	03/12/2021 9:33 AM
2103211-009	GRMW-CCSP-03092021	03/09/2021 1:15 PM	03/12/2021 9:33 AM
2103211-010	GRMW-GRFC-03092021	03/09/2021 2:40 PM	03/12/2021 9:33 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2103211**
Date: **3/19/2021**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 8:10:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-001
Matrix: Water
Client Sample ID: **GRMW-GR82-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	4.68	0.200	D	mg/L	2	3/19/2021 9:46:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31643		Analyst: EH
Total Hardness (as CaCO3)	7.96	1.00		mg/L CaCO3	1	3/15/2021 5:28:30 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	2.18	1.00		µg/L	1	3/16/2021 8:06:08 PM
Chromium	1.10	0.750		µg/L	1	3/16/2021 8:06:08 PM
Copper	2.47	2.00		µg/L	1	3/16/2021 8:06:08 PM
Iron	200	100		µg/L	1	3/16/2021 8:06:08 PM
Nickel	1.37	1.30		µg/L	1	3/16/2021 8:06:08 PM
Selenium	ND	1.90		µg/L	1	3/18/2021 1:54:51 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:06:08 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	47.8	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	ND	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 8:50:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-002
Matrix: Water
Client Sample ID: **GRMW-WCCL-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	2.24	0.100		mg/L	1	3/18/2021 1:01:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31643		Analyst: EH
Total Hardness (as CaCO3)	9.45	1.00		mg/L CaCO3	1	3/15/2021 5:34:04 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	2.33	1.00		µg/L	1	3/16/2021 8:11:42 PM
Chromium	0.758	0.750		µg/L	1	3/16/2021 8:11:42 PM
Copper	ND	2.00		µg/L	1	3/16/2021 8:11:42 PM
Iron	121	100		µg/L	1	3/16/2021 8:11:42 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:11:42 PM
Selenium	ND	1.90		µg/L	1	3/18/2021 2:00:25 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:11:42 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	41.4	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	0.600	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 9:40:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-003
Matrix: Water
Client Sample ID: **GRMW-CCML-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	6.48	0.500	D	mg/L	5	3/19/2021 10:09:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31660		Analyst: EH
Total Hardness (as CaCO3)	48.0	1.00		mg/L CaCO3	1	3/18/2021 3:16:28 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	3.33	1.00		µg/L	1	3/16/2021 8:17:16 PM
Chromium	0.918	0.750		µg/L	1	3/16/2021 8:17:16 PM
Copper	ND	2.00		µg/L	1	3/16/2021 8:17:16 PM
Iron	169	100		µg/L	1	3/16/2021 8:17:16 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:17:16 PM
Selenium	ND	1.90		µg/L	1	3/18/2021 2:05:59 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:17:16 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	52.5	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	ND	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 10:10:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-004
Matrix: Water
Client Sample ID: **GRMW-GRML-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	5.30	0.400	D	mg/L	4	3/19/2021 10:32:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31660		Analyst: EH
Total Hardness (as CaCO3)	32.2	1.00		mg/L CaCO3	1	3/18/2021 3:22:02 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	ND	1.00		µg/L	1	3/16/2021 8:22:49 PM
Chromium	ND	0.750		µg/L	1	3/16/2021 8:22:49 PM
Copper	ND	2.00		µg/L	1	3/16/2021 8:22:49 PM
Iron	238	100		µg/L	1	3/16/2021 8:22:49 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:22:49 PM
Selenium	ND	1.90		µg/L	1	3/16/2021 8:22:49 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:22:49 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	44.6	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	0.522	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	ND	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 10:40:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-005
Matrix: Water
Client Sample ID: **GRMW-GRIC-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	5.43	0.400	D	mg/L	4	3/19/2021 10:55:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31660		Analyst: EH
Total Hardness (as CaCO3)	29.4	1.00		mg/L CaCO3	1	3/18/2021 3:48:12 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	ND	1.00		µg/L	1	3/16/2021 8:28:24 PM
Chromium	ND	0.750		µg/L	1	3/16/2021 8:28:24 PM
Copper	ND	2.00		µg/L	1	3/16/2021 8:28:24 PM
Iron	238	100		µg/L	1	3/16/2021 8:28:24 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:28:24 PM
Selenium	ND	1.90		µg/L	1	3/16/2021 8:28:24 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:28:24 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	31.8	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	ND	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 11:20:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-006
Matrix: Water
Client Sample ID: GRMW-LCPL-03092021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	86.2	5.00	D	mg/L	50	3/19/2021 11:19:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31660		Analyst: EH
Total Hardness (as CaCO3)	89.3	1.00		mg/L CaCO3	1	3/18/2021 3:53:46 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	1.91	1.00		µg/L	1	3/16/2021 8:33:58 PM
Chromium	ND	0.750		µg/L	1	3/16/2021 8:33:58 PM
Copper	33.7	2.00		µg/L	1	3/16/2021 8:33:58 PM
Iron	ND	100		µg/L	1	3/16/2021 8:33:58 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:33:58 PM
Selenium	ND	1.90		µg/L	1	3/16/2021 8:33:58 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:33:58 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	90.7	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	0.800	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 11:50:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-007
Matrix: Water
Client Sample ID: **GRMW-CCWL-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	2.98	0.100		mg/L	1	3/18/2021 3:42:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31660		Analyst: EH
Total Hardness (as CaCO3)	38.8	1.00		mg/L CaCO3	1	3/18/2021 3:59:20 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	ND	1.00		µg/L	1	3/16/2021 8:39:31 PM
Chromium	ND	0.750		µg/L	1	3/16/2021 8:39:31 PM
Copper	ND	2.00		µg/L	1	3/16/2021 8:39:31 PM
Iron	115	100		µg/L	1	3/16/2021 8:39:31 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:39:31 PM
Selenium	ND	1.90		µg/L	1	3/16/2021 8:39:31 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:39:31 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	50.9	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	ND	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 12:25:00 PM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-008
Matrix: Water
Client Sample ID: **GRMW-CCUB-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	2.14	0.100		mg/L	1	3/18/2021 4:05:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31660		Analyst: EH
Total Hardness (as CaCO3)	32.9	1.00		mg/L CaCO3	1	3/18/2021 4:04:54 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	ND	1.00		µg/L	1	3/16/2021 8:45:05 PM
Chromium	ND	0.750		µg/L	1	3/16/2021 8:45:05 PM
Copper	ND	2.00		µg/L	1	3/16/2021 8:45:05 PM
Iron	ND	100		µg/L	1	3/16/2021 8:45:05 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:45:05 PM
Selenium	ND	1.90		µg/L	1	3/16/2021 8:45:05 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:45:05 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	41.4	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	0.152	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	ND	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 1:15:00 PM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-009
Matrix: Water
Client Sample ID: **GRMW-CCSP-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	1.09	0.100		mg/L	1	3/18/2021 4:28:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31660		Analyst: EH
Total Hardness (as CaCO3)	29.3	1.00		mg/L CaCO3	1	3/18/2021 4:10:28 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	ND	1.00		µg/L	1	3/16/2021 8:50:39 PM
Chromium	ND	0.750		µg/L	1	3/16/2021 8:50:39 PM
Copper	ND	2.00		µg/L	1	3/16/2021 8:50:39 PM
Iron	115	100		µg/L	1	3/16/2021 8:50:39 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:50:39 PM
Selenium	ND	1.90		µg/L	1	3/18/2021 2:31:55 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:50:39 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	41.4	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	ND	0.500		mg/L	1	3/15/2021 1:54:15 PM

Analytical Report

Work Order: **2103211**
Date Reported: **3/19/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 3/9/2021 2:40:00 PM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2103211-010
Matrix: Water
Client Sample ID: **GRMW-GRFC-03092021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 31689		Analyst: SS
Chloride	0.773	0.100		mg/L	1	3/18/2021 4:52:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 31660		Analyst: EH
Total Hardness (as CaCO3)	38.1	1.00		mg/L CaCO3	1	3/18/2021 4:16:02 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 31662		Analyst: EH
Arsenic	ND	1.00		µg/L	1	3/16/2021 8:56:12 PM
Chromium	ND	0.750		µg/L	1	3/16/2021 8:56:12 PM
Copper	7.20	2.00		µg/L	1	3/16/2021 8:56:12 PM
Iron	ND	100		µg/L	1	3/16/2021 8:56:12 PM
Nickel	ND	1.30		µg/L	1	3/16/2021 8:56:12 PM
Selenium	ND	1.90		µg/L	1	3/16/2021 8:56:12 PM
Zinc	ND	3.80		µg/L	1	3/16/2021 8:56:12 PM
Total Alkalinity by SM 2320B				Batch ID: R65986		Analyst: WF
Alkalinity, Total (As CaCO3)	66.8	2.50		mg/L	1	3/19/2021 11:24:38 AM
Ammonia by SM 4500 NH3 E				Batch ID: R65978		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	3/17/2021 8:35:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 31697		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	3/19/2021 9:30:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R65870		Analyst: SS
Sulfide	ND	0.500		mg/L	1	3/15/2021 1:54:15 PM

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R65986**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **3/19/2021**			RunNo: **65986**		
Client ID: **MBLKW**	Batch ID: **R65986**					Analysis Date: **3/19/2021**			SeqNo: **1327706**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R65986**	SampType: **LCS**			Units: **mg/L**		Prep Date: **3/19/2021**			RunNo: **65986**		
Client ID: **LCSW**	Batch ID: **R65986**					Analysis Date: **3/19/2021**			SeqNo: **1327707**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101	2.50	100.0	0	101	99.1	105				

Sample ID: **2103211-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **3/19/2021**			RunNo: **65986**		
Client ID: **GRMW-GR82-03092021**	Batch ID: **R65986**					Analysis Date: **3/19/2021**			SeqNo: **1327709**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	43.0	2.50						47.75	10.5	20	

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Ammonia by SM 4500 NH3 E

Sample ID: **MB-R65911**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **3/17/2021**			RunNo: **65978**	
Client ID: **MBLKW**	Batch ID: **R65978**					Analysis Date: **3/17/2021**			SeqNo: **1327586**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-R65911**	SampType: **LCS**			Units: **mg/L**		Prep Date: **3/17/2021**			RunNo: **65978**	
Client ID: **LCSW**	Batch ID: **R65978**					Analysis Date: **3/17/2021**			SeqNo: **1327587**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	1.98	0.100	2.000	0	98.9	91	108				

Sample ID: **2103211-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **3/17/2021**			RunNo: **65978**	
Client ID: **GRMW-GR82-03092021**	Batch ID: **R65978**					Analysis Date: **3/17/2021**			SeqNo: **1327589**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2103211-002CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **3/17/2021**			RunNo: **65978**	
Client ID: **GRMW-WCCL-0309202**	Batch ID: **R65978**					Analysis Date: **3/17/2021**			SeqNo: **1327591**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2.07	0.100	2.000	0.07993	99.5	80.8	108				

Sample ID: **2103211-002CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **3/17/2021**			RunNo: **65978**	
Client ID: **GRMW-WCCL-0309202**	Batch ID: **R65978**					Analysis Date: **3/17/2021**			SeqNo: **1327592**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2.06	0.100	2.000	0.07993	98.9	80.8	108	2.069	0.566	30	

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Ammonia by SM 4500 NH3 E

Sample ID: **2103211-009CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/17/2021** RunNo: **65978**
Client ID: **GRMW-CCSP-03092021** Batch ID: **R65978** Analysis Date: **3/17/2021** SeqNo: **1327600**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2103211-009CMS** SampType: **MS** Units: **mg/L** Prep Date: **3/17/2021** RunNo: **65978**
Client ID: **GRMW-CCSP-03092021** Batch ID: **R65978** Analysis Date: **3/17/2021** SeqNo: **1327601**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	1.90	0.100	2.000	0	95.1	80.8	108				

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-31660** SampType: **MBLK** Units: **mg/L** Prep Date: **3/16/2021** RunNo: **65935**
Client ID: **MBLKW** Batch ID: **31660** Analysis Date: **3/18/2021** SeqNo: **1327476**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **LCS-31660** SampType: **LCS** Units: **mg/L** Prep Date: **3/16/2021** RunNo: **65935**
Client ID: **LCSW** Batch ID: **31660** Analysis Date: **3/18/2021** SeqNo: **1327477**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.04	0.350	1.000	0	104	50	150				
Magnesium	0.982	0.150	1.000	0	98.2	50	150				

Sample ID: **2103228-001DDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **3/16/2021** RunNo: **65935**
Client ID: **BATCH** Batch ID: **31660** Analysis Date: **3/18/2021** SeqNo: **1327479**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	250	1.00						252.9	1.28	20	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2103228-001DMS** SampType: **MS** Units: **mg/L** Prep Date: **3/16/2021** RunNo: **65935**
Client ID: **BATCH** Batch ID: **31660** Analysis Date: **3/18/2021** SeqNo: **1327480**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	46.9	0.350	5.000	42.12	96.2	50	150				E
Magnesium	42.4	0.150	5.000	35.86	131	50	150				E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2103228-001DMSD** SampType: **MSD** Units: **mg/L** Prep Date: **3/16/2021** RunNo: **65935**
Client ID: **BATCH** Batch ID: **31660** Analysis Date: **3/18/2021** SeqNo: **1327481**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	47.1	0.350	5.000	42.12	99.3	50	150	46.93	0.331	20	E
Magnesium	42.2	0.150	5.000	35.86	127	50	150	42.40	0.478	20	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **MB-31643** SampType: **MBLK** Units: **mg/L** Prep Date: **3/15/2021** RunNo: **65958**
Client ID: **MBLKW** Batch ID: **31643** Analysis Date: **3/19/2021** SeqNo: **1327836**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **LCS-31643** SampType: **LCS** Units: **mg/L** Prep Date: **3/15/2021** RunNo: **65958**
Client ID: **LCSW** Batch ID: **31643** Analysis Date: **3/19/2021** SeqNo: **1327837**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	0.989	0.350	1.000	0	98.9	50	150				
Magnesium	0.964	0.150	1.000	0	96.4	50	150				

Sample ID: **2103212-001CDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **3/15/2021** RunNo: **65958**
Client ID: **BATCH** Batch ID: **31643** Analysis Date: **3/19/2021** SeqNo: **1327839**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	162	1.00						170.7	5.17	20	

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2103212-001CMS** SampType: **MS** Units: **mg/L** Prep Date: **3/15/2021** RunNo: **65958**
Client ID: **BATCH** Batch ID: **31643** Analysis Date: **3/19/2021** SeqNo: **1327840**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	47.7	0.350	5.000	44.15	71.5	50	150				E
Magnesium	18.5	0.150	5.000	14.68	77.2	50	150				

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2103212-001CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **3/15/2021** RunNo: **65958**
Client ID: **BATCH** Batch ID: **31643** Analysis Date: **3/19/2021** SeqNo: **1327841**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	47.7	0.350	5.000	44.15	70.7	50	150	47.73	0.0860	20	E
Magnesium	18.5	0.150	5.000	14.68	75.6	50	150	18.54	0.423	20	

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-31689**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65995**		
Client ID: **MBLKW**	Batch ID: **31689**					Analysis Date: **3/18/2021**			SeqNo: **1327916**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-31689**	SampType: **LCS**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65995**		
Client ID: **LCSW**	Batch ID: **31689**					Analysis Date: **3/18/2021**			SeqNo: **1327917**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.696	0.100	0.7500	0	92.8	90	110				

Sample ID: **2103211-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65995**		
Client ID: **GRMW-GR82-03092021**	Batch ID: **31689**					Analysis Date: **3/18/2021**			SeqNo: **1327919**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.02	0.100						5.026	0.0398	20	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2103211-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65995**		
Client ID: **GRMW-GR82-03092021**	Batch ID: **31689**					Analysis Date: **3/18/2021**			SeqNo: **1327920**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.86	0.100	0.7500	5.026	112	80	120				E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2103211-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65995**		
Client ID: **GRMW-GR82-03092021**	Batch ID: **31689**					Analysis Date: **3/18/2021**			SeqNo: **1327921**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.86	0.100	0.7500	5.026	112	80	120	5.865	0	20	E

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2103211-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **3/18/2021** RunNo: **65995**
Client ID: **GRMW-GR82-03092021** Batch ID: **31689** Analysis Date: **3/18/2021** SeqNo: **1327921**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2103214-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/18/2021** RunNo: **65995**
Client ID: **BATCH** Batch ID: **31689** Analysis Date: **3/18/2021** SeqNo: **1327934**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	9.56	0.100						9.566	0.0627	20	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2103214-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/18/2021** RunNo: **65995**
Client ID: **BATCH** Batch ID: **31689** Analysis Date: **3/18/2021** SeqNo: **1327935**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	10.6	0.100	0.7500	9.566	140	80	120				ES

NOTES:
S - Analyte concentration was too high for accurate spike recovery(ies).
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **MB-31697**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65992**	
Client ID: **MBLKW**	Batch ID: **31697**					Analysis Date: **3/19/2021**			SeqNo: **1327865**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **LCS-31697**	SampType: **LCS**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65992**	
Client ID: **LCSW**	Batch ID: **31697**					Analysis Date: **3/19/2021**			SeqNo: **1327866**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.545	0.250	0.5000	0	109	65	135				

Sample ID: **2103206-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65992**	
Client ID: **BATCH**	Batch ID: **31697**					Analysis Date: **3/19/2021**			SeqNo: **1327868**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2103206-001CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65992**	
Client ID: **BATCH**	Batch ID: **31697**					Analysis Date: **3/19/2021**			SeqNo: **1327869**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.355	0.250	0.5000	0	70.9	65	135				

Sample ID: **2103206-001CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **3/18/2021**			RunNo: **65992**	
Client ID: **BATCH**	Batch ID: **31697**					Analysis Date: **3/19/2021**			SeqNo: **1327870**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.579	0.250	0.5000	0	116	65	135	0.3546	48.1	30	

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **2103211-009CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/18/2021** RunNo: **65992**
Client ID: **GRMW-CCSP-03092021** Batch ID: **31697** Analysis Date: **3/19/2021** SeqNo: **1327882**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2103211-009CMS** SampType: **MS** Units: **mg/L** Prep Date: **3/18/2021** RunNo: **65992**
Client ID: **GRMW-CCSP-03092021** Batch ID: **31697** Analysis Date: **3/19/2021** SeqNo: **1327883**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.409	0.250	0.5000	0	81.9	65	135				

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R65870**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **3/15/2021**	RunNo: **65870**
Client ID: **MBLKW**	Batch ID: **R65870**		Analysis Date: **3/15/2021**	SeqNo: **1325414**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R65870**	SampType: **LCS**	Units: **mg/L**	Prep Date: **3/15/2021**	RunNo: **65870**
Client ID: **LCSW**	Batch ID: **R65870**		Analysis Date: **3/15/2021**	SeqNo: **1325415**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.40	0.500	2.000	0	70.0	63.2	129				

Sample ID: **2103211-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **3/15/2021**	RunNo: **65870**
Client ID: **GRMW-GR82-03092021**	Batch ID: **R65870**		Analysis Date: **3/15/2021**	SeqNo: **1325417**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2103211-001DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **3/15/2021**	RunNo: **65870**
Client ID: **GRMW-GR82-03092021**	Batch ID: **R65870**		Analysis Date: **3/15/2021**	SeqNo: **1325418**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.60	0.500	2.000	0.4000	260	31.5	199				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2103211-001DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **3/15/2021**	RunNo: **65870**
Client ID: **GRMW-GR82-03092021**	Batch ID: **R65870**		Analysis Date: **3/15/2021**	SeqNo: **1325419**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.80	0.500	2.000	0.4000	270	31.5	199	5.600	3.51	30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **2103211-009DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/15/2021** RunNo: **65870**
Client ID: **GRMW-CCSP-03092021** Batch ID: **R65870** Analysis Date: **3/15/2021** SeqNo: **1325428**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2103211-009DMS** SampType: **MS** Units: **mg/L** Prep Date: **3/15/2021** RunNo: **65870**
Client ID: **GRMW-CCSP-03092021** Batch ID: **R65870** Analysis Date: **3/15/2021** SeqNo: **1325429**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.40	0.500	2.000	0.2000	260	31.5	199				S

NOTES:
S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-31662** SampType: **MBLK** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **MBLKW** Batch ID: **31662** Analysis Date: **3/16/2021** SeqNo: **1326581**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **LCS-31662** SampType: **LCS** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **LCSW** Batch ID: **31662** Analysis Date: **3/16/2021** SeqNo: **1326582**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	113	1.00	100.0	0	113	85	115				
Copper	111	2.00	100.0	0	111	85	115				
Iron	1,240	100	1,000	0	124	50	150				
Selenium	11.2	1.90	10.00	0	112	85	115				
Zinc	111	3.80	100.0	0	111	85	115				

Sample ID: **2103156-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **BATCH** Batch ID: **31662** Analysis Date: **3/16/2021** SeqNo: **1326584**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.68	1.00						2.763	2.90	30	
Chromium	ND	0.750						1.004	47.9	30	
Copper	2.46	2.00						1.141	73.3	30	
Iron	998	100						940.5	5.91	30	
Nickel	4.77	1.30						4.993	4.59	30	
Selenium	ND	1.90						2.173	56.7	30	
Zinc	20.2	3.80						20.74	2.90	30	

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2103156-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **BATCH** Batch ID: **31662** Analysis Date: **3/16/2021** SeqNo: **1326584**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **2103156-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **BATCH** Batch ID: **31662** Analysis Date: **3/16/2021** SeqNo: **1326585**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	598	1.00	500.0	2.763	119	70	130				
Copper	589	2.00	500.0	1.141	118	70	130				
Iron	7,170	100	5,000	940.5	125	50	150				
Nickel	603	1.30	500.0	4.993	120	70	130				
Selenium	66.9	1.90	50.00	2.173	129	70	130				
Zinc	561	3.80	500.0	20.74	108	70	130				

Sample ID: **2103156-001AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **BATCH** Batch ID: **31662** Analysis Date: **3/16/2021** SeqNo: **1326586**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	582	1.00	500.0	2.763	116	70	130	598.1	2.81	30	
Chromium	633	0.750	500.0	1.004	126	70	130	664.8	4.91	30	
Copper	532	2.00	500.0	1.141	106	70	130	588.9	10.1	30	
Iron	7,130	100	5,000	940.5	124	50	150	7,168	0.557	30	
Nickel	580	1.30	500.0	4.993	115	70	130	603.3	4.02	30	
Selenium	60.8	1.90	50.00	2.173	117	70	130	66.88	9.44	30	
Zinc	546	3.80	500.0	20.74	105	70	130	560.7	2.58	30	

Sample ID: **MB-31663FB** SampType: **MBLK** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **MBLKW** Batch ID: **31662** Analysis Date: **3/16/2021** SeqNo: **1326602**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-31663FB** SampType: **MBLK** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **MBLKW** Batch ID: **31662** Analysis Date: **3/16/2021** SeqNo: **1326602**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **LCS-31662** SampType: **LCS** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **LCSW** Batch ID: **31662** Analysis Date: **3/17/2021** SeqNo: **1327180**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	107	0.750	100.0	0	107	85	115				
Nickel	105	1.30	100.0	0	105	85	115				

Sample ID: **2103156-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **BATCH** Batch ID: **31662** Analysis Date: **3/17/2021** SeqNo: **1327181**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	523	0.750	500.0	1.004	104	70	130				

Sample ID: **2103156-001AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **BATCH** Batch ID: **31662** Analysis Date: **3/17/2021** SeqNo: **1327182**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	547	1.00	500.0	2.763	109	70	130	536.4	2.03	30	
Chromium	542	0.750	500.0	1.004	108	70	130	523.4	3.50	30	
Copper	512	2.00	500.0	1.141	102	70	130	497.6	2.85	30	
Iron	5,630	100	5,000	940.5	93.7	50	150	5,350	5.01	30	
Nickel	550	1.30	500.0	4.993	109	70	130	520.0	5.56	30	

Date: *3/19/2021*

Work Order: 2103211
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2103156-001AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **3/16/2021** RunNo: **65924**
Client ID: **BATCH** Batch ID: **31662** Analysis Date: **3/17/2021** SeqNo: **1327182**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	55.1	1.90	50.00	2.173	106	70	130	55.23	0.267	30	
Zinc	515	3.80	500.0	20.74	98.9	70	130	520.2	0.994	30	

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2103211**
Logged by:	**Gabrielle Coeuille**	Date Received:	**3/12/2021 9:33:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	UPS				

Log In

3.	Coolers are present?	Yes	☑	No ☐	NA	☐
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☐	Not Present	☑
6.	Was an attempt made to cool the samples?	Yes	☑	No ☐	NA	☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No ☐	NA	☐
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☑	No ☐	NA	☐

Person Notified:	Shiloh Simrell	Date:	3/12/2021
By Whom:	Gabrielle Coeuille	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Are metals total or dissolved?		
Client Instructions:	Dissolved.		

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	1.3
Sample 2	4.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assessment
Work Order Number: 2104388

May 07, 2021

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 10 sample(s) on 4/28/2021 for the analyses presented in the following report.

Ammonia by SM 4500 NH3 E
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Date: *05/07/2021*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess
Work Order: 2104388

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2104388-001	GRMW-GR82-04252021	04/25/2021 8:15 AM	04/28/2021 11:05 AM
2104388-002	GRMW-WCCL-04252021	04/25/2021 9:00 AM	04/28/2021 11:05 AM
2104388-003	GRMW-CCML-04252021	04/25/2021 10:00 AM	04/28/2021 11:05 AM
2104388-004	GRMW-GRML-04252021	04/25/2021 10:50 AM	04/28/2021 11:05 AM
2104388-005	GRMW-GRIC-04252021	04/25/2021 11:40 AM	04/28/2021 11:05 AM
2104388-006	GRMW-LCPL-04252021	04/25/2021 12:45 PM	04/28/2021 11:05 AM
2104388-007	GRMW-CCWL-04252021	04/25/2021 1:30 PM	04/28/2021 11:05 AM
2104388-008	GRMW-CCUB-04252021	04/25/2021 3:30 PM	04/28/2021 11:05 AM
2104388-009	GRMW-CCSP-04252021	04/25/2021 2:45 PM	04/28/2021 11:05 AM
2104388-010	GRMW-GRFC-04252021	04/25/2021 4:45 PM	04/28/2021 11:05 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2104388**
Date: **5/7/2021**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assessment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 8:15:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-001 **Matrix:** Water
Client Sample ID: **GRMW-GR82-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32174		Analyst: SS
Chloride	1.32	0.200	D	mg/L	2	5/4/2021 10:45:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	24.1	1.00		mg/L CaCO3	1	5/5/2021 5:44:02 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 10:24:15 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 10:24:15 PM
Copper	ND	2.00		µg/L	1	4/30/2021 10:24:15 PM
Iron	ND	100		µg/L	1	4/30/2021 10:24:15 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 10:24:15 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 10:24:15 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 10:24:15 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	28.6	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67010		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/5/2021 8:34:27 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 9:00:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-002 **Matrix:** Water
Client Sample ID: **GRMW-WCCL-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32174		Analyst: SS
Chloride	0.622	0.100		mg/L	1	5/4/2021 12:17:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	29.0	1.00		mg/L CaCO3	1	5/5/2021 5:49:35 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 10:40:59 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 10:40:59 PM
Copper	ND	2.00		µg/L	1	4/30/2021 10:40:59 PM
Iron	ND	100		µg/L	1	4/30/2021 10:40:59 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 10:40:59 PM
Selenium	2.35	1.90		µg/L	1	4/30/2021 10:40:59 PM
Zinc	9.05	3.80		µg/L	1	4/30/2021 10:40:59 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	30.6	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67010		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/5/2021 8:34:27 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 10:00:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-003 **Matrix:** Water
Client Sample ID: **GRMW-CCML-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32174		Analyst: SS
Chloride	2.54	0.500	D	mg/L	5	5/4/2021 12:40:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	29.3	1.00		mg/L CaCO3	1	5/5/2021 5:55:09 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 10:46:33 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 10:46:33 PM
Copper	ND	2.00		µg/L	1	4/30/2021 10:46:33 PM
Iron	ND	100		µg/L	1	4/30/2021 10:46:33 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 10:46:33 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 10:46:33 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 10:46:33 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	36.3	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67010		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/5/2021 8:34:27 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 10:50:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-004 **Matrix:** Water
Client Sample ID: **GRMW-GRML-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32174		Analyst: SS
Chloride	1.28	0.500	D	mg/L	5	5/4/2021 1:03:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	21.4	1.00		mg/L CaCO3	1	5/5/2021 6:00:42 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 10:52:07 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 10:52:07 PM
Copper	ND	2.00		µg/L	1	4/30/2021 10:52:07 PM
Iron	164	100		µg/L	1	4/30/2021 10:52:07 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 10:52:07 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 10:52:07 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 10:52:07 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	26.7	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67010		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/5/2021 8:34:27 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 11:40:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-005 **Matrix:** Water
Client Sample ID: **GRMW-GRIC-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32174		Analyst: SS
Chloride	1.26	0.500	D	mg/L	5	5/4/2021 1:26:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	20.3	1.00		mg/L CaCO3	1	5/5/2021 6:06:16 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 10:57:41 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 10:57:41 PM
Copper	ND	2.00		µg/L	1	4/30/2021 10:57:41 PM
Iron	161	100		µg/L	1	4/30/2021 10:57:41 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 10:57:41 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 10:57:41 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 10:57:41 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	26.7	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67010		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/5/2021 8:34:27 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 12:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-006 **Matrix:** Water
Client Sample ID: **GRMW-LCPL-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32190		Analyst: SS
Chloride	31.8	2.00	D	mg/L	20	5/5/2021 10:40:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	74.4	1.00		mg/L CaCO3	1	5/5/2021 6:23:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 11:03:15 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 11:03:15 PM
Copper	ND	2.00		µg/L	1	4/30/2021 11:03:15 PM
Iron	ND	100		µg/L	1	4/30/2021 11:03:15 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 11:03:15 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 11:03:15 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 11:03:15 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	93.6	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67045		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/6/2021 8:36:30 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	0.800	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 1:30:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-007 **Matrix:** Water
Client Sample ID: **GRMW-CCWL-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32190		Analyst: SS
Chloride	0.633	0.100		mg/L	1	5/5/2021 12:13:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	23.6	1.00		mg/L CaCO3	1	5/5/2021 6:28:33 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 11:08:49 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 11:08:49 PM
Copper	ND	2.00		µg/L	1	4/30/2021 11:08:49 PM
Iron	ND	100		µg/L	1	4/30/2021 11:08:49 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 11:08:49 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 11:08:49 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 11:08:49 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	28.6	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67045		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/6/2021 8:36:30 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 3:30:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-008 **Matrix:** Water
Client Sample ID: **GRMW-CCUB-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32190		Analyst: SS
Chloride	0.554	0.100		mg/L	1	5/5/2021 12:36:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	24.0	1.00		mg/L CaCO3	1	5/5/2021 6:34:07 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 11:14:24 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 11:14:24 PM
Copper	ND	2.00		µg/L	1	4/30/2021 11:14:24 PM
Iron	ND	100		µg/L	1	4/30/2021 11:14:24 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 11:14:24 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 11:14:24 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 11:14:24 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	30.6	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67045		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/6/2021 8:36:30 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 2:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-009 **Matrix:** Water
Client Sample ID: **GRMW-CCSP-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32190		Analyst: SS
Chloride	0.408	0.100		mg/L	1	5/5/2021 12:59:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	23.8	1.00		mg/L CaCO3	1	5/5/2021 6:39:40 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 11:19:58 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 11:19:58 PM
Copper	ND	2.00		µg/L	1	4/30/2021 11:19:58 PM
Iron	ND	100		µg/L	1	4/30/2021 11:19:58 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 11:19:58 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 11:19:58 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 11:19:58 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	28.0	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67045		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/6/2021 8:36:30 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Analytical Report

Work Order: **2104388**
Date Reported: **5/7/2021**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 4/25/2021 4:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2104388-010 **Matrix:** Water
Client Sample ID: **GRMW-GRFC-04252021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 32190		Analyst: SS
Chloride	0.563	0.100		mg/L	1	5/5/2021 1:22:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 32124		Analyst: EH
Total Hardness (as CaCO3)	25.3	1.00		mg/L CaCO3	1	5/5/2021 6:45:14 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 32126		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/30/2021 11:25:32 PM
Chromium	ND	0.750		µg/L	1	4/30/2021 11:25:32 PM
Copper	ND	2.00		µg/L	1	4/30/2021 11:25:32 PM
Iron	111	100		µg/L	1	4/30/2021 11:25:32 PM
Nickel	ND	1.30		µg/L	1	4/30/2021 11:25:32 PM
Selenium	ND	1.90		µg/L	1	4/30/2021 11:25:32 PM
Zinc	ND	3.80		µg/L	1	4/30/2021 11:25:32 PM
Total Alkalinity by SM 2320B				Batch ID: R66981		Analyst: WF
Alkalinity, Total (As CaCO3)	29.0	2.50		mg/L	1	5/4/2021 10:50:58 AM
Ammonia by SM 4500 NH3 E				Batch ID: R67045		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	5/6/2021 8:36:30 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 32173		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	5/5/2021 2:00:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R66897		Analyst: SS
Sulfide	ND	0.500		mg/L	1	4/30/2021 9:28:57 AM

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R66981**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/4/2021**			RunNo: **66981**		
Client ID: **MBLKW**	Batch ID: **R66981**					Analysis Date: **5/4/2021**			SeqNo: **1349134**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R66981**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/4/2021**			RunNo: **66981**		
Client ID: **LCSW**	Batch ID: **R66981**					Analysis Date: **5/4/2021**			SeqNo: **1349135**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101	2.50	100.0	0	101	99.1	105				

Sample ID: **2104388-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/4/2021**			RunNo: **66981**		
Client ID: **GRMW-GR82-04252021**	Batch ID: **R66981**					Analysis Date: **5/4/2021**			SeqNo: **1349137**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	28.6	2.50						28.65	0	20	

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3 E

Sample ID: **MB-R67010**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/5/2021**			RunNo: **67010**		
Client ID: **MBLKW**	Batch ID: **R67010**					Analysis Date: **5/5/2021**			SeqNo: **1350509**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-R67010**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/5/2021**			RunNo: **67010**		
Client ID: **LCSW**	Batch ID: **R67010**					Analysis Date: **5/5/2021**			SeqNo: **1350511**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	1.99	0.100	2.000	0	99.5	91	108				

Sample ID: **2104388-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/5/2021**			RunNo: **67010**		
Client ID: **GRMW-GR82-04252021**	Batch ID: **R67010**					Analysis Date: **5/5/2021**			SeqNo: **1350514**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2104388-001CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/5/2021**			RunNo: **67010**		
Client ID: **GRMW-GR82-04252021**	Batch ID: **R67010**					Analysis Date: **5/5/2021**			SeqNo: **1350516**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2.01	0.100	2.000	0	101	80.8	108				

Sample ID: **2104388-001CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/5/2021**			RunNo: **67010**		
Client ID: **GRMW-GR82-04252021**	Batch ID: **R67010**					Analysis Date: **5/5/2021**			SeqNo: **1350517**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2.00	0.100	2.000	0	100	80.8	108	2.012	0.555	30	

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3 E

Sample ID: **MB-R67045**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/6/2021**			RunNo: **67045**	
Client ID: **MBLKW**	Batch ID: **R67045**					Analysis Date: **5/6/2021**			SeqNo: **1351245**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-R67045**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/6/2021**			RunNo: **67045**	
Client ID: **LCSW**	Batch ID: **R67045**					Analysis Date: **5/6/2021**			SeqNo: **1351246**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2.03	0.100	2.000	0	102	91	108				

Sample ID: **2104388-006CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/6/2021**			RunNo: **67045**	
Client ID: **GRMW-LCPL-04252021**	Batch ID: **R67045**					Analysis Date: **5/6/2021**			SeqNo: **1351248**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2104388-006CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/6/2021**			RunNo: **67045**	
Client ID: **GRMW-LCPL-04252021**	Batch ID: **R67045**					Analysis Date: **5/6/2021**			SeqNo: **1351249**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	1.96	0.100	2.000	0	97.9	80.8	108				

Sample ID: **2104388-006CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/6/2021**			RunNo: **67045**	
Client ID: **GRMW-LCPL-04252021**	Batch ID: **R67045**					Analysis Date: **5/6/2021**			SeqNo: **1351250**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2.05	0.100	2.000	0	102	80.8	108	1.958	4.35	30	

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-32124** SampType: **MBLK** Units: **mg/L** Prep Date: **4/29/2021** RunNo: **67018**
Client ID: **MBLKW** Batch ID: **32124** Analysis Date: **4/29/2021** SeqNo: **1349964**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **LCS-32124** SampType: **LCS** Units: **mg/L** Prep Date: **4/29/2021** RunNo: **67018**
Client ID: **LCSW** Batch ID: **32124** Analysis Date: **4/29/2021** SeqNo: **1349965**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.03	0.350	1.000	0	103	50	150				
Magnesium	0.968	0.150	1.000	0	96.8	50	150				

Sample ID: **2104385-002ADUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **4/29/2021** RunNo: **67018**
Client ID: **BATCH** Batch ID: **32124** Analysis Date: **4/29/2021** SeqNo: **1349967**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	52.2	1.00						51.42	1.44	20	

Sample ID: **2104385-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **4/29/2021** RunNo: **67018**
Client ID: **BATCH** Batch ID: **32124** Analysis Date: **4/29/2021** SeqNo: **1349968**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.3	0.350	5.000	18.90	147	50	150				E
Magnesium	6.16	0.150	5.000	1.023	103	50	150				

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2104385-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **4/29/2021** RunNo: **67018**
Client ID: **BATCH** Batch ID: **32124** Analysis Date: **4/29/2021** SeqNo: **1349969**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.4	0.350	5.000	18.90	129	50	150	26.27	3.55	20	E
Magnesium	5.94	0.150	5.000	1.023	98.4	50	150	6.158	3.53	20	

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-32174**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67008**		
Client ID: **MBLKW**	Batch ID: **32174**					Analysis Date: **5/4/2021**			SeqNo: **1349595**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-32174**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67008**		
Client ID: **LCSW**	Batch ID: **32174**					Analysis Date: **5/4/2021**			SeqNo: **1349596**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.707	0.100	0.7500	0	94.3	90	110				

Sample ID: **2104388-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67008**		
Client ID: **GRMW-GR82-04252021**	Batch ID: **32174**					Analysis Date: **5/4/2021**			SeqNo: **1349584**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.31	0.200						1.322	1.22	20	D

Sample ID: **2104388-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67008**		
Client ID: **GRMW-GR82-04252021**	Batch ID: **32174**					Analysis Date: **5/4/2021**			SeqNo: **1349585**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.83	0.200	1.500	1.322	101	80	120				D

Sample ID: **2104388-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67008**		
Client ID: **GRMW-GR82-04252021**	Batch ID: **32174**					Analysis Date: **5/4/2021**			SeqNo: **1349586**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.83	0.200	1.500	1.322	101	80	120	2.832	0.0706	20	D

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-32190**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/4/2021**			RunNo: **67037**		
Client ID: **MBLKW**	Batch ID: **32190**					Analysis Date: **5/5/2021**			SeqNo: **1350379**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-32190**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/4/2021**			RunNo: **67037**		
Client ID: **LCSW**	Batch ID: **32190**					Analysis Date: **5/5/2021**			SeqNo: **1350366**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.732	0.100	0.7500	0	97.6	90	110				

Sample ID: **2104388-006BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/4/2021**			RunNo: **67037**		
Client ID: **GRMW-LCPL-04252021**	Batch ID: **32190**					Analysis Date: **5/5/2021**			SeqNo: **1350368**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.0	2.00						31.78	2.36	20	D

Sample ID: **2104388-006BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/4/2021**			RunNo: **67037**		
Client ID: **GRMW-LCPL-04252021**	Batch ID: **32190**					Analysis Date: **5/5/2021**			SeqNo: **1350369**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47.9	2.00	15.00	31.78	108	80	120				D

Sample ID: **2104388-006BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/4/2021**			RunNo: **67037**		
Client ID: **GRMW-LCPL-04252021**	Batch ID: **32190**					Analysis Date: **5/5/2021**			SeqNo: **1350370**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47.0	2.00	15.00	31.78	102	80	120	47.92	1.85	20	D

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **LCS-32173**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67041**		
Client ID: **LCSW**	Batch ID: **32173**					Analysis Date: **5/5/2021**			SeqNo: **1350538**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.501	0.250	0.5000	0	100	65	135				

Sample ID: **MB-32173**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67041**		
Client ID: **MBLKW**	Batch ID: **32173**					Analysis Date: **5/5/2021**			SeqNo: **1350540**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **2104370-001DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67041**		
Client ID: **BATCH**	Batch ID: **32173**					Analysis Date: **5/5/2021**			SeqNo: **1350542**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2104370-001DMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67041**		
Client ID: **BATCH**	Batch ID: **32173**					Analysis Date: **5/5/2021**			SeqNo: **1350543**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.517	0.250	0.5000	0	103	65	135				

Sample ID: **2104370-001DMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/3/2021**			RunNo: **67041**		
Client ID: **BATCH**	Batch ID: **32173**					Analysis Date: **5/5/2021**			SeqNo: **1350544**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.523	0.250	0.5000	0	105	65	135	0.5174	1.11	30	

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **2104432-001DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/3/2021** RunNo: **67041**
Client ID: **BATCH** Batch ID: **32173** Analysis Date: **5/5/2021** SeqNo: **1350938**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2104432-001DMS** SampType: **MS** Units: **mg/L** Prep Date: **5/3/2021** RunNo: **67041**
Client ID: **BATCH** Batch ID: **32173** Analysis Date: **5/5/2021** SeqNo: **1350939**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.644	0.250	0.5000	0.1412	101	65	135				

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R66897**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **4/30/2021**	RunNo: **66897**
Client ID: **MBLKW**	Batch ID: **R66897**		Analysis Date: **4/30/2021**	SeqNo: **1347215**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R66897**	SampType: **LCS**	Units: **mg/L**	Prep Date: **4/30/2021**	RunNo: **66897**
Client ID: **LCSW**	Batch ID: **R66897**		Analysis Date: **4/30/2021**	SeqNo: **1347216**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.60	0.500	2.000	0	80.0	63.2	129				

Sample ID: **2104388-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **4/30/2021**	RunNo: **66897**
Client ID: **GRMW-GR82-04252021**	Batch ID: **R66897**		Analysis Date: **4/30/2021**	SeqNo: **1347218**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2104388-001DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **4/30/2021**	RunNo: **66897**
Client ID: **GRMW-GR82-04252021**	Batch ID: **R66897**		Analysis Date: **4/30/2021**	SeqNo: **1347219**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.00	0.500	2.000	0.2000	240	31.5	199				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2104388-001DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **4/30/2021**	RunNo: **66897**
Client ID: **GRMW-GR82-04252021**	Batch ID: **R66897**		Analysis Date: **4/30/2021**	SeqNo: **1347220**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.20	0.500	2.000	0.2000	250	31.5	199	5.000	3.92	30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **2104388-010DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **4/30/2021**	RunNo: **66897**
Client ID: **GRMW-GRFC-04252021**	Batch ID: **R66897**		Analysis Date: **4/30/2021**	SeqNo: **1347230**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2104388-010DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **4/30/2021**	RunNo: **66897**
Client ID: **GRMW-GRFC-04252021**	Batch ID: **R66897**		Analysis Date: **4/30/2021**	SeqNo: **1347231**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	3.80	0.500	2.000	0	190	31.5	199				

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-32125FB** SampType: **MBLK** Units: **µg/L** Prep Date: **4/29/2021** RunNo: **66901**
Client ID: **MBLKW** Batch ID: **32126** Analysis Date: **4/30/2021** SeqNo: **1347583**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

NOTES:
Filter Blank

Sample ID: **MB-32126** SampType: **MBLK** Units: **µg/L** Prep Date: **4/29/2021** RunNo: **66901**
Client ID: **MBLKW** Batch ID: **32126** Analysis Date: **4/30/2021** SeqNo: **1347584**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **LCS-32126** SampType: **LCS** Units: **µg/L** Prep Date: **4/29/2021** RunNo: **66901**
Client ID: **LCSW** Batch ID: **32126** Analysis Date: **4/30/2021** SeqNo: **1347585**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	98.6	1.00	100.0	0	98.6	85	115				
Chromium	93.9	0.750	100.0	0	93.9	85	115				
Copper	97.0	2.00	100.0	0	97.0	85	115				
Iron	937	100	1,000	0	93.7	50	150				

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **LCS-32126** SampType: **LCS** Units: **µg/L** Prep Date: **4/29/2021** RunNo: **66901**
Client ID: **LCSW** Batch ID: **32126** Analysis Date: **4/30/2021** SeqNo: **1347585**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	95.5	1.30	100.0	0	95.5	85	115				
Selenium	10.1	1.90	10.00	0	101	85	115				
Zinc	110	3.80	100.0	0	110	85	115				

Sample ID: **2104385-002BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **4/29/2021** RunNo: **66901**
Client ID: **BATCH** Batch ID: **32126** Analysis Date: **4/30/2021** SeqNo: **1347587**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00						1.459	200	30	R
Chromium	ND	0.750						0		30	
Copper	ND	2.00						0		30	
Iron	310	100						306.8	0.932	30	
Nickel	ND	1.30						0		30	
Selenium	ND	1.90						0		30	
Zinc	ND	3.80						0		30	

NOTES:
R - High RPD due to low analyte concentration. In this range, high RPD's may be expected.

Sample ID: **2104385-002BMS** SampType: **MS** Units: **µg/L** Prep Date: **4/29/2021** RunNo: **66901**
Client ID: **BATCH** Batch ID: **32126** Analysis Date: **4/30/2021** SeqNo: **1347590**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	500	1.00	500.0	1.459	99.7	70	130				
Chromium	484	0.750	500.0	0.4820	96.6	70	130				
Copper	489	2.00	500.0	0	97.8	70	130				
Iron	4,970	100	5,000	306.8	93.3	50	150				
Nickel	487	1.30	500.0	0	97.3	70	130				
Selenium	53.4	1.90	50.00	0	107	70	130				
Zinc	553	3.80	500.0	0	111	70	130				

Work Order: 2104388
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2104385-002BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **4/29/2021** RunNo: **66901**
Client ID: **BATCH** Batch ID: **32126** Analysis Date: **4/30/2021** SeqNo: **1347591**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	509	1.00	500.0	1.459	102	70	130	499.9	1.86	30	
Chromium	496	0.750	500.0	0.4820	99.1	70	130	483.7	2.54	30	
Copper	507	2.00	500.0	0	101	70	130	488.8	3.56	30	
Iron	4,950	100	5,000	306.8	92.8	50	150	4,970	0.483	30	
Nickel	497	1.30	500.0	0	99.4	70	130	486.7	2.12	30	
Selenium	53.2	1.90	50.00	0	106	70	130	53.41	0.379	30	
Zinc	576	3.80	500.0	0	115	70	130	552.6	4.16	30	

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2104388**
Logged by:	**Gabrielle Coeuille**	Date Received:	**4/28/2021 11:05:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	UPS				

Log In

3.	Coolers are present?	Yes	☑	No ☐	NA	☐
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☐	Not Present	☑
6.	Was an attempt made to cool the samples?	Yes	☑	No ☐	NA	☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No ☐	NA	☐
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No ☐	NA	☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	3.8
Sample 2	4.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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21830 S.W. Alexander Ln
Sherwood, OR 97140

Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-04252021
Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/30/21	5/6/21	a-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Acetochlor	ND	0.060 ug/L	
4/30/21	5/6/21	Alachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Aldrin	ND	0.060 ug/L	
4/30/21	5/6/21	Ametryn	ND	0.060 ug/L	
4/30/21	5/6/21	Aspon	ND	0.060 ug/L	
4/30/21	5/6/21	b-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Benfluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Bifenthrin	ND	0.060 ug/L	
4/30/21	5/6/21	Bolstar	ND	0.060 ug/L	
4/30/21	5/6/21	Bromopropylate	ND	0.060 ug/L	
4/30/21	5/6/21	Buprofezin	ND	0.060 ug/L	
4/30/21	5/6/21	Captan	ND	0.60 ug/L	
4/30/21	5/6/21	Chlordane	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorfenapyr	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorfenvinphos	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorobenzilate	ND	0.060 ug/L	
4/30/21	5/6/21	Chloroneb	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpropham	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpyrifos	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	cis-Nonachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Cyfluthrin	ND	0.30 ug/L	
4/30/21	5/6/21	Cypermethrin	ND	0.30 ug/L	
4/30/21	5/6/21	Dacthal	ND	0.060 ug/L	
4/30/21	5/6/21	d-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Deltamethrin	ND	0.30 ug/L	
4/30/21	5/6/21	Demeton	ND	0.060 ug/L	
4/30/21	5/6/21	Diazinon	ND	0.060 ug/L	
4/30/21	5/6/21	Dichlobenil	ND	0.060 ug/L	
4/30/21	5/6/21	Dichlorofenthion	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-04252021
Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	Dichlorvos	ND	0.060 ug/L	
4/30/21	5/6/21	Diclofop-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	Dicloran	ND	0.060 ug/L	
4/30/21	5/6/21	Dicofol	ND	0.060 ug/L	
4/30/21	5/6/21	Dieldrin	ND	0.060 ug/L	
4/30/21	5/6/21	Dimethenamid	ND	0.060 ug/L	
4/30/21	5/6/21	Diphenamid	ND	0.060 ug/L	
4/30/21	5/6/21	Diphenylamine	ND	0.060 ug/L	
4/30/21	5/6/21	Disulfoton	ND	0.060 ug/L	
4/30/21	5/6/21	Dithiopyr	ND	0.060 ug/L	
4/30/21	5/6/21	Endosulfan I	ND	0.12 ug/L	
4/30/21	5/6/21	Endosulfan II	ND	0.12 ug/L	
4/30/21	5/6/21	Endosulfan sulfate	ND	0.12 ug/L	
4/30/21	5/6/21	Endrin	ND	0.060 ug/L	
4/30/21	5/6/21	Endrin ketone	ND	0.060 ug/L	
4/30/21	5/6/21	EPN	ND	0.060 ug/L	
4/30/21	5/6/21	EPTC	ND	0.060 ug/L	
4/30/21	5/6/21	Esfenvalerate	ND	0.060 ug/L	
4/30/21	5/6/21	Ethalfluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Ethofumesate	ND	0.060 ug/L	
4/30/21	5/6/21	Ethoprop	ND	0.060 ug/L	
4/30/21	5/6/21	Etoxazole	ND	0.060 ug/L	
4/30/21	5/6/21	Etridiazole	ND	0.060 ug/L	
4/30/21	5/6/21	Fenarimol	ND	0.060 ug/L	
4/30/21	5/6/21	Fenitrothion	ND	0.060 ug/L	
4/30/21	5/6/21	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/30/21	5/6/21	Fenthion	ND	0.060 ug/L	
4/30/21	5/6/21	Fenvalerate	ND	0.060 ug/L	
4/30/21	5/6/21	Fipronil	ND	0.060 ug/L	
4/30/21	5/6/21	Fluazifop-p-butyl	ND	0.060 ug/L	
4/30/21	5/6/21	Fludioxonil	ND	0.060 ug/L	
4/30/21	5/6/21	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/30/21	5/6/21	Flutolanil	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-04252021
Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	g-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Heptachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Heptachlor epoxide	ND	0.060 ug/L	
4/30/21	5/6/21	Hexachlorobenzene	ND	0.060 ug/L	
4/30/21	5/6/21	Kresoxim-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	lambda-Cyhalothrin	ND	0.060 ug/L	
4/30/21	5/6/21	Leptophos	ND	0.060 ug/L	
4/30/21	5/6/21	Malathion	ND	0.060 ug/L	
4/30/21	5/6/21	Mefenoxam	ND	0.060 ug/L	
4/30/21	5/6/21	Methoxychlor	ND	0.060 ug/L	
4/30/21	5/6/21	Metolachlor	ND	0.060 ug/L	
4/30/21	5/6/21	MGK-264	ND	0.060 ug/L	
4/30/21	5/6/21	Myclobutanil	ND	0.060 ug/L	
4/30/21	5/6/21	Napropamide	ND	0.060 ug/L	
4/30/21	5/6/21	o-Phenylphenol	ND	0.060 ug/L	
4/30/21	5/6/21	Ovex	ND	0.060 ug/L	
4/30/21	5/6/21	Oxadiazon	ND	0.060 ug/L	
4/30/21	5/6/21	Oxyfluorfen	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDD	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDE	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDT	ND	0.060 ug/L	
4/30/21	5/6/21	Paclobutrazol	ND	0.060 ug/L	
4/30/21	5/6/21	Parathion	ND	0.060 ug/L	
4/30/21	5/6/21	Parathion-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	PCA	ND	0.060 ug/L	
4/30/21	5/6/21	PCB	ND	0.060 ug/L	
4/30/21	5/6/21	PCNB	ND	0.060 ug/L	
4/30/21	5/6/21	Pendimethalin	ND	0.060 ug/L	
4/30/21	5/6/21	Pentachlorothioanisole	ND	0.060 ug/L	
4/30/21	5/6/21	Permethrin	ND	0.12 ug/L	
4/30/21	5/6/21	Phorate	ND	0.060 ug/L	
4/30/21	5/6/21	Procymidone	ND	0.060 ug/L	
4/30/21	5/6/21	Prodiamine	ND	0.060 ug/L	

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Rick Jordan, Laboratory Director

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-04252021
Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	Pronamide	ND	0.060 ug/L	
4/30/21	5/6/21	Propachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Pyriproxyfen	ND	0.060 ug/L	
4/30/21	5/6/21	Quinoxyfen	ND	0.060 ug/L	
4/30/21	5/6/21	Ronnel	ND	0.060 ug/L	
4/30/21	5/6/21	Spirodiclofen	ND	0.060 ug/L	
4/30/21	5/6/21	Sulfotep	ND	0.060 ug/L	
4/30/21	5/6/21	Tefluthrin	ND	0.060 ug/L	
4/30/21	5/6/21	Terbufos	ND	0.060 ug/L	
4/30/21	5/6/21	Tetraconazole	ND	0.060 ug/L	
4/30/21	5/6/21	Tetradifon	ND	0.060 ug/L	
4/30/21	5/6/21	Thionazin	ND	0.060 ug/L	
4/30/21	5/6/21	Tokuthion	ND	0.060 ug/L	
4/30/21	5/6/21	trans-Nonachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Trichloronate	ND	0.060 ug/L	
4/30/21	5/6/21	Trifluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Vinclozalin	ND	0.060 ug/L	
Method: Modified EPA 8321B (LC-MS/MS)					
4/30/21	5/4/21	Abamectin	ND	0.060 ug/L	
4/30/21	5/4/21	Acetamiprid	ND	0.060 ug/L	
4/30/21	5/4/21	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/30/21	5/4/21	Afidopyropen	ND	0.060 ug/L	
4/30/21	5/4/21	Aldicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Allethrin	ND	0.060 ug/L	
4/30/21	5/4/21	Ametoctradin	ND	0.060 ug/L	
4/30/21	5/4/21	Atrazine	ND	0.060 ug/L	
4/30/21	5/4/21	Azinphos-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Azinphos-methyl	ND	0.12 ug/L	
4/30/21	5/4/21	Azoxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Bendiocarb	ND	0.060 ug/L	
4/30/21	5/4/21	Bensulide	ND	0.060 ug/L	
4/30/21	5/4/21	Bicyclopyrone	ND	0.060 ug/L	

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Client Sample ID: GRMW-CCUB-04252021
Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Bitertanol	ND	0.060 ug/L	
4/30/21	5/4/21	Boscalid	ND	0.060 ug/L	
4/30/21	5/4/21	Bromacil	ND	0.060 ug/L	
4/30/21	5/4/21	Carbaryl	ND	0.060 ug/L	
4/30/21	5/4/21	Carbendazim	ND	0.060 ug/L	
4/30/21	5/4/21	Carbofuran	ND	0.060 ug/L	
4/30/21	5/4/21	Carfentrazone-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Chlorantraniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Clethodim	ND	0.12 ug/L	
4/30/21	5/4/21	Clofentezine	ND	0.060 ug/L	
4/30/21	5/4/21	Clomazone	ND	0.060 ug/L	
4/30/21	5/4/21	Cyanazine	ND	0.060 ug/L	
4/30/21	5/4/21	Cyantraniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Cyazofamid	ND	0.060 ug/L	
4/30/21	5/4/21	Cyclaniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Cycloate	ND	0.12 ug/L	
4/30/21	5/4/21	Cyflufenamid	ND	0.060 ug/L	
4/30/21	5/4/21	Cyflumetofen	ND	0.060 ug/L	
4/30/21	5/4/21	Cyhalofop-butyl	ND	0.12 ug/L	
4/30/21	5/4/21	Cymoxanil	ND	0.060 ug/L	
4/30/21	5/4/21	Cyprodinil	ND	0.060 ug/L	
4/30/21	5/4/21	Cyprosulfamide	ND	0.060 ug/L	
4/30/21	5/4/21	DCPMU	ND	0.060 ug/L	
4/30/21	5/4/21	Diazoxon	ND	0.060 ug/L	
4/30/21	5/4/21	Difenoconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Diflubenzuron	ND	0.060 ug/L	
4/30/21	5/4/21	Diflufenican	ND	0.060 ug/L	
4/30/21	5/4/21	Dimethoate	ND	0.060 ug/L	
4/30/21	5/4/21	Dimethomorph	ND	0.060 ug/L	
4/30/21	5/4/21	Dioxathion	ND	0.060 ug/L	
4/30/21	5/4/21	Disulfoton sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Diuron	ND	0.060 ug/L	
4/30/21	5/4/21	d-Phenothrin	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Ethion	ND	0.060 ug/L	
4/30/21	5/4/21	Etofenprox	ND	0.060 ug/L	
4/30/21	5/4/21	Famoxadone	ND	0.060 ug/L	
4/30/21	5/4/21	Famphur	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamidone	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamiphos sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Fenazaquin	ND	0.060 ug/L	
4/30/21	5/4/21	Fenbuconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Fenbutatin oxide	ND	0.060 ug/L	
4/30/21	5/4/21	Fenhexamid	ND	0.060 ug/L	
4/30/21	5/4/21	Fenobucarb	ND	0.060 ug/L	
4/30/21	5/4/21	Fenoxycarb	ND	0.060 ug/L	
4/30/21	5/4/21	Fenpropathrin	ND	0.060 ug/L	
4/30/21	5/4/21	Fenpyroximate	ND	0.060 ug/L	
4/30/21	5/4/21	Fenuron	ND	0.060 ug/L	
4/30/21	5/4/21	Fluazinam	ND	0.060 ug/L	
4/30/21	5/4/21	Flubendiamide	ND	0.12 ug/L	
4/30/21	5/4/21	Flufenacet	ND	0.060 ug/L	
4/30/21	5/4/21	Flumioxazin	ND	0.060 ug/L	
4/30/21	5/4/21	Fluometuron	ND	0.060 ug/L	
4/30/21	5/4/21	Fluopicolide	ND	0.060 ug/L	
4/30/21	5/4/21	Fluopyram	ND	0.060 ug/L	
4/30/21	5/4/21	Fluoxastrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Flupyradifurone	ND	0.060 ug/L	
4/30/21	5/4/21	Fluridone	ND	0.060 ug/L	
4/30/21	5/4/21	Flutianil	ND	0.060 ug/L	
4/30/21	5/4/21	Flutriafol	ND	0.060 ug/L	
4/30/21	5/4/21	Fluvalinate	ND	0.060 ug/L	
4/30/21	5/4/21	Fluxapyroxad	ND	0.060 ug/L	
4/30/21	5/4/21	Fonofos	ND	0.12 ug/L	
4/30/21	5/4/21	Hexaconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Hexazinone	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Hexythiazox	ND	0.060 ug/L	
4/30/21	5/4/21	Imazalil	ND	0.060 ug/L	
4/30/21	5/4/21	Imidacloprid	ND	0.060 ug/L	
4/30/21	5/4/21	Indaziflam	ND	0.060 ug/L	
4/30/21	5/4/21	Indoxacarb	ND	0.060 ug/L	
4/30/21	5/4/21	Iodosulfuron-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Ipconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Iprodione	ND	0.30 ug/L	
4/30/21	5/4/21	Isofetamid	ND	0.060 ug/L	
4/30/21	5/4/21	Isoxaben	ND	0.060 ug/L	
4/30/21	5/4/21	Isoxadifen-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Lactofen	ND	0.060 ug/L	
4/30/21	5/4/21	Linuron	ND	0.060 ug/L	
4/30/21	5/4/21	Malaoxon	ND	0.060 ug/L	
4/30/21	5/4/21	Mandipropamid	ND	0.060 ug/L	
4/30/21	5/4/21	Metconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Methidathion	ND	0.060 ug/L	
4/30/21	5/4/21	Methiocarb	ND	0.060 ug/L	
4/30/21	5/4/21	Methomyl	ND	0.060 ug/L	
4/30/21	5/4/21	Methoxyfenozide	ND	0.060 ug/L	
4/30/21	5/4/21	Metrafenone	ND	0.060 ug/L	
4/30/21	5/4/21	Metribuzin	ND	0.060 ug/L	
4/30/21	5/4/21	Mevinphos	ND	0.060 ug/L	
4/30/21	5/4/21	Monuron	ND	0.060 ug/L	
4/30/21	5/4/21	Neburon	ND	0.060 ug/L	
4/30/21	5/4/21	Norflurazon	ND	0.060 ug/L	
4/30/21	5/4/21	Novaluron	ND	0.060 ug/L	
4/30/21	5/4/21	Oryzalin	ND	0.060 ug/L	
4/30/21	5/4/21	Oxadixyl	ND	0.060 ug/L	
4/30/21	5/4/21	Oxamyl	ND	0.060 ug/L	
4/30/21	5/4/21	Penoxsulam	ND	0.060 ug/L	
4/30/21	5/4/21	Penthiopyrad	ND	0.060 ug/L	
4/30/21	5/4/21	Phenmedipham	ND	0.060 ug/L	

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Analytical Report

Client Sample ID: GRMW-CCUB-04252021
Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Phorate Sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Phorate Sulfoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Phosalone	ND	0.060 ug/L	
4/30/21	5/4/21	Phosmet	ND	0.060 ug/L	
4/30/21	5/4/21	Phosphamidon	ND	0.060 ug/L	
4/30/21	5/4/21	Picoxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Piperonyl Butoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Pirimicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Pirimiphos-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Prallethrin	ND	0.060 ug/L	
4/30/21	5/4/21	Prometon	ND	0.060 ug/L	
4/30/21	5/4/21	Prometryn	ND	0.060 ug/L	
4/30/21	5/4/21	Propanil	ND	0.060 ug/L	
4/30/21	5/4/21	Propargite	ND	0.060 ug/L	
4/30/21	5/4/21	Propazine	ND	0.060 ug/L	
4/30/21	5/4/21	Propiconazole	ND	0.12 ug/L	
4/30/21	5/4/21	Propoxur	ND	0.060 ug/L	
4/30/21	5/4/21	Pyraclostrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Pyraflufen-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Pyrethrin	ND	0.30 ug/L	
4/30/21	5/4/21	Pyridaben	ND	0.060 ug/L	
4/30/21	5/4/21	Pyridalyl	ND	0.060 ug/L	
4/30/21	5/4/21	Pyrimethanil	ND	0.060 ug/L	
4/30/21	5/4/21	Pyroxasulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Rotenone	ND	0.060 ug/L	
4/30/21	5/4/21	Saflufenacil	ND	0.060 ug/L	
4/30/21	5/4/21	Sethoxydim	ND	0.12 ug/L	
4/30/21	5/4/21	Siduron	ND	0.060 ug/L	
4/30/21	5/4/21	Simazine	ND	0.060 ug/L	
4/30/21	5/4/21	Simetryn	ND	0.060 ug/L	
4/30/21	5/4/21	Spinetoram	ND	0.060 ug/L	
4/30/21	5/4/21	Spinosad	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P210479-01
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Spiromesifen	ND	0.12 ug/L	
4/30/21	5/4/21	Spirotetramat	ND	0.060 ug/L	
4/30/21	5/4/21	Spiroxamine	ND	0.060 ug/L	
4/30/21	5/4/21	Sulfentrazone	ND	0.060 ug/L	
4/30/21	5/4/21	Sulfoxaflor	ND	0.060 ug/L	
4/30/21	5/4/21	Tebuconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Tebufenozide	ND	0.060 ug/L	
4/30/21	5/4/21	Tebuthiuron	ND	0.060 ug/L	
4/30/21	5/4/21	Terbacil	ND	0.060 ug/L	
4/30/21	5/4/21	Terbuthylazine	ND	0.060 ug/L	
4/30/21	5/4/21	Terbutryn	ND	0.060 ug/L	
4/30/21	5/4/21	Thiabendazole	ND	0.060 ug/L	
4/30/21	5/4/21	Thiacloprid	ND	0.060 ug/L	
4/30/21	5/4/21	Thiamethoxam	ND	0.060 ug/L	
4/30/21	5/4/21	Thiencarbazone-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Thiobencarb	ND	0.060 ug/L	
4/30/21	5/4/21	Thiodicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Tolfenpyrad	ND	0.060 ug/L	
4/30/21	5/4/21	Triadimefon	ND	0.060 ug/L	
4/30/21	5/4/21	Triadimenol	ND	0.12 ug/L	
4/30/21	5/4/21	Triallate	ND	0.060 ug/L	
4/30/21	5/4/21	Trifloxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/30/21	5/4/21	Triflumizole	ND	0.060 ug/L	
4/30/21	5/4/21	Trinexapac-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 76 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Analytical Report

Client Sample ID: GRMW-CCWL-04252021
Matrix: water

PAL Sample ID: P210479-02
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/30/21	5/6/21	a-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Acetochlor	ND	0.060 ug/L	
4/30/21	5/6/21	Alachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Aldrin	ND	0.060 ug/L	
4/30/21	5/6/21	Ametryn	ND	0.060 ug/L	
4/30/21	5/6/21	Aspon	ND	0.060 ug/L	
4/30/21	5/6/21	b-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Benfluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Bifenthrin	ND	0.060 ug/L	
4/30/21	5/6/21	Bolstar	ND	0.060 ug/L	
4/30/21	5/6/21	Bromopropylate	ND	0.060 ug/L	
4/30/21	5/6/21	Buprofezin	ND	0.060 ug/L	
4/30/21	5/6/21	Captan	ND	0.60 ug/L	
4/30/21	5/6/21	Chlordane	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorfenapyr	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorfenvinphos	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorobenzilate	ND	0.060 ug/L	
4/30/21	5/6/21	Chloroneb	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpropham	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpyrifos	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	cis-Nonachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Cyfluthrin	ND	0.30 ug/L	
4/30/21	5/6/21	Cypermethrin	ND	0.30 ug/L	
4/30/21	5/6/21	Dacthal	ND	0.060 ug/L	
4/30/21	5/6/21	d-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Deltamethrin	ND	0.30 ug/L	
4/30/21	5/6/21	Demeton	ND	0.060 ug/L	
4/30/21	5/6/21	Diazinon	ND	0.060 ug/L	
4/30/21	5/6/21	Dichlobenil	ND	0.060 ug/L	
4/30/21	5/6/21	Dichlorofenthion	ND	0.060 ug/L	

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Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCWL-04252021
Matrix: water

PAL Sample ID: P210479-02
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	Dichlorvos	ND	0.060 ug/L	
4/30/21	5/6/21	Diclofop-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	Dicloran	ND	0.060 ug/L	
4/30/21	5/6/21	Dicofol	ND	0.060 ug/L	
4/30/21	5/6/21	Dieldrin	ND	0.060 ug/L	
4/30/21	5/6/21	Dimethenamid	ND	0.060 ug/L	
4/30/21	5/6/21	Diphenamid	ND	0.060 ug/L	
4/30/21	5/6/21	Diphenylamine	ND	0.060 ug/L	
4/30/21	5/6/21	Disulfoton	ND	0.060 ug/L	
4/30/21	5/6/21	Dithiopyr	ND	0.060 ug/L	
4/30/21	5/6/21	Endosulfan I	ND	0.12 ug/L	
4/30/21	5/6/21	Endosulfan II	ND	0.12 ug/L	
4/30/21	5/6/21	Endosulfan sulfate	ND	0.12 ug/L	
4/30/21	5/6/21	Endrin	ND	0.060 ug/L	
4/30/21	5/6/21	Endrin ketone	ND	0.060 ug/L	
4/30/21	5/6/21	EPN	ND	0.060 ug/L	
4/30/21	5/6/21	EPTC	ND	0.060 ug/L	
4/30/21	5/6/21	Esfenvalerate	ND	0.060 ug/L	
4/30/21	5/6/21	Ethalfluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Ethofumesate	ND	0.060 ug/L	
4/30/21	5/6/21	Ethoprop	ND	0.060 ug/L	
4/30/21	5/6/21	Etoxazole	ND	0.060 ug/L	
4/30/21	5/6/21	Etridiazole	ND	0.060 ug/L	
4/30/21	5/6/21	Fenarimol	ND	0.060 ug/L	
4/30/21	5/6/21	Fenitrothion	ND	0.060 ug/L	
4/30/21	5/6/21	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/30/21	5/6/21	Fenthion	ND	0.060 ug/L	
4/30/21	5/6/21	Fenvalerate	ND	0.060 ug/L	
4/30/21	5/6/21	Fipronil	ND	0.060 ug/L	
4/30/21	5/6/21	Fluazifop-p-butyl	ND	0.060 ug/L	
4/30/21	5/6/21	Fludioxonil	ND	0.060 ug/L	
4/30/21	5/6/21	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/30/21	5/6/21	Flutolanil	ND	0.060 ug/L	

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4/30/21	5/6/21	g-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Heptachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Heptachlor epoxide	ND	0.060 ug/L	
4/30/21	5/6/21	Hexachlorobenzene	ND	0.060 ug/L	
4/30/21	5/6/21	Kresoxim-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	lambda-Cyhalothrin	ND	0.060 ug/L	
4/30/21	5/6/21	Leptophos	ND	0.060 ug/L	
4/30/21	5/6/21	Malathion	ND	0.060 ug/L	
4/30/21	5/6/21	Mefenoxam	ND	0.060 ug/L	
4/30/21	5/6/21	Methoxychlor	ND	0.060 ug/L	
4/30/21	5/6/21	Metolachlor	ND	0.060 ug/L	
4/30/21	5/6/21	MGK-264	ND	0.060 ug/L	
4/30/21	5/6/21	Myclobutanil	ND	0.060 ug/L	
4/30/21	5/6/21	Napropamide	ND	0.060 ug/L	
4/30/21	5/6/21	o-Phenylphenol	ND	0.060 ug/L	
4/30/21	5/6/21	Ovex	ND	0.060 ug/L	
4/30/21	5/6/21	Oxadiazon	ND	0.060 ug/L	
4/30/21	5/6/21	Oxyfluorfen	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDD	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDE	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDT	ND	0.060 ug/L	
4/30/21	5/6/21	Paclobutrazol	ND	0.060 ug/L	
4/30/21	5/6/21	Parathion	ND	0.060 ug/L	
4/30/21	5/6/21	Parathion-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	PCA	ND	0.060 ug/L	
4/30/21	5/6/21	PCB	ND	0.060 ug/L	
4/30/21	5/6/21	PCNB	ND	0.060 ug/L	
4/30/21	5/6/21	Pendimethalin	ND	0.060 ug/L	
4/30/21	5/6/21	Pentachlorothioanisole	ND	0.060 ug/L	
4/30/21	5/6/21	Permethrin	ND	0.12 ug/L	
4/30/21	5/6/21	Phorate	ND	0.060 ug/L	
4/30/21	5/6/21	Procymidone	ND	0.060 ug/L	
4/30/21	5/6/21	Prodiamine	ND	0.060 ug/L	

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4/30/21	5/6/21	Pronamide	ND	0.060 ug/L	
4/30/21	5/6/21	Propachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Pyriproxyfen	ND	0.060 ug/L	
4/30/21	5/6/21	Quinoxyfen	ND	0.060 ug/L	
4/30/21	5/6/21	Ronnel	ND	0.060 ug/L	
4/30/21	5/6/21	Spirodiclofen	ND	0.060 ug/L	
4/30/21	5/6/21	Sulfotep	ND	0.060 ug/L	
4/30/21	5/6/21	Tefluthrin	ND	0.060 ug/L	
4/30/21	5/6/21	Terbufos	ND	0.060 ug/L	
4/30/21	5/6/21	Tetraconazole	ND	0.060 ug/L	
4/30/21	5/6/21	Tetradifon	ND	0.060 ug/L	
4/30/21	5/6/21	Thionazin	ND	0.060 ug/L	
4/30/21	5/6/21	Tokuthion	ND	0.060 ug/L	
4/30/21	5/6/21	trans-Nonachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Trichloronate	ND	0.060 ug/L	
4/30/21	5/6/21	Trifluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Vinclozalin	ND	0.060 ug/L	
Method: Modified EPA 8321B (LC-MS/MS)					
4/30/21	5/4/21	Abamectin	ND	0.060 ug/L	
4/30/21	5/4/21	Acetamiprid	ND	0.060 ug/L	
4/30/21	5/4/21	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/30/21	5/4/21	Afidopyropen	ND	0.060 ug/L	
4/30/21	5/4/21	Aldicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Allethrin	ND	0.060 ug/L	
4/30/21	5/4/21	Ametoctradin	ND	0.060 ug/L	
4/30/21	5/4/21	Atrazine	ND	0.060 ug/L	
4/30/21	5/4/21	Azinphos-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Azinphos-methyl	ND	0.12 ug/L	
4/30/21	5/4/21	Azoxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Bendiocarb	ND	0.060 ug/L	
4/30/21	5/4/21	Bensulide	ND	0.060 ug/L	
4/30/21	5/4/21	Bicyclopyrone	ND	0.060 ug/L	

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4/30/21	5/4/21	Bitertanol	ND	0.060 ug/L	
4/30/21	5/4/21	Boscalid	ND	0.060 ug/L	
4/30/21	5/4/21	Bromacil	ND	0.060 ug/L	
4/30/21	5/4/21	Carbaryl	ND	0.060 ug/L	
4/30/21	5/4/21	Carbendazim	ND	0.060 ug/L	
4/30/21	5/4/21	Carbofuran	ND	0.060 ug/L	
4/30/21	5/4/21	Carfentrazone-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Chlorantraniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Clethodim	ND	0.12 ug/L	
4/30/21	5/4/21	Clofentezine	ND	0.060 ug/L	
4/30/21	5/4/21	Clomazone	ND	0.060 ug/L	
4/30/21	5/4/21	Cyanazine	ND	0.060 ug/L	
4/30/21	5/4/21	Cyantraniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Cyazofamid	ND	0.060 ug/L	
4/30/21	5/4/21	Cyclaniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Cycloate	ND	0.12 ug/L	
4/30/21	5/4/21	Cyflufenamid	ND	0.060 ug/L	
4/30/21	5/4/21	Cyflumetofen	ND	0.060 ug/L	
4/30/21	5/4/21	Cyhalofop-butyl	ND	0.12 ug/L	
4/30/21	5/4/21	Cymoxanil	ND	0.060 ug/L	
4/30/21	5/4/21	Cyprodinil	ND	0.060 ug/L	
4/30/21	5/4/21	Cyprosulfamide	ND	0.060 ug/L	
4/30/21	5/4/21	DCPMU	ND	0.060 ug/L	
4/30/21	5/4/21	Diazoxon	ND	0.060 ug/L	
4/30/21	5/4/21	Difenoconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Diflubenzuron	ND	0.060 ug/L	
4/30/21	5/4/21	Diflufenican	ND	0.060 ug/L	
4/30/21	5/4/21	Dimethoate	ND	0.060 ug/L	
4/30/21	5/4/21	Dimethomorph	ND	0.060 ug/L	
4/30/21	5/4/21	Dioxathion	ND	0.060 ug/L	
4/30/21	5/4/21	Disulfoton sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Diuron	ND	0.060 ug/L	
4/30/21	5/4/21	d-Phenothrin	ND	0.060 ug/L	

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4/30/21	5/4/21	Ethion	ND	0.060 ug/L	
4/30/21	5/4/21	Etofenprox	ND	0.060 ug/L	
4/30/21	5/4/21	Famoxadone	ND	0.060 ug/L	
4/30/21	5/4/21	Famphur	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamidone	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamiphos sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Fenazaquin	ND	0.060 ug/L	
4/30/21	5/4/21	Fenbuconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Fenbutatin oxide	ND	0.060 ug/L	
4/30/21	5/4/21	Fenhexamid	ND	0.060 ug/L	
4/30/21	5/4/21	Fenobucarb	ND	0.060 ug/L	
4/30/21	5/4/21	Fenoxycarb	ND	0.060 ug/L	
4/30/21	5/4/21	Fenpropathrin	ND	0.060 ug/L	
4/30/21	5/4/21	Fenpyroximate	ND	0.060 ug/L	
4/30/21	5/4/21	Fenuron	ND	0.060 ug/L	
4/30/21	5/4/21	Fluazinam	ND	0.060 ug/L	
4/30/21	5/4/21	Flubendiamide	ND	0.12 ug/L	
4/30/21	5/4/21	Flufenacet	ND	0.060 ug/L	
4/30/21	5/4/21	Flumioxazin	ND	0.060 ug/L	
4/30/21	5/4/21	Fluometuron	ND	0.060 ug/L	
4/30/21	5/4/21	Fluopicolide	ND	0.060 ug/L	
4/30/21	5/4/21	Fluopyram	ND	0.060 ug/L	
4/30/21	5/4/21	Fluoxastrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Flupyradifurone	ND	0.060 ug/L	
4/30/21	5/4/21	Fluridone	ND	0.060 ug/L	
4/30/21	5/4/21	Flutianil	ND	0.060 ug/L	
4/30/21	5/4/21	Flutriafol	ND	0.060 ug/L	
4/30/21	5/4/21	Fluvalinate	ND	0.060 ug/L	
4/30/21	5/4/21	Fluxapyroxad	ND	0.060 ug/L	
4/30/21	5/4/21	Fonofos	ND	0.12 ug/L	
4/30/21	5/4/21	Hexaconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Hexazinone	ND	0.060 ug/L	

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4/30/21	5/4/21	Hexythiazox	ND	0.060 ug/L	
4/30/21	5/4/21	Imazalil	ND	0.060 ug/L	
4/30/21	5/4/21	Imidacloprid	ND	0.060 ug/L	
4/30/21	5/4/21	Indaziflam	ND	0.060 ug/L	
4/30/21	5/4/21	Indoxacarb	ND	0.060 ug/L	
4/30/21	5/4/21	Iodosulfuron-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Ipconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Iprodione	ND	0.30 ug/L	
4/30/21	5/4/21	Isofetamid	ND	0.060 ug/L	
4/30/21	5/4/21	Isoxaben	ND	0.060 ug/L	
4/30/21	5/4/21	Isoxadifen-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Lactofen	ND	0.060 ug/L	
4/30/21	5/4/21	Linuron	ND	0.060 ug/L	
4/30/21	5/4/21	Malaoxon	ND	0.060 ug/L	
4/30/21	5/4/21	Mandipropamid	ND	0.060 ug/L	
4/30/21	5/4/21	Metconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Methidathion	ND	0.060 ug/L	
4/30/21	5/4/21	Methiocarb	ND	0.060 ug/L	
4/30/21	5/4/21	Methomyl	ND	0.060 ug/L	
4/30/21	5/4/21	Methoxyfenozide	ND	0.060 ug/L	
4/30/21	5/4/21	Metrafenone	ND	0.060 ug/L	
4/30/21	5/4/21	Metribuzin	ND	0.060 ug/L	
4/30/21	5/4/21	Mevinphos	ND	0.060 ug/L	
4/30/21	5/4/21	Monuron	ND	0.060 ug/L	
4/30/21	5/4/21	Neburon	ND	0.060 ug/L	
4/30/21	5/4/21	Norflurazon	ND	0.060 ug/L	
4/30/21	5/4/21	Novaluron	ND	0.060 ug/L	
4/30/21	5/4/21	Oryzalin	ND	0.060 ug/L	
4/30/21	5/4/21	Oxadixyl	ND	0.060 ug/L	
4/30/21	5/4/21	Oxamyl	ND	0.060 ug/L	
4/30/21	5/4/21	Penoxsulam	ND	0.060 ug/L	
4/30/21	5/4/21	Penthiopyrad	ND	0.060 ug/L	
4/30/21	5/4/21	Phenmedipham	ND	0.060 ug/L	

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4/30/21	5/4/21	Phorate Sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Phorate Sulfoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Phosalone	ND	0.060 ug/L	
4/30/21	5/4/21	Phosmet	ND	0.060 ug/L	
4/30/21	5/4/21	Phosphamidon	ND	0.060 ug/L	
4/30/21	5/4/21	Picoxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Piperonyl Butoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Pirimicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Pirimiphos-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Prallethrin	ND	0.060 ug/L	
4/30/21	5/4/21	Prometon	ND	0.060 ug/L	
4/30/21	5/4/21	Prometryn	ND	0.060 ug/L	
4/30/21	5/4/21	Propanil	ND	0.060 ug/L	
4/30/21	5/4/21	Propargite	ND	0.060 ug/L	
4/30/21	5/4/21	Propazine	ND	0.060 ug/L	
4/30/21	5/4/21	Propiconazole	ND	0.12 ug/L	
4/30/21	5/4/21	Propoxur	ND	0.060 ug/L	
4/30/21	5/4/21	Pyraclostrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Pyraflufen-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Pyrethrin	ND	0.30 ug/L	
4/30/21	5/4/21	Pyridaben	ND	0.060 ug/L	
4/30/21	5/4/21	Pyridalyl	ND	0.060 ug/L	
4/30/21	5/4/21	Pyrimethanil	ND	0.060 ug/L	
4/30/21	5/4/21	Pyroxasulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Rotenone	ND	0.060 ug/L	
4/30/21	5/4/21	Saflufenacil	ND	0.060 ug/L	
4/30/21	5/4/21	Sethoxydim	ND	0.12 ug/L	
4/30/21	5/4/21	Siduron	ND	0.060 ug/L	
4/30/21	5/4/21	Simazine	ND	0.060 ug/L	
4/30/21	5/4/21	Simetryn	ND	0.060 ug/L	
4/30/21	5/4/21	Spinetoram	ND	0.060 ug/L	
4/30/21	5/4/21	Spinosad	ND	0.060 ug/L	

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4/30/21	5/4/21	Spiromesifen	ND	0.12 ug/L	
4/30/21	5/4/21	Spirotetramat	ND	0.060 ug/L	
4/30/21	5/4/21	Spiroxamine	ND	0.060 ug/L	
4/30/21	5/4/21	Sulfentrazone	ND	0.060 ug/L	
4/30/21	5/4/21	Sulfoxaflor	ND	0.060 ug/L	
4/30/21	5/4/21	Tebuconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Tebufenozide	ND	0.060 ug/L	
4/30/21	5/4/21	Tebuthiuron	ND	0.060 ug/L	
4/30/21	5/4/21	Terbacil	ND	0.060 ug/L	
4/30/21	5/4/21	Terbuthylazine	ND	0.060 ug/L	
4/30/21	5/4/21	Terbutryn	ND	0.060 ug/L	
4/30/21	5/4/21	Thiabendazole	ND	0.060 ug/L	
4/30/21	5/4/21	Thiacloprid	ND	0.060 ug/L	
4/30/21	5/4/21	Thiamethoxam	ND	0.060 ug/L	
4/30/21	5/4/21	Thiencarbazone-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Thiobencarb	ND	0.060 ug/L	
4/30/21	5/4/21	Thiodicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Tolfenpyrad	ND	0.060 ug/L	
4/30/21	5/4/21	Triadimefon	ND	0.060 ug/L	
4/30/21	5/4/21	Triadimenol	ND	0.12 ug/L	
4/30/21	5/4/21	Triallate	ND	0.060 ug/L	
4/30/21	5/4/21	Trifloxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/30/21	5/4/21	Triflumizole	ND	0.060 ug/L	
4/30/21	5/4/21	Trinexapac-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 75 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GRIC-04252021
Matrix: water

PAL Sample ID: P210479-03
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/30/21	5/6/21	a-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Acetochlor	ND	0.060 ug/L	
4/30/21	5/6/21	Alachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Aldrin	ND	0.060 ug/L	
4/30/21	5/6/21	Ametryn	ND	0.060 ug/L	
4/30/21	5/6/21	Aspon	ND	0.060 ug/L	
4/30/21	5/6/21	b-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Benfluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Bifenthrin	ND	0.060 ug/L	
4/30/21	5/6/21	Bolstar	ND	0.060 ug/L	
4/30/21	5/6/21	Bromopropylate	ND	0.060 ug/L	
4/30/21	5/6/21	Buprofezin	ND	0.060 ug/L	
4/30/21	5/6/21	Captan	ND	0.60 ug/L	
4/30/21	5/6/21	Chlordane	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorfenapyr	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorfenvinphos	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorobenzilate	ND	0.060 ug/L	
4/30/21	5/6/21	Chloroneb	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpropham	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpyrifos	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	cis-Nonachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Cyfluthrin	ND	0.30 ug/L	
4/30/21	5/6/21	Cypermethrin	ND	0.30 ug/L	
4/30/21	5/6/21	Dacthal	ND	0.060 ug/L	
4/30/21	5/6/21	d-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Deltamethrin	ND	0.30 ug/L	
4/30/21	5/6/21	Demeton	ND	0.060 ug/L	
4/30/21	5/6/21	Diazinon	ND	0.060 ug/L	
4/30/21	5/6/21	Dichlobenil	ND	0.060 ug/L	
4/30/21	5/6/21	Dichlorofenthion	ND	0.060 ug/L	

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4/30/21	5/6/21	Dichlorvos	ND	0.060 ug/L	
4/30/21	5/6/21	Diclofop-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	Dicloran	ND	0.060 ug/L	
4/30/21	5/6/21	Dicofol	ND	0.060 ug/L	
4/30/21	5/6/21	Dieldrin	ND	0.060 ug/L	
4/30/21	5/6/21	Dimethenamid	ND	0.060 ug/L	
4/30/21	5/6/21	Diphenamid	ND	0.060 ug/L	
4/30/21	5/6/21	Diphenylamine	ND	0.060 ug/L	
4/30/21	5/6/21	Disulfoton	ND	0.060 ug/L	
4/30/21	5/6/21	Dithiopyr	ND	0.060 ug/L	
4/30/21	5/6/21	Endosulfan I	ND	0.12 ug/L	
4/30/21	5/6/21	Endosulfan II	ND	0.12 ug/L	
4/30/21	5/6/21	Endosulfan sulfate	ND	0.12 ug/L	
4/30/21	5/6/21	Endrin	ND	0.060 ug/L	
4/30/21	5/6/21	Endrin ketone	ND	0.060 ug/L	
4/30/21	5/6/21	EPN	ND	0.060 ug/L	
4/30/21	5/6/21	EPTC	ND	0.060 ug/L	
4/30/21	5/6/21	Esfenvalerate	ND	0.060 ug/L	
4/30/21	5/6/21	Ethalfluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Ethofumesate	ND	0.060 ug/L	
4/30/21	5/6/21	Ethoprop	ND	0.060 ug/L	
4/30/21	5/6/21	Etoxazole	ND	0.060 ug/L	
4/30/21	5/6/21	Etridiazole	ND	0.060 ug/L	
4/30/21	5/6/21	Fenarimol	ND	0.060 ug/L	
4/30/21	5/6/21	Fenitrothion	ND	0.060 ug/L	
4/30/21	5/6/21	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/30/21	5/6/21	Fenthion	ND	0.060 ug/L	
4/30/21	5/6/21	Fenvalerate	ND	0.060 ug/L	
4/30/21	5/6/21	Fipronil	ND	0.060 ug/L	
4/30/21	5/6/21	Fluazifop-p-butyl	ND	0.060 ug/L	
4/30/21	5/6/21	Fludioxonil	ND	0.060 ug/L	
4/30/21	5/6/21	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/30/21	5/6/21	Flutolanil	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	g-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Heptachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Heptachlor epoxide	ND	0.060 ug/L	
4/30/21	5/6/21	Hexachlorobenzene	ND	0.060 ug/L	
4/30/21	5/6/21	Kresoxim-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	lambda-Cyhalothrin	ND	0.060 ug/L	
4/30/21	5/6/21	Leptophos	ND	0.060 ug/L	
4/30/21	5/6/21	Malathion	ND	0.060 ug/L	
4/30/21	5/6/21	Mefenoxam	ND	0.060 ug/L	
4/30/21	5/6/21	Methoxychlor	ND	0.060 ug/L	
4/30/21	5/6/21	Metolachlor	ND	0.060 ug/L	
4/30/21	5/6/21	MGK-264	ND	0.060 ug/L	
4/30/21	5/6/21	Myclobutanil	ND	0.060 ug/L	
4/30/21	5/6/21	Napropamide	ND	0.060 ug/L	
4/30/21	5/6/21	o-Phenylphenol	ND	0.060 ug/L	
4/30/21	5/6/21	Ovex	ND	0.060 ug/L	
4/30/21	5/6/21	Oxadiazon	ND	0.060 ug/L	
4/30/21	5/6/21	Oxyfluorfen	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDD	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDE	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDT	ND	0.060 ug/L	
4/30/21	5/6/21	Paclobutrazol	ND	0.060 ug/L	
4/30/21	5/6/21	Parathion	ND	0.060 ug/L	
4/30/21	5/6/21	Parathion-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	PCA	ND	0.060 ug/L	
4/30/21	5/6/21	PCB	ND	0.060 ug/L	
4/30/21	5/6/21	PCNB	ND	0.060 ug/L	
4/30/21	5/6/21	Pendimethalin	ND	0.060 ug/L	
4/30/21	5/6/21	Pentachlorothioanisole	ND	0.060 ug/L	
4/30/21	5/6/21	Permethrin	ND	0.12 ug/L	
4/30/21	5/6/21	Phorate	ND	0.060 ug/L	
4/30/21	5/6/21	Procymidone	ND	0.060 ug/L	
4/30/21	5/6/21	Prodiamine	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	Pronamide	ND	0.060 ug/L	
4/30/21	5/6/21	Propachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Pyriproxyfen	ND	0.060 ug/L	
4/30/21	5/6/21	Quinoxyfen	ND	0.060 ug/L	
4/30/21	5/6/21	Ronnel	ND	0.060 ug/L	
4/30/21	5/6/21	Spirodiclofen	ND	0.060 ug/L	
4/30/21	5/6/21	Sulfotep	ND	0.060 ug/L	
4/30/21	5/6/21	Tefluthrin	ND	0.060 ug/L	
4/30/21	5/6/21	Terbufos	ND	0.060 ug/L	
4/30/21	5/6/21	Tetraconazole	ND	0.060 ug/L	
4/30/21	5/6/21	Tetradifon	ND	0.060 ug/L	
4/30/21	5/6/21	Thionazin	ND	0.060 ug/L	
4/30/21	5/6/21	Tokuthion	ND	0.060 ug/L	
4/30/21	5/6/21	trans-Nonachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Trichloronate	ND	0.060 ug/L	
4/30/21	5/6/21	Trifluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Vinclozalin	ND	0.060 ug/L	
Method: Modified EPA 8321B (LC-MS/MS)					
4/30/21	5/4/21	Abamectin	ND	0.060 ug/L	
4/30/21	5/4/21	Acetamiprid	ND	0.060 ug/L	
4/30/21	5/4/21	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/30/21	5/4/21	Afidopyropen	ND	0.060 ug/L	
4/30/21	5/4/21	Aldicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Allethrin	ND	0.060 ug/L	
4/30/21	5/4/21	Ametoctradin	ND	0.060 ug/L	
4/30/21	5/4/21	Atrazine	ND	0.060 ug/L	
4/30/21	5/4/21	Azinphos-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Azinphos-methyl	ND	0.12 ug/L	
4/30/21	5/4/21	Azoxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Bendiocarb	ND	0.060 ug/L	
4/30/21	5/4/21	Bensulide	ND	0.060 ug/L	
4/30/21	5/4/21	Bicyclopyrone	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Bitertanol	ND	0.060 ug/L	
4/30/21	5/4/21	Boscalid	ND	0.060 ug/L	
4/30/21	5/4/21	Bromacil	ND	0.060 ug/L	
4/30/21	5/4/21	Carbaryl	ND	0.060 ug/L	
4/30/21	5/4/21	Carbendazim	ND	0.060 ug/L	
4/30/21	5/4/21	Carbofuran	ND	0.060 ug/L	
4/30/21	5/4/21	Carfentrazone-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Chlorantraniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Clethodim	ND	0.12 ug/L	
4/30/21	5/4/21	Clofentezine	ND	0.060 ug/L	
4/30/21	5/4/21	Clomazone	ND	0.060 ug/L	
4/30/21	5/4/21	Cyanazine	ND	0.060 ug/L	
4/30/21	5/4/21	Cyantraniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Cyazofamid	ND	0.060 ug/L	
4/30/21	5/4/21	Cyclaniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Cycloate	ND	0.12 ug/L	
4/30/21	5/4/21	Cyflufenamid	ND	0.060 ug/L	
4/30/21	5/4/21	Cyflumetofen	ND	0.060 ug/L	
4/30/21	5/4/21	Cyhalofop-butyl	ND	0.12 ug/L	
4/30/21	5/4/21	Cymoxanil	ND	0.060 ug/L	
4/30/21	5/4/21	Cyprodinil	ND	0.060 ug/L	
4/30/21	5/4/21	Cyprosulfamide	ND	0.060 ug/L	
4/30/21	5/4/21	DCPMU	ND	0.060 ug/L	
4/30/21	5/4/21	Diazoxon	ND	0.060 ug/L	
4/30/21	5/4/21	Difenoconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Diflubenzuron	ND	0.060 ug/L	
4/30/21	5/4/21	Diflufenican	ND	0.060 ug/L	
4/30/21	5/4/21	Dimethoate	ND	0.060 ug/L	
4/30/21	5/4/21	Dimethomorph	ND	0.060 ug/L	
4/30/21	5/4/21	Dioxathion	ND	0.060 ug/L	
4/30/21	5/4/21	Disulfoton sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Diuron	ND	0.060 ug/L	
4/30/21	5/4/21	d-Phenothrin	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Ethion	ND	0.060 ug/L	
4/30/21	5/4/21	Etofenprox	ND	0.060 ug/L	
4/30/21	5/4/21	Famoxadone	ND	0.060 ug/L	
4/30/21	5/4/21	Famphur	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamidone	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamiphos sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Fenazaquin	ND	0.060 ug/L	
4/30/21	5/4/21	Fenbuconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Fenbutatin oxide	ND	0.060 ug/L	
4/30/21	5/4/21	Fenhexamid	ND	0.060 ug/L	
4/30/21	5/4/21	Fenobucarb	ND	0.060 ug/L	
4/30/21	5/4/21	Fenoxycarb	ND	0.060 ug/L	
4/30/21	5/4/21	Fenpropathrin	ND	0.060 ug/L	
4/30/21	5/4/21	Fenpyroximate	ND	0.060 ug/L	
4/30/21	5/4/21	Fenuron	ND	0.060 ug/L	
4/30/21	5/4/21	Fluazinam	ND	0.060 ug/L	
4/30/21	5/4/21	Flubendiamide	ND	0.12 ug/L	
4/30/21	5/4/21	Flufenacet	ND	0.060 ug/L	
4/30/21	5/4/21	Flumioxazin	ND	0.060 ug/L	
4/30/21	5/4/21	Fluometuron	ND	0.060 ug/L	
4/30/21	5/4/21	Fluopicolide	ND	0.060 ug/L	
4/30/21	5/4/21	Fluopyram	ND	0.060 ug/L	
4/30/21	5/4/21	Fluoxastrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Flupyradifurone	ND	0.060 ug/L	
4/30/21	5/4/21	Fluridone	ND	0.060 ug/L	
4/30/21	5/4/21	Flutianil	ND	0.060 ug/L	
4/30/21	5/4/21	Flutriafol	ND	0.060 ug/L	
4/30/21	5/4/21	Fluvalinate	ND	0.060 ug/L	
4/30/21	5/4/21	Fluxapyroxad	ND	0.060 ug/L	
4/30/21	5/4/21	Fonofos	ND	0.12 ug/L	
4/30/21	5/4/21	Hexaconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Hexazinone	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Hexythiazox	ND	0.060 ug/L	
4/30/21	5/4/21	Imazalil	ND	0.060 ug/L	
4/30/21	5/4/21	Imidacloprid	ND	0.060 ug/L	
4/30/21	5/4/21	Indaziflam	ND	0.060 ug/L	
4/30/21	5/4/21	Indoxacarb	ND	0.060 ug/L	
4/30/21	5/4/21	Iodosulfuron-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Ipconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Iprodione	ND	0.30 ug/L	
4/30/21	5/4/21	Isofetamid	ND	0.060 ug/L	
4/30/21	5/4/21	Isoxaben	ND	0.060 ug/L	
4/30/21	5/4/21	Isoxadifen-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Lactofen	ND	0.060 ug/L	
4/30/21	5/4/21	Linuron	ND	0.060 ug/L	
4/30/21	5/4/21	Malaoxon	ND	0.060 ug/L	
4/30/21	5/4/21	Mandipropamid	ND	0.060 ug/L	
4/30/21	5/4/21	Metconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Methidathion	ND	0.060 ug/L	
4/30/21	5/4/21	Methiocarb	ND	0.060 ug/L	
4/30/21	5/4/21	Methomyl	ND	0.060 ug/L	
4/30/21	5/4/21	Methoxyfenozide	ND	0.060 ug/L	
4/30/21	5/4/21	Metrafenone	ND	0.060 ug/L	
4/30/21	5/4/21	Metribuzin	ND	0.060 ug/L	
4/30/21	5/4/21	Mevinphos	ND	0.060 ug/L	
4/30/21	5/4/21	Monuron	ND	0.060 ug/L	
4/30/21	5/4/21	Neburon	ND	0.060 ug/L	
4/30/21	5/4/21	Norflurazon	ND	0.060 ug/L	
4/30/21	5/4/21	Novaluron	ND	0.060 ug/L	
4/30/21	5/4/21	Oryzalin	ND	0.060 ug/L	
4/30/21	5/4/21	Oxadixyl	ND	0.060 ug/L	
4/30/21	5/4/21	Oxamyl	ND	0.060 ug/L	
4/30/21	5/4/21	Penoxsulam	ND	0.060 ug/L	
4/30/21	5/4/21	Penthiopyrad	ND	0.060 ug/L	
4/30/21	5/4/21	Phenmedipham	ND	0.060 ug/L	

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GRIC-04252021
Matrix: water

PAL Sample ID: P210479-03
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Phorate Sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Phorate Sulfoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Phosalone	ND	0.060 ug/L	
4/30/21	5/4/21	Phosmet	ND	0.060 ug/L	
4/30/21	5/4/21	Phosphamidon	ND	0.060 ug/L	
4/30/21	5/4/21	Picoxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Piperonyl Butoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Pirimicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Pirimiphos-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Prallethrin	ND	0.060 ug/L	
4/30/21	5/4/21	Prometon	ND	0.060 ug/L	
4/30/21	5/4/21	Prometryn	ND	0.060 ug/L	
4/30/21	5/4/21	Propanil	ND	0.060 ug/L	
4/30/21	5/4/21	Propargite	ND	0.060 ug/L	
4/30/21	5/4/21	Propazine	ND	0.060 ug/L	
4/30/21	5/4/21	Propiconazole	ND	0.12 ug/L	
4/30/21	5/4/21	Propoxur	ND	0.060 ug/L	
4/30/21	5/4/21	Pyraclostrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Pyraflufen-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Pyrethrin	ND	0.30 ug/L	
4/30/21	5/4/21	Pyridaben	ND	0.060 ug/L	
4/30/21	5/4/21	Pyridalyl	ND	0.060 ug/L	
4/30/21	5/4/21	Pyrimethanil	ND	0.060 ug/L	
4/30/21	5/4/21	Pyroxasulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Rotenone	ND	0.060 ug/L	
4/30/21	5/4/21	Saflufenacil	ND	0.060 ug/L	
4/30/21	5/4/21	Sethoxydim	ND	0.12 ug/L	
4/30/21	5/4/21	Siduron	ND	0.060 ug/L	
4/30/21	5/4/21	Simazine	ND	0.060 ug/L	
4/30/21	5/4/21	Simetryn	ND	0.060 ug/L	
4/30/21	5/4/21	Spinetoram	ND	0.060 ug/L	
4/30/21	5/4/21	Spinosad	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P210479-03
Sample Date: 4/25/21
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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Spiromesifen	ND	0.12 ug/L	
4/30/21	5/4/21	Spirotetramat	ND	0.060 ug/L	
4/30/21	5/4/21	Spiroxamine	ND	0.060 ug/L	
4/30/21	5/4/21	Sulfentrazone	ND	0.060 ug/L	
4/30/21	5/4/21	Sulfoxaflor	ND	0.060 ug/L	
4/30/21	5/4/21	Tebuconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Tebufenozide	ND	0.060 ug/L	
4/30/21	5/4/21	Tebuthiuron	ND	0.060 ug/L	
4/30/21	5/4/21	Terbacil	ND	0.060 ug/L	
4/30/21	5/4/21	Terbuthylazine	ND	0.060 ug/L	
4/30/21	5/4/21	Terbutryn	ND	0.060 ug/L	
4/30/21	5/4/21	Thiabendazole	ND	0.060 ug/L	
4/30/21	5/4/21	Thiacloprid	ND	0.060 ug/L	
4/30/21	5/4/21	Thiamethoxam	ND	0.060 ug/L	
4/30/21	5/4/21	Thiencarbazone-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Thiobencarb	ND	0.060 ug/L	
4/30/21	5/4/21	Thiodicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Tolfenpyrad	ND	0.060 ug/L	
4/30/21	5/4/21	Triadimefon	ND	0.060 ug/L	
4/30/21	5/4/21	Triadimenol	ND	0.12 ug/L	
4/30/21	5/4/21	Triallate	ND	0.060 ug/L	
4/30/21	5/4/21	Trifloxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/30/21	5/4/21	Triflumizole	ND	0.060 ug/L	
4/30/21	5/4/21	Trinexapac-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 74 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04252021
Matrix: water

PAL Sample ID: P210479-04
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/30/21	5/6/21	a-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Acetochlor	ND	0.060 ug/L	
4/30/21	5/6/21	Alachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Aldrin	ND	0.060 ug/L	
4/30/21	5/6/21	Ametryn	ND	0.060 ug/L	
4/30/21	5/6/21	Aspon	ND	0.060 ug/L	
4/30/21	5/6/21	b-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Benfluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Bifenthrin	ND	0.060 ug/L	
4/30/21	5/6/21	Bolstar	ND	0.060 ug/L	
4/30/21	5/6/21	Bromopropylate	ND	0.060 ug/L	
4/30/21	5/6/21	Buprofezin	ND	0.060 ug/L	
4/30/21	5/6/21	Captan	ND	0.60 ug/L	
4/30/21	5/6/21	Chlordane	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorfenapyr	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorfenvinphos	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorobenzilate	ND	0.060 ug/L	
4/30/21	5/6/21	Chloroneb	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpropham	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpyrifos	ND	0.060 ug/L	
4/30/21	5/6/21	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	cis-Nonachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Cyfluthrin	ND	0.30 ug/L	
4/30/21	5/6/21	Cypermethrin	ND	0.30 ug/L	
4/30/21	5/6/21	Dacthal	ND	0.060 ug/L	
4/30/21	5/6/21	d-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Deltamethrin	ND	0.30 ug/L	
4/30/21	5/6/21	Demeton	ND	0.060 ug/L	
4/30/21	5/6/21	Diazinon	ND	0.060 ug/L	
4/30/21	5/6/21	Dichlobenil	ND	0.060 ug/L	
4/30/21	5/6/21	Dichlorofenthion	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P210479-04
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	Dichlorvos	ND	0.060 ug/L	
4/30/21	5/6/21	Diclofop-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	Dicloran	ND	0.060 ug/L	
4/30/21	5/6/21	Dicofol	ND	0.060 ug/L	
4/30/21	5/6/21	Dieldrin	ND	0.060 ug/L	
4/30/21	5/6/21	Dimethenamid	ND	0.060 ug/L	
4/30/21	5/6/21	Diphenamid	ND	0.060 ug/L	
4/30/21	5/6/21	Diphenylamine	ND	0.060 ug/L	
4/30/21	5/6/21	Disulfoton	ND	0.060 ug/L	
4/30/21	5/6/21	Dithiopyr	ND	0.060 ug/L	
4/30/21	5/6/21	Endosulfan I	ND	0.12 ug/L	
4/30/21	5/6/21	Endosulfan II	ND	0.12 ug/L	
4/30/21	5/6/21	Endosulfan sulfate	ND	0.12 ug/L	
4/30/21	5/6/21	Endrin	ND	0.060 ug/L	
4/30/21	5/6/21	Endrin ketone	ND	0.060 ug/L	
4/30/21	5/6/21	EPN	ND	0.060 ug/L	
4/30/21	5/6/21	EPTC	ND	0.060 ug/L	
4/30/21	5/6/21	Esfenvalerate	ND	0.060 ug/L	
4/30/21	5/6/21	Ethalfluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Ethofumesate	ND	0.060 ug/L	
4/30/21	5/6/21	Ethoprop	ND	0.060 ug/L	
4/30/21	5/6/21	Etoxazole	ND	0.060 ug/L	
4/30/21	5/6/21	Etridiazole	ND	0.060 ug/L	
4/30/21	5/6/21	Fenarimol	ND	0.060 ug/L	
4/30/21	5/6/21	Fenitrothion	ND	0.060 ug/L	
4/30/21	5/6/21	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/30/21	5/6/21	Fenthion	ND	0.060 ug/L	
4/30/21	5/6/21	Fenvalerate	ND	0.060 ug/L	
4/30/21	5/6/21	Fipronil	ND	0.060 ug/L	
4/30/21	5/6/21	Fluazifop-p-butyl	ND	0.060 ug/L	
4/30/21	5/6/21	Fludioxonil	ND	0.060 ug/L	
4/30/21	5/6/21	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/30/21	5/6/21	Flutolanil	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P210479-04
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	g-BHC	ND	0.060 ug/L	
4/30/21	5/6/21	Heptachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Heptachlor epoxide	ND	0.060 ug/L	
4/30/21	5/6/21	Hexachlorobenzene	ND	0.060 ug/L	
4/30/21	5/6/21	Kresoxim-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	lambda-Cyhalothrin	ND	0.060 ug/L	
4/30/21	5/6/21	Leptophos	ND	0.060 ug/L	
4/30/21	5/6/21	Malathion	ND	0.060 ug/L	
4/30/21	5/6/21	Mefenoxam	ND	0.060 ug/L	
4/30/21	5/6/21	Methoxychlor	ND	0.060 ug/L	
4/30/21	5/6/21	Metolachlor	ND	0.060 ug/L	
4/30/21	5/6/21	MGK-264	ND	0.060 ug/L	
4/30/21	5/6/21	Myclobutanil	ND	0.060 ug/L	
4/30/21	5/6/21	Napropamide	ND	0.060 ug/L	
4/30/21	5/6/21	o-Phenylphenol	ND	0.060 ug/L	
4/30/21	5/6/21	Ovex	ND	0.060 ug/L	
4/30/21	5/6/21	Oxadiazon	ND	0.060 ug/L	
4/30/21	5/6/21	Oxyfluorfen	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDD	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDE	ND	0.060 ug/L	
4/30/21	5/6/21	p,p'-DDT	ND	0.060 ug/L	
4/30/21	5/6/21	Paclobutrazol	ND	0.060 ug/L	
4/30/21	5/6/21	Parathion	ND	0.060 ug/L	
4/30/21	5/6/21	Parathion-methyl	ND	0.060 ug/L	
4/30/21	5/6/21	PCA	ND	0.060 ug/L	
4/30/21	5/6/21	PCB	ND	0.060 ug/L	
4/30/21	5/6/21	PCNB	ND	0.060 ug/L	
4/30/21	5/6/21	Pendimethalin	ND	0.060 ug/L	
4/30/21	5/6/21	Pentachlorothioanisole	ND	0.060 ug/L	
4/30/21	5/6/21	Permethrin	ND	0.12 ug/L	
4/30/21	5/6/21	Phorate	ND	0.060 ug/L	
4/30/21	5/6/21	Procymidone	ND	0.060 ug/L	
4/30/21	5/6/21	Prodiamine	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P210479-04
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/6/21	Pronamide	ND	0.060 ug/L	
4/30/21	5/6/21	Propachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Pyriproxyfen	ND	0.060 ug/L	
4/30/21	5/6/21	Quinoxyfen	ND	0.060 ug/L	
4/30/21	5/6/21	Ronnel	ND	0.060 ug/L	
4/30/21	5/6/21	Spirodiclofen	ND	0.060 ug/L	
4/30/21	5/6/21	Sulfotep	ND	0.060 ug/L	
4/30/21	5/6/21	Tefluthrin	ND	0.060 ug/L	
4/30/21	5/6/21	Terbufos	ND	0.060 ug/L	
4/30/21	5/6/21	Tetraconazole	ND	0.060 ug/L	
4/30/21	5/6/21	Tetradifon	ND	0.060 ug/L	
4/30/21	5/6/21	Thionazin	ND	0.060 ug/L	
4/30/21	5/6/21	Tokuthion	ND	0.060 ug/L	
4/30/21	5/6/21	trans-Nonachlor	ND	0.060 ug/L	
4/30/21	5/6/21	Trichloronate	ND	0.060 ug/L	
4/30/21	5/6/21	Trifluralin	ND	0.060 ug/L	
4/30/21	5/6/21	Vinclozalin	ND	0.060 ug/L	
Method: Modified EPA 8321B (LC-MS/MS)					
4/30/21	5/4/21	Abamectin	ND	0.060 ug/L	
4/30/21	5/4/21	Acetamiprid	ND	0.060 ug/L	
4/30/21	5/4/21	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/30/21	5/4/21	Afidopyropen	ND	0.060 ug/L	
4/30/21	5/4/21	Aldicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Allethrin	ND	0.060 ug/L	
4/30/21	5/4/21	Ametoctradin	ND	0.060 ug/L	
4/30/21	5/4/21	Atrazine	ND	0.060 ug/L	
4/30/21	5/4/21	Azinphos-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Azinphos-methyl	ND	0.12 ug/L	
4/30/21	5/4/21	Azoxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Bendiocarb	ND	0.060 ug/L	
4/30/21	5/4/21	Bensulide	ND	0.060 ug/L	
4/30/21	5/4/21	Bicyclopyrone	ND	0.060 ug/L	

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Analytical Report

Client Sample ID: GRMW-GR82-04252021
Matrix: water

PAL Sample ID: P210479-04
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Bitertanol	ND	0.060 ug/L	
4/30/21	5/4/21	Boscalid	ND	0.060 ug/L	
4/30/21	5/4/21	Bromacil	ND	0.060 ug/L	
4/30/21	5/4/21	Carbaryl	ND	0.060 ug/L	
4/30/21	5/4/21	Carbendazim	ND	0.060 ug/L	
4/30/21	5/4/21	Carbofuran	ND	0.060 ug/L	
4/30/21	5/4/21	Carfentrazone-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Chlorantraniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Clethodim	ND	0.12 ug/L	
4/30/21	5/4/21	Clofentezine	ND	0.060 ug/L	
4/30/21	5/4/21	Clomazone	ND	0.060 ug/L	
4/30/21	5/4/21	Cyanazine	ND	0.060 ug/L	
4/30/21	5/4/21	Cyantraniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Cyazofamid	ND	0.060 ug/L	
4/30/21	5/4/21	Cyclaniliprole	ND	0.060 ug/L	
4/30/21	5/4/21	Cycloate	ND	0.12 ug/L	
4/30/21	5/4/21	Cyflufenamid	ND	0.060 ug/L	
4/30/21	5/4/21	Cyflumetofen	ND	0.060 ug/L	
4/30/21	5/4/21	Cyhalofop-butyl	ND	0.12 ug/L	
4/30/21	5/4/21	Cymoxanil	ND	0.060 ug/L	
4/30/21	5/4/21	Cyprodinil	ND	0.060 ug/L	
4/30/21	5/4/21	Cyprosulfamide	ND	0.060 ug/L	
4/30/21	5/4/21	DCPMU	ND	0.060 ug/L	
4/30/21	5/4/21	Diazoxon	ND	0.060 ug/L	
4/30/21	5/4/21	Difenoconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Diflubenzuron	ND	0.060 ug/L	
4/30/21	5/4/21	Diflufenican	ND	0.060 ug/L	
4/30/21	5/4/21	Dimethoate	ND	0.060 ug/L	
4/30/21	5/4/21	Dimethomorph	ND	0.060 ug/L	
4/30/21	5/4/21	Dioxathion	ND	0.060 ug/L	
4/30/21	5/4/21	Disulfoton sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Diuron	ND	0.060 ug/L	
4/30/21	5/4/21	d-Phenothrin	ND	0.060 ug/L	

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Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
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La Grande, OR 97850

Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04252021
Matrix: water

PAL Sample ID: P210479-04
Sample Date: 4/25/21
Received Date: 4/28/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Ethion	ND	0.060 ug/L	
4/30/21	5/4/21	Etofenprox	ND	0.060 ug/L	
4/30/21	5/4/21	Famoxadone	ND	0.060 ug/L	
4/30/21	5/4/21	Famphur	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamidone	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamiphos sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Fenazaquin	ND	0.060 ug/L	
4/30/21	5/4/21	Fenbuconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Fenbutatin oxide	ND	0.060 ug/L	
4/30/21	5/4/21	Fenhexamid	ND	0.060 ug/L	
4/30/21	5/4/21	Fenobucarb	ND	0.060 ug/L	
4/30/21	5/4/21	Fenoxycarb	ND	0.060 ug/L	
4/30/21	5/4/21	Fenpropathrin	ND	0.060 ug/L	
4/30/21	5/4/21	Fenpyroximate	ND	0.060 ug/L	
4/30/21	5/4/21	Fenuron	ND	0.060 ug/L	
4/30/21	5/4/21	Fluazinam	ND	0.060 ug/L	
4/30/21	5/4/21	Flubendiamide	ND	0.12 ug/L	
4/30/21	5/4/21	Flufenacet	ND	0.060 ug/L	
4/30/21	5/4/21	Flumioxazin	ND	0.060 ug/L	
4/30/21	5/4/21	Fluometuron	ND	0.060 ug/L	
4/30/21	5/4/21	Fluopicolide	ND	0.060 ug/L	
4/30/21	5/4/21	Fluopyram	ND	0.060 ug/L	
4/30/21	5/4/21	Fluoxastrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Flupyradifurone	ND	0.060 ug/L	
4/30/21	5/4/21	Fluridone	ND	0.060 ug/L	
4/30/21	5/4/21	Flutianil	ND	0.060 ug/L	
4/30/21	5/4/21	Flutriafol	ND	0.060 ug/L	
4/30/21	5/4/21	Fluvalinate	ND	0.060 ug/L	
4/30/21	5/4/21	Fluxapyroxad	ND	0.060 ug/L	
4/30/21	5/4/21	Fonofos	ND	0.12 ug/L	
4/30/21	5/4/21	Hexaconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Hexazinone	ND	0.060 ug/L	

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PAL Sample ID: P210479-04
Sample Date: 4/25/21
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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Hexythiazox	ND	0.060 ug/L	
4/30/21	5/4/21	Imazalil	ND	0.060 ug/L	
4/30/21	5/4/21	Imidacloprid	ND	0.060 ug/L	
4/30/21	5/4/21	Indaziflam	ND	0.060 ug/L	
4/30/21	5/4/21	Indoxacarb	ND	0.060 ug/L	
4/30/21	5/4/21	Iodosulfuron-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Ipconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Iprodione	ND	0.30 ug/L	
4/30/21	5/4/21	Isofetamid	ND	0.060 ug/L	
4/30/21	5/4/21	Isoxaben	ND	0.060 ug/L	
4/30/21	5/4/21	Isoxadifen-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Lactofen	ND	0.060 ug/L	
4/30/21	5/4/21	Linuron	ND	0.060 ug/L	
4/30/21	5/4/21	Malaoxon	ND	0.060 ug/L	
4/30/21	5/4/21	Mandipropamid	ND	0.060 ug/L	
4/30/21	5/4/21	Metconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Methidathion	ND	0.060 ug/L	
4/30/21	5/4/21	Methiocarb	ND	0.060 ug/L	
4/30/21	5/4/21	Methomyl	ND	0.060 ug/L	
4/30/21	5/4/21	Methoxyfenozide	ND	0.060 ug/L	
4/30/21	5/4/21	Metrafenone	ND	0.060 ug/L	
4/30/21	5/4/21	Metribuzin	ND	0.060 ug/L	
4/30/21	5/4/21	Mevinphos	ND	0.060 ug/L	
4/30/21	5/4/21	Monuron	ND	0.060 ug/L	
4/30/21	5/4/21	Neburon	ND	0.060 ug/L	
4/30/21	5/4/21	Norflurazon	ND	0.060 ug/L	
4/30/21	5/4/21	Novaluron	ND	0.060 ug/L	
4/30/21	5/4/21	Oryzalin	ND	0.060 ug/L	
4/30/21	5/4/21	Oxadixyl	ND	0.060 ug/L	
4/30/21	5/4/21	Oxamyl	ND	0.060 ug/L	
4/30/21	5/4/21	Penoxsulam	ND	0.060 ug/L	
4/30/21	5/4/21	Penthiopyrad	ND	0.060 ug/L	
4/30/21	5/4/21	Phenmedipham	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P210479-04
Sample Date: 4/25/21
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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Phorate Sulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Phorate Sulfoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Phosalone	ND	0.060 ug/L	
4/30/21	5/4/21	Phosmet	ND	0.060 ug/L	
4/30/21	5/4/21	Phosphamidon	ND	0.060 ug/L	
4/30/21	5/4/21	Picoxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Piperonyl Butoxide	ND	0.060 ug/L	
4/30/21	5/4/21	Pirimicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Pirimiphos-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Prallethrin	ND	0.060 ug/L	
4/30/21	5/4/21	Prometon	ND	0.060 ug/L	
4/30/21	5/4/21	Prometryn	ND	0.060 ug/L	
4/30/21	5/4/21	Propanil	ND	0.060 ug/L	
4/30/21	5/4/21	Propargite	ND	0.060 ug/L	
4/30/21	5/4/21	Propazine	ND	0.060 ug/L	
4/30/21	5/4/21	Propiconazole	ND	0.12 ug/L	
4/30/21	5/4/21	Propoxur	ND	0.060 ug/L	
4/30/21	5/4/21	Pyraclostrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Pyraflufen-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Pyrethrin	ND	0.30 ug/L	
4/30/21	5/4/21	Pyridaben	ND	0.060 ug/L	
4/30/21	5/4/21	Pyridalyl	ND	0.060 ug/L	
4/30/21	5/4/21	Pyrimethanil	ND	0.060 ug/L	
4/30/21	5/4/21	Pyroxasulfone	ND	0.060 ug/L	
4/30/21	5/4/21	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Rotenone	ND	0.060 ug/L	
4/30/21	5/4/21	Saflufenacil	ND	0.060 ug/L	
4/30/21	5/4/21	Sethoxydim	ND	0.12 ug/L	
4/30/21	5/4/21	Siduron	ND	0.060 ug/L	
4/30/21	5/4/21	Simazine	ND	0.060 ug/L	
4/30/21	5/4/21	Simetryn	ND	0.060 ug/L	
4/30/21	5/4/21	Spinetoram	ND	0.060 ug/L	
4/30/21	5/4/21	Spinosad	ND	0.060 ug/L	

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Matrix: water

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/30/21	5/4/21	Spiromesifen	ND	0.12 ug/L	
4/30/21	5/4/21	Spirotetramat	ND	0.060 ug/L	
4/30/21	5/4/21	Spiroxamine	ND	0.060 ug/L	
4/30/21	5/4/21	Sulfentrazone	ND	0.060 ug/L	
4/30/21	5/4/21	Sulfoxaflor	ND	0.060 ug/L	
4/30/21	5/4/21	Tebuconazole	ND	0.060 ug/L	
4/30/21	5/4/21	Tebufenozide	ND	0.060 ug/L	
4/30/21	5/4/21	Tebuthiuron	ND	0.060 ug/L	
4/30/21	5/4/21	Terbacil	ND	0.060 ug/L	
4/30/21	5/4/21	Terbuthylazine	ND	0.060 ug/L	
4/30/21	5/4/21	Terbutryn	ND	0.060 ug/L	
4/30/21	5/4/21	Thiabendazole	ND	0.060 ug/L	
4/30/21	5/4/21	Thiacloprid	ND	0.060 ug/L	
4/30/21	5/4/21	Thiamethoxam	ND	0.060 ug/L	
4/30/21	5/4/21	Thiencarbazone-methyl	ND	0.060 ug/L	
4/30/21	5/4/21	Thiobencarb	ND	0.060 ug/L	
4/30/21	5/4/21	Thiodicarb	ND	0.060 ug/L	
4/30/21	5/4/21	Tolfenpyrad	ND	0.060 ug/L	
4/30/21	5/4/21	Triadimefon	ND	0.060 ug/L	
4/30/21	5/4/21	Triadimenol	ND	0.12 ug/L	
4/30/21	5/4/21	Triallate	ND	0.060 ug/L	
4/30/21	5/4/21	Trifloxystrobin	ND	0.060 ug/L	
4/30/21	5/4/21	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/30/21	5/4/21	Triflumizole	ND	0.060 ug/L	
4/30/21	5/4/21	Trinexapac-ethyl	ND	0.060 ug/L	
4/30/21	5/4/21	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 71 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Client Project ID: 81-54

Quality Assurance

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/4/21	21D3001-BLK1	Abamectin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	a-BHC	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Acetamiprid	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Acetochlor	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Acibenzolar-S-methyl	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Afidopyropen	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Alachlor	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Aldicarb	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Aldrin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Allethrin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Ametoctradin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Ametryn	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Aspon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Atrazine	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Azinphos-ethyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Azinphos-methyl	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Azoxystrobin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	b-BHC	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Bendiocarb	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Benfluralin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Bensulide	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Bicyclopyrone	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Bifenthrin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Bitertanol	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Bolstar	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Boscalid	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Bromacil	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Bromopropylate	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Buprofezin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Captan	Not Detected	< 0.60 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Carbaryl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Carbendazim	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Carbofuran	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Carfentrazone-ethyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Chlorantraniliprole	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Chlordane	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Chlorfenapyr	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Chlorfenvinphos	Not Detected	< 0.060 ug/L	

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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/6/21	21D3001-BLK1	Chlorobenzilate	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Chloroneb	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Chlorpropham	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Chlorpyrifos	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Chlorpyrifos-methyl	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	cis-Nonachlor	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Clethodim	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Clofentezine	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Clomazone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyanazine	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyantraniliprole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyazofamid	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyclaniliprole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cycloate	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyflufenamid	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyflumetofen	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Cyfluthrin	Not Detected	< 0.30 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyhalofop-butyl	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cymoxanil	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Cypermethrin	Not Detected	< 0.30 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyprodinil	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Cyprosulfamide	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dacthal	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	d-BHC	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	DCPMU	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Deltamethrin	Not Detected	< 0.30 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Demeton	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Diazinon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Diazoxon	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dichlobenil	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dichlorofenthion	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dichlorvos	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Diclofop-methyl	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dicloran	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dicofol	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dieldrin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Difenoconazole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Diflubenzuron	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Diflufenican	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dimethenamid	Not Detected	< 0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/4/21	21D3001-BLK1	Dimethoate	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Dimethomorph	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Dioxathion	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Diphenamid	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Diphenylamine	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Disulfoton	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Disulfoton sulfone	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Dithiopyr	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Diuron	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	d-Phenothrin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Endosulfan I	Not Detected	< 0.12 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Endosulfan II	Not Detected	< 0.12 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Endosulfan sulfate	Not Detected	< 0.12 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Endrin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Endrin ketone	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	EPN	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	EPTC	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Esfenvalerate	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Ethalfluralin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Ethion	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Ethofumesate	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Ethoprop	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Etofenprox	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Etoxazole	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Etridiazole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Famoxadone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Famphur	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenamidone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenamiphos sulfone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenamiphos sulfoxide	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fenarimol	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenazaquin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenbuconazole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenbutatin oxide	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenhexamid	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fenitrothion	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenobucarb	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fenoxaprop-ethyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenoxycarb	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenpropathrin	Not Detected	< 0.060 ug/L	

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/4/21	21D3001-BLK1	Fenpyroximate	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fenthion	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fenuron	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fenvalerate	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fipronil	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fluazifop-p-butyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fluazinam	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Flubendiamide	Not Detected	< 0.12 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fludioxonil	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Flufenacet	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Flumioxazin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fluometuron	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fluopicolide	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fluopyram	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fluoxastrobin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Flupyradifurone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fluridone	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Fluroxypyr-meptyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Flutianil	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Flutolanil	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Flutriafol	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fluvalinate	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fluxapyroxad	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Fonofos	Not Detected	< 0.12 ug/L	
4/30/21	5/6/21	21D3001-BLK1	g-BHC	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Heptachlor	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Heptachlor epoxide	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Hexachlorobenzene	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Hexaconazole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Hexazinone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Hexythiazox	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Imazalil	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Imidacloprid	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Indaziflam	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Indoxacarb	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Iodosulfuron-methyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Ipconazole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Iprodione	Not Detected	< 0.30 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Isofetamid	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Isoxaben	Not Detected	< 0.060 ug/L	

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/4/21	21D3001-BLK1	Isoxadifen-ethyl	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Kresoxim-methyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Lactofen	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	lambda-Cyhalothrin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Leptophos	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Linuron	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Malaoxon	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Malathion	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Mandipropamid	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Mefenoxam	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Metconazole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Methidathion	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Methiocarb	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Methomyl	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Methoxychlor	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Methoxyfenozide	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Metolachlor	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Metrafenone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Metribuzin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Mevinphos	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	MGK-264	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Monuron	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Myclobutanil	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Napropamide	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Neburon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Norflurazon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Novaluron	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	o-Phenylphenol	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Oryzalin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Ovex	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Oxadiazon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Oxadixyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Oxamyl	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Oxyfluorfen	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	p,p'-DDD	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	p,p'-DDE	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	p,p'-DDT	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Paclobutrazol	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Parathion	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Parathion-methyl	Not Detected	< 0.060 ug/L	

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/6/21	21D3001-BLK1	PCA	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	PCB	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	PCNB	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Pendimethalin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Penoxsulam	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Pentachlorothioanisole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Penthiopyrad	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Permethrin	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Phenmedipham	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Phorate	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Phorate Sulfone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Phorate Sulfoxide	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Phosalone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Phosmet	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Phosphamidon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Picoxystrobin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Piperonyl Butoxide	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pirimicarb	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pirimiphos-methyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Prallethrin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Procymidone	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Prodiamine	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Prometon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Prometryn	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Pronamide	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Propachlor	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Propanil	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Propargite	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Propazine	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Propiconazole	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Propoxur	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pyraclostrobin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pyraflufen-ethyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pyrethrin	Not Detected	< 0.30 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pyridaben	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pyridalyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pyrimethanil	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Pyriproxyfen	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Pyroxasulfone	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Quinoxyfen	Not Detected	< 0.060 ug/L	

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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/4/21	21D3001-BLK1	Quizalofop-p-ethyl	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Ronnel	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Rotenone	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Saflufenacil	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Sethoxydim	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Siduron	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Simazine	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Simetryn	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Spinetoram	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Spinosad	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Spirodiclofen	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Spiromesifen	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Spirotetramat	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Spiroxamine	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Sulfentrazone	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Sulfotep	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Sulfoxaflor	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Tebuconazole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Tebufenozide	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Tebuthiuron	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Tefluthrin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Terbacil	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Terbufos	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Terbuthylazine	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Terbutryn	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Tetraconazole	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Tetradifon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Thiabendazole	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Thiacloprid	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Thiamethoxam	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Thiencarbazone-methyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Thiobencarb	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Thiodicarb	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Thionazin	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Tokuthion	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Tolfenpyrad	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	trans-Nonachlor	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Triadimefon	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Triadimenol	Not Detected	< 0.12 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Triallate	Not Detected	< 0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Sherwood, OR 97140

Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/6/21	21D3001-BLK1	Trichloronate	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Trifloxystrobin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Trifloxysulfuron-sodium	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Triflumizole	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Trifluralin	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Trinexapac-ethyl	Not Detected	< 0.060 ug/L	
4/30/21	5/4/21	21D3001-BLK1	Triticonazole	Not Detected	< 0.060 ug/L	
4/30/21	5/6/21	21D3001-BLK1	Vinclozalin	Not Detected	< 0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/6/21	21D3001-BS1	Acetochlor	86	67-129	
4/30/21	5/6/21	21D3001-BSD1	Acetochlor	93	67-129	
4/30/21	5/6/21	21D3001-BS1	Ametryn	91	60-134	
4/30/21	5/6/21	21D3001-BSD1	Ametryn	96	60-134	
4/30/21	5/6/21	21D3001-BS1	Bifenthrin	86	63-142	
4/30/21	5/6/21	21D3001-BSD1	Bifenthrin	90	63-142	
4/30/21	5/6/21	21D3001-BS1	Buprofezin	94	70-134	
4/30/21	5/6/21	21D3001-BSD1	Buprofezin	97	70-134	
4/30/21	5/6/21	21D3001-BS1	Captan	118	25-143	
4/30/21	5/6/21	21D3001-BSD1	Captan	178	25-143	R3
4/30/21	5/4/21	21D3001-BS1	Carbaryl	86	80-109	
4/30/21	5/4/21	21D3001-BSD1	Carbaryl	89	80-109	
4/30/21	5/6/21	21D3001-BS1	Chlorpropham	90	67-127	
4/30/21	5/6/21	21D3001-BSD1	Chlorpropham	96	67-127	
4/30/21	5/6/21	21D3001-BS1	Chlorpyrifos	92	69-128	
4/30/21	5/6/21	21D3001-BSD1	Chlorpyrifos	97	69-128	
4/30/21	5/6/21	21D3001-BS1	Chlorpyrifos-methyl	90	61-131	
4/30/21	5/6/21	21D3001-BSD1	Chlorpyrifos-methyl	97	61-131	
4/30/21	5/6/21	21D3001-BS1	cis-Nonachlor	108	57-130	
4/30/21	5/6/21	21D3001-BSD1	cis-Nonachlor	112	57-130	
4/30/21	5/6/21	21D3001-BS1	Cyfluthrin	104	50-158	
4/30/21	5/6/21	21D3001-BSD1	Cyfluthrin	111	50-158	
4/30/21	5/6/21	21D3001-BS1	Cypermethrin	104	48-163	
4/30/21	5/6/21	21D3001-BSD1	Cypermethrin	110	48-163	
4/30/21	5/6/21	21D3001-BS1	Dacthal	88	72-120	
4/30/21	5/6/21	21D3001-BSD1	Dacthal	94	72-120	
4/30/21	5/6/21	21D3001-BS1	Deltamethrin	103	59-148	
4/30/21	5/6/21	21D3001-BSD1	Deltamethrin	109	59-148	
4/30/21	5/6/21	21D3001-BS1	Diazinon	93	67-136	
4/30/21	5/6/21	21D3001-BSD1	Diazinon	98	67-136	
4/30/21	5/6/21	21D3001-BS1	Dichlobenil	80	60-111	
4/30/21	5/6/21	21D3001-BSD1	Dichlobenil	90	60-111	
4/30/21	5/6/21	21D3001-BS1	Dichlorofenthion	85	64-124	
4/30/21	5/6/21	21D3001-BSD1	Dichlorofenthion	91	64-124	
4/30/21	5/6/21	21D3001-BS1	Dichlorvos	86	43-125	
4/30/21	5/6/21	21D3001-BSD1	Dichlorvos	98	43-125	
4/30/21	5/6/21	21D3001-BS1	Dicloran	89	63-128	
4/30/21	5/6/21	21D3001-BSD1	Dicloran	93	63-128	
4/30/21	5/6/21	21D3001-BS1	Dicofol	88	70-129	
4/30/21	5/6/21	21D3001-BSD1	Dicofol	93	70-129	
4/30/21	5/6/21	21D3001-BS1	Dimethenamid	87	68-128	
4/30/21	5/6/21	21D3001-BSD1	Dimethenamid	93	68-128	
4/30/21	5/6/21	21D3001-BS1	Diphenamid	92	70-128	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/6/21	21D3001-BSD1	Diphenamid	96	70-128	
4/30/21	5/6/21	21D3001-BS1	Diphenylamine	86	67-120	
4/30/21	5/6/21	21D3001-BSD1	Diphenylamine	95	67-120	
4/30/21	5/6/21	21D3001-BS1	Disulfoton	62	64-128	R1
4/30/21	5/6/21	21D3001-BSD1	Disulfoton	27	64-128	R1
4/30/21	5/6/21	21D3001-BS1	Endosulfan I	89	72-117	
4/30/21	5/6/21	21D3001-BSD1	Endosulfan I	94	72-117	
4/30/21	5/6/21	21D3001-BS1	Endosulfan II	96	59-119	
4/30/21	5/6/21	21D3001-BSD1	Endosulfan II	101	59-119	
4/30/21	5/6/21	21D3001-BS1	Endosulfan sulfate	104	68-128	
4/30/21	5/6/21	21D3001-BSD1	Endosulfan sulfate	111	68-128	
4/30/21	5/6/21	21D3001-BS1	Ethofumesate	88	69-130	
4/30/21	5/6/21	21D3001-BSD1	Ethofumesate	92	69-130	
4/30/21	5/6/21	21D3001-BS1	Ethoprop	89	65-126	
4/30/21	5/6/21	21D3001-BSD1	Ethoprop	96	65-126	
4/30/21	5/6/21	21D3001-BS1	Etoxazole	92	64-137	
4/30/21	5/6/21	21D3001-BSD1	Etoxazole	96	64-137	
4/30/21	5/6/21	21D3001-BS1	Fenarimol	97	70-125	
4/30/21	5/6/21	21D3001-BSD1	Fenarimol	103	70-125	
4/30/21	5/6/21	21D3001-BS1	Fipronil	89	51-146	
4/30/21	5/6/21	21D3001-BSD1	Fipronil	93	51-146	
4/30/21	5/6/21	21D3001-BS1	Fluazifop-p-butyl	92	61-152	
4/30/21	5/6/21	21D3001-BSD1	Fluazifop-p-butyl	96	61-152	
4/30/21	5/6/21	21D3001-BS1	Fludioxonil	92	49-143	
4/30/21	5/6/21	21D3001-BSD1	Fludioxonil	94	49-143	
4/30/21	5/6/21	21D3001-BS1	Fluroxypyr-meptyl	87	53-145	
4/30/21	5/6/21	21D3001-BSD1	Fluroxypyr-meptyl	91	53-145	
4/30/21	5/6/21	21D3001-BS1	Flutolanil	95	57-152	
4/30/21	5/6/21	21D3001-BSD1	Flutolanil	99	57-152	
4/30/21	5/6/21	21D3001-BS1	Hexachlorobenzene	67	38-118	
4/30/21	5/6/21	21D3001-BSD1	Hexachlorobenzene	76	38-118	
4/30/21	5/4/21	21D3001-BS1	Imidacloprid	85	61-115	
4/30/21	5/4/21	21D3001-BSD1	Imidacloprid	86	61-115	
4/30/21	5/6/21	21D3001-BS1	Kresoxim-methyl	96	70-131	
4/30/21	5/6/21	21D3001-BSD1	Kresoxim-methyl	101	70-131	
4/30/21	5/6/21	21D3001-BS1	lambda-Cyhalothrin	103	61-141	
4/30/21	5/6/21	21D3001-BSD1	lambda-Cyhalothrin	111	61-141	
4/30/21	5/4/21	21D3001-BS1	Linuron	88	76-114	
4/30/21	5/4/21	21D3001-BSD1	Linuron	92	76-114	
4/30/21	5/6/21	21D3001-BS1	Malathion	100	45-157	
4/30/21	5/6/21	21D3001-BSD1	Malathion	106	45-157	
4/30/21	5/6/21	21D3001-BS1	Mefenoxam	93	69-130	
4/30/21	5/6/21	21D3001-BSD1	Mefenoxam	97	69-130	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/6/21	21D3001-BS1	Metolachlor	90	71-128	
4/30/21	5/6/21	21D3001-BSD1	Metolachlor	95	71-128	
4/30/21	5/4/21	21D3001-BS1	Metribuzin	83	63-123	
4/30/21	5/4/21	21D3001-BSD1	Metribuzin	88	63-123	
4/30/21	5/6/21	21D3001-BS1	MGK-264	86	70-124	
4/30/21	5/6/21	21D3001-BSD1	MGK-264	92	70-124	
4/30/21	5/6/21	21D3001-BS1	Myclobutanil	95	61-141	
4/30/21	5/6/21	21D3001-BSD1	Myclobutanil	100	61-141	
4/30/21	5/6/21	21D3001-BS1	Napropamide	93	65-138	
4/30/21	5/6/21	21D3001-BSD1	Napropamide	97	65-138	
4/30/21	5/6/21	21D3001-BS1	Oxyfluorfen	93	63-140	
4/30/21	5/6/21	21D3001-BSD1	Oxyfluorfen	96	63-140	
4/30/21	5/6/21	21D3001-BS1	Parathion-methyl	93	49-149	
4/30/21	5/6/21	21D3001-BSD1	Parathion-methyl	97	49-149	
4/30/21	5/6/21	21D3001-BS1	PCA	80	66-112	
4/30/21	5/6/21	21D3001-BSD1	PCA	85	66-112	
4/30/21	5/6/21	21D3001-BS1	PCB	52	19-117	
4/30/21	5/6/21	21D3001-BSD1	PCB	64	19-117	
4/30/21	5/6/21	21D3001-BS1	PCNB	81	61-114	
4/30/21	5/6/21	21D3001-BSD1	PCNB	91	61-114	
4/30/21	5/6/21	21D3001-BS1	Pendimethalin	92	65-131	
4/30/21	5/6/21	21D3001-BSD1	Pendimethalin	93	65-131	
4/30/21	5/6/21	21D3001-BS1	Pentachlorothioanisole	80	61-125	
4/30/21	5/6/21	21D3001-BSD1	Pentachlorothioanisole	88	61-125	
4/30/21	5/6/21	21D3001-BS1	Permethrin	98	62-146	
4/30/21	5/6/21	21D3001-BSD1	Permethrin	103	62-146	
4/30/21	5/6/21	21D3001-BS1	Procymidone	93	74-123	
4/30/21	5/6/21	21D3001-BSD1	Procymidone	97	74-123	
4/30/21	5/4/21	21D3001-BS1	Pyraclostrobin	87	81-104	
4/30/21	5/4/21	21D3001-BSD1	Pyraclostrobin	89	81-104	
4/30/21	5/6/21	21D3001-BS1	Pyriproxyfen	94	50-149	
4/30/21	5/6/21	21D3001-BSD1	Pyriproxyfen	99	50-149	
4/30/21	5/6/21	21D3001-BS1	Quinoxyfen	89	63-132	
4/30/21	5/6/21	21D3001-BSD1	Quinoxyfen	93	63-132	
4/30/21	5/6/21	21D3001-BS1	Spirodiclofen	107	57-136	
4/30/21	5/6/21	21D3001-BSD1	Spirodiclofen	116	57-136	
4/30/21	5/4/21	21D3001-BS1	Spirotetramat	88	76-107	
4/30/21	5/4/21	21D3001-BSD1	Spirotetramat	92	76-107	
4/30/21	5/6/21	21D3001-BS1	Tetraconazole	94	58-143	
4/30/21	5/6/21	21D3001-BSD1	Tetraconazole	99	58-143	
4/30/21	5/6/21	21D3001-BS1	Tetradifon	88	70-125	
4/30/21	5/6/21	21D3001-BSD1	Tetradifon	95	70-125	
4/30/21	5/4/21	21D3001-BS1	Thiabendazole	75	67-103	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P210479
Report Date: May 11, 2021
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/30/21	5/4/21	21D3001-BSD1	Thiabendazole	80	67-103	
4/30/21	5/6/21	21D3001-BS1	trans-Nonachlor	90	72-120	
4/30/21	5/6/21	21D3001-BSD1	trans-Nonachlor	96	72-120	
4/30/21	5/6/21	21D3001-BS1	Trifluralin	85	60-128	
4/30/21	5/6/21	21D3001-BSD1	Trifluralin	91	60-128	
4/30/21	5/6/21	21D3001-BS1	Vinclozalin	88	70-128	
4/30/21	5/6/21	21D3001-BSD1	Vinclozalin	93	70-128	

Project Notes

Notes	Definition
R3	Spike recovery above control limit. Sample results are not detected, data quality has not been affected.
R1	Spike recovery is outside of control limits.

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assessment
Work Order Number: 2108063

August 13, 2021

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 10 sample(s) on 8/5/2021 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *08/13/2021*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess
Work Order: 2108063

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2108063-001	GRMW-GR82-08022021	08/02/2021 1:45 PM	08/05/2021 9:10 AM
2108063-002	GRMW-WCCL-08022021	08/02/2021 2:20 PM	08/05/2021 9:10 AM
2108063-003	GRMW-CCML-08022021	08/02/2021 3:15 PM	08/05/2021 9:10 AM
2108063-004	GRMW-GRML-08022021	08/02/2021 4:00 PM	08/05/2021 9:10 AM
2108063-005	GRMW-GRIC-08022021	08/02/2021 4:20 PM	08/05/2021 9:10 AM
2108063-006	GRMW-LCPL-08022021	08/02/2021 10:45 AM	08/05/2021 9:10 AM
2108063-007	GRMW-CCWL-08022021	08/02/2021 10:05 AM	08/05/2021 9:10 AM
2108063-008	GRMW-CCUB-08022021	08/02/2021 9:00 AM	08/05/2021 9:10 AM
2108063-009	GRMW-CCSP-08022021	08/02/2021 8:15 AM	08/05/2021 9:10 AM
2108063-010	GRMW-GRFC-08022021	08/02/2021 12:15 PM	08/05/2021 9:10 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2108063**
Date: **8/13/2021**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assessment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 1:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-001
Matrix: Water
Client Sample ID: GRMW-GR82-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	0.762	0.100		mg/L	1	8/11/2021 4:06:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	47.6	1.00		mg/L CaCO3	1	8/9/2021 7:15:44 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	1.50	1.00		µg/L	1	8/11/2021 11:27:16 PM
Chromium	ND	0.750		µg/L	1	8/11/2021 11:27:16 PM
Copper	ND	2.00		µg/L	1	8/11/2021 11:27:16 PM
Iron	ND	100		µg/L	1	8/12/2021 5:01:32 PM
Nickel	ND	1.30		µg/L	1	8/11/2021 11:27:16 PM
Selenium	ND	1.90		µg/L	1	8/12/2021 5:01:32 PM
Zinc	ND	3.80		µg/L	1	8/12/2021 5:01:32 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	51.1	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 1:04:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 9:21:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 2:20:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-002
Matrix: Water
Client Sample ID: GRMW-WCCL-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	0.629	0.100		mg/L	1	8/11/2021 4:29:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	42.4	1.00		mg/L CaCO3	1	8/9/2021 7:21:18 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	ND	1.00		µg/L	1	8/11/2021 11:32:50 PM
Chromium	ND	0.750		µg/L	1	8/11/2021 11:32:50 PM
Copper	ND	2.00		µg/L	1	8/11/2021 11:32:50 PM
Iron	ND	100		µg/L	1	8/12/2021 5:07:06 PM
Nickel	ND	1.30		µg/L	1	8/11/2021 11:32:50 PM
Selenium	ND	1.90		µg/L	1	8/12/2021 5:07:06 PM
Zinc	4.99	3.80		µg/L	1	8/12/2021 5:07:06 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	47.0	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 1:09:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 9:23:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 3:15:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-003
Matrix: Water
Client Sample ID: GRMW-CCML-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	1.61	0.100		mg/L	1	8/11/2021 4:52:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	72.8	1.00		mg/L CaCO3	1	8/9/2021 7:26:52 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	1.30	1.00		µg/L	1	8/11/2021 11:38:24 PM
Chromium	ND	0.750		µg/L	1	8/11/2021 11:38:24 PM
Copper	ND	2.00		µg/L	1	8/11/2021 11:38:24 PM
Iron	ND	100		µg/L	1	8/12/2021 5:12:40 PM
Nickel	ND	1.30		µg/L	1	8/11/2021 11:38:24 PM
Selenium	ND	1.90		µg/L	1	8/12/2021 5:12:40 PM
Zinc	4.19	3.80		µg/L	1	8/12/2021 5:12:40 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	96.0	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 1:14:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 9:25:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 4:00:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-004
Matrix: Water
Client Sample ID: GRMW-GRML-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	3.73	0.200	D	mg/L	2	8/12/2021 10:56:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	66.7	1.00		mg/L CaCO3	1	8/9/2021 7:43:37 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	1.16	1.00		µg/L	1	8/11/2021 11:43:58 PM
Chromium	ND	0.750		µg/L	1	8/11/2021 11:43:58 PM
Copper	5.84	2.00		µg/L	1	8/11/2021 11:43:58 PM
Iron	ND	100		µg/L	1	8/12/2021 5:18:14 PM
Nickel	ND	1.30		µg/L	1	8/11/2021 11:43:58 PM
Selenium	ND	1.90		µg/L	1	8/12/2021 5:18:14 PM
Zinc	ND	3.80		µg/L	1	8/12/2021 5:18:14 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	73.8	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 1:19:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 9:28:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 4:20:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-005
Matrix: Water
Client Sample ID: GRMW-GRIC-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	3.93	0.200	D	mg/L	2	8/12/2021 11:19:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	59.0	1.00		mg/L CaCO3	1	8/9/2021 7:49:11 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	ND	1.00		µg/L	1	8/11/2021 11:49:32 PM
Chromium	ND	0.750		µg/L	1	8/11/2021 11:49:32 PM
Copper	ND	2.00		µg/L	1	8/11/2021 11:49:32 PM
Iron	ND	100		µg/L	1	8/12/2021 5:23:48 PM
Nickel	ND	1.30		µg/L	1	8/11/2021 11:49:32 PM
Selenium	ND	1.90		µg/L	1	8/12/2021 5:23:48 PM
Zinc	ND	3.80		µg/L	1	8/12/2021 5:23:48 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	58.3	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 1:24:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 9:31:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 10:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-006
Matrix: Water
Client Sample ID: GRMW-LCPL-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	49.6	5.00	D	mg/L	50	8/12/2021 11:42:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	225	1.00		mg/L CaCO3	1	8/9/2021 7:54:44 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	2.75	1.00		µg/L	1	8/11/2021 11:55:06 PM
Chromium	ND	0.750		µg/L	1	8/11/2021 11:55:06 PM
Copper	ND	2.00		µg/L	1	8/11/2021 11:55:06 PM
Iron	799	100		µg/L	1	8/12/2021 5:40:32 PM
Nickel	ND	1.30		µg/L	1	8/11/2021 11:55:06 PM
Selenium	ND	1.90		µg/L	1	8/12/2021 5:40:32 PM
Zinc	3.97	3.80		µg/L	1	8/12/2021 5:40:32 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	213	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	0.863	0.100		mg/L	1	8/12/2021 1:57:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	4.64	0.750	D	mg/L	3	8/12/2021 10:14:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 10:05:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-007
Matrix: Water
Client Sample ID: GRMW-CCWL-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	1.30	0.100		mg/L	1	8/11/2021 6:24:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	40.7	1.00		mg/L CaCO3	1	8/9/2021 8:00:18 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	ND	1.00		µg/L	1	8/12/2021 12:11:49 AM
Chromium	ND	0.750		µg/L	1	8/12/2021 12:11:49 AM
Copper	ND	2.00		µg/L	1	8/12/2021 12:11:49 AM
Iron	ND	100		µg/L	1	8/12/2021 12:11:49 AM
Nickel	ND	1.30		µg/L	1	8/12/2021 12:11:49 AM
Selenium	ND	1.90		µg/L	1	8/12/2021 12:11:49 AM
Zinc	ND	3.80		µg/L	1	8/12/2021 5:46:06 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	43.6	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 2:02:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 9:41:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 9:00:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-008
Matrix: Water
Client Sample ID: GRMW-CCUB-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	0.792	0.100		mg/L	1	8/11/2021 7:34:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	29.8	1.00		mg/L CaCO3	1	8/9/2021 3:09:28 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	ND	1.00		µg/L	1	8/11/2021 11:05:00 PM
Chromium	ND	0.750		µg/L	1	8/11/2021 11:05:00 PM
Copper	ND	2.00		µg/L	1	8/11/2021 11:05:00 PM
Iron	ND	100		µg/L	1	8/12/2021 4:50:24 PM
Nickel	ND	1.30		µg/L	1	8/11/2021 11:05:00 PM
Selenium	ND	1.90		µg/L	1	8/12/2021 4:50:24 PM
Zinc	ND	3.80		µg/L	1	8/12/2021 4:50:24 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	31.3	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 2:07:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 9:44:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 8:15:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-009
Matrix: Water
Client Sample ID: GRMW-CCSP-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	0.461	0.100		mg/L	1	8/11/2021 9:06:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	26.6	1.00		mg/L CaCO3	1	8/9/2021 8:05:52 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	ND	1.00		µg/L	1	8/12/2021 12:17:23 AM
Chromium	ND	0.750		µg/L	1	8/12/2021 12:17:23 AM
Copper	ND	2.00		µg/L	1	8/12/2021 12:17:23 AM
Iron	ND	100		µg/L	1	8/12/2021 12:17:23 AM
Nickel	ND	1.30		µg/L	1	8/12/2021 12:17:23 AM
Selenium	ND	1.90		µg/L	1	8/12/2021 12:17:23 AM
Zinc	ND	3.80		µg/L	1	8/12/2021 5:51:40 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	27.9	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 2:27:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 10:10:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	0.600	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Analytical Report

Work Order: **2108063**
Date Reported: **8/13/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 8/2/2021 12:15:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2108063-010
Matrix: Water
Client Sample ID: GRMW-GRFC-08022021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 33326		Analyst: SS
Chloride	0.503	0.100		mg/L	1	8/11/2021 9:30:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 33284		Analyst: TN
Total Hardness (as CaCO3)	38.4	1.00		mg/L CaCO3	1	8/9/2021 8:11:26 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 33314		Analyst: EH
Arsenic	ND	1.00		µg/L	1	8/12/2021 12:22:57 AM
Chromium	ND	0.750		µg/L	1	8/12/2021 12:22:57 AM
Copper	ND	2.00		µg/L	1	8/12/2021 12:22:57 AM
Iron	ND	100		µg/L	1	8/12/2021 12:22:57 AM
Nickel	ND	1.30		µg/L	1	8/12/2021 12:22:57 AM
Selenium	ND	1.90		µg/L	1	8/12/2021 12:22:57 AM
Zinc	ND	3.80		µg/L	1	8/12/2021 5:57:14 PM
Total Alkalinity by SM 2320B				Batch ID: R69028		Analyst: TN
Alkalinity, Total (As CaCO3)	39.3	2.50		mg/L	1	8/6/2021 12:15:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 33336		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	8/12/2021 2:32:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 33306		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	8/12/2021 10:12:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R69083		Analyst: SS
Sulfide	ND	0.500	H	mg/L	1	8/9/2021 8:56:41 AM

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R69028**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **8/6/2021**			RunNo: **69028**		
Client ID: **MBLKW**	Batch ID: **R69028**					Analysis Date: **8/6/2021**			SeqNo: **1397169**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R69028**	SampType: **LCS**			Units: **mg/L**		Prep Date: **8/6/2021**			RunNo: **69028**		
Client ID: **LCSW**	Batch ID: **R69028**					Analysis Date: **8/6/2021**			SeqNo: **1397170**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	96.8	2.50	100.0	0	96.8	88.3	113				

Sample ID: **2108038-002EDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/6/2021**			RunNo: **69028**		
Client ID: **BATCH**	Batch ID: **R69028**					Analysis Date: **8/6/2021**			SeqNo: **1397173**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	429	2.50						412.9	3.90	20	

Sample ID: **2108063-008BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/6/2021**			RunNo: **69028**		
Client ID: **GRMW-CCUB-0802202**	Batch ID: **R69028**					Analysis Date: **8/6/2021**			SeqNo: **1398689**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	32.6	2.50						31.30	4.08	20	

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **LCS-33336**	SampType: **LCS**			Units: **mg/L**		Prep Date: **8/12/2021**			RunNo: **69210**		
Client ID: **LCSW**	Batch ID: **33336**					Analysis Date: **8/12/2021**			SeqNo: **1401655**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.442	0.100	0.5000	0	88.4	78.6	101				

Sample ID: **MB-33336**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **8/12/2021**			RunNo: **69210**		
Client ID: **MBLKW**	Batch ID: **33336**					Analysis Date: **8/12/2021**			SeqNo: **1401657**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **2108063-008CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/12/2021**			RunNo: **69210**		
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33336**					Analysis Date: **8/12/2021**			SeqNo: **1401668**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2108063-008CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **8/12/2021**			RunNo: **69210**		
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33336**					Analysis Date: **8/12/2021**			SeqNo: **1401669**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.518	0.100	0.5000	0	104	55.4	129				

Sample ID: **2108063-008CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **8/12/2021**			RunNo: **69210**		
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33336**					Analysis Date: **8/12/2021**			SeqNo: **1401670**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.526	0.100	0.5000	0	105	55.4	129	0.5180	1.53	30	

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2108081-003CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/12/2021** RunNo: **69210**
Client ID: **BATCH** Batch ID: **33336** Analysis Date: **8/12/2021** SeqNo: **1401678**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2108081-003CMS** SampType: **MS** Units: **mg/L** Prep Date: **8/12/2021** RunNo: **69210**
Client ID: **BATCH** Batch ID: **33336** Analysis Date: **8/12/2021** SeqNo: **1401679**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	0	55.4	129				S

NOTES:
S - Spike recovery indicates a possible matrix effect.

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-33284** SampType: **MBLK** Units: **mg/L** Prep Date: **8/9/2021** RunNo: **69116**
Client ID: **MBLKW** Batch ID: **33284** Analysis Date: **8/9/2021** SeqNo: **1399425**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **LCS-33284** SampType: **LCS** Units: **mg/L** Prep Date: **8/9/2021** RunNo: **69116**
Client ID: **LCSW** Batch ID: **33284** Analysis Date: **8/9/2021** SeqNo: **1399426**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.01	0.350	1.000	0	101	50	150				
Magnesium	1.07	0.150	1.000	0	107	50	150				

Sample ID: **2108063-008EDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **8/9/2021** RunNo: **69116**
Client ID: **GRMW-CCUB-0802202** Batch ID: **33284** Analysis Date: **8/9/2021** SeqNo: **1399428**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	27.4	1.00						29.81	8.42	20	

Sample ID: **2108063-008EMS** SampType: **MS** Units: **mg/L** Prep Date: **8/9/2021** RunNo: **69116**
Client ID: **GRMW-CCUB-0802202** Batch ID: **33284** Analysis Date: **8/9/2021** SeqNo: **1399429**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	12.8	0.350	5.000	7.373	108	50	150				
Magnesium	7.61	0.150	5.000	2.768	96.9	50	150				

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2108063-008EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **8/9/2021** RunNo: **69116**
Client ID: **GRMW-CCUB-0802202** Batch ID: **33284** Analysis Date: **8/9/2021** SeqNo: **1399430**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	13.3	0.350	5.000	7.373	119	50	150	12.79	4.24	20	
Magnesium	7.98	0.150	5.000	2.768	104	50	150	7.612	4.71	20	

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-33326**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **8/11/2021**			RunNo: **69200**		
Client ID: **MBLKW**	Batch ID: **33326**					Analysis Date: **8/11/2021**			SeqNo: **1401362**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-33326**	SampType: **LCS**			Units: **mg/L**		Prep Date: **8/11/2021**			RunNo: **69200**		
Client ID: **LCSW**	Batch ID: **33326**					Analysis Date: **8/11/2021**			SeqNo: **1401363**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.722	0.100	0.7500	0	96.3	90	110				

Sample ID: **2108063-008BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/11/2021**			RunNo: **69200**		
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33326**					Analysis Date: **8/11/2021**			SeqNo: **1401374**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.793	0.100						0.7920	0.126	20	

Sample ID: **2108063-008BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **8/11/2021**			RunNo: **69200**		
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33326**					Analysis Date: **8/11/2021**			SeqNo: **1401375**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.56	0.100	0.7500	0.7920	102	80	120				

Sample ID: **2108063-008BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **8/11/2021**			RunNo: **69200**		
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33326**					Analysis Date: **8/11/2021**			SeqNo: **1401376**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.55	0.100	0.7500	0.7920	101	80	120	1.559	0.644	20	

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2108155-003EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/11/2021** RunNo: **69200**
Client ID: **BATCH** Batch ID: **33326** Analysis Date: **8/12/2021** SeqNo: **1401387**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	20.0	0.100						19.89	0.391	20	E

Sample ID: **2108155-003EMS** SampType: **MS** Units: **mg/L** Prep Date: **8/11/2021** RunNo: **69200**
Client ID: **BATCH** Batch ID: **33326** Analysis Date: **8/12/2021** SeqNo: **1401388**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	20.7	0.100	0.7500	19.89	104	80	120				E

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **MB-33306**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **8/10/2021**			RunNo: **69203**	
Client ID: **MBLKW**	Batch ID: **33306**					Analysis Date: **8/12/2021**			SeqNo: **1401432**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **LCS-33306**	SampType: **LCS**			Units: **mg/L**		Prep Date: **8/10/2021**			RunNo: **69203**	
Client ID: **LCSW**	Batch ID: **33306**					Analysis Date: **8/12/2021**			SeqNo: **1401433**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.520	0.250	0.5000	0	104	65	135				

Sample ID: **2108063-008CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/10/2021**			RunNo: **69203**	
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33306**					Analysis Date: **8/12/2021**			SeqNo: **1401444**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2108063-008CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **8/10/2021**			RunNo: **69203**	
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33306**					Analysis Date: **8/12/2021**			SeqNo: **1401445**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.538	0.250	0.5000	0	108	65	135				

Sample ID: **2108063-008CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **8/10/2021**			RunNo: **69203**	
Client ID: **GRMW-CCUB-0802202**	Batch ID: **33306**					Analysis Date: **8/12/2021**			SeqNo: **1401424**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.508	0.250	0.5000	0	102	65	135	0.5378	5.78	30	

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R69083**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/9/2021**	RunNo: **69083**
Client ID: **MBLKW**	Batch ID: **R69083**		Analysis Date: **8/9/2021**	SeqNo: **1398738**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R69083**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/9/2021**	RunNo: **69083**
Client ID: **LCSW**	Batch ID: **R69083**		Analysis Date: **8/9/2021**	SeqNo: **1398739**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.40	0.500	2.000	0	70.0	63.2	129				

Sample ID: **2108063-008DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/9/2021**	RunNo: **69083**
Client ID: **GRMW-CCUB-0802202**	Batch ID: **R69083**		Analysis Date: **8/9/2021**	SeqNo: **1398750**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	H

Sample ID: **2108063-008DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/9/2021**	RunNo: **69083**
Client ID: **GRMW-CCUB-0802202**	Batch ID: **R69083**		Analysis Date: **8/9/2021**	SeqNo: **1398751**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	2.80	0.500	2.000	0.4000	120	31.5	199				H

Sample ID: **2108063-008DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **8/9/2021**	RunNo: **69083**
Client ID: **GRMW-CCUB-0802202**	Batch ID: **R69083**		Analysis Date: **8/9/2021**	SeqNo: **1398752**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	2.40	0.500	2.000	0.4000	100	31.5	199	2.800	15.4	30	H

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-33313FB** SampType: **MBLK** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **MBLKW** Batch ID: **33314** Analysis Date: **8/11/2021** SeqNo: **1401249**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Nickel	ND	1.30									

Sample ID: **MB-33314** SampType: **MBLK** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **MBLKW** Batch ID: **33314** Analysis Date: **8/11/2021** SeqNo: **1401250**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Nickel	ND	1.30									

Sample ID: **LCS-33314** SampType: **LCS** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **LCSW** Batch ID: **33314** Analysis Date: **8/11/2021** SeqNo: **1401251**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	93.2	1.00	100.0	0	93.2	85	115				
Chromium	91.3	0.750	100.0	0	91.3	85	115				
Copper	88.7	2.00	100.0	0	88.7	85	115				
Nickel	88.5	1.30	100.0	0	88.5	85	115				

Sample ID: **2108063-008ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **GRMW-CCUB-0802202** Batch ID: **33314** Analysis Date: **8/11/2021** SeqNo: **1401255**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00						0		30	
Chromium	ND	0.750						0		30	

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2108063-008ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **GRMW-CCUB-0802202** Batch ID: **33314** Analysis Date: **8/11/2021** SeqNo: **1401255**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	2.00						0		30	
Nickel	ND	1.30						0		30	

Sample ID: **2108063-008AMS** SampType: **MS** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **GRMW-CCUB-0802202** Batch ID: **33314** Analysis Date: **8/11/2021** SeqNo: **1401256**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	483	1.00	500.0	0	96.6	70	130				
Chromium	461	0.750	500.0	0	92.1	70	130				
Copper	450	2.00	500.0	0	90.1	70	130				
Iron	4,490	100	5,000	45.91	88.8	50	150				
Nickel	448	1.30	500.0	0	89.6	70	130				
Selenium	43.7	1.90	50.00	0	87.4	70	130				
Zinc	440	3.80	500.0	5.685	87.0	70	130				

Sample ID: **2108063-008AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **GRMW-CCUB-0802202** Batch ID: **33314** Analysis Date: **8/11/2021** SeqNo: **1401257**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	488	1.00	500.0	0	97.7	70	130	483.1	1.07	30	
Chromium	463	0.750	500.0	0	92.6	70	130	460.6	0.548	30	
Copper	452	2.00	500.0	0	90.4	70	130	450.3	0.328	30	
Iron	4,360	100	5,000	45.91	86.3	50	150	4,485	2.77	30	
Nickel	447	1.30	500.0	0	89.4	70	130	448.0	0.289	30	
Selenium	45.4	1.90	50.00	0	90.7	70	130	43.72	3.71	30	
Zinc	451	3.80	500.0	5.685	89.1	70	130	440.5	2.44	30	

Work Order: 2108063
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-33313FB** SampType: **MBLK** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **MBLKW** Batch ID: **33314** Analysis Date: **8/12/2021** SeqNo: **1402089**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	100									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **MB-33314** SampType: **MBLK** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **MBLKW** Batch ID: **33314** Analysis Date: **8/12/2021** SeqNo: **1402090**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	100									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **LCS-33314** SampType: **LCS** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **LCSW** Batch ID: **33314** Analysis Date: **8/12/2021** SeqNo: **1402091**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1,010	100	1,000	0	101	50	150				
Selenium	10.5	1.90	10.00	0	105	85	115				
Zinc	85.1	3.80	100.0	0	85.1	85	115				

Sample ID: **2108063-008ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **8/11/2021** RunNo: **69184**
Client ID: **GRMW-CCUB-0802202** Batch ID: **33314** Analysis Date: **8/12/2021** SeqNo: **1402093**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	100						0		30	
Selenium	ND	1.90						0		30	
Zinc	ND	3.80						0		30	

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2108063**
Logged by:	**Gabrielle Coeuille**	Date Received:	**8/5/2021 9:10:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	UPS				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☑	No	☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☐	No	☑	NA ☐
		Approved by client.				
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☑	No	☐	NA ☐

Person Notified:	Shiloh Simrell	Date:	8/5/2021
By Whom:	Gabrielle Coeuille	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Ok to proceed out of temp?		
Client Instructions:	Proceed.		

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	19.5

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assesment
Work Order Number: 2110391

November 10, 2021

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 9 sample(s) on 10/27/2021 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *11/10/2021*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm
Work Order: 2110391

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2110391-001	GRMW-GR82-10232021	10/23/2021 8:20 AM	10/27/2021 9:30 AM
2110391-002	GRMW-WCCL-10232021	10/23/2021 8:55 AM	10/27/2021 9:30 AM
2110391-003	GRMW-CCML-10232021	10/23/2021 9:40 AM	10/27/2021 9:30 AM
2110391-004	GRMW-GRML-10232021	10/23/2021 10:15 AM	10/27/2021 9:30 AM
2110391-005	GRMW-GRIC-10232021	10/23/2021 11:00 AM	10/27/2021 9:30 AM
2110391-006	GRMW-GRFC-10232021	10/23/2021 11:55 AM	10/27/2021 9:30 AM
2110391-007	GRMW-CCSP-10232021	10/23/2021 1:20 PM	10/27/2021 9:30 AM
2110391-008	GRMW-CCUB-10232021	10/23/2021 2:00 PM	10/27/2021 9:30 AM
2110391-009	GRMW-CCWL-10232021	10/23/2021 2:40 PM	10/27/2021 9:30 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2110391**
Date: **11/10/2021**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 8:20:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-001
Matrix: Water
Client Sample ID: **GRMW-GR82-10232021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	2.07	0.100		mg/L	1	11/2/2021 9:17:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	64.4	10.0	D	mg/L CaCO3	10	11/10/2021 12:30:56 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 7:59:43 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 7:59:43 PM
Copper	ND	2.00		µg/L	1	10/29/2021 7:59:43 PM
Iron	ND	100		µg/L	1	10/29/2021 7:59:43 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 7:59:43 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 7:59:43 PM
Zinc	ND	3.80		µg/L	1	10/29/2021 7:59:43 PM
Total Alkalinity by SM 2320B				Batch ID: R70909		Analyst: CH
Alkalinity, Total (As CaCO3)	69.2	2.50		mg/L	1	11/1/2021 8:43:24 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 9:57:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 8:55:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-002
Matrix: Water
Client Sample ID: **GRMW-WCCL-10232021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	0.799	0.100		mg/L	1	11/2/2021 9:40:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	52.3	10.0	D	mg/L CaCO3	10	11/10/2021 12:36:30 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 8:05:17 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 8:05:17 PM
Copper	ND	2.00		µg/L	1	10/29/2021 8:05:17 PM
Iron	ND	100		µg/L	1	10/29/2021 8:05:17 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 8:05:17 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 8:05:17 PM
Zinc	ND	3.80		µg/L	1	10/29/2021 8:05:17 PM
Total Alkalinity by SM 2320B				Batch ID: R70909		Analyst: CH
Alkalinity, Total (As CaCO3)	54.0	2.50		mg/L	1	11/1/2021 8:43:24 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 10:02:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 9:40:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-003
Matrix: Water
Client Sample ID: **GRMW-CCML-10232021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	2.92	0.100		mg/L	1	11/2/2021 10:03:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	43.1	10.0	D	mg/L CaCO3	10	11/10/2021 12:42:03 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 8:10:51 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 8:10:51 PM
Copper	ND	2.00		µg/L	1	10/29/2021 8:10:51 PM
Iron	ND	100		µg/L	1	10/29/2021 8:10:51 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 8:10:51 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 8:10:51 PM
Zinc	10.9	3.80		µg/L	1	10/29/2021 8:10:51 PM
Total Alkalinity by SM 2320B				Batch ID: R71051		Analyst: TN
Alkalinity, Total (As CaCO3)	58.9	2.50		mg/L	1	11/5/2021 10:08:02 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 10:07:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 10:15:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-004
Matrix: Water
Client Sample ID: **GRMW-GRML-10232021**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	2.93	0.100		mg/L	1	11/2/2021 10:26:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	61.1	10.0	D	mg/L CaCO3	10	11/10/2021 1:11:47 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 8:16:25 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 8:16:25 PM
Copper	ND	2.00		µg/L	1	10/29/2021 8:16:25 PM
Iron	ND	100		µg/L	1	10/29/2021 8:16:25 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 8:16:25 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 8:16:25 PM
Zinc	ND	3.80		µg/L	1	10/29/2021 8:16:25 PM
Total Alkalinity by SM 2320B				Batch ID: R71051		Analyst: TN
Alkalinity, Total (As CaCO3)	65.1	2.50		mg/L	1	11/5/2021 10:08:02 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 10:13:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 11:00:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-005
Matrix: Water
Client Sample ID: GRMW-GRIC-10232021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	4.49	0.200	D	mg/L	2	11/3/2021 10:35:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	56.8	10.0	D	mg/L CaCO3	10	11/10/2021 1:17:20 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 8:33:10 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 8:33:10 PM
Copper	ND	2.00		µg/L	1	10/29/2021 8:33:10 PM
Iron	ND	100		µg/L	1	10/29/2021 8:33:10 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 8:33:10 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 8:33:10 PM
Zinc	ND	3.80		µg/L	1	10/29/2021 8:33:10 PM
Total Alkalinity by SM 2320B				Batch ID: R71051		Analyst: TN
Alkalinity, Total (As CaCO3)	56.8	2.50		mg/L	1	11/5/2021 10:08:02 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 10:44:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 11:55:00 AM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-006
Matrix: Water
Client Sample ID: GRMW-GRFC-10232021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	0.800	0.100		mg/L	1	11/3/2021 1:08:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	38.2	10.0	D	mg/L CaCO3	10	11/10/2021 1:22:54 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 8:38:44 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 8:38:44 PM
Copper	ND	2.00		µg/L	1	10/29/2021 8:38:44 PM
Iron	ND	100		µg/L	1	10/29/2021 8:38:44 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 8:38:44 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 8:38:44 PM
Zinc	ND	3.80		µg/L	1	10/29/2021 8:38:44 PM
Total Alkalinity by SM 2320B				Batch ID: R71051		Analyst: TN
Alkalinity, Total (As CaCO3)	39.4	2.50		mg/L	1	11/5/2021 10:08:02 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 10:49:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 1:20:00 PM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-007
Matrix: Water
Client Sample ID: GRMW-CCSP-10232021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	1.01	0.100		mg/L	1	11/3/2021 1:32:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	32.3	10.0	D	mg/L CaCO3	10	11/10/2021 1:28:27 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 8:44:18 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 8:44:18 PM
Copper	ND	2.00		µg/L	1	10/29/2021 8:44:18 PM
Iron	ND	100		µg/L	1	10/29/2021 8:44:18 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 8:44:18 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 8:44:18 PM
Zinc	ND	3.80		µg/L	1	10/29/2021 8:44:18 PM
Total Alkalinity by SM 2320B				Batch ID: R71051		Analyst: TN
Alkalinity, Total (As CaCO3)	35.3	2.50		mg/L	1	11/5/2021 10:08:02 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 10:55:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 2:00:00 PM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-008
Matrix: Water
Client Sample ID: GRMW-CCUB-10232021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	2.15	0.100		mg/L	1	11/3/2021 1:55:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	36.3	10.0	D	mg/L CaCO3	10	11/10/2021 1:34:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 8:49:52 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 8:49:52 PM
Copper	ND	2.00		µg/L	1	10/29/2021 8:49:52 PM
Iron	ND	100		µg/L	1	10/29/2021 8:49:52 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 8:49:52 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 8:49:52 PM
Zinc	ND	3.80		µg/L	1	10/29/2021 8:49:52 PM
Total Alkalinity by SM 2320B				Batch ID: R71051		Analyst: TN
Alkalinity, Total (As CaCO3)	38.6	2.50		mg/L	1	11/5/2021 10:08:02 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 11:38:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Analytical Report

Work Order: **2110391**
Date Reported: **11/10/2021**

Client: Anderson Perry & Associates, Inc.
Collection Date: 10/23/2021 2:40:00 PM
Project: Grande Ronde Basin Water Quality Assesment
Lab ID: 2110391-009
Matrix: Water
Client Sample ID: GRMW-CCWL-10232021

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 34278		Analyst: SS
Chloride	1.59	0.100		mg/L	1	11/3/2021 2:18:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 34222		Analyst: EH
Total Hardness (as CaCO3)	43.3	10.0	D	mg/L CaCO3	10	11/10/2021 1:39:34 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 34225		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/29/2021 8:55:26 PM
Chromium	ND	0.750		µg/L	1	10/29/2021 8:55:26 PM
Copper	ND	2.00		µg/L	1	10/29/2021 8:55:26 PM
Iron	ND	100		µg/L	1	10/29/2021 8:55:26 PM
Nickel	ND	1.30		µg/L	1	10/29/2021 8:55:26 PM
Selenium	ND	1.90		µg/L	1	10/29/2021 8:55:26 PM
Zinc	ND	3.80		µg/L	1	10/29/2021 8:55:26 PM
Total Alkalinity by SM 2320B				Batch ID: R71051		Analyst: TN
Alkalinity, Total (As CaCO3)	44.8	2.50		mg/L	1	11/5/2021 10:08:02 AM
Ammonia by SM 4500 NH3G				Batch ID: 34295		Analyst: SS
Nitrogen, Ammonia	ND	0.100		mg/L	1	11/3/2021 11:42:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 34279		Analyst: SS
Phosphorus, Total (As P)	ND	0.250		mg/L	1	11/3/2021 3:30:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R70857		Analyst: SS
Sulfide	ND	0.500		mg/L	1	10/28/2021 2:11:11 PM

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R70909**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/1/2021**		RunNo: **70909**		
Client ID: **MBLKW**	Batch ID: **R70909**					Analysis Date: **11/1/2021**		SeqNo: **1442558**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R70909**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/1/2021**		RunNo: **70909**		
Client ID: **LCSW**	Batch ID: **R70909**					Analysis Date: **11/1/2021**		SeqNo: **1442559**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	110	2.50	100.0	0	110	88.3	113				

Sample ID: **2110351-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/1/2021**		RunNo: **70909**		
Client ID: **BATCH**	Batch ID: **R70909**					Analysis Date: **11/1/2021**		SeqNo: **1442561**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	43.4	2.50						42.80	1.32	20	

Sample ID: **MB-R71051**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/5/2021**		RunNo: **71051**		
Client ID: **MBLKW**	Batch ID: **R71051**					Analysis Date: **11/5/2021**		SeqNo: **1445991**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R71051**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/5/2021**		RunNo: **71051**		
Client ID: **LCSW**	Batch ID: **R71051**					Analysis Date: **11/5/2021**		SeqNo: **1445992**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	108	2.50	100.0	0	108	88.3	113				

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **2110391-004BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/5/2021** RunNo: **71051**
Client ID: **GRMW-GRML-1023202** Batch ID: **R71051** Analysis Date: **11/5/2021** SeqNo: **1445995**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	66.5	2.50						65.10	2.09	20	

Sample ID: **2111144-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/5/2021** RunNo: **71051**
Client ID: **BATCH** Batch ID: **R71051** Analysis Date: **11/5/2021** SeqNo: **1446646**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50						0		20	

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-34295** SampType: **MBLK** Units: **mg/L** Prep Date: **11/3/2021** RunNo: **70982**
Client ID: **MBLKW** Batch ID: **34295** Analysis Date: **11/3/2021** SeqNo: **1444229**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-34295** SampType: **LCS** Units: **mg/L** Prep Date: **11/3/2021** RunNo: **70982**
Client ID: **LCSW** Batch ID: **34295** Analysis Date: **11/3/2021** SeqNo: **1444230**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.463	0.100	0.5000	0	92.6	78.6	101				

Sample ID: **2110391-004CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/3/2021** RunNo: **70982**
Client ID: **GRMW-GRML-1023202** Batch ID: **34295** Analysis Date: **11/3/2021** SeqNo: **1444215**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2110391-004CMS** SampType: **MS** Units: **mg/L** Prep Date: **11/3/2021** RunNo: **70982**
Client ID: **GRMW-GRML-1023202** Batch ID: **34295** Analysis Date: **11/3/2021** SeqNo: **1444216**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.391	0.100	0.5000	0	78.2	55.4	129				

Sample ID: **2110391-004CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **11/3/2021** RunNo: **70982**
Client ID: **GRMW-GRML-1023202** Batch ID: **34295** Analysis Date: **11/3/2021** SeqNo: **1444217**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.424	0.100	0.5000	0	84.8	55.4	129	0.3910	8.10	30	

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-34222** SampType: **MBLK** Units: **mg/L** Prep Date: **10/29/2021** RunNo: **71173**
Client ID: **MBLKW** Batch ID: **34222** Analysis Date: **11/10/2021** SeqNo: **1448861**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **LCS-34222** SampType: **LCS** Units: **mg/L** Prep Date: **10/29/2021** RunNo: **71173**
Client ID: **LCSW** Batch ID: **34222** Analysis Date: **11/10/2021** SeqNo: **1448862**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.23	0.350	1.000	0	123	50	150				
Magnesium	1.09	0.150	1.000	0	109	50	150				

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-34278**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70984**		
Client ID: **MBLKW**	Batch ID: **34278**					Analysis Date: **11/2/2021**			SeqNo: **1444241**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-34278**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70984**		
Client ID: **LCSW**	Batch ID: **34278**					Analysis Date: **11/2/2021**			SeqNo: **1444242**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.720	0.100	0.7500	0	96.0	90	110				

Sample ID: **2110391-004BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70984**		
Client ID: **GRMW-GRML-1023202**	Batch ID: **34278**					Analysis Date: **11/2/2021**			SeqNo: **1444247**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.94	0.100						2.933	0.170	20	

Sample ID: **2110391-004BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70984**		
Client ID: **GRMW-GRML-1023202**	Batch ID: **34278**					Analysis Date: **11/2/2021**			SeqNo: **1444248**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.81	0.100	0.7500	2.933	117	80	120				E

Sample ID: **2110391-004BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70984**		
Client ID: **GRMW-GRML-1023202**	Batch ID: **34278**					Analysis Date: **11/2/2021**			SeqNo: **1444249**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.79	0.100	0.7500	2.933	115	80	120	3.807	0.368	20	E

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2110482-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/2/2021**	RunNo: **70984**
Client ID: **BATCH**	Batch ID: **34278**		Analysis Date: **11/3/2021**	SeqNo: **1444262**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.720	0.100						0.7220	0.277	20	

Sample ID: **2110482-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **11/2/2021**	RunNo: **70984**
Client ID: **BATCH**	Batch ID: **34278**		Analysis Date: **11/3/2021**	SeqNo: **1444263**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.49	0.100	0.7500	0.7220	103	80	120				

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **LCS-34279**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70997**		
Client ID: **LCSW**	Batch ID: **34279**					Analysis Date: **11/3/2021**			SeqNo: **1444588**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.541	0.250	0.5000	0	108	65	135				

Sample ID: **MB-34279**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70997**		
Client ID: **MBLKW**	Batch ID: **34279**					Analysis Date: **11/3/2021**			SeqNo: **1444590**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **2110388-002BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70997**		
Client ID: **BATCH**	Batch ID: **34279**					Analysis Date: **11/3/2021**			SeqNo: **1444592**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2110388-002BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70997**		
Client ID: **BATCH**	Batch ID: **34279**					Analysis Date: **11/3/2021**			SeqNo: **1444593**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250	0.5000	0	0	65	135				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2110388-002BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/2/2021**			RunNo: **70997**		
Client ID: **BATCH**	Batch ID: **34279**					Analysis Date: **11/3/2021**			SeqNo: **1444594**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250	0.5000	0	0	65	135	0		30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **2110391-004CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/2/2021** RunNo: **70997**
Client ID: **GRMW-GRML-1023202** Batch ID: **34279** Analysis Date: **11/3/2021** SeqNo: **1444601**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2110391-004CMS** SampType: **MS** Units: **mg/L** Prep Date: **11/2/2021** RunNo: **70997**
Client ID: **GRMW-GRML-1023202** Batch ID: **34279** Analysis Date: **11/3/2021** SeqNo: **1444602**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.522	0.250	0.5000	0	104	65	135				

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R70857**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/28/2021**	RunNo: **70857**
Client ID: **MBLKW**	Batch ID: **R70857**		Analysis Date: **10/28/2021**	SeqNo: **1441392**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R70857**	SampType: **LCS**	Units: **mg/L**	Prep Date: **10/28/2021**	RunNo: **70857**
Client ID: **LCSW**	Batch ID: **R70857**		Analysis Date: **10/28/2021**	SeqNo: **1441393**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.40	0.500	2.000	0	70.0	63.2	129				

Sample ID: **2110391-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/28/2021**	RunNo: **70857**
Client ID: **GRMW-GR82-10232021**	Batch ID: **R70857**		Analysis Date: **10/28/2021**	SeqNo: **1441395**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2110391-001DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **10/28/2021**	RunNo: **70857**
Client ID: **GRMW-GR82-10232021**	Batch ID: **R70857**		Analysis Date: **10/28/2021**	SeqNo: **1441396**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	4.80	0.500	2.000	0.4000	220	31.5	199				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2110391-001DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **10/28/2021**	RunNo: **70857**
Client ID: **GRMW-GR82-10232021**	Batch ID: **R70857**		Analysis Date: **10/28/2021**	SeqNo: **1441397**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	4.60	0.500	2.000	0.4000	210	31.5	199	4.800	4.26	30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **2110391-008DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **10/28/2021** RunNo: **70857**
Client ID: **GRMW-CCUB-1023202** Batch ID: **R70857** Analysis Date: **10/28/2021** SeqNo: **1441405**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2110391-008DMS** SampType: **MS** Units: **mg/L** Prep Date: **10/28/2021** RunNo: **70857**
Client ID: **GRMW-CCUB-1023202** Batch ID: **R70857** Analysis Date: **10/28/2021** SeqNo: **1441406**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.00	0.500	2.000	0	250	31.5	199				S

NOTES:
S - Outlying spike recoveries were associated with this sample.

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-34224FB** SampType: **MBLK** Units: **µg/L** Prep Date: **10/29/2021** RunNo: **70891**
Client ID: **MBLKW** Batch ID: **34225** Analysis Date: **10/29/2021** SeqNo: **1442104**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **MB-34225** SampType: **MBLK** Units: **µg/L** Prep Date: **10/29/2021** RunNo: **70891**
Client ID: **MBLKW** Batch ID: **34225** Analysis Date: **10/29/2021** SeqNo: **1442105**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Zinc	ND	3.80									

Sample ID: **LCS-34225** SampType: **LCS** Units: **µg/L** Prep Date: **10/29/2021** RunNo: **70891**
Client ID: **LCSW** Batch ID: **34225** Analysis Date: **10/29/2021** SeqNo: **1442106**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	519	1.00	500.0	0	104	85	115				
Chromium	534	0.750	500.0	0	107	85	115				
Copper	545	2.00	500.0	0	109	85	115				
Iron	5,180	100	5,000	0	104	85	115				
Nickel	513	1.30	500.0	0	103	85	115				
Zinc	528	3.80	500.0	0	106	85	115				

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **LCS-34225**	SampType: **LCS**	Units: **µg/L**	Prep Date: **10/29/2021**	RunNo: **70891**
Client ID: **LCSW**	Batch ID: **34225**		Analysis Date: **10/29/2021**	SeqNo: **1442106**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **2110437-001EDUP**	SampType: **DUP**	Units: **µg/L**	Prep Date: **10/29/2021**	RunNo: **70891**
Client ID: **BATCH**	Batch ID: **34225**		Analysis Date: **10/29/2021**	SeqNo: **1442108**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.12	1.00						1.035	7.49	30	
Chromium	ND	0.750						0		30	
Copper	3.35	2.00						3.383	1.05	30	
Iron	ND	100						0		30	
Nickel	2.62	1.30						2.492	5.06	30	
Zinc	ND	3.80						0		30	

Sample ID: **2110437-001EMS**	SampType: **MS**	Units: **µg/L**	Prep Date: **10/29/2021**	RunNo: **70891**
Client ID: **BATCH**	Batch ID: **34225**		Analysis Date: **10/29/2021**	SeqNo: **1442109**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	505	1.00	500.0	1.035	101	70	130				
Chromium	479	0.750	500.0	0	95.8	70	130				
Copper	505	2.00	500.0	3.383	100	70	130				
Iron	4,880	100	5,000	25.52	97.0	50	150				
Nickel	482	1.30	500.0	2.492	95.8	70	130				
Zinc	488	3.80	500.0	3.652	96.8	70	130				

Sample ID: **2110437-001EMSD**	SampType: **MSD**	Units: **µg/L**	Prep Date: **10/29/2021**	RunNo: **70891**
Client ID: **BATCH**	Batch ID: **34225**		Analysis Date: **10/29/2021**	SeqNo: **1442110**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	495	1.00	500.0	1.035	98.9	70	130	505.1	1.96	30	
Chromium	479	0.750	500.0	0	95.7	70	130	479.2	0.137	30	

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2110437-001EMSD** SampType: **MSD** Units: **µg/L** Prep Date: **10/29/2021** RunNo: **70891**
Client ID: **BATCH** Batch ID: **34225** Analysis Date: **10/29/2021** SeqNo: **1442110**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	500	2.00	500.0	3.383	99.4	70	130	505.4	0.974	30	
Iron	4,840	100	5,000	25.52	96.2	50	150	4,876	0.828	30	
Nickel	477	1.30	500.0	2.492	94.8	70	130	481.7	1.07	30	
Zinc	495	3.80	500.0	3.652	98.4	70	130	487.6	1.59	30	

Sample ID: **2110437-001EDUP** SampType: **DUP** Units: **µg/L** Prep Date: **10/29/2021** RunNo: **70891**
Client ID: **BATCH** Batch ID: **34225** Analysis Date: **10/29/2021** SeqNo: **1442497**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	1.90						0		30	

Sample ID: **2110437-001EMS** SampType: **MS** Units: **µg/L** Prep Date: **10/29/2021** RunNo: **70891**
Client ID: **BATCH** Batch ID: **34225** Analysis Date: **10/29/2021** SeqNo: **1442498**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	47.0	1.90	50.00	0	94.0	70	130				

Sample ID: **2110437-001EMSD** SampType: **MSD** Units: **µg/L** Prep Date: **10/29/2021** RunNo: **70891**
Client ID: **BATCH** Batch ID: **34225** Analysis Date: **10/29/2021** SeqNo: **1442499**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	47.9	1.90	50.00	0	95.8	70	130	47.01	1.85	30	

Sample ID: **MB-34225** SampType: **MBLK** Units: **µg/L** Prep Date: **10/29/2021** RunNo: **70891**
Client ID: **MBLKW** Batch ID: **34225** Analysis Date: **11/2/2021** SeqNo: **1443636**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	1.90									

Work Order: 2110391
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assesm

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-34225**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **10/29/2021**		RunNo: **70891**	
Client ID: **MBLKW**	Batch ID: **34225**					Analysis Date: **11/2/2021**		SeqNo: **1443636**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **MB-34224FB**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **10/29/2021**		RunNo: **70891**	
Client ID: **MBLKW**	Batch ID: **34225**					Analysis Date: **11/2/2021**		SeqNo: **1443637**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	1.90									

Sample ID: **LCS-34225**	SampType: **LCS**			Units: **µg/L**		Prep Date: **10/29/2021**		RunNo: **70891**	
Client ID: **LCSW**	Batch ID: **34225**					Analysis Date: **11/2/2021**		SeqNo: **1443638**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	49.8	1.90	50.00	0	99.5	85	115				

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2110391**
Logged by:	**Gabrielle Coeuille**	Date Received:	**10/27/2021 9:30:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	UPS				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No	☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	1.5
Sample 2	0.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assessment
Work Order Number: 2201356

February 08, 2022

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 11 sample(s) on 1/25/2022 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *02/08/2022*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess
Work Order: 2201356

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2201356-001	GRMW-GRIC-01212022	01/21/2022 8:20 AM	01/25/2022 10:23 AM
2201356-002	GRMW-CCML-01212022	01/21/2022 9:15 AM	01/25/2022 10:23 AM
2201356-003	GRMW-GRML-01212022	01/21/2022 9:55 AM	01/25/2022 10:23 AM
2201356-004	GRMW-GR82-01212022	01/21/2022 10:50 AM	01/25/2022 10:23 AM
2201356-005	GRMW-WCCL-01212022	01/21/2022 11:25 AM	01/25/2022 10:23 AM
2201356-006	GRMW-LCPL-01212022	01/21/2022 12:15 PM	01/25/2022 10:23 AM
2201356-007	GRMW-CCWL-01212022	01/21/2022 12:35 PM	01/25/2022 10:23 AM
2201356-008	GRMW-CCUB-01212022	01/21/2022 1:05 PM	01/25/2022 10:23 AM
2201356-009	GRMW-CCSP-01212022	01/21/2022 1:40 PM	01/25/2022 10:23 AM
2201356-010	GRMW-GRFC-01212022	01/21/2022 3:10 PM	01/25/2022 10:23 AM
2201356-011	GRMW-CCUB-01212022 Field Duplicat	01/21/2022 1:05 PM	01/25/2022 10:23 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2201356**
Date: **2/8/2022**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assessment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Total Hardness by EPA Method 200.8/SM 2340B: Samples were originally run with incorrect sample being used as the MS/MSD. Sample GRMW-GRIC-01212022 was re-extracted and used as the MS/MSD, however this re-extraction was affected by a high biased calibration verification and is flagged with a Q Qualifier. Both sets of data have been included in this report.

Sulfide by SM 4500-S2-F: Samples were originally run with incorrect sample being used as the MS/MSD. Sample GRMW-GRIC-01212022 was re-extracted out of hold and used as the MS/MSD. Both sets of data have been included in this report.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/21/2022 8:20:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-001
Matrix: Water
Client Sample ID: GRMW-GRIC-01212022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35143		Analyst: SLL
Chloride	9.28	0.500	D	mg/L	5	1/27/2022 3:54:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35274		Analyst: EH
Total Hardness (as CaCO3)	32.5	2.00	DQ	mg/L CaCO3	2	2/8/2022 9:55:58 AM
Total Hardness (as CaCO3)	33.3	2.00	D	mg/L CaCO3	2	2/4/2022 1:34:42 PM
NOTES: Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.						
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 12:02:30 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:02:30 PM
Copper	ND	2.00		µg/L	1	1/28/2022 12:02:30 PM
Iron	ND	100		µg/L	1	1/28/2022 12:02:30 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:02:30 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:02:30 PM
Zinc	ND	3.80		µg/L	1	1/28/2022 12:02:30 PM
Total Alkalinity by SM 2320B				Batch ID: R72774		Analyst: CH
Alkalinity, Total (As CaCO3)	30.6	2.50		mg/L	1	1/26/2022 8:27:44 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 10:16:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 10:04:45 AM
Sulfide by SM 4500-S2-F				Batch ID: R72984		Analyst: SLL
Sulfide	6.80	0.500	H	mg/L	1	2/2/2022 5:05:55 PM
Sulfide	10.4	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/21/2022 9:15:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-002
Matrix: Water
Client Sample ID: GRMW-CCML-01212022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35143		Analyst: SLL
Chloride	2.78	0.200	D	mg/L	2	1/27/2022 4:17:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	29.9	2.00	D	mg/L CaCO3	2	1/31/2022 1:09:14 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	2/3/2022 3:37:44 PM
Chromium	ND	0.750		µg/L	1	2/3/2022 3:37:44 PM
Copper	ND	2.00		µg/L	1	2/3/2022 3:37:44 PM
Iron	ND	100		µg/L	1	2/3/2022 3:37:44 PM
Nickel	ND	1.30		µg/L	1	2/3/2022 3:37:44 PM
Selenium	ND	1.90		µg/L	1	2/3/2022 3:37:44 PM
Zinc	ND	3.80		µg/L	1	2/3/2022 3:37:44 PM
Total Alkalinity by SM 2320B				Batch ID: R72774		Analyst: CH
Alkalinity, Total (As CaCO3)	44.9	2.50		mg/L	1	1/26/2022 8:27:44 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 10:37:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 10:37:08 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	ND	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/21/2022 9:55:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-003
Matrix: Water
Client Sample ID: **GRMW-GRML-01212022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35143		Analyst: SLL
Chloride	11.2	1.00	D	mg/L	10	1/27/2022 4:40:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	30.9	2.00	D	mg/L CaCO3	2	1/31/2022 1:07:06 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 12:38:38 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:38:38 PM
Copper	ND	2.00		µg/L	1	1/28/2022 12:38:38 PM
Iron	ND	100		µg/L	1	1/28/2022 12:38:38 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:38:38 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:38:38 PM
Zinc	8.02	3.80		µg/L	1	1/28/2022 12:38:38 PM
Total Alkalinity by SM 2320B				Batch ID: R72774		Analyst: CH
Alkalinity, Total (As CaCO3)	32.3	2.50		mg/L	1	1/26/2022 8:27:44 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 10:42:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 10:39:15 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	5.60	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/21/2022 10:50:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-004
Matrix: Water
Client Sample ID: **GRMW-GR82-01212022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35143		Analyst: SLL
Chloride	4.27	0.200	D	mg/L	2	1/27/2022 5:03:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	31.7	2.00	D	mg/L CaCO3	2	1/31/2022 1:11:22 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 12:41:17 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:41:17 PM
Copper	ND	2.00		µg/L	1	1/28/2022 12:41:17 PM
Iron	ND	100		µg/L	1	1/28/2022 12:41:17 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:41:17 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:41:17 PM
Zinc	ND	3.80		µg/L	1	1/28/2022 12:41:17 PM
Total Alkalinity by SM 2320B				Batch ID: R72774		Analyst: CH
Alkalinity, Total (As CaCO3)	38.8	2.50		mg/L	1	1/26/2022 8:27:44 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 10:47:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 10:41:17 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	0.600	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/21/2022 11:25:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-005
Matrix: Water
Client Sample ID: **GRMW-WCCL-01212022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35132		Analyst: SLL
Chloride	1.87	0.100		mg/L	1	1/25/2022 11:14:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	29.6	2.00	D	mg/L CaCO3	2	1/31/2022 1:13:30 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 12:43:56 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:43:56 PM
Copper	ND	2.00		µg/L	1	1/28/2022 12:43:56 PM
Iron	ND	100		µg/L	1	1/28/2022 12:43:56 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:43:56 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:43:56 PM
Zinc	ND	3.80		µg/L	1	1/28/2022 12:43:56 PM
Total Alkalinity by SM 2320B				Batch ID: R72811		Analyst: CH
Alkalinity, Total (As CaCO3)	36.4	2.50		mg/L	1	1/27/2022 8:20:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 11:14:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 10:43:22 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	6.00	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/21/2022 12:15:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-006
Matrix: Water
Client Sample ID: GRMW-LCPL-01212022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35143		Analyst: SLL
Chloride	38.9	2.00	D	mg/L	20	1/27/2022 5:26:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	110	20.0	D	mg/L CaCO3	20	2/3/2022 1:20:12 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	2.08	1.00		µg/L	1	1/28/2022 12:46:34 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:46:34 PM
Copper	2.48	2.00		µg/L	1	1/28/2022 12:46:34 PM
Iron	ND	100		µg/L	1	1/28/2022 12:46:34 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:46:34 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:46:34 PM
Zinc	10.8	3.80		µg/L	1	1/28/2022 12:46:34 PM
Total Alkalinity by SM 2320B				Batch ID: R72811		Analyst: CH
Alkalinity, Total (As CaCO3)	131	2.50		mg/L	1	1/27/2022 8:20:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	1.72	0.300	D	mg/L	3	2/2/2022 11:28:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	2.47	0.500	D	mg/L	2	2/1/2022 1:36:22 PM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	1.40	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/21/2022 12:35:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-007
Matrix: Water
Client Sample ID: GRMW-CCWL-01212022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35143		Analyst: SLL
Chloride	3.16	0.200	D	mg/L	2	1/27/2022 5:50:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	34.9	2.00	D	mg/L CaCO3	2	1/31/2022 1:17:45 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 12:49:13 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:49:13 PM
Copper	ND	2.00		µg/L	1	1/28/2022 12:49:13 PM
Iron	ND	100		µg/L	1	1/28/2022 12:49:13 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:49:13 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:49:13 PM
Zinc	ND	3.80		µg/L	1	1/28/2022 12:49:13 PM
Total Alkalinity by SM 2320B				Batch ID: R72811		Analyst: CH
Alkalinity, Total (As CaCO3)	41.5	2.50		mg/L	1	1/27/2022 8:20:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 11:33:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 10:49:38 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	1.60	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 1/21/2022 1:05:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-008 **Matrix:** Water
Client Sample ID: GRMW-CCUB-01212022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35132		Analyst: SLL
Chloride	2.76	0.100		mg/L	1	1/26/2022 12:24:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	31.6	2.00	D	mg/L CaCO3	2	1/31/2022 1:19:53 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 12:51:52 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:51:52 PM
Copper	ND	2.00		µg/L	1	1/28/2022 12:51:52 PM
Iron	ND	100		µg/L	1	1/28/2022 12:51:52 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:51:52 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:51:52 PM
Zinc	ND	3.80		µg/L	1	1/28/2022 12:51:52 PM
Total Alkalinity by SM 2320B				Batch ID: R72811		Analyst: CH
Alkalinity, Total (As CaCO3)	38.3	2.50		mg/L	1	1/27/2022 8:20:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 11:38:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 10:52:13 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	1.80	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 1/21/2022 1:40:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-009 **Matrix:** Water
Client Sample ID: GRMW-CCSP-01212022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35132		Analyst: SLL
Chloride	0.863	0.100		mg/L	1	1/26/2022 12:47:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	24.7	2.00	D	mg/L CaCO3	2	1/31/2022 1:22:01 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 12:54:31 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:54:31 PM
Copper	ND	2.00		µg/L	1	1/28/2022 12:54:31 PM
Iron	ND	100		µg/L	1	1/28/2022 12:54:31 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:54:31 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:54:31 PM
Zinc	ND	3.80		µg/L	1	1/28/2022 12:54:31 PM
Total Alkalinity by SM 2320B				Batch ID: R72811		Analyst: CH
Alkalinity, Total (As CaCO3)	33.7	2.50		mg/L	1	1/27/2022 8:20:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 11:43:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 10:54:45 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	0.800	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 1/21/2022 3:10:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-010
Matrix: Water
Client Sample ID: **GRMW-GRFC-01212022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35132		Analyst: SLL
Chloride	0.728	0.100		mg/L	1	1/26/2022 1:10:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	30.3	2.00	D	mg/L CaCO3	2	1/31/2022 1:24:09 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 12:57:10 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 12:57:10 PM
Copper	ND	2.00		µg/L	1	1/28/2022 12:57:10 PM
Iron	ND	100		µg/L	1	1/28/2022 12:57:10 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 12:57:10 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 12:57:10 PM
Zinc	ND	3.80		µg/L	1	1/28/2022 12:57:10 PM
Total Alkalinity by SM 2320B				Batch ID: R72811		Analyst: CH
Alkalinity, Total (As CaCO3)	39.2	2.50		mg/L	1	1/27/2022 8:20:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 11:49:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 11:02:37 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	1.00	0.500		mg/L	1	1/27/2022 3:30:00 PM

Analytical Report

Work Order: **2201356**
Date Reported: **2/8/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 1/21/2022 1:05:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2201356-011 **Matrix:** Water
Client Sample ID: GRMW-CCUB-01212022 Field Duplicate

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 35132		Analyst: SLL
Chloride	2.67	0.100		mg/L	1	1/26/2022 1:33:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 35152		Analyst: EH
Total Hardness (as CaCO3)	31.3	2.00	D	mg/L CaCO3	2	1/31/2022 1:26:16 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 35137		Analyst: EH
Arsenic	ND	1.00		µg/L	1	1/28/2022 1:18:50 PM
Chromium	ND	0.750		µg/L	1	1/28/2022 1:18:50 PM
Copper	ND	2.00		µg/L	1	1/28/2022 1:18:50 PM
Iron	ND	100		µg/L	1	1/28/2022 1:18:50 PM
Nickel	ND	1.30		µg/L	1	1/28/2022 1:18:50 PM
Selenium	ND	1.90		µg/L	1	1/28/2022 1:18:50 PM
Zinc	ND	3.80		µg/L	1	1/28/2022 1:18:50 PM
Total Alkalinity by SM 2320B				Batch ID: R72811		Analyst: CH
Alkalinity, Total (As CaCO3)	37.2	2.50		mg/L	1	1/27/2022 8:20:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 35207		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/2/2022 11:54:00 AM
Total Phosphorous by EPA Method 365.3				Batch ID: 35190		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	2/1/2022 11:05:04 AM
Sulfide by SM 4500-S2-F				Batch ID: R72922		Analyst: SLL
Sulfide	1.60	0.500		mg/L	1	1/27/2022 3:30:00 PM

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R72774**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **1/26/2022**		RunNo: **72774**		
Client ID: **MBLKW**	Batch ID: **R72774**					Analysis Date: **1/26/2022**		SeqNo: **1485379**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R72774**	SampType: **LCS**			Units: **mg/L**		Prep Date: **1/26/2022**		RunNo: **72774**		
Client ID: **LCSW**	Batch ID: **R72774**					Analysis Date: **1/26/2022**		SeqNo: **1485380**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	95.9	2.50	100.0	0	95.9	88.3	113				

Sample ID: **2201356-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **1/26/2022**		RunNo: **72774**		
Client ID: **GRMW-GRIC-01212022**	Batch ID: **R72774**					Analysis Date: **1/26/2022**		SeqNo: **1485641**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	30.5	2.50						30.60	0.375	20	

Sample ID: **MB-R72811**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **1/27/2022**		RunNo: **72811**		
Client ID: **MBLKW**	Batch ID: **R72811**					Analysis Date: **1/27/2022**		SeqNo: **1485884**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R72811**	SampType: **LCS**			Units: **mg/L**		Prep Date: **1/27/2022**		RunNo: **72811**		
Client ID: **LCSW**	Batch ID: **R72811**					Analysis Date: **1/27/2022**		SeqNo: **1485885**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	96.0	2.50	100.0	0	96.0	88.3	113				

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **2201356-005BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/27/2022** RunNo: **72811**
Client ID: **GRMW-WCCL-0121202** Batch ID: **R72811** Analysis Date: **1/27/2022** SeqNo: **1485887**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	36.4	2.50						36.45	0.221	20	

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **LCS-35207**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/2/2022**			RunNo: **72982**		
Client ID: **LCSW**	Batch ID: **35207**					Analysis Date: **2/2/2022**			SeqNo: **1489909**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.474	0.100	0.5000	0	94.8	78.6	101				

Sample ID: **MB-35207**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/2/2022**			RunNo: **72982**		
Client ID: **MBLKW**	Batch ID: **35207**					Analysis Date: **2/2/2022**			SeqNo: **1489911**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **2201356-001EDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/2/2022**			RunNo: **72982**		
Client ID: **GRMW-GRIC-01212022**	Batch ID: **35207**					Analysis Date: **2/2/2022**			SeqNo: **1489913**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2201356-001EMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/2/2022**			RunNo: **72982**		
Client ID: **GRMW-GRIC-01212022**	Batch ID: **35207**					Analysis Date: **2/2/2022**			SeqNo: **1489914**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.413	0.100	0.5000	0	82.6	55.4	129				

Sample ID: **2201356-001EMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/2/2022**			RunNo: **72982**		
Client ID: **GRMW-GRIC-01212022**	Batch ID: **35207**					Analysis Date: **2/2/2022**			SeqNo: **1489915**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.425	0.100	0.5000	0	85.0	55.4	129	0.4130	2.86	30	

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2201455-002BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **2/2/2022** RunNo: **72982**
Client ID: **BATCH** Batch ID: **35207** Analysis Date: **2/2/2022** SeqNo: **1489930**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2201455-002BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/2/2022** RunNo: **72982**
Client ID: **BATCH** Batch ID: **35207** Analysis Date: **2/2/2022** SeqNo: **1489931**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.549	0.100	0.5000	0	110	55.4	129				

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-35134**	SampType: **MBLK**				Units: **mg/L CaCO3**		Prep Date: **1/26/2022**		RunNo: **72791**	
Client ID: **MBLKW**	Batch ID: **35134**						Analysis Date: **1/26/2022**		SeqNo: **1485537**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **2201325-011CDUP**	SampType: **DUP**				Units: **mg/L CaCO3**		Prep Date: **1/26/2022**		RunNo: **72791**	
Client ID: **BATCH**	Batch ID: **35134**						Analysis Date: **1/26/2022**		SeqNo: **1485540**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	181	1.00						171.5	5.51	20	E

Sample ID: **MB-35152**	SampType: **MBLK**				Units: **mg/L**		Prep Date: **1/27/2022**		RunNo: **72896**	
Client ID: **MBLKW**	Batch ID: **35152**						Analysis Date: **1/31/2022**		SeqNo: **1487615**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **LCS-35152**	SampType: **LCS**				Units: **mg/L**		Prep Date: **1/27/2022**		RunNo: **72896**	
Client ID: **LCSW**	Batch ID: **35152**						Analysis Date: **1/31/2022**		SeqNo: **1487616**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.09	0.350	1.000	0	109	50	150				
Magnesium	0.991	0.150	1.000	0	99.1	50	150				

Sample ID: **2201356-003CDUP**	SampType: **DUP**				Units: **mg/L CaCO3**		Prep Date: **1/27/2022**		RunNo: **72896**	
Client ID: **GRMW-GRML-0121202**	Batch ID: **35152**						Analysis Date: **1/31/2022**		SeqNo: **1487618**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	33.9	1.00						30.87	9.23	20	E

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2201356-003CDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **1/27/2022** RunNo: **72896**
Client ID: **GRMW-GRML-0121202** Batch ID: **35152** Analysis Date: **1/31/2022** SeqNo: **1487618**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **2201356-003CMS** SampType: **MS** Units: **mg/L** Prep Date: **1/27/2022** RunNo: **72896**
Client ID: **GRMW-GRML-0121202** Batch ID: **35152** Analysis Date: **1/31/2022** SeqNo: **1487619**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.65	0.350	1.000	7.579	207	50	150				ES
Magnesium	4.39	0.150	1.000	2.902	148	50	150				

NOTES:
S - Analyte concentration was too high for accurate spike recovery(ies).

Sample ID: **MB-35134** SampType: **MBLK** Units: **mg/L CaCO3** Prep Date: **1/26/2022** RunNo: **73060**
Client ID: **MBLKW** Batch ID: **35134** Analysis Date: **2/4/2022** SeqNo: **1491716**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **2201325-011CDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **1/26/2022** RunNo: **73060**
Client ID: **BATCH** Batch ID: **35134** Analysis Date: **2/4/2022** SeqNo: **1491719**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	192	1.00						191.6	0	20	E

Sample ID: **MB-35274** SampType: **MBLK** Units: **mg/L** Prep Date: **2/7/2022** RunNo: **73124**
Client ID: **MBLKW** Batch ID: **35274** Analysis Date: **2/8/2022** SeqNo: **1493083**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-35274** SampType: **MBLK** Units: **mg/L** Prep Date: **2/7/2022** RunNo: **73124**
Client ID: **MBLKW** Batch ID: **35274** Analysis Date: **2/8/2022** SeqNo: **1493083**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **LCS-35274** SampType: **LCS** Units: **mg/L** Prep Date: **2/7/2022** RunNo: **73124**
Client ID: **LCSW** Batch ID: **35274** Analysis Date: **2/8/2022** SeqNo: **1493084**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.30	0.350	1.000	0	130	50	150				
Magnesium	1.10	0.150	1.000	0	110	50	150				

Sample ID: **2201356-001CDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **2/7/2022** RunNo: **73124**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35274** Analysis Date: **2/8/2022** SeqNo: **1493086**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	33.7	1.00						32.46	3.70	20	Q

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.

Sample ID: **2201356-001CMS** SampType: **MS** Units: **mg/L** Prep Date: **2/7/2022** RunNo: **73124**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35274** Analysis Date: **2/8/2022** SeqNo: **1493087**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.75	0.350	1.000	7.994	176	50	150				ES
Magnesium	4.36	0.150	1.000	3.034	133	50	150				

NOTES:
S - Analyte concentration was too high for accurate spike recovery(ies).

Sample ID: **2201356-001CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/7/2022** RunNo: **73124**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35274** Analysis Date: **2/8/2022** SeqNo: **1493088**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.2	0.350	1.000	7.994	224	50	150	9.751	4.79	20	ES

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2201356-001CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/7/2022** RunNo: **73124**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35274** Analysis Date: **2/8/2022** SeqNo: **1493088**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	4.58	0.150	1.000	3.034	154	50	150	4.363	4.76	20	S

NOTES:
S - Analyte concentration was too high for accurate spike recovery(ies).

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-35132** SampType: **MBLK** Units: **mg/L** Prep Date: **1/25/2022** RunNo: **72822**
Client ID: **MBLKW** Batch ID: **35132** Analysis Date: **1/25/2022** SeqNo: **1486030**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-35132** SampType: **LCS** Units: **mg/L** Prep Date: **1/25/2022** RunNo: **72822**
Client ID: **LCSW** Batch ID: **35132** Analysis Date: **1/25/2022** SeqNo: **1486031**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.758	0.100	0.7500	0	101	90	110				

Sample ID: **2201339-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/25/2022** RunNo: **72822**
Client ID: **BATCH** Batch ID: **35132** Analysis Date: **1/25/2022** SeqNo: **1486033**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	77.4	1.00						77.37	0.0129	20	DE

NOTES:
Diluted due to matrix.

Sample ID: **2201339-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **1/25/2022** RunNo: **72822**
Client ID: **BATCH** Batch ID: **35132** Analysis Date: **1/25/2022** SeqNo: **1486034**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	86.0	1.00	7.500	77.37	115	80	120				DE

Sample ID: **2201356-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/25/2022** RunNo: **72822**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35132** Analysis Date: **1/25/2022** SeqNo: **1486038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	11.4	0.100						11.46	0.122	20	E

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2201356-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **1/25/2022** RunNo: **72822**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35132** Analysis Date: **1/25/2022** SeqNo: **1486039**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12.4	0.100	0.7500	11.46	121	80	120				ES

NOTES:
S - Analyte concentration was too high for accurate spike recovery(ies).

Sample ID: **2201356-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **1/25/2022** RunNo: **72822**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35132** Analysis Date: **1/25/2022** SeqNo: **1486040**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12.3	0.100	0.7500	11.46	117	80	120	12.36	0.227	20	E

Sample ID: **LCS-35143** SampType: **LCS** Units: **mg/L** Prep Date: **1/26/2022** RunNo: **72824**
Client ID: **LCSW** Batch ID: **35143** Analysis Date: **1/26/2022** SeqNo: **1486442**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.710	0.100	0.7500	0	94.7	90	110				

Sample ID: **MB-35143** SampType: **MBLK** Units: **mg/L** Prep Date: **1/26/2022** RunNo: **72824**
Client ID: **MBLKW** Batch ID: **35143** Analysis Date: **1/26/2022** SeqNo: **1486444**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **2201362-002ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/26/2022** RunNo: **72824**
Client ID: **BATCH** Batch ID: **35143** Analysis Date: **1/26/2022** SeqNo: **1486447**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	16.0	1.00						16.12	0.498	20	D

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2201362-002AMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **1/26/2022**		RunNo: **72824**			
Client ID: **BATCH**	Batch ID: **35143**					Analysis Date: **1/26/2022**		SeqNo: **1486448**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.1	1.00	7.500	16.12	107	80	120				D

Sample ID: **2201362-002AMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **1/26/2022**		RunNo: **72824**			
Client ID: **BATCH**	Batch ID: **35143**					Analysis Date: **1/26/2022**		SeqNo: **1486449**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.0	1.00	7.500	16.12	105	80	120	24.12	0.582	20	D

Sample ID: **2201366-006BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **1/26/2022**		RunNo: **72824**			
Client ID: **BATCH**	Batch ID: **35143**					Analysis Date: **1/27/2022**		SeqNo: **1486460**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	283	5.00						285.2	0.633	20	DE

NOTES:
Diluted due to matrix.

Sample ID: **2201366-006BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **1/26/2022**		RunNo: **72824**			
Client ID: **BATCH**	Batch ID: **35143**					Analysis Date: **1/27/2022**		SeqNo: **1486461**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	324	5.00	37.50	285.2	105	80	120				ED

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **LCS-35190**	SampType: **LCS**			Units: **mg/L**		Prep Date: **1/31/2022**		RunNo: **72939**		
Client ID: **LCSW**	Batch ID: **35190**					Analysis Date: **2/1/2022**		SeqNo: **1488721**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.547	0.250	0.5000	0	109	65	135				

Sample ID: **MB-35190**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **1/31/2022**		RunNo: **72939**		
Client ID: **MBLKW**	Batch ID: **35190**					Analysis Date: **2/1/2022**		SeqNo: **1488685**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **2201356-001EDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **1/31/2022**		RunNo: **72939**		
Client ID: **GRMW-GRIC-01212022**	Batch ID: **35190**					Analysis Date: **2/1/2022**		SeqNo: **1488687**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2201356-001EMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **1/31/2022**		RunNo: **72939**		
Client ID: **GRMW-GRIC-01212022**	Batch ID: **35190**					Analysis Date: **2/1/2022**		SeqNo: **1488688**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.621	0.250	0.5000	0	124	65	135				

Sample ID: **2201356-001EMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **1/31/2022**		RunNo: **72939**		
Client ID: **GRMW-GRIC-01212022**	Batch ID: **35190**					Analysis Date: **2/1/2022**		SeqNo: **1488689**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.620	0.250	0.5000	0	124	65	135	0.6212	0.226	30	

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **2201356-009EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **1/31/2022** RunNo: **72939**
Client ID: **GRMW-CCSP-01212022** Batch ID: **35190** Analysis Date: **2/1/2022** SeqNo: **1488699**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2201356-009EMS** SampType: **MS** Units: **mg/L** Prep Date: **1/31/2022** RunNo: **72939**
Client ID: **GRMW-CCSP-01212022** Batch ID: **35190** Analysis Date: **2/1/2022** SeqNo: **1488700**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.517	0.250	0.5000	0	103	65	135				

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R72922**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **1/27/2022**	RunNo: **72922**
Client ID: **MBLKW**	Batch ID: **R72922**		Analysis Date: **1/27/2022**	SeqNo: **1488127**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R72922**	SampType: **LCS**	Units: **mg/L**	Prep Date: **1/27/2022**	RunNo: **72922**
Client ID: **LCSW**	Batch ID: **R72922**		Analysis Date: **1/27/2022**	SeqNo: **1488128**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.80	0.500	2.000	0	90.0	63.2	129				

Sample ID: **2201356-002DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **1/27/2022**	RunNo: **72922**
Client ID: **GRMW-CCML-0121202**	Batch ID: **R72922**		Analysis Date: **1/27/2022**	SeqNo: **1488131**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2201356-002DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **1/27/2022**	RunNo: **72922**
Client ID: **GRMW-CCML-0121202**	Batch ID: **R72922**		Analysis Date: **1/27/2022**	SeqNo: **1488132**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	4.00	0.500	2.000	0.4000	180	31.5	199				

Sample ID: **2201356-002DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **1/27/2022**	RunNo: **72922**
Client ID: **GRMW-CCML-0121202**	Batch ID: **R72922**		Analysis Date: **1/27/2022**	SeqNo: **1488133**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	3.60	0.500	2.000	0.4000	160	31.5	199	4.000	10.5	30	

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **2201356-008DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **1/27/2022**	RunNo: **72922**
Client ID: **GRMW-CCUB-0121202**	Batch ID: **R72922**		Analysis Date: **1/27/2022**	SeqNo: **1488140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	2.20	0.500						1.800	20.0	30	

Sample ID: **2201356-008DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **1/27/2022**	RunNo: **72922**
Client ID: **GRMW-CCUB-0121202**	Batch ID: **R72922**		Analysis Date: **1/27/2022**	SeqNo: **1488141**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.00	0.500	2.000	1.800	160	31.5	199				

Sample ID: **MB-R72984**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/2/2022**	RunNo: **72984**
Client ID: **MBLKW**	Batch ID: **R72984**		Analysis Date: **2/2/2022**	SeqNo: **1490070**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R72984**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/2/2022**	RunNo: **72984**
Client ID: **LCSW**	Batch ID: **R72984**		Analysis Date: **2/2/2022**	SeqNo: **1490071**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.80	0.500	2.000	0	90.0	63.2	129				

Sample ID: **2201356-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/2/2022**	RunNo: **72984**
Client ID: **GRMW-GRIC-01212022**	Batch ID: **R72984**		Analysis Date: **2/2/2022**	SeqNo: **1490073**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.60	0.500						6.800	19.4	30	H

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **2201356-001DMS** SampType: **MS** Units: **mg/L** Prep Date: **2/2/2022** RunNo: **72984**
Client ID: **GRMW-GRIC-01212022** Batch ID: **R72984** Analysis Date: **2/2/2022** SeqNo: **1490074**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	8.80	0.500	2.000	6.800	100	31.5	199				H

Sample ID: **2201356-001DMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/2/2022** RunNo: **72984**
Client ID: **GRMW-GRIC-01212022** Batch ID: **R72984** Analysis Date: **2/2/2022** SeqNo: **1490075**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	8.80	0.500	2.000	6.800	100	31.5	199	8.800	0	30	H

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-35136FB** SampType: **MBLK** Units: **µg/L** Prep Date: **1/26/2022** RunNo: **72832**
Client ID: **MBLKW** Batch ID: **35137** Analysis Date: **1/28/2022** SeqNo: **1486686**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

NOTES:
Filter Blank

Sample ID: **MB-35137** SampType: **MBLK** Units: **µg/L** Prep Date: **1/26/2022** RunNo: **72832**
Client ID: **MBLKW** Batch ID: **35137** Analysis Date: **1/28/2022** SeqNo: **1486687**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **LCS-35137** SampType: **LCS** Units: **µg/L** Prep Date: **1/26/2022** RunNo: **72832**
Client ID: **LCSW** Batch ID: **35137** Analysis Date: **1/28/2022** SeqNo: **1486688**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	456	1.00	500.0	0	91.2	85	115				
Chromium	456	0.750	500.0	0	91.1	85	115				
Copper	452	2.00	500.0	0	90.4	85	115				
Iron	4,900	100	5,000	0	98.0	85	115				

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **LCS-35137** SampType: **LCS** Units: **µg/L** Prep Date: **1/26/2022** RunNo: **72832**
Client ID: **LCSW** Batch ID: **35137** Analysis Date: **1/28/2022** SeqNo: **1486688**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	451	1.30	500.0	0	90.3	85	115				
Selenium	48.0	1.90	50.00	0	95.9	85	115				
Zinc	458	3.80	500.0	0	91.7	85	115				

Sample ID: **2201356-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **1/26/2022** RunNo: **72832**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35137** Analysis Date: **1/28/2022** SeqNo: **1486690**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00						0		30	
Chromium	ND	0.750						0		30	
Copper	ND	2.00						0		30	
Iron	ND	100						0		30	
Nickel	ND	1.30						0		30	
Selenium	ND	1.90						0		30	
Zinc	ND	3.80						0		30	

Sample ID: **2201356-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **1/26/2022** RunNo: **72832**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35137** Analysis Date: **1/28/2022** SeqNo: **1486691**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	487	1.00	500.0	0.7020	97.2	70	130				
Chromium	475	0.750	500.0	0	95.0	70	130				
Copper	510	2.00	500.0	1.290	102	70	130				
Iron	5,120	100	5,000	65.10	101	50	150				
Nickel	464	1.30	500.0	0	92.8	70	130				
Selenium	51.4	1.90	50.00	0	103	70	130				
Zinc	486	3.80	500.0	3.717	96.4	70	130				

Work Order: 2201356
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2201356-001AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **1/26/2022** RunNo: **72832**
Client ID: **GRMW-GRIC-01212022** Batch ID: **35137** Analysis Date: **1/28/2022** SeqNo: **1486692**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	417	1.00	500.0	0.7020	83.3	70	130	549.2	27.3	30	
Chromium	400	0.750	500.0	0	80.0	70	130	517.5	25.6	30	
Copper	400	2.00	500.0	1.290	79.7	70	130	518.4	25.8	30	
Iron	4,200	100	5,000	65.10	82.8	50	150	4,937	16.0	30	
Nickel	394	1.30	500.0	0	78.8	70	130	534.3	30.2	30	R
Selenium	48.0	1.90	50.00	0	95.9	70	130	58.30	19.5	30	
Zinc	408	3.80	500.0	3.717	80.9	70	130	555.1	30.5	30	R

NOTES:
R - High RPD observed.

Sample ID: **2201315-001BMS** SampType: **MS** Units: **µg/L** Prep Date: **1/26/2022** RunNo: **72832**
Client ID: **BATCH** Batch ID: **35137** Analysis Date: **1/28/2022** SeqNo: **1486694**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	515	1.00	500.0	4.358	102	70	130				
Chromium	475	0.750	500.0	0.9175	94.8	70	130				
Copper	491	2.00	500.0	6.055	96.9	70	130				
Iron	4,900	100	5,000	35.19	97.3	50	150				
Nickel	471	1.30	500.0	3.557	93.5	70	130				
Selenium	53.3	1.90	50.00	0	107	70	130				
Zinc	493	3.80	500.0	7.517	97.1	70	130				

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2201356**
Logged by:	**Gabrielle Coeuille**	Date Received:	**1/25/2022 10:23:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	UPS				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No	☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	4.2

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

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Anderson Perry and Associates, Inc.
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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GRIC-04052022
Matrix: water

PAL Sample ID: P220410-01
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/12/22	4/13/22	a-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Acetochlor	ND	0.060 ug/L	
4/12/22	4/13/22	Alachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Aldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametryn	ND	0.060 ug/L	
4/12/22	4/13/22	Aspon	ND	0.060 ug/L	
4/12/22	4/13/22	b-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Benfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Bifenthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Bolstar	ND	0.060 ug/L	
4/12/22	4/13/22	Bromopropylate	ND	0.060 ug/L	
4/12/22	4/13/22	Buprofezin	ND	0.060 ug/L	
4/12/22	4/13/22	Captan	ND	0.60 ug/L	
4/12/22	4/13/22	Chlordane	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenapyr	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenvinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorobenzilate	ND	0.060 ug/L	
4/12/22	4/13/22	Chloroneb	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpropham	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	cis-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Cyfluthrin	ND	0.30 ug/L	
4/12/22	4/13/22	Cypermethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Dacthal	ND	0.060 ug/L	
4/12/22	4/13/22	d-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Deltamethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Demeton	ND	0.060 ug/L	
4/12/22	4/13/22	Diazinon	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlobenil	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlorofenthion	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Analytical Report

Client Sample ID: GRMW-GRIC-04052022
Matrix: water

PAL Sample ID: P220410-01
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Dichlorvos	ND	0.060 ug/L	
4/12/22	4/13/22	Diclofop-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Dicloran	ND	0.30 ug/L	
4/12/22	4/13/22	Dicofol	ND	0.060 ug/L	
4/12/22	4/13/22	Dieldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenylamine	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton	ND	0.060 ug/L	
4/12/22	4/13/22	Dithiopyr	ND	0.060 ug/L	
4/12/22	4/13/22	Endosulfan I	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan II	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan sulfate	ND	0.12 ug/L	
4/12/22	4/13/22	Endrin	ND	0.060 ug/L	
4/12/22	4/13/22	Endrin ketone	ND	0.060 ug/L	
4/12/22	4/13/22	EPN	ND	0.060 ug/L	
4/12/22	4/13/22	EPTC	ND	0.060 ug/L	
4/12/22	4/13/22	Esfenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethalfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethofumesate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethoprop	ND	0.060 ug/L	
4/12/22	4/13/22	Etoxazole	ND	0.060 ug/L	
4/12/22	4/13/22	Etridiazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenarimol	ND	0.060 ug/L	
4/12/22	4/13/22	Fenitrothion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fenthion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Fipronil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazifop-p-butyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fludioxonil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/12/22	4/13/22	Flutolanil	ND	0.060 ug/L	

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Analytical Report

Client Sample ID: GRMW-GRIC-04052022
Matrix: water

PAL Sample ID: P220410-01
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	g-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor epoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Hexachlorobenzene	ND	0.060 ug/L	
4/12/22	4/13/22	Kresoxim-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Leptophos	ND	0.060 ug/L	
4/12/22	4/13/22	Malathion	ND	0.060 ug/L	
4/12/22	4/13/22	Mefenoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxychlor	ND	0.060 ug/L	
4/12/22	4/13/22	Metolachlor	ND	0.060 ug/L	
4/12/22	4/13/22	MGK-264	ND	0.060 ug/L	
4/12/22	4/13/22	Myclobutanil	ND	0.060 ug/L	
4/12/22	4/13/22	Napropamide	ND	0.060 ug/L	
4/12/22	4/13/22	o-Phenylphenol	ND	0.060 ug/L	
4/12/22	4/13/22	Ovex	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadiazon	ND	0.060 ug/L	
4/12/22	4/13/22	Oxyfluorfen	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDD	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDE	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDT	ND	0.060 ug/L	
4/12/22	4/13/22	Paclobutrazol	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	PCA	ND	0.060 ug/L	
4/12/22	4/13/22	PCB	ND	0.060 ug/L	
4/12/22	4/13/22	PCNB	ND	0.060 ug/L	
4/12/22	4/13/22	Pendimethalin	ND	0.060 ug/L	
4/12/22	4/13/22	Pentachlorothioanisole	ND	0.060 ug/L	
4/12/22	4/13/22	Permethrin	ND	0.12 ug/L	
4/12/22	4/13/22	Phorate	ND	0.060 ug/L	
4/12/22	4/13/22	Procymidone	ND	0.060 ug/L	
4/12/22	4/13/22	Prodiamine	ND	0.060 ug/L	

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Analytical Report

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Matrix: water

PAL Sample ID: P220410-01
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Pronamide	ND	0.060 ug/L	
4/12/22	4/13/22	Propachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Pyriproxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Quinoxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Ronnel	ND	0.060 ug/L	
4/12/22	4/13/22	Spirodiclofen	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfotep	ND	0.060 ug/L	
4/12/22	4/13/22	Tefluthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Terbufos	ND	0.060 ug/L	
4/12/22	4/13/22	Tetraconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tetradifon	ND	0.060 ug/L	
4/12/22	4/13/22	Thionazin	ND	0.060 ug/L	
4/12/22	4/13/22	Tokuthion	ND	0.060 ug/L	
4/12/22	4/13/22	trans-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Trichloronate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Vinclozalin	ND	0.060 ug/L	

Surrogate Recovery: 100 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

4/12/22	4/13/22	Abamectin	ND	0.060 ug/L	
4/12/22	4/13/22	Acetamiprid	ND	0.060 ug/L	
4/12/22	4/13/22	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Afidopyropen	ND	0.060 ug/L	
4/12/22	4/13/22	Aldicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Allethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametoctradin	ND	0.060 ug/L	
4/12/22	4/13/22	Atrazine	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Azoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Bendiocarb	ND	0.060 ug/L	

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GRIC-04052022
Matrix: water

PAL Sample ID: P220410-01
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Bensulide	ND	0.060 ug/L	
4/12/22	4/13/22	Bicyclopyrone	ND	0.060 ug/L	
4/12/22	4/13/22	Bitertanol	ND	0.060 ug/L	
4/12/22	4/13/22	Boscalid	ND	0.060 ug/L	
4/12/22	4/13/22	Bromacil	ND	0.060 ug/L	
4/12/22	4/13/22	Carbaryl	ND	0.060 ug/L	
4/12/22	4/13/22	Carbendazim	ND	0.060 ug/L	
4/12/22	4/13/22	Carbofuran	ND	0.060 ug/L	
4/12/22	4/13/22	Carfentrazone-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Clethodim	ND	0.12 ug/L	
4/12/22	4/13/22	Clofentezine	ND	0.060 ug/L	
4/12/22	4/13/22	Clomazone	ND	0.060 ug/L	
4/12/22	4/13/22	Cyanazine	ND	0.060 ug/L	
4/12/22	4/13/22	Cyantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cyazofamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyclaniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cycloate	ND	0.12 ug/L	
4/12/22	4/13/22	Cyflufenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyflumetofen	ND	0.060 ug/L	
4/12/22	4/13/22	Cyhalofop-butyl	ND	0.12 ug/L	
4/12/22	4/13/22	Cymoxanil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprodinil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprosulfamide	ND	0.060 ug/L	
4/12/22	4/13/22	DCPMU	ND	0.060 ug/L	
4/12/22	4/13/22	Diazoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Difenoconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Diflubenzuron	ND	0.060 ug/L	
4/12/22	4/13/22	Diflufenican	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethoate	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethomorph	ND	0.060 ug/L	
4/12/22	4/13/22	Dioxathion	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton sulfone	ND	0.060 ug/L	

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Analytical Report

Client Sample ID: GRMW-GRIC-04052022
Matrix: water

PAL Sample ID: P220410-01
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Diuron	ND	0.060 ug/L	
4/12/22	4/13/22	d-Phenothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethion	ND	0.060 ug/L	
4/12/22	4/13/22	Etofenprox	ND	0.060 ug/L	
4/12/22	4/13/22	Famoxadone	ND	0.060 ug/L	
4/12/22	4/13/22	Famphur	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamidone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenazaquin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbutatin oxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenhexamid	ND	0.060 ug/L	
4/12/22	4/13/22	Fenobucarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxycarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpropathrin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpyroximate	ND	0.060 ug/L	
4/12/22	4/13/22	Fenuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazinam	ND	0.060 ug/L	
4/12/22	4/13/22	Flubendiamide	ND	0.12 ug/L	
4/12/22	4/13/22	Flufenacet	ND	0.060 ug/L	
4/12/22	4/13/22	Flumioxazin	ND	0.060 ug/L	
4/12/22	4/13/22	Fluometuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopicolide	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopyram	ND	0.060 ug/L	
4/12/22	4/13/22	Fluoxastrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Flupyradifurone	ND	0.060 ug/L	
4/12/22	4/13/22	Fluridone	ND	0.060 ug/L	
4/12/22	4/13/22	Flutianil	ND	0.060 ug/L	
4/12/22	4/13/22	Flutriafol	ND	0.060 ug/L	
4/12/22	4/13/22	Fluvalinate	ND	0.060 ug/L	
4/12/22	4/13/22	Fluxapyroxad	ND	0.060 ug/L	
4/12/22	4/13/22	Fonofos	ND	0.12 ug/L	

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Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GRIC-04052022
Matrix: water

PAL Sample ID: P220410-01
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Hexaconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Hexazinone	ND	0.060 ug/L	
4/12/22	4/13/22	Hexythiazox	ND	0.060 ug/L	
4/12/22	4/13/22	Imazalil	ND	0.060 ug/L	
4/12/22	4/13/22	Imidacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Indaziflam	ND	0.060 ug/L	
4/12/22	4/13/22	Indoxacarb	ND	0.060 ug/L	
4/12/22	4/13/22	Iodosulfuron-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Ipconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Iprodione	ND	0.30 ug/L	
4/12/22	4/13/22	Isofetamid	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxaben	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxadifen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Lactofen	ND	0.060 ug/L	
4/12/22	4/13/22	Linuron	ND	0.060 ug/L	
4/12/22	4/13/22	Malaoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Mandipropamid	ND	0.060 ug/L	
4/12/22	4/13/22	Metconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Methidathion	ND	0.060 ug/L	
4/12/22	4/13/22	Methiocarb	ND	0.060 ug/L	
4/12/22	4/13/22	Methomyl	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxyfenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Metrafenone	ND	0.060 ug/L	
4/12/22	4/13/22	Metribuzin	ND	0.060 ug/L	
4/12/22	4/13/22	Mevinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Monuron	ND	0.060 ug/L	
4/12/22	4/13/22	Neburon	ND	0.060 ug/L	
4/12/22	4/13/22	Norflurazon	ND	0.060 ug/L	
4/12/22	4/13/22	Novaluron	ND	0.060 ug/L	
4/12/22	4/13/22	Oryzalin	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadixyl	ND	0.060 ug/L	
4/12/22	4/13/22	Oxamyl	ND	0.060 ug/L	
4/12/22	4/13/22	Penoxsulam	ND	0.060 ug/L	

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4/12/22	4/13/22	Penthiopyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Phosalone	ND	0.060 ug/L	
4/12/22	4/13/22	Phosmet	ND	0.060 ug/L	
4/12/22	4/13/22	Phosphamidon	ND	0.060 ug/L	
4/12/22	4/13/22	Picoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Piperonyl Butoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimiphos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Prallethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Prometon	ND	0.060 ug/L	
4/12/22	4/13/22	Prometryn	ND	0.060 ug/L	
4/12/22	4/13/22	Propanil	ND	0.060 ug/L	
4/12/22	4/13/22	Propargite	ND	0.060 ug/L	
4/12/22	4/13/22	Propazine	ND	0.060 ug/L	
4/12/22	4/13/22	Propiconazole	ND	0.12 ug/L	
4/12/22	4/13/22	Propoxur	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraclostrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraflufen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Pyridaben	ND	0.060 ug/L	
4/12/22	4/13/22	Pyridalyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrimethanil	ND	0.060 ug/L	
4/12/22	4/13/22	Pyroxasulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Rotenone	ND	0.060 ug/L	
4/12/22	4/13/22	Saflufenacil	ND	0.060 ug/L	
4/12/22	4/13/22	Sethoxydim	ND	0.12 ug/L	
4/12/22	4/13/22	Siduron	ND	0.060 ug/L	
4/12/22	4/13/22	Simazine	ND	0.060 ug/L	
4/12/22	4/13/22	Simetryn	ND	0.060 ug/L	
4/12/22	4/13/22	Spinetoram	ND	0.060 ug/L	

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4/12/22	4/13/22	Spinosad	ND	0.060 ug/L	
4/12/22	4/13/22	Spiromesifen	ND	0.12 ug/L	
4/12/22	4/13/22	Spirotetramat	ND	0.060 ug/L	
4/12/22	4/13/22	Spiroxamine	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfentrazone	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfoxaflor	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tebufenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuthiuron	ND	0.060 ug/L	
4/12/22	4/13/22	Terbacil	ND	0.060 ug/L	
4/12/22	4/13/22	Terbuthylazine	ND	0.060 ug/L	
4/12/22	4/13/22	Terbutryn	ND	0.060 ug/L	
4/12/22	4/13/22	Thiabendazole	ND	0.060 ug/L	
4/12/22	4/13/22	Thiacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Thiamethoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Thiencarbazone-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Thiobencarb	ND	0.060 ug/L	
4/12/22	4/13/22	Thiodicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Tolfenpyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimefon	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimenol	ND	0.12 ug/L	
4/12/22	4/13/22	Triallate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/12/22	4/13/22	Triflumizole	ND	0.060 ug/L	
4/12/22	4/13/22	Trinexapac-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 90 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Report Number: P220410
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Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04052022
Matrix: water

PAL Sample ID: P220410-02
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/12/22	4/13/22	a-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Acetochlor	ND	0.060 ug/L	
4/12/22	4/13/22	Alachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Aldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametryn	ND	0.060 ug/L	
4/12/22	4/13/22	Aspon	ND	0.060 ug/L	
4/12/22	4/13/22	b-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Benfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Bifenthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Bolstar	ND	0.060 ug/L	
4/12/22	4/13/22	Bromopropylate	ND	0.060 ug/L	
4/12/22	4/13/22	Buprofezin	ND	0.060 ug/L	
4/12/22	4/13/22	Captan	ND	0.60 ug/L	
4/12/22	4/13/22	Chlordane	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenapyr	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenvinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorobenzilate	ND	0.060 ug/L	
4/12/22	4/13/22	Chloroneb	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpropham	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	cis-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Cyfluthrin	ND	0.30 ug/L	
4/12/22	4/13/22	Cypermethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Dacthal	ND	0.060 ug/L	
4/12/22	4/13/22	d-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Deltamethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Demeton	ND	0.060 ug/L	
4/12/22	4/13/22	Diazinon	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlobenil	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlorofenthion	ND	0.060 ug/L	

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Matrix: water

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Dichlorvos	ND	0.060 ug/L	
4/12/22	4/13/22	Diclofop-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Dicloran	ND	0.30 ug/L	
4/12/22	4/13/22	Dicofol	ND	0.060 ug/L	
4/12/22	4/13/22	Dieldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenylamine	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton	ND	0.060 ug/L	
4/12/22	4/13/22	Dithiopyr	ND	0.060 ug/L	
4/12/22	4/13/22	Endosulfan I	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan II	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan sulfate	ND	0.12 ug/L	
4/12/22	4/13/22	Endrin	ND	0.060 ug/L	
4/12/22	4/13/22	Endrin ketone	ND	0.060 ug/L	
4/12/22	4/13/22	EPN	ND	0.060 ug/L	
4/12/22	4/13/22	EPTC	ND	0.060 ug/L	
4/12/22	4/13/22	Esfenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethalfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethofumesate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethoprop	ND	0.060 ug/L	
4/12/22	4/13/22	Etoxazole	ND	0.060 ug/L	
4/12/22	4/13/22	Etridiazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenarimol	ND	0.060 ug/L	
4/12/22	4/13/22	Fenitrothion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fenthion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Fipronil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazifop-p-butyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fludioxonil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/12/22	4/13/22	Flutolanil	ND	0.060 ug/L	

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Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	g-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor epoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Hexachlorobenzene	ND	0.060 ug/L	
4/12/22	4/13/22	Kresoxim-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Leptophos	ND	0.060 ug/L	
4/12/22	4/13/22	Malathion	ND	0.060 ug/L	
4/12/22	4/13/22	Mefenoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxychlor	ND	0.060 ug/L	
4/12/22	4/13/22	Metolachlor	ND	0.060 ug/L	
4/12/22	4/13/22	MGK-264	ND	0.060 ug/L	
4/12/22	4/13/22	Myclobutanil	ND	0.060 ug/L	
4/12/22	4/13/22	Napropamide	ND	0.060 ug/L	
4/12/22	4/13/22	o-Phenylphenol	ND	0.060 ug/L	
4/12/22	4/13/22	Ovex	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadiazon	ND	0.060 ug/L	
4/12/22	4/13/22	Oxyfluorfen	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDD	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDE	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDT	ND	0.060 ug/L	
4/12/22	4/13/22	Paclobutrazol	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	PCA	ND	0.060 ug/L	
4/12/22	4/13/22	PCB	ND	0.060 ug/L	
4/12/22	4/13/22	PCNB	ND	0.060 ug/L	
4/12/22	4/13/22	Pendimethalin	ND	0.060 ug/L	
4/12/22	4/13/22	Pentachlorothioanisole	ND	0.060 ug/L	
4/12/22	4/13/22	Permethrin	ND	0.12 ug/L	
4/12/22	4/13/22	Phorate	ND	0.060 ug/L	
4/12/22	4/13/22	Procymidone	ND	0.060 ug/L	
4/12/22	4/13/22	Prodiamine	ND	0.060 ug/L	

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Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Pronamide	ND	0.060 ug/L	
4/12/22	4/13/22	Propachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Pyriproxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Quinoxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Ronnel	ND	0.060 ug/L	
4/12/22	4/13/22	Spirodiclofen	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfotep	ND	0.060 ug/L	
4/12/22	4/13/22	Tefluthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Terbufos	ND	0.060 ug/L	
4/12/22	4/13/22	Tetraconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tetradifon	ND	0.060 ug/L	
4/12/22	4/13/22	Thionazin	ND	0.060 ug/L	
4/12/22	4/13/22	Tokuthion	ND	0.060 ug/L	
4/12/22	4/13/22	trans-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Trichloronate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Vinclozalin	ND	0.060 ug/L	

Surrogate Recovery: 101 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

4/12/22	4/13/22	Abamectin	ND	0.060 ug/L	
4/12/22	4/13/22	Acetamiprid	ND	0.060 ug/L	
4/12/22	4/13/22	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Afidopyropen	ND	0.060 ug/L	
4/12/22	4/13/22	Aldicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Allethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametoctradin	ND	0.060 ug/L	
4/12/22	4/13/22	Atrazine	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Azoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Bendiocarb	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04052022
Matrix: water

PAL Sample ID: P220410-02
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Bensulide	ND	0.060 ug/L	
4/12/22	4/13/22	Bicyclopyrone	ND	0.060 ug/L	
4/12/22	4/13/22	Bitertanol	ND	0.060 ug/L	
4/12/22	4/13/22	Boscalid	ND	0.060 ug/L	
4/12/22	4/13/22	Bromacil	ND	0.060 ug/L	
4/12/22	4/13/22	Carbaryl	ND	0.060 ug/L	
4/12/22	4/13/22	Carbendazim	ND	0.060 ug/L	
4/12/22	4/13/22	Carbofuran	ND	0.060 ug/L	
4/12/22	4/13/22	Carfentrazone-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Clethodim	ND	0.12 ug/L	
4/12/22	4/13/22	Clofentezine	ND	0.060 ug/L	
4/12/22	4/13/22	Clomazone	ND	0.060 ug/L	
4/12/22	4/13/22	Cyanazine	ND	0.060 ug/L	
4/12/22	4/13/22	Cyantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cyazofamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyclaniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cycloate	ND	0.12 ug/L	
4/12/22	4/13/22	Cyflufenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyflumetofen	ND	0.060 ug/L	
4/12/22	4/13/22	Cyhalofop-butyl	ND	0.12 ug/L	
4/12/22	4/13/22	Cymoxanil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprodinil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprosulfamide	ND	0.060 ug/L	
4/12/22	4/13/22	DCPMU	ND	0.060 ug/L	
4/12/22	4/13/22	Diazoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Difenoconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Diflubenzuron	ND	0.060 ug/L	
4/12/22	4/13/22	Diflufenican	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethoate	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethomorph	ND	0.060 ug/L	
4/12/22	4/13/22	Dioxathion	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton sulfone	ND	0.060 ug/L	

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Matrix: water

PAL Sample ID: P220410-02
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Diuron	ND	0.060 ug/L	
4/12/22	4/13/22	d-Phenothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethion	ND	0.060 ug/L	
4/12/22	4/13/22	Etofenprox	ND	0.060 ug/L	
4/12/22	4/13/22	Famoxadone	ND	0.060 ug/L	
4/12/22	4/13/22	Famphur	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamidone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenazaquin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbutatin oxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenhexamid	ND	0.060 ug/L	
4/12/22	4/13/22	Fenobucarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxycarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpropathrin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpyroximate	ND	0.060 ug/L	
4/12/22	4/13/22	Fenuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazinam	ND	0.060 ug/L	
4/12/22	4/13/22	Flubendiamide	ND	0.12 ug/L	
4/12/22	4/13/22	Flufenacet	ND	0.060 ug/L	
4/12/22	4/13/22	Flumioxazin	ND	0.060 ug/L	
4/12/22	4/13/22	Fluometuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopicolide	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopyram	ND	0.060 ug/L	
4/12/22	4/13/22	Fluoxastrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Flupyradifurone	ND	0.060 ug/L	
4/12/22	4/13/22	Fluridone	ND	0.060 ug/L	
4/12/22	4/13/22	Flutianil	ND	0.060 ug/L	
4/12/22	4/13/22	Flutriafol	ND	0.060 ug/L	
4/12/22	4/13/22	Fluvalinate	ND	0.060 ug/L	
4/12/22	4/13/22	Fluxapyroxad	ND	0.060 ug/L	
4/12/22	4/13/22	Fonofos	ND	0.12 ug/L	

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Matrix: water

PAL Sample ID: P220410-02
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Hexaconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Hexazinone	ND	0.060 ug/L	
4/12/22	4/13/22	Hexythiazox	ND	0.060 ug/L	
4/12/22	4/13/22	Imazalil	ND	0.060 ug/L	
4/12/22	4/13/22	Imidacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Indaziflam	ND	0.060 ug/L	
4/12/22	4/13/22	Indoxacarb	ND	0.060 ug/L	
4/12/22	4/13/22	Iodosulfuron-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Ipconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Iprodione	ND	0.30 ug/L	
4/12/22	4/13/22	Isofetamid	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxaben	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxadifen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Lactofen	ND	0.060 ug/L	
4/12/22	4/13/22	Linuron	ND	0.060 ug/L	
4/12/22	4/13/22	Malaoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Mandipropamid	ND	0.060 ug/L	
4/12/22	4/13/22	Metconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Methidathion	ND	0.060 ug/L	
4/12/22	4/13/22	Methiocarb	ND	0.060 ug/L	
4/12/22	4/13/22	Methomyl	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxyfenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Metrafenone	ND	0.060 ug/L	
4/12/22	4/13/22	Metribuzin	ND	0.060 ug/L	
4/12/22	4/13/22	Mevinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Monuron	ND	0.060 ug/L	
4/12/22	4/13/22	Neburon	ND	0.060 ug/L	
4/12/22	4/13/22	Norflurazon	ND	0.060 ug/L	
4/12/22	4/13/22	Novaluron	ND	0.060 ug/L	
4/12/22	4/13/22	Oryzalin	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadixyl	ND	0.060 ug/L	
4/12/22	4/13/22	Oxamyl	ND	0.060 ug/L	
4/12/22	4/13/22	Penoxsulam	ND	0.060 ug/L	

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Analytical Report

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Matrix: water

PAL Sample ID: P220410-02
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Penthiopyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Phosalone	ND	0.060 ug/L	
4/12/22	4/13/22	Phosmet	ND	0.060 ug/L	
4/12/22	4/13/22	Phosphamidon	ND	0.060 ug/L	
4/12/22	4/13/22	Picoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Piperonyl Butoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimiphos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Prallethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Prometon	ND	0.060 ug/L	
4/12/22	4/13/22	Prometryn	ND	0.060 ug/L	
4/12/22	4/13/22	Propanil	ND	0.060 ug/L	
4/12/22	4/13/22	Propargite	ND	0.060 ug/L	
4/12/22	4/13/22	Propazine	ND	0.060 ug/L	
4/12/22	4/13/22	Propiconazole	ND	0.12 ug/L	
4/12/22	4/13/22	Propoxur	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraclostrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraflufen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Pyridaben	ND	0.060 ug/L	
4/12/22	4/13/22	Pyridalyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrimethanil	ND	0.060 ug/L	
4/12/22	4/13/22	Pyroxasulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Rotenone	ND	0.060 ug/L	
4/12/22	4/13/22	Saflufenacil	ND	0.060 ug/L	
4/12/22	4/13/22	Sethoxydim	ND	0.12 ug/L	
4/12/22	4/13/22	Siduron	ND	0.060 ug/L	
4/12/22	4/13/22	Simazine	ND	0.060 ug/L	
4/12/22	4/13/22	Simetryn	ND	0.060 ug/L	
4/12/22	4/13/22	Spinetoram	ND	0.060 ug/L	

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Analytical Report

Client Sample ID: GRMW-GR82-04052022
Matrix: water

PAL Sample ID: P220410-02
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Spinosad	ND	0.060 ug/L	
4/12/22	4/13/22	Spiromesifen	ND	0.12 ug/L	
4/12/22	4/13/22	Spirotetramat	ND	0.060 ug/L	
4/12/22	4/13/22	Spiroxamine	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfentrazone	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfoxaflor	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tebufenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuthiuron	ND	0.060 ug/L	
4/12/22	4/13/22	Terbacil	ND	0.060 ug/L	
4/12/22	4/13/22	Terbuthylazine	ND	0.060 ug/L	
4/12/22	4/13/22	Terbutryn	ND	0.060 ug/L	
4/12/22	4/13/22	Thiabendazole	ND	0.060 ug/L	
4/12/22	4/13/22	Thiacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Thiamethoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Thiencarbazone-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Thiobencarb	ND	0.060 ug/L	
4/12/22	4/13/22	Thiodicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Tolfenpyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimefon	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimenol	ND	0.12 ug/L	
4/12/22	4/13/22	Triallate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/12/22	4/13/22	Triflumizole	ND	0.060 ug/L	
4/12/22	4/13/22	Trinexapac-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 89 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCWL-04052022
Matrix: water

PAL Sample ID: P220410-03
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/12/22	4/13/22	a-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Acetochlor	ND	0.060 ug/L	
4/12/22	4/13/22	Alachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Aldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametryn	ND	0.060 ug/L	
4/12/22	4/13/22	Aspon	ND	0.060 ug/L	
4/12/22	4/13/22	b-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Benfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Bifenthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Bolstar	ND	0.060 ug/L	
4/12/22	4/13/22	Bromopropylate	ND	0.060 ug/L	
4/12/22	4/13/22	Buprofezin	ND	0.060 ug/L	
4/12/22	4/13/22	Captan	ND	0.60 ug/L	
4/12/22	4/13/22	Chlordane	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenapyr	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenvinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorobenzilate	ND	0.060 ug/L	
4/12/22	4/13/22	Chloroneb	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpropham	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	cis-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Cyfluthrin	ND	0.30 ug/L	
4/12/22	4/13/22	Cypermethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Dacthal	ND	0.060 ug/L	
4/12/22	4/13/22	d-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Deltamethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Demeton	ND	0.060 ug/L	
4/12/22	4/13/22	Diazinon	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlobenil	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlorofenthion	ND	0.060 ug/L	

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Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCWL-04052022
Matrix: water

PAL Sample ID: P220410-03
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Dichlorvos	ND	0.060 ug/L	
4/12/22	4/13/22	Diclofop-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Dicloran	ND	0.30 ug/L	
4/12/22	4/13/22	Dicofol	ND	0.060 ug/L	
4/12/22	4/13/22	Dieldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenylamine	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton	ND	0.060 ug/L	
4/12/22	4/13/22	Dithiopyr	ND	0.060 ug/L	
4/12/22	4/13/22	Endosulfan I	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan II	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan sulfate	ND	0.12 ug/L	
4/12/22	4/13/22	Endrin	ND	0.060 ug/L	
4/12/22	4/13/22	Endrin ketone	ND	0.060 ug/L	
4/12/22	4/13/22	EPN	ND	0.060 ug/L	
4/12/22	4/13/22	EPTC	ND	0.060 ug/L	
4/12/22	4/13/22	Esfenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethalfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethofumesate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethoprop	ND	0.060 ug/L	
4/12/22	4/13/22	Etoxazole	ND	0.060 ug/L	
4/12/22	4/13/22	Etridiazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenarimol	ND	0.060 ug/L	
4/12/22	4/13/22	Fenitrothion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fenthion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Fipronil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazifop-p-butyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fludioxonil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/12/22	4/13/22	Flutolanil	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCWL-04052022
Matrix: water

PAL Sample ID: P220410-03
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	g-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor epoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Hexachlorobenzene	ND	0.060 ug/L	
4/12/22	4/13/22	Kresoxim-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Leptophos	ND	0.060 ug/L	
4/12/22	4/13/22	Malathion	ND	0.060 ug/L	
4/12/22	4/13/22	Mefenoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxychlor	ND	0.060 ug/L	
4/12/22	4/13/22	Metolachlor	ND	0.060 ug/L	
4/12/22	4/13/22	MGK-264	ND	0.060 ug/L	
4/12/22	4/13/22	Myclobutanil	ND	0.060 ug/L	
4/12/22	4/13/22	Napropamide	ND	0.060 ug/L	
4/12/22	4/13/22	o-Phenylphenol	ND	0.060 ug/L	
4/12/22	4/13/22	Ovex	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadiazon	ND	0.060 ug/L	
4/12/22	4/13/22	Oxyfluorfen	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDD	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDE	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDT	ND	0.060 ug/L	
4/12/22	4/13/22	Paclobutrazol	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	PCA	ND	0.060 ug/L	
4/12/22	4/13/22	PCB	ND	0.060 ug/L	
4/12/22	4/13/22	PCNB	ND	0.060 ug/L	
4/12/22	4/13/22	Pendimethalin	ND	0.060 ug/L	
4/12/22	4/13/22	Pentachlorothioanisole	ND	0.060 ug/L	
4/12/22	4/13/22	Permethrin	ND	0.12 ug/L	
4/12/22	4/13/22	Phorate	ND	0.060 ug/L	
4/12/22	4/13/22	Procymidone	ND	0.060 ug/L	
4/12/22	4/13/22	Prodiamine	ND	0.060 ug/L	

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4/12/22	4/13/22	Pronamide	ND	0.060 ug/L	
4/12/22	4/13/22	Propachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Pyriproxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Quinoxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Ronnel	ND	0.060 ug/L	
4/12/22	4/13/22	Spirodiclofen	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfotep	ND	0.060 ug/L	
4/12/22	4/13/22	Tefluthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Terbufos	ND	0.060 ug/L	
4/12/22	4/13/22	Tetraconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tetradifon	ND	0.060 ug/L	
4/12/22	4/13/22	Thionazin	ND	0.060 ug/L	
4/12/22	4/13/22	Tokuthion	ND	0.060 ug/L	
4/12/22	4/13/22	trans-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Trichloronate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Vinclozalin	ND	0.060 ug/L	

Surrogate Recovery: 101 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

4/12/22	4/13/22	Abamectin	ND	0.060 ug/L	
4/12/22	4/13/22	Acetamiprid	ND	0.060 ug/L	
4/12/22	4/13/22	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Afidopyropen	ND	0.060 ug/L	
4/12/22	4/13/22	Aldicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Allethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametoctradin	ND	0.060 ug/L	
4/12/22	4/13/22	Atrazine	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Azoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Bendiocarb	ND	0.060 ug/L	

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4/12/22	4/13/22	Bensulide	ND	0.060 ug/L	
4/12/22	4/13/22	Bicyclopyrone	ND	0.060 ug/L	
4/12/22	4/13/22	Bitertanol	ND	0.060 ug/L	
4/12/22	4/13/22	Boscalid	ND	0.060 ug/L	
4/12/22	4/13/22	Bromacil	ND	0.060 ug/L	
4/12/22	4/13/22	Carbaryl	ND	0.060 ug/L	
4/12/22	4/13/22	Carbendazim	ND	0.060 ug/L	
4/12/22	4/13/22	Carbofuran	ND	0.060 ug/L	
4/12/22	4/13/22	Carfentrazone-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Clethodim	ND	0.12 ug/L	
4/12/22	4/13/22	Clofentezine	ND	0.060 ug/L	
4/12/22	4/13/22	Clomazone	ND	0.060 ug/L	
4/12/22	4/13/22	Cyanazine	ND	0.060 ug/L	
4/12/22	4/13/22	Cyantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cyazofamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyclaniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cycloate	ND	0.12 ug/L	
4/12/22	4/13/22	Cyflufenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyflumetofen	ND	0.060 ug/L	
4/12/22	4/13/22	Cyhalofop-butyl	ND	0.12 ug/L	
4/12/22	4/13/22	Cymoxanil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprodinil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprosulfamide	ND	0.060 ug/L	
4/12/22	4/13/22	DCPMU	ND	0.060 ug/L	
4/12/22	4/13/22	Diazoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Difenoconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Diflubenzuron	ND	0.060 ug/L	
4/12/22	4/13/22	Diflufenican	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethoate	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethomorph	ND	0.060 ug/L	
4/12/22	4/13/22	Dioxathion	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton sulfone	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Diuron	ND	0.060 ug/L	
4/12/22	4/13/22	d-Phenothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethion	ND	0.060 ug/L	
4/12/22	4/13/22	Etofenprox	ND	0.060 ug/L	
4/12/22	4/13/22	Famoxadone	ND	0.060 ug/L	
4/12/22	4/13/22	Famphur	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamidone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenazaquin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbutatin oxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenhexamid	ND	0.060 ug/L	
4/12/22	4/13/22	Fenobucarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxycarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpropathrin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpyroximate	ND	0.060 ug/L	
4/12/22	4/13/22	Fenuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazinam	ND	0.060 ug/L	
4/12/22	4/13/22	Flubendiamide	ND	0.12 ug/L	
4/12/22	4/13/22	Flufenacet	ND	0.060 ug/L	
4/12/22	4/13/22	Flumioxazin	ND	0.060 ug/L	
4/12/22	4/13/22	Fluometuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopicolide	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopyram	ND	0.060 ug/L	
4/12/22	4/13/22	Fluoxastrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Flupyradifurone	ND	0.060 ug/L	
4/12/22	4/13/22	Fluridone	ND	0.060 ug/L	
4/12/22	4/13/22	Flutianil	ND	0.060 ug/L	
4/12/22	4/13/22	Flutriafol	ND	0.060 ug/L	
4/12/22	4/13/22	Fluvalinate	ND	0.060 ug/L	
4/12/22	4/13/22	Fluxapyroxad	ND	0.060 ug/L	
4/12/22	4/13/22	Fonofos	ND	0.12 ug/L	

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4/12/22	4/13/22	Hexaconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Hexazinone	ND	0.060 ug/L	
4/12/22	4/13/22	Hexythiazox	ND	0.060 ug/L	
4/12/22	4/13/22	Imazalil	ND	0.060 ug/L	
4/12/22	4/13/22	Imidacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Indaziflam	ND	0.060 ug/L	
4/12/22	4/13/22	Indoxacarb	ND	0.060 ug/L	
4/12/22	4/13/22	Iodosulfuron-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Ipconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Iprodione	ND	0.30 ug/L	
4/12/22	4/13/22	Isofetamid	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxaben	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxadifen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Lactofen	ND	0.060 ug/L	
4/12/22	4/13/22	Linuron	ND	0.060 ug/L	
4/12/22	4/13/22	Malaoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Mandipropamid	ND	0.060 ug/L	
4/12/22	4/13/22	Metconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Methidathion	ND	0.060 ug/L	
4/12/22	4/13/22	Methiocarb	ND	0.060 ug/L	
4/12/22	4/13/22	Methomyl	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxyfenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Metrafenone	ND	0.060 ug/L	
4/12/22	4/13/22	Metribuzin	ND	0.060 ug/L	
4/12/22	4/13/22	Mevinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Monuron	ND	0.060 ug/L	
4/12/22	4/13/22	Neburon	ND	0.060 ug/L	
4/12/22	4/13/22	Norflurazon	ND	0.060 ug/L	
4/12/22	4/13/22	Novaluron	ND	0.060 ug/L	
4/12/22	4/13/22	Oryzalin	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadixyl	ND	0.060 ug/L	
4/12/22	4/13/22	Oxamyl	ND	0.060 ug/L	
4/12/22	4/13/22	Penoxsulam	ND	0.060 ug/L	

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4/12/22	4/13/22	Penthiopyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Phosalone	ND	0.060 ug/L	
4/12/22	4/13/22	Phosmet	ND	0.060 ug/L	
4/12/22	4/13/22	Phosphamidon	ND	0.060 ug/L	
4/12/22	4/13/22	Picoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Piperonyl Butoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimiphos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Prallethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Prometon	ND	0.060 ug/L	
4/12/22	4/13/22	Prometryn	ND	0.060 ug/L	
4/12/22	4/13/22	Propanil	ND	0.060 ug/L	
4/12/22	4/13/22	Propargite	ND	0.060 ug/L	
4/12/22	4/13/22	Propazine	ND	0.060 ug/L	
4/12/22	4/13/22	Propiconazole	ND	0.12 ug/L	
4/12/22	4/13/22	Propoxur	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraclostrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraflufen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Pyridaben	ND	0.060 ug/L	
4/12/22	4/13/22	Pyridalyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrimethanil	ND	0.060 ug/L	
4/12/22	4/13/22	Pyroxasulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Rotenone	ND	0.060 ug/L	
4/12/22	4/13/22	Saflufenacil	ND	0.060 ug/L	
4/12/22	4/13/22	Sethoxydim	ND	0.12 ug/L	
4/12/22	4/13/22	Siduron	ND	0.060 ug/L	
4/12/22	4/13/22	Simazine	ND	0.060 ug/L	
4/12/22	4/13/22	Simetryn	ND	0.060 ug/L	
4/12/22	4/13/22	Spinetoram	ND	0.060 ug/L	

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4/12/22	4/13/22	Spinosad	ND	0.060 ug/L	
4/12/22	4/13/22	Spiromesifen	ND	0.12 ug/L	
4/12/22	4/13/22	Spirotetramat	ND	0.060 ug/L	
4/12/22	4/13/22	Spiroxamine	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfentrazone	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfoxaflor	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tebufenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuthiuron	ND	0.060 ug/L	
4/12/22	4/13/22	Terbacil	ND	0.060 ug/L	
4/12/22	4/13/22	Terbuthylazine	ND	0.060 ug/L	
4/12/22	4/13/22	Terbutryn	ND	0.060 ug/L	
4/12/22	4/13/22	Thiabendazole	ND	0.060 ug/L	
4/12/22	4/13/22	Thiacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Thiamethoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Thiencarbazone-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Thiobencarb	ND	0.060 ug/L	
4/12/22	4/13/22	Thiodicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Tolfenpyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimefon	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimenol	ND	0.12 ug/L	
4/12/22	4/13/22	Triallate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/12/22	4/13/22	Triflumizole	ND	0.060 ug/L	
4/12/22	4/13/22	Trinexapac-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 90 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Client Sample ID: GRMW-CCUB-04052022
Matrix: water

PAL Sample ID: P220410-04
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/12/22	4/13/22	a-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Acetochlor	ND	0.060 ug/L	
4/12/22	4/13/22	Alachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Aldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametryn	ND	0.060 ug/L	
4/12/22	4/13/22	Aspon	ND	0.060 ug/L	
4/12/22	4/13/22	b-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Benfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Bifenthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Bolstar	ND	0.060 ug/L	
4/12/22	4/13/22	Bromopropylate	ND	0.060 ug/L	
4/12/22	4/13/22	Buprofezin	ND	0.060 ug/L	
4/12/22	4/13/22	Captan	ND	0.60 ug/L	
4/12/22	4/13/22	Chlordane	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenapyr	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenvinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorobenzilate	ND	0.060 ug/L	
4/12/22	4/13/22	Chloroneb	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpropham	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	cis-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Cyfluthrin	ND	0.30 ug/L	
4/12/22	4/13/22	Cypermethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Dacthal	ND	0.060 ug/L	
4/12/22	4/13/22	d-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Deltamethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Demeton	ND	0.060 ug/L	
4/12/22	4/13/22	Diazinon	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlobenil	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlorofenthion	ND	0.060 ug/L	

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Rick Jordan, Laboratory Director

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-04052022
Matrix: water

PAL Sample ID: P220410-04
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Dichlorvos	ND	0.060 ug/L	
4/12/22	4/13/22	Diclofop-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Dicloran	ND	0.30 ug/L	
4/12/22	4/13/22	Dicofol	ND	0.060 ug/L	
4/12/22	4/13/22	Dieldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenylamine	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton	ND	0.060 ug/L	
4/12/22	4/13/22	Dithiopyr	ND	0.060 ug/L	
4/12/22	4/13/22	Endosulfan I	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan II	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan sulfate	ND	0.12 ug/L	
4/12/22	4/13/22	Endrin	ND	0.060 ug/L	
4/12/22	4/13/22	Endrin ketone	ND	0.060 ug/L	
4/12/22	4/13/22	EPN	ND	0.060 ug/L	
4/12/22	4/13/22	EPTC	ND	0.060 ug/L	
4/12/22	4/13/22	Esfenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethalfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethofumesate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethoprop	ND	0.060 ug/L	
4/12/22	4/13/22	Etoxazole	ND	0.060 ug/L	
4/12/22	4/13/22	Etridiazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenarimol	ND	0.060 ug/L	
4/12/22	4/13/22	Fenitrothion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fenthion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Fipronil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazifop-p-butyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fludioxonil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/12/22	4/13/22	Flutolanil	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	g-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor epoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Hexachlorobenzene	ND	0.060 ug/L	
4/12/22	4/13/22	Kresoxim-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Leptophos	ND	0.060 ug/L	
4/12/22	4/13/22	Malathion	ND	0.060 ug/L	
4/12/22	4/13/22	Mefenoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxychlor	ND	0.060 ug/L	
4/12/22	4/13/22	Metolachlor	ND	0.060 ug/L	
4/12/22	4/13/22	MGK-264	ND	0.060 ug/L	
4/12/22	4/13/22	Myclobutanil	ND	0.060 ug/L	
4/12/22	4/13/22	Napropamide	ND	0.060 ug/L	
4/12/22	4/13/22	o-Phenylphenol	ND	0.060 ug/L	
4/12/22	4/13/22	Ovex	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadiazon	ND	0.060 ug/L	
4/12/22	4/13/22	Oxyfluorfen	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDD	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDE	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDT	ND	0.060 ug/L	
4/12/22	4/13/22	Paclobutrazol	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	PCA	ND	0.060 ug/L	
4/12/22	4/13/22	PCB	ND	0.060 ug/L	
4/12/22	4/13/22	PCNB	ND	0.060 ug/L	
4/12/22	4/13/22	Pendimethalin	ND	0.060 ug/L	
4/12/22	4/13/22	Pentachlorothioanisole	ND	0.060 ug/L	
4/12/22	4/13/22	Permethrin	ND	0.12 ug/L	
4/12/22	4/13/22	Phorate	ND	0.060 ug/L	
4/12/22	4/13/22	Procymidone	ND	0.060 ug/L	
4/12/22	4/13/22	Prodiamine	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Pronamide	ND	0.060 ug/L	
4/12/22	4/13/22	Propachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Pyriproxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Quinoxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Ronnel	ND	0.060 ug/L	
4/12/22	4/13/22	Spirodiclofen	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfotep	ND	0.060 ug/L	
4/12/22	4/13/22	Tefluthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Terbufos	ND	0.060 ug/L	
4/12/22	4/13/22	Tetraconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tetradifon	ND	0.060 ug/L	
4/12/22	4/13/22	Thionazin	ND	0.060 ug/L	
4/12/22	4/13/22	Tokuthion	ND	0.060 ug/L	
4/12/22	4/13/22	trans-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Trichloronate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Vinclozalin	ND	0.060 ug/L	

Surrogate Recovery: 97 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

4/12/22	4/13/22	Abamectin	ND	0.060 ug/L	
4/12/22	4/13/22	Acetamiprid	ND	0.060 ug/L	
4/12/22	4/13/22	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Afidopyropen	ND	0.060 ug/L	
4/12/22	4/13/22	Aldicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Allethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametoctradin	ND	0.060 ug/L	
4/12/22	4/13/22	Atrazine	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Azoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Bendiocarb	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Bensulide	ND	0.060 ug/L	
4/12/22	4/13/22	Bicyclopyrone	ND	0.060 ug/L	
4/12/22	4/13/22	Bitertanol	ND	0.060 ug/L	
4/12/22	4/13/22	Boscalid	ND	0.060 ug/L	
4/12/22	4/13/22	Bromacil	ND	0.060 ug/L	
4/12/22	4/13/22	Carbaryl	ND	0.060 ug/L	
4/12/22	4/13/22	Carbendazim	ND	0.060 ug/L	
4/12/22	4/13/22	Carbofuran	ND	0.060 ug/L	
4/12/22	4/13/22	Carfentrazone-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Clethodim	ND	0.12 ug/L	
4/12/22	4/13/22	Clofentezine	ND	0.060 ug/L	
4/12/22	4/13/22	Clomazone	ND	0.060 ug/L	
4/12/22	4/13/22	Cyanazine	ND	0.060 ug/L	
4/12/22	4/13/22	Cyantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cyazofamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyclaniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cycloate	ND	0.12 ug/L	
4/12/22	4/13/22	Cyflufenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyflumetofen	ND	0.060 ug/L	
4/12/22	4/13/22	Cyhalofop-butyl	ND	0.12 ug/L	
4/12/22	4/13/22	Cymoxanil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprodinil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprosulfamide	ND	0.060 ug/L	
4/12/22	4/13/22	DCPMU	ND	0.060 ug/L	
4/12/22	4/13/22	Diazoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Difenoconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Diflubenzuron	ND	0.060 ug/L	
4/12/22	4/13/22	Diflufenican	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethoate	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethomorph	ND	0.060 ug/L	
4/12/22	4/13/22	Dioxathion	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton sulfone	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Diuron	ND	0.060 ug/L	
4/12/22	4/13/22	d-Phenothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethion	ND	0.060 ug/L	
4/12/22	4/13/22	Etofenprox	ND	0.060 ug/L	
4/12/22	4/13/22	Famoxadone	ND	0.060 ug/L	
4/12/22	4/13/22	Famphur	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamidone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenazaquin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbutatin oxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenhexamid	ND	0.060 ug/L	
4/12/22	4/13/22	Fenobucarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxycarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpropathrin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpyroximate	ND	0.060 ug/L	
4/12/22	4/13/22	Fenuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazinam	ND	0.060 ug/L	
4/12/22	4/13/22	Flubendiamide	ND	0.12 ug/L	
4/12/22	4/13/22	Flufenacet	ND	0.060 ug/L	
4/12/22	4/13/22	Flumioxazin	ND	0.060 ug/L	
4/12/22	4/13/22	Fluometuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopicolide	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopyram	ND	0.060 ug/L	
4/12/22	4/13/22	Fluoxastrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Flupyradifurone	ND	0.060 ug/L	
4/12/22	4/13/22	Fluridone	ND	0.060 ug/L	
4/12/22	4/13/22	Flutianil	ND	0.060 ug/L	
4/12/22	4/13/22	Flutriafol	ND	0.060 ug/L	
4/12/22	4/13/22	Fluvalinate	ND	0.060 ug/L	
4/12/22	4/13/22	Fluxapyroxad	ND	0.060 ug/L	
4/12/22	4/13/22	Fonofos	ND	0.12 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Hexaconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Hexazinone	ND	0.060 ug/L	
4/12/22	4/13/22	Hexythiazox	ND	0.060 ug/L	
4/12/22	4/13/22	Imazalil	ND	0.060 ug/L	
4/12/22	4/13/22	Imidacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Indaziflam	ND	0.060 ug/L	
4/12/22	4/13/22	Indoxacarb	ND	0.060 ug/L	
4/12/22	4/13/22	Iodosulfuron-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Ipconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Iprodione	ND	0.30 ug/L	
4/12/22	4/13/22	Isofetamid	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxaben	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxadifen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Lactofen	ND	0.060 ug/L	
4/12/22	4/13/22	Linuron	ND	0.060 ug/L	
4/12/22	4/13/22	Malaoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Mandipropamid	ND	0.060 ug/L	
4/12/22	4/13/22	Metconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Methidathion	ND	0.060 ug/L	
4/12/22	4/13/22	Methiocarb	ND	0.060 ug/L	
4/12/22	4/13/22	Methomyl	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxyfenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Metrafenone	ND	0.060 ug/L	
4/12/22	4/13/22	Metribuzin	ND	0.060 ug/L	
4/12/22	4/13/22	Mevinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Monuron	ND	0.060 ug/L	
4/12/22	4/13/22	Neburon	ND	0.060 ug/L	
4/12/22	4/13/22	Norflurazon	ND	0.060 ug/L	
4/12/22	4/13/22	Novaluron	ND	0.060 ug/L	
4/12/22	4/13/22	Oryzalin	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadixyl	ND	0.060 ug/L	
4/12/22	4/13/22	Oxamyl	ND	0.060 ug/L	
4/12/22	4/13/22	Penoxsulam	ND	0.060 ug/L	

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Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Penthiopyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Phosalone	ND	0.060 ug/L	
4/12/22	4/13/22	Phosmet	ND	0.060 ug/L	
4/12/22	4/13/22	Phosphamidon	ND	0.060 ug/L	
4/12/22	4/13/22	Picoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Piperonyl Butoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimiphos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Prallethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Prometon	ND	0.060 ug/L	
4/12/22	4/13/22	Prometryn	ND	0.060 ug/L	
4/12/22	4/13/22	Propanil	ND	0.060 ug/L	
4/12/22	4/13/22	Propargite	ND	0.060 ug/L	
4/12/22	4/13/22	Propazine	ND	0.060 ug/L	
4/12/22	4/13/22	Propiconazole	ND	0.12 ug/L	
4/12/22	4/13/22	Propoxur	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraclostrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraflufen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Pyridaben	ND	0.060 ug/L	
4/12/22	4/13/22	Pyridalyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrimethanil	ND	0.060 ug/L	
4/12/22	4/13/22	Pyroxasulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Rotenone	ND	0.060 ug/L	
4/12/22	4/13/22	Saflufenacil	ND	0.060 ug/L	
4/12/22	4/13/22	Sethoxydim	ND	0.12 ug/L	
4/12/22	4/13/22	Siduron	ND	0.060 ug/L	
4/12/22	4/13/22	Simazine	ND	0.060 ug/L	
4/12/22	4/13/22	Simetryn	ND	0.060 ug/L	
4/12/22	4/13/22	Spinetoram	ND	0.060 ug/L	

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-CCUB-04052022
Matrix: water

PAL Sample ID: P220410-04
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Spinosad	ND	0.060 ug/L	
4/12/22	4/13/22	Spiromesifen	ND	0.12 ug/L	
4/12/22	4/13/22	Spirotetramat	ND	0.060 ug/L	
4/12/22	4/13/22	Spiroxamine	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfentrazone	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfoxaflor	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tebufenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuthiuron	ND	0.060 ug/L	
4/12/22	4/13/22	Terbacil	ND	0.060 ug/L	
4/12/22	4/13/22	Terbuthylazine	ND	0.060 ug/L	
4/12/22	4/13/22	Terbutryn	ND	0.060 ug/L	
4/12/22	4/13/22	Thiabendazole	ND	0.060 ug/L	
4/12/22	4/13/22	Thiacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Thiamethoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Thiencarbazone-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Thiobencarb	ND	0.060 ug/L	
4/12/22	4/13/22	Thiodicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Tolfenpyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimefon	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimenol	ND	0.12 ug/L	
4/12/22	4/13/22	Triallate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/12/22	4/13/22	Triflumizole	ND	0.060 ug/L	
4/12/22	4/13/22	Trinexapac-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 89 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04052022-FD
Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/12/22	4/13/22	a-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Acetochlor	ND	0.060 ug/L	
4/12/22	4/13/22	Alachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Aldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametryn	ND	0.060 ug/L	
4/12/22	4/13/22	Aspon	ND	0.060 ug/L	
4/12/22	4/13/22	b-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Benfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Bifenthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Bolstar	ND	0.060 ug/L	
4/12/22	4/13/22	Bromopropylate	ND	0.060 ug/L	
4/12/22	4/13/22	Buprofezin	ND	0.060 ug/L	
4/12/22	4/13/22	Captan	ND	0.60 ug/L	
4/12/22	4/13/22	Chlordane	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenapyr	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorfenvinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorobenzilate	ND	0.060 ug/L	
4/12/22	4/13/22	Chloroneb	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpropham	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	cis-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Cyfluthrin	ND	0.30 ug/L	
4/12/22	4/13/22	Cypermethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Dacthal	ND	0.060 ug/L	
4/12/22	4/13/22	d-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Deltamethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Demeton	ND	0.060 ug/L	
4/12/22	4/13/22	Diazinon	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlobenil	ND	0.060 ug/L	
4/12/22	4/13/22	Dichlorofenthion	ND	0.060 ug/L	

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Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04052022-FD
Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Dichlorvos	ND	0.060 ug/L	
4/12/22	4/13/22	Diclofop-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Dicloran	ND	0.30 ug/L	
4/12/22	4/13/22	Dicofol	ND	0.060 ug/L	
4/12/22	4/13/22	Dieldrin	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Diphenylamine	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton	ND	0.060 ug/L	
4/12/22	4/13/22	Dithiopyr	ND	0.060 ug/L	
4/12/22	4/13/22	Endosulfan I	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan II	ND	0.12 ug/L	
4/12/22	4/13/22	Endosulfan sulfate	ND	0.12 ug/L	
4/12/22	4/13/22	Endrin	ND	0.060 ug/L	
4/12/22	4/13/22	Endrin ketone	ND	0.060 ug/L	
4/12/22	4/13/22	EPN	ND	0.060 ug/L	
4/12/22	4/13/22	EPTC	ND	0.060 ug/L	
4/12/22	4/13/22	Esfenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethalfluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethofumesate	ND	0.060 ug/L	
4/12/22	4/13/22	Ethoprop	ND	0.060 ug/L	
4/12/22	4/13/22	Etoxazole	ND	0.060 ug/L	
4/12/22	4/13/22	Etridiazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenarimol	ND	0.060 ug/L	
4/12/22	4/13/22	Fenitrothion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxaprop-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fenthion	ND	0.060 ug/L	
4/12/22	4/13/22	Fenvalerate	ND	0.060 ug/L	
4/12/22	4/13/22	Fipronil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazifop-p-butyl	ND	0.060 ug/L	
4/12/22	4/13/22	Fludioxonil	ND	0.060 ug/L	
4/12/22	4/13/22	Fluroxypyr-meptyl	ND	0.060 ug/L	
4/12/22	4/13/22	Flutolanil	ND	0.060 ug/L	

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Analytical Report

Client Sample ID: GRMW-GR82-04052022-FD
Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	g-BHC	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Heptachlor epoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Hexachlorobenzene	ND	0.060 ug/L	
4/12/22	4/13/22	Kresoxim-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Leptophos	ND	0.060 ug/L	
4/12/22	4/13/22	Malathion	ND	0.060 ug/L	
4/12/22	4/13/22	Mefenoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxychlor	ND	0.060 ug/L	
4/12/22	4/13/22	Metolachlor	ND	0.060 ug/L	
4/12/22	4/13/22	MGK-264	ND	0.060 ug/L	
4/12/22	4/13/22	Myclobutanil	ND	0.060 ug/L	
4/12/22	4/13/22	Napropamide	ND	0.060 ug/L	
4/12/22	4/13/22	o-Phenylphenol	ND	0.060 ug/L	
4/12/22	4/13/22	Ovex	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadiazon	ND	0.060 ug/L	
4/12/22	4/13/22	Oxyfluorfen	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDD	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDE	ND	0.060 ug/L	
4/12/22	4/13/22	p,p'-DDT	ND	0.060 ug/L	
4/12/22	4/13/22	Paclobutrazol	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion	ND	0.060 ug/L	
4/12/22	4/13/22	Parathion-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	PCA	ND	0.060 ug/L	
4/12/22	4/13/22	PCB	ND	0.060 ug/L	
4/12/22	4/13/22	PCNB	ND	0.060 ug/L	
4/12/22	4/13/22	Pendimethalin	ND	0.060 ug/L	
4/12/22	4/13/22	Pentachlorothioanisole	ND	0.060 ug/L	
4/12/22	4/13/22	Permethrin	ND	0.12 ug/L	
4/12/22	4/13/22	Phorate	ND	0.060 ug/L	
4/12/22	4/13/22	Procymidone	ND	0.060 ug/L	
4/12/22	4/13/22	Prodiamine	ND	0.060 ug/L	

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Analytical Report

Client Sample ID: GRMW-GR82-04052022-FD
Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Pronamide	ND	0.060 ug/L	
4/12/22	4/13/22	Propachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Pyriproxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Quinoxyfen	ND	0.060 ug/L	
4/12/22	4/13/22	Ronnel	ND	0.060 ug/L	
4/12/22	4/13/22	Spirodiclofen	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfotep	ND	0.060 ug/L	
4/12/22	4/13/22	Tefluthrin	ND	0.060 ug/L	
4/12/22	4/13/22	Terbufos	ND	0.060 ug/L	
4/12/22	4/13/22	Tetraconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tetradifon	ND	0.060 ug/L	
4/12/22	4/13/22	Thionazin	ND	0.060 ug/L	
4/12/22	4/13/22	Tokuthion	ND	0.060 ug/L	
4/12/22	4/13/22	trans-Nonachlor	ND	0.060 ug/L	
4/12/22	4/13/22	Trichloronate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifluralin	ND	0.060 ug/L	
4/12/22	4/13/22	Vinclozalin	ND	0.060 ug/L	

Surrogate Recovery: 99 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

4/12/22	4/13/22	Abamectin	ND	0.060 ug/L	
4/12/22	4/13/22	Acetamiprid	ND	0.060 ug/L	
4/12/22	4/13/22	Acibenzolar-S-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Afidopyropen	ND	0.060 ug/L	
4/12/22	4/13/22	Aldicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Allethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ametoctradin	ND	0.060 ug/L	
4/12/22	4/13/22	Atrazine	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Azinphos-methyl	ND	0.12 ug/L	
4/12/22	4/13/22	Azoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Bendiocarb	ND	0.060 ug/L	

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04052022-FD
Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Bensulide	ND	0.060 ug/L	
4/12/22	4/13/22	Bicyclopyrone	ND	0.060 ug/L	
4/12/22	4/13/22	Bitertanol	ND	0.060 ug/L	
4/12/22	4/13/22	Boscalid	ND	0.060 ug/L	
4/12/22	4/13/22	Bromacil	ND	0.060 ug/L	
4/12/22	4/13/22	Carbaryl	ND	0.060 ug/L	
4/12/22	4/13/22	Carbendazim	ND	0.060 ug/L	
4/12/22	4/13/22	Carbofuran	ND	0.060 ug/L	
4/12/22	4/13/22	Carfentrazone-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Chlorantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Clethodim	ND	0.12 ug/L	
4/12/22	4/13/22	Clofentezine	ND	0.060 ug/L	
4/12/22	4/13/22	Clomazone	ND	0.060 ug/L	
4/12/22	4/13/22	Cyanazine	ND	0.060 ug/L	
4/12/22	4/13/22	Cyantraniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cyazofamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyclaniliprole	ND	0.060 ug/L	
4/12/22	4/13/22	Cycloate	ND	0.12 ug/L	
4/12/22	4/13/22	Cyflufenamid	ND	0.060 ug/L	
4/12/22	4/13/22	Cyflumetofen	ND	0.060 ug/L	
4/12/22	4/13/22	Cyhalofop-butyl	ND	0.12 ug/L	
4/12/22	4/13/22	Cymoxanil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprodinil	ND	0.060 ug/L	
4/12/22	4/13/22	Cyprosulfamide	ND	0.060 ug/L	
4/12/22	4/13/22	DCPMU	ND	0.060 ug/L	
4/12/22	4/13/22	Diazoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Difenoconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Diflubenzuron	ND	0.060 ug/L	
4/12/22	4/13/22	Diflufenican	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethoate	ND	0.060 ug/L	
4/12/22	4/13/22	Dimethomorph	ND	0.060 ug/L	
4/12/22	4/13/22	Dioxathion	ND	0.060 ug/L	
4/12/22	4/13/22	Disulfoton sulfone	ND	0.060 ug/L	

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Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04052022-FD
Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Diuron	ND	0.060 ug/L	
4/12/22	4/13/22	d-Phenothrin	ND	0.060 ug/L	
4/12/22	4/13/22	Ethion	ND	0.060 ug/L	
4/12/22	4/13/22	Etofenprox	ND	0.060 ug/L	
4/12/22	4/13/22	Famoxadone	ND	0.060 ug/L	
4/12/22	4/13/22	Famphur	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamidone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Fenamiphos sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenazaquin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Fenbutatin oxide	ND	0.060 ug/L	
4/12/22	4/13/22	Fenhexamid	ND	0.060 ug/L	
4/12/22	4/13/22	Fenobucarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenoxycarb	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpropathrin	ND	0.060 ug/L	
4/12/22	4/13/22	Fenpyroximate	ND	0.060 ug/L	
4/12/22	4/13/22	Fenuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluazinam	ND	0.060 ug/L	
4/12/22	4/13/22	Flubendiamide	ND	0.12 ug/L	
4/12/22	4/13/22	Flufenacet	ND	0.060 ug/L	
4/12/22	4/13/22	Flumioxazin	ND	0.060 ug/L	
4/12/22	4/13/22	Fluometuron	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopicolide	ND	0.060 ug/L	
4/12/22	4/13/22	Fluopyram	ND	0.060 ug/L	
4/12/22	4/13/22	Fluoxastrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Flupyradifurone	ND	0.060 ug/L	
4/12/22	4/13/22	Fluridone	ND	0.060 ug/L	
4/12/22	4/13/22	Flutianil	ND	0.060 ug/L	
4/12/22	4/13/22	Flutriafol	ND	0.060 ug/L	
4/12/22	4/13/22	Fluvalinate	ND	0.060 ug/L	
4/12/22	4/13/22	Fluxapyroxad	ND	0.060 ug/L	
4/12/22	4/13/22	Fonofos	ND	0.12 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Analytical Report

Client Sample ID: GRMW-GR82-04052022-FD
Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Hexaconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Hexazinone	ND	0.060 ug/L	
4/12/22	4/13/22	Hexythiazox	ND	0.060 ug/L	
4/12/22	4/13/22	Imazalil	ND	0.060 ug/L	
4/12/22	4/13/22	Imidacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Indaziflam	ND	0.060 ug/L	
4/12/22	4/13/22	Indoxacarb	ND	0.060 ug/L	
4/12/22	4/13/22	Iodosulfuron-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Ipconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Iprodione	ND	0.30 ug/L	
4/12/22	4/13/22	Isofetamid	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxaben	ND	0.060 ug/L	
4/12/22	4/13/22	Isoxadifen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Lactofen	ND	0.060 ug/L	
4/12/22	4/13/22	Linuron	ND	0.060 ug/L	
4/12/22	4/13/22	Malaoxon	ND	0.060 ug/L	
4/12/22	4/13/22	Mandipropamid	ND	0.060 ug/L	
4/12/22	4/13/22	Metconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Methidathion	ND	0.060 ug/L	
4/12/22	4/13/22	Methiocarb	ND	0.060 ug/L	
4/12/22	4/13/22	Methomyl	ND	0.060 ug/L	
4/12/22	4/13/22	Methoxyfenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Metrafenone	ND	0.060 ug/L	
4/12/22	4/13/22	Metribuzin	ND	0.060 ug/L	
4/12/22	4/13/22	Mevinphos	ND	0.060 ug/L	
4/12/22	4/13/22	Monuron	ND	0.060 ug/L	
4/12/22	4/13/22	Neburon	ND	0.060 ug/L	
4/12/22	4/13/22	Norflurazon	ND	0.060 ug/L	
4/12/22	4/13/22	Novaluron	ND	0.060 ug/L	
4/12/22	4/13/22	Oryzalin	ND	0.060 ug/L	
4/12/22	4/13/22	Oxadixyl	ND	0.060 ug/L	
4/12/22	4/13/22	Oxamyl	ND	0.060 ug/L	
4/12/22	4/13/22	Penoxsulam	ND	0.060 ug/L	

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Analytical Report

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Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Penthiopyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Phorate Sulfoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Phosalone	ND	0.060 ug/L	
4/12/22	4/13/22	Phosmet	ND	0.060 ug/L	
4/12/22	4/13/22	Phosphamidon	ND	0.060 ug/L	
4/12/22	4/13/22	Picoxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Piperonyl Butoxide	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Pirimiphos-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Prallethrin	ND	0.060 ug/L	
4/12/22	4/13/22	Prometon	ND	0.060 ug/L	
4/12/22	4/13/22	Prometryn	ND	0.060 ug/L	
4/12/22	4/13/22	Propanil	ND	0.060 ug/L	
4/12/22	4/13/22	Propargite	ND	0.060 ug/L	
4/12/22	4/13/22	Propazine	ND	0.060 ug/L	
4/12/22	4/13/22	Propiconazole	ND	0.12 ug/L	
4/12/22	4/13/22	Propoxur	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraclostrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Pyraflufen-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrethrin	ND	0.30 ug/L	
4/12/22	4/13/22	Pyridaben	ND	0.060 ug/L	
4/12/22	4/13/22	Pyridalyl	ND	0.060 ug/L	
4/12/22	4/13/22	Pyrimethanil	ND	0.060 ug/L	
4/12/22	4/13/22	Pyroxasulfone	ND	0.060 ug/L	
4/12/22	4/13/22	Quizalofop-p-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Rotenone	ND	0.060 ug/L	
4/12/22	4/13/22	Saflufenacil	ND	0.060 ug/L	
4/12/22	4/13/22	Sethoxydim	ND	0.12 ug/L	
4/12/22	4/13/22	Siduron	ND	0.060 ug/L	
4/12/22	4/13/22	Simazine	ND	0.060 ug/L	
4/12/22	4/13/22	Simetryn	ND	0.060 ug/L	
4/12/22	4/13/22	Spinetoram	ND	0.060 ug/L	

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Analytical Report

Client Sample ID: GRMW-GR82-04052022-FD
Matrix: water

PAL Sample ID: P220410-05
Sample Date: 4/5/22
Received Date: 4/8/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/12/22	4/13/22	Spinosad	ND	0.060 ug/L	
4/12/22	4/13/22	Spiromesifen	ND	0.12 ug/L	
4/12/22	4/13/22	Spirotetramat	ND	0.060 ug/L	
4/12/22	4/13/22	Spiroxamine	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfentrazone	ND	0.060 ug/L	
4/12/22	4/13/22	Sulfoxaflor	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuconazole	ND	0.060 ug/L	
4/12/22	4/13/22	Tebufenozide	ND	0.060 ug/L	
4/12/22	4/13/22	Tebuthiuron	ND	0.060 ug/L	
4/12/22	4/13/22	Terbacil	ND	0.060 ug/L	
4/12/22	4/13/22	Terbuthylazine	ND	0.060 ug/L	
4/12/22	4/13/22	Terbutryn	ND	0.060 ug/L	
4/12/22	4/13/22	Thiabendazole	ND	0.060 ug/L	
4/12/22	4/13/22	Thiacloprid	ND	0.060 ug/L	
4/12/22	4/13/22	Thiamethoxam	ND	0.060 ug/L	
4/12/22	4/13/22	Thiencarbazone-methyl	ND	0.060 ug/L	
4/12/22	4/13/22	Thiobencarb	ND	0.060 ug/L	
4/12/22	4/13/22	Thiodicarb	ND	0.060 ug/L	
4/12/22	4/13/22	Tolfenpyrad	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimefon	ND	0.060 ug/L	
4/12/22	4/13/22	Triadimenol	ND	0.12 ug/L	
4/12/22	4/13/22	Triallate	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxystrobin	ND	0.060 ug/L	
4/12/22	4/13/22	Trifloxysulfuron-sodium	ND	0.060 ug/L	
4/12/22	4/13/22	Triflumizole	ND	0.060 ug/L	
4/12/22	4/13/22	Trinexapac-ethyl	ND	0.060 ug/L	
4/12/22	4/13/22	Triticonazole	ND	0.060 ug/L	

Surrogate Recovery: 88 %
Surrogate Recovery Range: 69-120
(TPP-d15 used as Surrogate)

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Report Date: April 22, 2022
Client Project ID: 81-54

Quality Assurance

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BLK1	Abamectin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	a-BHC	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Acetamiprid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Acetochlor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Acibenzolar-S-methyl	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Afidopyropen	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Alachlor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Aldicarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Aldrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Allethrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Ametoctradin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Ametryn	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Aspon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Atrazine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Azinphos-ethyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Azinphos-methyl	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Azoxystrobin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	b-BHC	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Bendiocarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Benfluralin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Bensulide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Bicyclopyrone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Bifenthrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Bitertanol	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Bolstar	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Boscalid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Bromacil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Bromopropylate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Buprofezin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Captan	Not Detected	< 0.60 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Carbaryl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Carbendazim	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Carbofuran	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Carfentrazone-ethyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Chlorantraniliprole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Chlordane	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Chlorfenapyr	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Chlorfenvinphos	Not Detected	< 0.060 ug/L	

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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BLK1	Chlorobenzilate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Chloroneb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Chlorpropham	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Chlorpyrifos	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Chlorpyrifos-methyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	cis-Nonachlor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Clethodim	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Clofentezine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Clomazone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyanazine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyantraniliprole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyazofamid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyclaniliprole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cycloate	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyflufenamid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyflumetofen	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyfluthrin	Not Detected	< 0.30 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyhalofop-butyl	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cymoxanil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cypermethrin	Not Detected	< 0.30 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyprodinil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Cyprosulfamide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dacthal	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	d-BHC	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	DCPMU	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Deltamethrin	Not Detected	< 0.30 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Demeton	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Diazinon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Diazoxon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dichlobenil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dichlorofenthion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dichlorvos	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Diclofop-methyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dicloran	Not Detected	< 0.30 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dicofol	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dieldrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Difenoconazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Diflubenzuron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Diflufenican	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dimethenamid	Not Detected	< 0.060 ug/L	

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Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BLK1	Dimethoate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dimethomorph	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dioxathion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Diphenamid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Diphenylamine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Disulfoton	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Disulfoton sulfone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Dithiopyr	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Diuron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	d-Phenothrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Endosulfan I	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Endosulfan II	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Endosulfan sulfate	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Endrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Endrin ketone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	EPN	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	EPTC	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Esfenvalerate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Ethalfluralin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Ethion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Ethofumesate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Ethoprop	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Etofenprox	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Etoxazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Etridiazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Famoxadone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Famphur	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenamidone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenamiphos sulfone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenamiphos sulfoxide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenarimol	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenazaquin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenbuconazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenbutatin oxide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenhexamid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenitrothion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenobucarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenoxaprop-ethyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenoxycarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenpropathrin	Not Detected	< 0.060 ug/L	

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BLK1	Fenpyroximate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenthion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenuron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fenvalerate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fipronil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluazifop-p-butyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluazinam	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Flubendiamide	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fludioxonil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Flufenacet	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Flumioxazin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluometuron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluopicolide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluopyram	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluoxastrobin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Flupyradifurone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluridone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluroxypyr-meptyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Flutianil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Flutolanil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Flutriafol	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluvalinate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fluxapyroxad	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Fonofos	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	g-BHC	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Heptachlor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Heptachlor epoxide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Hexachlorobenzene	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Hexaconazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Hexazinone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Hexythiazox	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Imazalil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Imidacloprid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Indaziflam	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Indoxacarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Iodosulfuron-methyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Ipconazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Iprodione	Not Detected	< 0.30 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Isofetamid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Isoxaben	Not Detected	< 0.060 ug/L	

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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BLK1	Isoxadifen-ethyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Kresoxim-methyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Lactofen	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	lambda-Cyhalothrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Leptophos	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Linuron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Malaoxon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Malathion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Mandipropamid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Mefenoxam	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Metconazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Methidathion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Methiocarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Methomyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Methoxychlor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Methoxyfenozide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Metolachlor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Metrafenone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Metribuzin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Mevinphos	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	MGK-264	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Monuron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Myclobutanil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Napropamide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Neburon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Norflurazon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Novaluron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	o-Phenylphenol	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Oryzalin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Ovex	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Oxadiazon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Oxadixyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Oxamyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Oxyfluorfen	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	p,p'-DDD	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	p,p'-DDE	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	p,p'-DDT	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Paclobutrazol	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Parathion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Parathion-methyl	Not Detected	< 0.060 ug/L	

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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BLK1	PCA	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	PCB	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	PCNB	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pendimethalin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Penoxsulam	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pentachlorothioanisole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Penthiopyrad	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Permethrin	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Phorate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Phorate Sulfone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Phorate Sulfoxide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Phosalone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Phosmet	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Phosphamidon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Picoxystrobin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Piperonyl Butoxide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pirimicarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pirimiphos-methyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Prallethrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Procymidone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Prodiamine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Prometon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Prometryn	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pronamide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Propachlor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Propanil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Propargite	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Propazine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Propiconazole	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Propoxur	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pyraclostrobin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pyraflufen-ethyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pyrethrin	Not Detected	< 0.30 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pyridaben	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pyridalyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pyrimethanil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pyriproxyfen	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Pyroxasulfone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Quinoxyfen	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Quizalofop-p-ethyl	Not Detected	< 0.060 ug/L	

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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BLK1	Ronnel	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Rotenone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Saflufenacil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Sethoxydim	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Siduron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Simazine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Simetryn	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Spinetoram	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Spinosad	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Spirodiclofen	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Spiromesifen	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Spirotetramat	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Spiroxamine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Sulfentrazone	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Sulfotep	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Sulfoxaflor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Tebuconazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Tebufenozide	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Tebuthiuron	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Tefluthrin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Terbacil	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Terbufos	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Terbuthylazine	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Terbutryn	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Tetraconazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Tetradifon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Thiabendazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Thiacloprid	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Thiamethoxam	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Thiencarbazone-methyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Thiobencarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Thiodicarb	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Thionazin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Tokuthion	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Tolfenpyrad	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	trans-Nonachlor	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Triadimefon	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Triadimenol	Not Detected	< 0.12 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Triallate	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Trichloronate	Not Detected	< 0.060 ug/L	

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Client Project ID: 81-54

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BLK1	Trifloxystrobin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Trifloxysulfuron-sodium	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Triflumizole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Trifluralin	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Trinexapac-ethyl	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Triticonazole	Not Detected	< 0.060 ug/L	
4/12/22	4/13/22	22D1201-BLK1	Vinclozalin	Not Detected	< 0.060 ug/L	

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Rick Jordan, Laboratory Director

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Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BS1	Abamectin	108	61-131	
4/12/22	4/13/22	22D1201-BSD1	Abamectin	112	61-131	
4/12/22	4/13/22	22D1201-BS1	a-BHC	90	65-111	
4/12/22	4/13/22	22D1201-BSD1	a-BHC	92	65-111	
4/12/22	4/13/22	22D1201-BS1	Acetamiprid	91	67-117	
4/12/22	4/13/22	22D1201-BSD1	Acetamiprid	94	67-117	
4/12/22	4/13/22	22D1201-BS1	Acibenzolar-S-methyl	86	60-115	
4/12/22	4/13/22	22D1201-BSD1	Acibenzolar-S-methyl	100	60-115	
4/12/22	4/13/22	22D1201-BS1	Alachlor	95	67-122	
4/12/22	4/13/22	22D1201-BSD1	Alachlor	100	67-122	
4/12/22	4/13/22	22D1201-BS1	Aldrin	85	44-118	
4/12/22	4/13/22	22D1201-BSD1	Aldrin	87	44-118	
4/12/22	4/13/22	22D1201-BS1	Allethrin	92	65-113	
4/12/22	4/13/22	22D1201-BSD1	Allethrin	95	65-113	
4/12/22	4/13/22	22D1201-BS1	Ametoctradin	92	65-119	
4/12/22	4/13/22	22D1201-BSD1	Ametoctradin	94	65-119	
4/12/22	4/13/22	22D1201-BS1	Azoxystrobin	89	62-121	
4/12/22	4/13/22	22D1201-BSD1	Azoxystrobin	95	62-121	
4/12/22	4/13/22	22D1201-BS1	b-BHC	93	66-114	
4/12/22	4/13/22	22D1201-BSD1	b-BHC	97	66-114	
4/12/22	4/13/22	22D1201-BS1	Bendiocarb	95	81-109	
4/12/22	4/13/22	22D1201-BSD1	Bendiocarb	95	81-109	
4/12/22	4/13/22	22D1201-BS1	Benfluralin	90	67-122	
4/12/22	4/13/22	22D1201-BSD1	Benfluralin	94	67-122	
4/12/22	4/13/22	22D1201-BS1	Bensulide	90	70-118	
4/12/22	4/13/22	22D1201-BSD1	Bensulide	95	70-118	
4/12/22	4/13/22	22D1201-BS1	Bifenthrin	100	63-142	
4/12/22	4/13/22	22D1201-BSD1	Bifenthrin	101	63-142	
4/12/22	4/13/22	22D1201-BS1	Bitertanol	90	71-115	
4/12/22	4/13/22	22D1201-BSD1	Bitertanol	89	71-115	
4/12/22	4/13/22	22D1201-BS1	Boscalid	94	80-113	
4/12/22	4/13/22	22D1201-BSD1	Boscalid	99	80-113	
4/12/22	4/13/22	22D1201-BS1	Bromacil	101	71-121	
4/12/22	4/13/22	22D1201-BSD1	Bromacil	103	71-121	
4/12/22	4/13/22	22D1201-BS1	Bromopropylate	92	61-130	
4/12/22	4/13/22	22D1201-BSD1	Bromopropylate	97	61-130	
4/12/22	4/13/22	22D1201-BS1	Buprofezin	94	70-134	
4/12/22	4/13/22	22D1201-BSD1	Buprofezin	95	70-134	
4/12/22	4/13/22	22D1201-BS1	Captan	110	25-143	
4/12/22	4/13/22	22D1201-BSD1	Captan	111	25-143	
4/12/22	4/13/22	22D1201-BS1	Carbendazim	76	30-121	
4/12/22	4/13/22	22D1201-BSD1	Carbendazim	78	30-121	
4/12/22	4/13/22	22D1201-BS1	Carfentrazone-ethyl	93	72-114	

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Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BSD1	Carfentrazone-ethyl	94	72-114	
4/12/22	4/13/22	22D1201-BS1	Chlorantraniliprole	91	70-115	
4/12/22	4/13/22	22D1201-BSD1	Chlorantraniliprole	92	70-115	
4/12/22	4/13/22	22D1201-BS1	Chlordane	92	71-113	
4/12/22	4/13/22	22D1201-BSD1	Chlordane	95	71-113	
4/12/22	4/13/22	22D1201-BS1	Chlorobenzilate	95	60-140	
4/12/22	4/13/22	22D1201-BSD1	Chlorobenzilate	98	60-140	
4/12/22	4/13/22	22D1201-BS1	Chloroneb	84	62-111	
4/12/22	4/13/22	22D1201-BSD1	Chloroneb	90	62-111	
4/12/22	4/13/22	22D1201-BS1	Clethodim	100	53-134	
4/12/22	4/13/22	22D1201-BSD1	Clethodim	103	53-134	
4/12/22	4/13/22	22D1201-BS1	Clofentezine	75	54-115	
4/12/22	4/13/22	22D1201-BSD1	Clofentezine	78	54-115	
4/12/22	4/13/22	22D1201-BS1	Clomazone	89	60-140	
4/12/22	4/13/22	22D1201-BSD1	Clomazone	91	60-140	
4/12/22	4/13/22	22D1201-BS1	Cyantraniliprole	89	60-124	
4/12/22	4/13/22	22D1201-BSD1	Cyantraniliprole	88	60-124	
4/12/22	4/13/22	22D1201-BS1	Cyazofamid	98	68-123	
4/12/22	4/13/22	22D1201-BSD1	Cyazofamid	99	68-123	
4/12/22	4/13/22	22D1201-BS1	Cycloate	75	41-99	
4/12/22	4/13/22	22D1201-BSD1	Cycloate	85	41-99	
4/12/22	4/13/22	22D1201-BS1	Cyflufenamid	84	74-116	
4/12/22	4/13/22	22D1201-BSD1	Cyflufenamid	87	74-116	
4/12/22	4/13/22	22D1201-BS1	Cyflumetofen	94	60-123	
4/12/22	4/13/22	22D1201-BSD1	Cyflumetofen	96	60-123	
4/12/22	4/13/22	22D1201-BS1	Cyfluthrin	99	50-158	
4/12/22	4/13/22	22D1201-BSD1	Cyfluthrin	101	50-158	
4/12/22	4/13/22	22D1201-BS1	Cymoxanil	93	66-116	
4/12/22	4/13/22	22D1201-BSD1	Cymoxanil	96	66-116	
4/12/22	4/13/22	22D1201-BS1	Cypermethrin	101	48-163	
4/12/22	4/13/22	22D1201-BSD1	Cypermethrin	104	48-163	
4/12/22	4/13/22	22D1201-BS1	Cyprodinil	92	66-115	
4/12/22	4/13/22	22D1201-BSD1	Cyprodinil	95	66-115	
4/12/22	4/13/22	22D1201-BS1	Cyprosulfamide	93	60-140	
4/12/22	4/13/22	22D1201-BSD1	Cyprosulfamide	99	60-140	
4/12/22	4/13/22	22D1201-BS1	d-BHC	95	68-116	
4/12/22	4/13/22	22D1201-BSD1	d-BHC	100	68-116	
4/12/22	4/13/22	22D1201-BS1	DCPMU	88	70-113	
4/12/22	4/13/22	22D1201-BSD1	DCPMU	94	70-113	
4/12/22	4/13/22	22D1201-BS1	Diazoxon	92	60-140	
4/12/22	4/13/22	22D1201-BSD1	Diazoxon	96	60-140	
4/12/22	4/13/22	22D1201-BS1	Dichlobenil	85	60-111	
4/12/22	4/13/22	22D1201-BSD1	Dichlobenil	87	60-111	

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Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BS1	Diclofop-methyl	98	59-133	
4/12/22	4/13/22	22D1201-BSD1	Diclofop-methyl	102	59-133	
4/12/22	4/13/22	22D1201-BS1	Dicofol	95	70-129	
4/12/22	4/13/22	22D1201-BSD1	Dicofol	99	70-129	
4/12/22	4/13/22	22D1201-BS1	Dieldrin	92	41-136	
4/12/22	4/13/22	22D1201-BSD1	Dieldrin	97	41-136	
4/12/22	4/13/22	22D1201-BS1	Difenoconazole	91	70-119	
4/12/22	4/13/22	22D1201-BSD1	Difenoconazole	95	70-119	
4/12/22	4/13/22	22D1201-BS1	Diflubenzuron	88	71-116	
4/12/22	4/13/22	22D1201-BSD1	Diflubenzuron	92	71-116	
4/12/22	4/13/22	22D1201-BS1	Diflufenican	87	60-140	
4/12/22	4/13/22	22D1201-BSD1	Diflufenican	90	60-140	
4/12/22	4/13/22	22D1201-BS1	Dimethomorph	89	72-113	
4/12/22	4/13/22	22D1201-BSD1	Dimethomorph	89	72-113	
4/12/22	4/13/22	22D1201-BS1	Diphenylamine	90	67-120	
4/12/22	4/13/22	22D1201-BSD1	Diphenylamine	94	67-120	
4/12/22	4/13/22	22D1201-BS1	Disulfoton sulfone	95	71-119	
4/12/22	4/13/22	22D1201-BSD1	Disulfoton sulfone	98	71-119	
4/12/22	4/13/22	22D1201-BS1	Dithiopyr	95	59-129	
4/12/22	4/13/22	22D1201-BSD1	Dithiopyr	100	59-129	
4/12/22	4/13/22	22D1201-BS1	Diuron	96	62-128	
4/12/22	4/13/22	22D1201-BSD1	Diuron	101	62-128	
4/12/22	4/13/22	22D1201-BS1	d-Phenothrin	82	53-123	
4/12/22	4/13/22	22D1201-BSD1	d-Phenothrin	83	53-123	
4/12/22	4/13/22	22D1201-BS1	Endosulfan I	91	72-117	
4/12/22	4/13/22	22D1201-BSD1	Endosulfan I	95	72-117	
4/12/22	4/13/22	22D1201-BS1	Endosulfan II	95	59-119	
4/12/22	4/13/22	22D1201-BSD1	Endosulfan II	98	59-119	
4/12/22	4/13/22	22D1201-BS1	Endosulfan sulfate	93	68-128	
4/12/22	4/13/22	22D1201-BSD1	Endosulfan sulfate	96	68-128	
4/12/22	4/13/22	22D1201-BS1	Endrin	93	58-132	
4/12/22	4/13/22	22D1201-BSD1	Endrin	98	58-132	
4/12/22	4/13/22	22D1201-BS1	Endrin ketone	94	65-126	
4/12/22	4/13/22	22D1201-BSD1	Endrin ketone	96	65-126	
4/12/22	4/13/22	22D1201-BS1	EPTC	83	60-140	
4/12/22	4/13/22	22D1201-BSD1	EPTC	88	60-140	
4/12/22	4/13/22	22D1201-BS1	Esfenvalerate	66	36-154	
4/12/22	4/13/22	22D1201-BSD1	Esfenvalerate	66	36-154	
4/12/22	4/13/22	22D1201-BS1	Ethalfluralin	93	66-130	
4/12/22	4/13/22	22D1201-BSD1	Ethalfluralin	95	66-130	
4/12/22	4/13/22	22D1201-BS1	Etoxazole	95	64-137	
4/12/22	4/13/22	22D1201-BSD1	Etoxazole	99	64-137	
4/12/22	4/13/22	22D1201-BS1	Etridiazole	95	70-105	

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Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BSD1	Etridiazole	97	70-105	
4/12/22	4/13/22	22D1201-BS1	Famoxadone	92	74-116	
4/12/22	4/13/22	22D1201-BSD1	Famoxadone	97	74-116	
4/12/22	4/13/22	22D1201-BS1	Fenamidone	96	71-114	
4/12/22	4/13/22	22D1201-BSD1	Fenamidone	96	71-114	
4/12/22	4/13/22	22D1201-BS1	Fenamiphos sulfone	103	62-122	
4/12/22	4/13/22	22D1201-BSD1	Fenamiphos sulfone	102	62-122	
4/12/22	4/13/22	22D1201-BS1	Fenamiphos sulfoxide	92	70-119	
4/12/22	4/13/22	22D1201-BSD1	Fenamiphos sulfoxide	98	70-119	
4/12/22	4/13/22	22D1201-BS1	Fenarimol	97	70-125	
4/12/22	4/13/22	22D1201-BSD1	Fenarimol	99	70-125	
4/12/22	4/13/22	22D1201-BS1	Fenazaquin	96	72-115	
4/12/22	4/13/22	22D1201-BSD1	Fenazaquin	99	72-115	
4/12/22	4/13/22	22D1201-BS1	Fenbuconazole	70	71-118	
4/12/22	4/13/22	22D1201-BSD1	Fenbuconazole	78	71-118	
4/12/22	4/13/22	22D1201-BS1	Fenbutatin oxide	104	66-118	
4/12/22	4/13/22	22D1201-BSD1	Fenbutatin oxide	107	66-118	
4/12/22	4/13/22	22D1201-BS1	Fenhexamid	90	61-118	
4/12/22	4/13/22	22D1201-BSD1	Fenhexamid	87	61-118	
4/12/22	4/13/22	22D1201-BS1	Fenobucarb	93	66-114	
4/12/22	4/13/22	22D1201-BSD1	Fenobucarb	96	66-114	
4/12/22	4/13/22	22D1201-BS1	Fenoxaprop-ethyl	98	37-141	
4/12/22	4/13/22	22D1201-BSD1	Fenoxaprop-ethyl	103	37-141	
4/12/22	4/13/22	22D1201-BS1	Fenpropathrin	81	70-115	
4/12/22	4/13/22	22D1201-BSD1	Fenpropathrin	83	70-115	
4/12/22	4/13/22	22D1201-BS1	Fenpyroximate	85	71-114	
4/12/22	4/13/22	22D1201-BSD1	Fenpyroximate	88	71-114	
4/12/22	4/13/22	22D1201-BS1	Fenuron	87	60-115	
4/12/22	4/13/22	22D1201-BSD1	Fenuron	90	60-115	
4/12/22	4/13/22	22D1201-BS1	Fluazinam	91	64-115	
4/12/22	4/13/22	22D1201-BSD1	Fluazinam	95	64-115	
4/12/22	4/13/22	22D1201-BS1	Flubendiamide	94	63-135	
4/12/22	4/13/22	22D1201-BSD1	Flubendiamide	94	63-135	
4/12/22	4/13/22	22D1201-BS1	Fludioxonil	94	49-143	
4/12/22	4/13/22	22D1201-BSD1	Fludioxonil	100	49-143	
4/12/22	4/13/22	22D1201-BS1	Flufenacet	98	60-140	
4/12/22	4/13/22	22D1201-BSD1	Flufenacet	99	60-140	
4/12/22	4/13/22	22D1201-BS1	Flumioxazin	94	70-122	
4/12/22	4/13/22	22D1201-BSD1	Flumioxazin	94	70-122	
4/12/22	4/13/22	22D1201-BS1	Fluometuron	98	70-115	
4/12/22	4/13/22	22D1201-BSD1	Fluometuron	103	70-115	
4/12/22	4/13/22	22D1201-BS1	Fluopyram	93	73-114	
4/12/22	4/13/22	22D1201-BSD1	Fluopyram	96	73-114	

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Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BS1	Fluoxastrobin	87	73-115	
4/12/22	4/13/22	22D1201-BSD1	Fluoxastrobin	91	73-115	
4/12/22	4/13/22	22D1201-BS1	Flupyradifurone	90	64-117	
4/12/22	4/13/22	22D1201-BSD1	Flupyradifurone	96	64-117	
4/12/22	4/13/22	22D1201-BS1	Flutriafol	95	73-116	
4/12/22	4/13/22	22D1201-BSD1	Flutriafol	98	73-116	
4/12/22	4/13/22	22D1201-BS1	Fluxapyroxad	96	72-117	
4/12/22	4/13/22	22D1201-BSD1	Fluxapyroxad	95	72-117	
4/12/22	4/13/22	22D1201-BS1	g-BHC	92	71-117	
4/12/22	4/13/22	22D1201-BSD1	g-BHC	96	71-117	
4/12/22	4/13/22	22D1201-BS1	Heptachlor	86	33-132	
4/12/22	4/13/22	22D1201-BSD1	Heptachlor	90	33-132	
4/12/22	4/13/22	22D1201-BS1	Heptachlor epoxide	94	64-123	
4/12/22	4/13/22	22D1201-BSD1	Heptachlor epoxide	99	64-123	
4/12/22	4/13/22	22D1201-BS1	Hexythiazox	98	73-115	
4/12/22	4/13/22	22D1201-BSD1	Hexythiazox	102	73-115	
4/12/22	4/13/22	22D1201-BS1	Imazalil	90	58-112	
4/12/22	4/13/22	22D1201-BSD1	Imazalil	95	58-112	
4/12/22	4/13/22	22D1201-BS1	Indaziflam	95	69-113	
4/12/22	4/13/22	22D1201-BSD1	Indaziflam	100	69-113	
4/12/22	4/13/22	22D1201-BS1	Iodosulfuron-methyl	79	60-140	
4/12/22	4/13/22	22D1201-BSD1	Iodosulfuron-methyl	84	60-140	
4/12/22	4/13/22	22D1201-BS1	Iprodione	107	62-132	
4/12/22	4/13/22	22D1201-BSD1	Iprodione	104	62-132	
4/12/22	4/13/22	22D1201-BS1	Isoxaben	90	73-115	
4/12/22	4/13/22	22D1201-BSD1	Isoxaben	92	73-115	
4/12/22	4/13/22	22D1201-BS1	Isoxadifen-ethyl	85	60-140	
4/12/22	4/13/22	22D1201-BSD1	Isoxadifen-ethyl	98	60-140	
4/12/22	4/13/22	22D1201-BS1	Kresoxim-methyl	98	70-131	
4/12/22	4/13/22	22D1201-BSD1	Kresoxim-methyl	99	70-131	
4/12/22	4/13/22	22D1201-BS1	Lactofen	86	60-140	
4/12/22	4/13/22	22D1201-BSD1	Lactofen	88	60-140	
4/12/22	4/13/22	22D1201-BS1	lambda-Cyhalothrin	97	61-141	
4/12/22	4/13/22	22D1201-BSD1	lambda-Cyhalothrin	98	61-141	
4/12/22	4/13/22	22D1201-BS1	Mefenoxam	97	69-130	
4/12/22	4/13/22	22D1201-BSD1	Mefenoxam	98	69-130	
4/12/22	4/13/22	22D1201-BS1	Methidathion	90	71-114	
4/12/22	4/13/22	22D1201-BSD1	Methidathion	92	71-114	
4/12/22	4/13/22	22D1201-BS1	Methoxychlor	100	57-135	
4/12/22	4/13/22	22D1201-BSD1	Methoxychlor	104	57-135	
4/12/22	4/13/22	22D1201-BS1	Monuron	92	60-140	
4/12/22	4/13/22	22D1201-BSD1	Monuron	98	60-140	
4/12/22	4/13/22	22D1201-BS1	Myclobutanil	95	61-141	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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21830 S.W. Alexander Ln
Sherwood, OR 97140

Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BSD1	Myclobutanil	99	61-141	
4/12/22	4/13/22	22D1201-BS1	Neburon	95	60-140	
4/12/22	4/13/22	22D1201-BSD1	Neburon	101	60-140	
4/12/22	4/13/22	22D1201-BS1	o-Phenylphenol	92	57-124	
4/12/22	4/13/22	22D1201-BSD1	o-Phenylphenol	94	57-124	
4/12/22	4/13/22	22D1201-BS1	Oxadiazon	93	73-127	
4/12/22	4/13/22	22D1201-BSD1	Oxadiazon	100	73-127	
4/12/22	4/13/22	22D1201-BS1	p,p'-DDD	95	65-132	
4/12/22	4/13/22	22D1201-BSD1	p,p'-DDD	97	65-132	
4/12/22	4/13/22	22D1201-BS1	p,p'-DDE	92	71-121	
4/12/22	4/13/22	22D1201-BSD1	p,p'-DDE	94	71-121	
4/12/22	4/13/22	22D1201-BS1	p,p'-DDT	98	64-128	
4/12/22	4/13/22	22D1201-BSD1	p,p'-DDT	100	64-128	
4/12/22	4/13/22	22D1201-BS1	Paclobutrazol	95	60-140	
4/12/22	4/13/22	22D1201-BSD1	Paclobutrazol	99	60-140	
4/12/22	4/13/22	22D1201-BS1	Permethrin	99	62-146	
4/12/22	4/13/22	22D1201-BSD1	Permethrin	95	62-146	
4/12/22	4/13/22	22D1201-BS1	Picoxystrobin	91	60-140	
4/12/22	4/13/22	22D1201-BSD1	Picoxystrobin	94	60-140	
4/12/22	4/13/22	22D1201-BS1	Pirimicarb	90	65-115	
4/12/22	4/13/22	22D1201-BSD1	Pirimicarb	90	65-115	
4/12/22	4/13/22	22D1201-BS1	Prodiamine	93	58-133	
4/12/22	4/13/22	22D1201-BSD1	Prodiamine	100	58-133	
4/12/22	4/13/22	22D1201-BS1	Propachlor	97	67-117	
4/12/22	4/13/22	22D1201-BSD1	Propachlor	98	67-117	
4/12/22	4/13/22	22D1201-BS1	Propargite	91	73-115	
4/12/22	4/13/22	22D1201-BSD1	Propargite	93	73-115	
4/12/22	4/13/22	22D1201-BS1	Pyraflufen-ethyl	85	71-118	
4/12/22	4/13/22	22D1201-BSD1	Pyraflufen-ethyl	88	71-118	
4/12/22	4/13/22	22D1201-BS1	Pyridaben	90	72-115	
4/12/22	4/13/22	22D1201-BSD1	Pyridaben	93	72-115	
4/12/22	4/13/22	22D1201-BS1	Pyridalyl	106	60-140	
4/12/22	4/13/22	22D1201-BSD1	Pyridalyl	108	60-140	
4/12/22	4/13/22	22D1201-BS1	Pyriproxyfen	102	50-149	
4/12/22	4/13/22	22D1201-BSD1	Pyriproxyfen	105	50-149	
4/12/22	4/13/22	22D1201-BS1	Pyroxasulfone	97	60-140	
4/12/22	4/13/22	22D1201-BSD1	Pyroxasulfone	98	60-140	
4/12/22	4/13/22	22D1201-BS1	Quinoxyfen	95	63-132	
4/12/22	4/13/22	22D1201-BSD1	Quinoxyfen	97	63-132	
4/12/22	4/13/22	22D1201-BS1	Sethoxydim	93	60-123	
4/12/22	4/13/22	22D1201-BSD1	Sethoxydim	96	60-123	
4/12/22	4/13/22	22D1201-BS1	Siduron	95	72-118	
4/12/22	4/13/22	22D1201-BSD1	Siduron	99	72-118	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry and Associates, Inc.
1901 N. Fir Street
La Grande, OR 97850

Report Number: P220410
Report Date: April 22, 2022
Client Project ID: 81-54

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/12/22	4/13/22	22D1201-BS1	Spirodiclofen	97	57-136	
4/12/22	4/13/22	22D1201-BSD1	Spirodiclofen	100	57-136	
4/12/22	4/13/22	22D1201-BS1	Spiromesifen	86	65-118	
4/12/22	4/13/22	22D1201-BSD1	Spiromesifen	97	65-118	
4/12/22	4/13/22	22D1201-BS1	Sulfoxaflor	91	67-116	
4/12/22	4/13/22	22D1201-BSD1	Sulfoxaflor	93	67-116	
4/12/22	4/13/22	22D1201-BS1	Tebuconazole	90	73-117	
4/12/22	4/13/22	22D1201-BSD1	Tebuconazole	92	73-117	
4/12/22	4/13/22	22D1201-BS1	Tebuthiuron	96	73-116	
4/12/22	4/13/22	22D1201-BSD1	Tebuthiuron	97	73-116	
4/12/22	4/13/22	22D1201-BS1	Tefluthrin	95	60-140	
4/12/22	4/13/22	22D1201-BSD1	Tefluthrin	98	60-140	
4/12/22	4/13/22	22D1201-BS1	Tetraconazole	98	58-143	
4/12/22	4/13/22	22D1201-BSD1	Tetraconazole	104	58-143	
4/12/22	4/13/22	22D1201-BS1	Thiencarbazone-methyl	80	60-140	
4/12/22	4/13/22	22D1201-BSD1	Thiencarbazone-methyl	82	60-140	
4/12/22	4/13/22	22D1201-BS1	Thiobencarb	91	67-117	
4/12/22	4/13/22	22D1201-BSD1	Thiobencarb	90	67-117	
4/12/22	4/13/22	22D1201-BS1	Trifloxystrobin	93	75-114	
4/12/22	4/13/22	22D1201-BSD1	Trifloxystrobin	97	75-114	
4/12/22	4/13/22	22D1201-BS1	Triflumizole	93	67-117	
4/12/22	4/13/22	22D1201-BSD1	Triflumizole	98	67-117	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assessment
Work Order Number: 2204119

April 14, 2022

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 11 sample(s) on 4/7/2022 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *04/14/2022*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess
Work Order: 2204119

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2204119-001	GRMW-GRIC-04052022	04/05/2022 7:45 AM	04/07/2022 10:09 AM
2204119-001	GRMW-GRIC-04052022	04/05/2022 7:45 AM	04/07/2022 10:09 AM
2204119-002	GRMW-GR82-04052022	04/05/2022 8:40 AM	04/07/2022 10:09 AM
2204119-003	GRMW-WCCL-04052022	04/05/2022 9:20 AM	04/07/2022 10:09 AM
2204119-004	GRMW-CCML-04052022	04/05/2022 10:20 AM	04/07/2022 10:09 AM
2204119-005	GRMW-GRML-04052022	04/05/2022 11:00 AM	04/07/2022 10:09 AM
2204119-006	GRMW-LCPL-04052022	04/05/2022 11:55 AM	04/07/2022 10:09 AM
2204119-007	GRMW-CCWL-04052022	04/05/2022 12:20 PM	04/07/2022 10:09 AM
2204119-008	GRMW-CCSP-04052022	04/05/2022 1:15 PM	04/07/2022 10:09 AM
2204119-009	GRMW-CCUB-04052022	04/05/2022 1:55 PM	04/07/2022 10:09 AM
2204119-010	GRMW-GRFC-04052022	04/05/2022 3:00 PM	04/07/2022 10:09 AM
2204119-011	GRMW-CCUB-04052022-FD	04/05/2022 1:55 PM	04/07/2022 10:09 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2204119**
Date: **4/14/2022**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assessment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 7:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-001
Matrix: Water
Client Sample ID: GRMW-GRIC-04052022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	1.78	0.500	D	mg/L	5	4/12/2022 7:40:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	19.7	5.00	D	mg/L CaCO3	5	4/11/2022 3:05:16 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 9:36:57 PM
Chromium	2.09	0.750		µg/L	1	4/12/2022 11:54:16 AM
Copper	ND	2.00		µg/L	1	4/8/2022 9:36:57 PM
Iron	ND	100		µg/L	1	4/8/2022 9:36:57 PM
Nickel	ND	1.30		µg/L	1	4/8/2022 9:36:57 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 9:36:57 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 9:36:57 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	26.2	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 12:16:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 1:10:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74634		Analyst: SLL
Sulfide	0.800	0.500		mg/L	1	4/8/2022 12:38:46 PM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 8:40:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-002
Matrix: Water
Client Sample ID: **GRMW-GR82-04052022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	1.84	0.200	D	mg/L	2	4/12/2022 9:12:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	24.0	5.00	D	mg/L CaCO3	5	4/11/2022 3:16:24 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 10:10:23 PM
Chromium	1.95	0.750		µg/L	1	4/12/2022 11:59:44 AM
Copper	ND	2.00		µg/L	1	4/8/2022 10:10:23 PM
Iron	ND	100		µg/L	1	4/8/2022 10:10:23 PM
Nickel	1.39	1.30		µg/L	1	4/8/2022 10:10:23 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 10:10:23 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 10:10:23 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	31.7	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 1:35:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 1:26:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74634		Analyst: SLL
Sulfide	0.600	0.500		mg/L	1	4/8/2022 12:38:46 PM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 9:20:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-003
Matrix: Water
Client Sample ID: GRMW-WCCL-04052022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	0.976	0.100		mg/L	1	4/12/2022 9:35:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	25.8	5.00	D	mg/L CaCO3	5	4/11/2022 3:21:58 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 10:27:07 PM
Chromium	2.82	0.750		µg/L	1	4/12/2022 12:02:28 PM
Copper	ND	2.00		µg/L	1	4/8/2022 10:27:07 PM
Iron	ND	100		µg/L	1	4/8/2022 10:27:07 PM
Nickel	1.95	1.30		µg/L	1	4/8/2022 10:27:07 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 10:27:07 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 10:27:07 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	34.3	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 1:40:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:01:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74634		Analyst: SLL
Sulfide	6.40	0.500		mg/L	1	4/8/2022 12:38:46 PM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 10:20:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-004
Matrix: Water
Client Sample ID: GRMW-CCML-04052022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	3.49	0.200	D	mg/L	2	4/12/2022 9:58:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	26.2	5.00	D	mg/L CaCO3	5	4/11/2022 3:27:32 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 10:32:41 PM
Chromium	2.03	0.750		µg/L	1	4/12/2022 12:05:12 PM
Copper	ND	2.00		µg/L	1	4/8/2022 10:32:41 PM
Iron	ND	100		µg/L	1	4/8/2022 10:32:41 PM
Nickel	1.65	1.30		µg/L	1	4/8/2022 10:32:41 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 10:32:41 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 10:32:41 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	40.9	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 1:45:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:03:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74634		Analyst: SLL
Sulfide	1.40	0.500		mg/L	1	4/8/2022 12:38:46 PM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 11:00:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-005
Matrix: Water
Client Sample ID: **GRMW-GRML-04052022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	2.08	1.00	D	mg/L	10	4/12/2022 10:21:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	18.5	5.00	D	mg/L CaCO3	5	4/11/2022 3:33:06 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 10:38:16 PM
Chromium	1.84	0.750		µg/L	1	4/12/2022 12:07:57 PM
Copper	2.16	2.00		µg/L	1	4/8/2022 10:38:16 PM
Iron	ND	100		µg/L	1	4/8/2022 10:38:16 PM
Nickel	1.41	1.30		µg/L	1	4/8/2022 10:38:16 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 10:38:16 PM
Zinc	33.9	3.80		µg/L	1	4/8/2022 10:38:16 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	26.2	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 1:50:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:05:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74649		Analyst: ALT
Sulfide	ND	0.500		mg/L	1	4/11/2022 11:13:07 AM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 11:55:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-006
Matrix: Water
Client Sample ID: GRMW-LCPL-04052022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	46.2	2.00	D	mg/L	20	4/12/2022 11:31:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	60.1	5.00	D	mg/L CaCO3	5	4/11/2022 3:38:40 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	1.41	1.00		µg/L	1	4/8/2022 10:43:50 PM
Chromium	1.84	0.750		µg/L	1	4/12/2022 12:10:41 PM
Copper	ND	2.00		µg/L	1	4/8/2022 10:43:50 PM
Iron	ND	100		µg/L	1	4/8/2022 10:43:50 PM
Nickel	1.86	1.30		µg/L	1	4/8/2022 10:43:50 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 10:43:50 PM
Zinc	8.33	3.80		µg/L	1	4/8/2022 10:43:50 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	80.7	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 1:55:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:07:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74649		Analyst: ALT
Sulfide	0.800	0.500		mg/L	1	4/11/2022 11:13:07 AM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 12:20:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-007
Matrix: Water
Client Sample ID: GRMW-CCWL-04052022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	0.936	0.200	D	mg/L	2	4/12/2022 11:54:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	25.3	5.00	D	mg/L CaCO3	5	4/11/2022 3:44:14 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 10:49:24 PM
Chromium	2.85	0.750		µg/L	1	4/12/2022 12:13:25 PM
Copper	ND	2.00		µg/L	1	4/8/2022 10:49:24 PM
Iron	ND	100		µg/L	1	4/8/2022 10:49:24 PM
Nickel	2.18	1.30		µg/L	1	4/8/2022 10:49:24 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 10:49:24 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 10:49:24 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	33.8	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 2:00:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:09:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74649		Analyst: ALT
Sulfide	ND	0.500		mg/L	1	4/11/2022 11:13:07 AM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 1:15:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-008
Matrix: Water
Client Sample ID: GRMW-CCSP-04052022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	0.567	0.100		mg/L	1	4/13/2022 12:17:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	24.0	5.00	D	mg/L CaCO3	5	4/13/2022 8:28:22 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 10:54:58 PM
Chromium	2.11	0.750		µg/L	1	4/12/2022 1:02:57 PM
Copper	ND	2.00		µg/L	1	4/8/2022 10:54:58 PM
Iron	ND	100		µg/L	1	4/8/2022 10:54:58 PM
Nickel	1.66	1.30		µg/L	1	4/8/2022 10:54:58 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 10:54:58 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 10:54:58 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	30.6	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 2:05:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:11:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74649		Analyst: ALT
Sulfide	ND	0.500		mg/L	1	4/11/2022 11:13:07 AM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 1:55:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-009
Matrix: Water
Client Sample ID: GRMW-CCUB-04052022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	0.655	0.100		mg/L	1	4/13/2022 12:40:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	25.2	5.00	D	mg/L CaCO3	5	4/13/2022 8:33:56 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 11:00:32 PM
Chromium	2.56	0.750		µg/L	1	4/12/2022 1:05:40 PM
Copper	ND	2.00		µg/L	1	4/8/2022 11:00:32 PM
Iron	ND	100		µg/L	1	4/8/2022 11:00:32 PM
Nickel	2.03	1.30		µg/L	1	4/8/2022 11:00:32 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 11:00:32 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 11:00:32 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	30.2	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 2:10:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:14:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74649		Analyst: ALT
Sulfide	ND	0.500		mg/L	1	4/11/2022 11:13:07 AM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 3:00:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-010
Matrix: Water
Client Sample ID: GRMW-GRFC-04052022

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	0.732	0.100		mg/L	1	4/13/2022 1:03:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	24.2	5.00	D	mg/L CaCO3	5	4/13/2022 8:39:30 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 11:06:06 PM
Chromium	2.10	0.750		µg/L	1	4/12/2022 1:08:24 PM
Copper	ND	2.00		µg/L	1	4/8/2022 11:06:06 PM
Iron	ND	100		µg/L	1	4/8/2022 11:06:06 PM
Nickel	1.67	1.30		µg/L	1	4/8/2022 11:06:06 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 11:06:06 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 11:06:06 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	32.1	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 2:15:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:16:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74649		Analyst: ALT
Sulfide	ND	0.500		mg/L	1	4/11/2022 11:13:07 AM

Analytical Report

Work Order: **2204119**
Date Reported: **4/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 4/5/2022 1:55:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2204119-011
Matrix: Water
Client Sample ID: GRMW-CCUB-04052022-FD

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36080		Analyst: SLL
Chloride	0.653	0.100		mg/L	1	4/13/2022 1:27:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36040		Analyst: EH
Total Hardness (as CaCO3)	24.5	5.00	D	mg/L CaCO3	5	4/13/2022 8:45:04 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36042		Analyst: EH
Arsenic	ND	1.00		µg/L	1	4/8/2022 11:11:40 PM
Chromium	1.69	0.750		µg/L	1	4/12/2022 1:11:08 PM
Copper	ND	2.00		µg/L	1	4/8/2022 11:11:40 PM
Iron	ND	100		µg/L	1	4/8/2022 11:11:40 PM
Nickel	ND	1.30		µg/L	1	4/8/2022 11:11:40 PM
Selenium	ND	1.90		µg/L	1	4/8/2022 11:11:40 PM
Zinc	ND	3.80		µg/L	1	4/8/2022 11:11:40 PM
Total Alkalinity by SM 2320B				Batch ID: R74643		Analyst: CH
Alkalinity, Total (As CaCO3)	30.1	2.50		mg/L	1	4/11/2022 8:53:14 AM
Ammonia by SM 4500 NH3G				Batch ID: 36046		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	4/8/2022 2:21:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36033		Analyst: SLL
Phosphorus, Total (As P)	ND	0.250		mg/L	1	4/11/2022 3:18:00 PM
Sulfide by SM 4500-S2-F				Batch ID: R74649		Analyst: ALT
Sulfide	ND	0.500		mg/L	1	4/11/2022 11:13:07 AM

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R74643** SampType: **MBLK** Units: **mg/L** Prep Date: **4/11/2022** RunNo: **74643**
Client ID: **MBLKW** Batch ID: **R74643** Analysis Date: **4/11/2022** SeqNo: **1531521**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R74643** SampType: **LCS** Units: **mg/L** Prep Date: **4/11/2022** RunNo: **74643**
Client ID: **LCSW** Batch ID: **R74643** Analysis Date: **4/11/2022** SeqNo: **1531522**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	96.0	2.50	100.0	0	96.0	84	121				

Sample ID: **2204119-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **4/11/2022** RunNo: **74643**
Client ID: **GRMW-GRIC-04052022** Batch ID: **R74643** Analysis Date: **4/11/2022** SeqNo: **1531524**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	25.9	2.50						26.22	1.13	20	

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-36046** SampType: **MBLK** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74652**
Client ID: **MBLKW** Batch ID: **36046** Analysis Date: **4/8/2022** SeqNo: **1531767**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-36046** SampType: **LCS** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74652**
Client ID: **LCSW** Batch ID: **36046** Analysis Date: **4/8/2022** SeqNo: **1531768**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.434	0.100	0.5000	0	86.8	80.1	103				

Sample ID: **2204063-003DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74652**
Client ID: **BATCH** Batch ID: **36046** Analysis Date: **4/8/2022** SeqNo: **1531772**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2204063-003DMS** SampType: **MS** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74652**
Client ID: **BATCH** Batch ID: **36046** Analysis Date: **4/8/2022** SeqNo: **1531773**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	10.2	51.9	133				S

NOTES:
S - Spike recovery indicates a possible matrix effect.

Sample ID: **2204119-001EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74652**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36046** Analysis Date: **4/8/2022** SeqNo: **1531775**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2204119-001EMS** SampType: **MS** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74652**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36046** Analysis Date: **4/8/2022** SeqNo: **1531776**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.380	0.100	0.5000	0	76.0	51.9	133				

Sample ID: **2204119-001EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74652**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36046** Analysis Date: **4/8/2022** SeqNo: **1531777**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.376	0.100	0.5000	0	75.2	51.9	133	0.3800	1.06	30	

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-36040** SampType: **MBLK** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74645**
Client ID: **MBLKW** Batch ID: **36040** Analysis Date: **4/8/2022** SeqNo: **1531611**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **2204119-001CMS** SampType: **MS** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74645**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36040** Analysis Date: **4/8/2022** SeqNo: **1531615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.95	0.350	1.000	5.062	88.8	50	150				E
Magnesium	2.59	0.150	1.000	1.700	89.1	50	150				

Sample ID: **2204119-001CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74645**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36040** Analysis Date: **4/8/2022** SeqNo: **1531616**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.86	0.350	1.000	5.062	79.6	50	150	5.951	1.56	20	E
Magnesium	2.53	0.150	1.000	1.700	83.1	50	150	2.591	2.35	20	

Sample ID: **LCS-36040** SampType: **LCS** Units: **mg/L** Prep Date: **4/8/2022** RunNo: **74645**
Client ID: **LCSW** Batch ID: **36040** Analysis Date: **4/11/2022** SeqNo: **1532019**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.15	0.350	1.000	0	115	50	150				
Magnesium	0.994	0.150	1.000	0	99.4	50	150				

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2204119-001CDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **4/8/2022** RunNo: **74645**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36040** Analysis Date: **4/11/2022** SeqNo: **1532021**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	18.6	5.00						19.75	5.98	20	D

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-36080**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **4/12/2022**			RunNo: **74715**		
Client ID: **MBLKW**	Batch ID: **36080**					Analysis Date: **4/12/2022**			SeqNo: **1533126**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-36080**	SampType: **LCS**			Units: **mg/L**		Prep Date: **4/12/2022**			RunNo: **74715**		
Client ID: **LCSW**	Batch ID: **36080**					Analysis Date: **4/12/2022**			SeqNo: **1533127**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.740	0.100	0.7500	0	98.7	90	110				

Sample ID: **2204119-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **4/12/2022**			RunNo: **74715**		
Client ID: **GRMW-GRIC-04052022**	Batch ID: **36080**					Analysis Date: **4/12/2022**			SeqNo: **1533130**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.76	0.500						1.785	1.13	20	D

Sample ID: **2204119-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **4/12/2022**			RunNo: **74715**		
Client ID: **GRMW-GRIC-04052022**	Batch ID: **36080**					Analysis Date: **4/12/2022**			SeqNo: **1533131**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.42	0.500	3.750	1.785	96.8	80	120				D

Sample ID: **2204119-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **4/12/2022**			RunNo: **74715**		
Client ID: **GRMW-GRIC-04052022**	Batch ID: **36080**					Analysis Date: **4/12/2022**			SeqNo: **1533132**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.49	0.500	3.750	1.785	98.8	80	120	5.415	1.38	20	D

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2204160-001CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **4/12/2022** RunNo: **74715**
Client ID: **BATCH** Batch ID: **36080** Analysis Date: **4/13/2022** SeqNo: **1533147**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.95	0.100						3.951	0.0506	20	E

Sample ID: **2204160-001CMS** SampType: **MS** Units: **mg/L** Prep Date: **4/12/2022** RunNo: **74715**
Client ID: **BATCH** Batch ID: **36080** Analysis Date: **4/13/2022** SeqNo: **1533148**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.83	0.100	0.7500	3.951	118	80	120				E

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **MB-36033**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **4/7/2022**		RunNo: **74670**		
Client ID: **MBLKW**	Batch ID: **36033**					Analysis Date: **4/11/2022**		SeqNo: **1532185**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **LCS-36033**	SampType: **LCS**			Units: **mg/L**		Prep Date: **4/7/2022**		RunNo: **74670**		
Client ID: **LCSW**	Batch ID: **36033**					Analysis Date: **4/11/2022**		SeqNo: **1532186**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.485	0.250	0.5000	0	96.9	65	135				

Sample ID: **2204063-001DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **4/7/2022**		RunNo: **74670**		
Client ID: **BATCH**	Batch ID: **36033**					Analysis Date: **4/11/2022**		SeqNo: **1532188**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2204063-001DMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **4/7/2022**		RunNo: **74670**		
Client ID: **BATCH**	Batch ID: **36033**					Analysis Date: **4/11/2022**		SeqNo: **1532189**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.556	0.250	0.5000	0	111	65	135				

Sample ID: **2204119-001EDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **4/7/2022**		RunNo: **74670**		
Client ID: **GRMW-GRIC-04052022**	Batch ID: **36033**					Analysis Date: **4/11/2022**		SeqNo: **1532193**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **2204119-001EMS** SampType: **MS** Units: **mg/L** Prep Date: **4/7/2022** RunNo: **74670**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36033** Analysis Date: **4/11/2022** SeqNo: **1532194**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.522	0.250	0.5000	0	104	65	135				

Sample ID: **2204119-001EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **4/7/2022** RunNo: **74670**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36033** Analysis Date: **4/11/2022** SeqNo: **1532195**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.565	0.250	0.5000	0	113	65	135	0.5218	8.02	30	

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R74634**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **4/8/2022**			RunNo: **74634**	
Client ID: **MBLKW**	Batch ID: **R74634**					Analysis Date: **4/8/2022**			SeqNo: **1531214**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R74634**	SampType: **LCS**			Units: **mg/L**		Prep Date: **4/8/2022**			RunNo: **74634**	
Client ID: **LCSW**	Batch ID: **R74634**					Analysis Date: **4/8/2022**			SeqNo: **1531215**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.80	0.500	2.000	0	90.0	55.8	124				

Sample ID: **AT IDC 2**	SampType: **LCS**			Units: **mg/L**		Prep Date: **4/8/2022**			RunNo: **74634**	
Client ID: **LCSW**	Batch ID: **R74634**					Analysis Date: **4/8/2022**			SeqNo: **1531216**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.80	0.500	2.000	0	90.0	55.8	124				

Sample ID: **AT IDC 3**	SampType: **LCS**			Units: **mg/L**		Prep Date: **4/8/2022**			RunNo: **74634**	
Client ID: **LCSW**	Batch ID: **R74634**					Analysis Date: **4/8/2022**			SeqNo: **1531217**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.60	0.500	2.000	0	80.0	55.8	124				

Sample ID: **AT IDC 4**	SampType: **LCS**			Units: **mg/L**		Prep Date: **4/8/2022**			RunNo: **74634**	
Client ID: **LCSW**	Batch ID: **R74634**					Analysis Date: **4/8/2022**			SeqNo: **1531218**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.80	0.500	2.000	0	90.0	55.8	124				

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **2204119-001DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **4/8/2022**	RunNo: **74634**
Client ID: **GRMW-GRIC-04052022**	Batch ID: **R74634**		Analysis Date: **4/8/2022**	SeqNo: **1531220**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	4.20	0.500	2.000	0.8000	170	21.5	190				

Sample ID: **2204119-001DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **4/8/2022**	RunNo: **74634**
Client ID: **GRMW-GRIC-04052022**	Batch ID: **R74634**		Analysis Date: **4/8/2022**	SeqNo: **1531221**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	5.60	0.500	2.000	0.8000	240	21.5	190	4.200	28.6	30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID: **2204119-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **4/8/2022**	RunNo: **74634**
Client ID: **GRMW-GRIC-04052022**	Batch ID: **R74634**		Analysis Date: **4/8/2022**	SeqNo: **1531546**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.800	0.500						0.8000	0	30	

Sample ID: **MB-R74649**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **4/11/2022**	RunNo: **74649**
Client ID: **MBLKW**	Batch ID: **R74649**		Analysis Date: **4/11/2022**	SeqNo: **1531742**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500									

Sample ID: **LCS-R74649**	SampType: **LCS**	Units: **mg/L**	Prep Date: **4/11/2022**	RunNo: **74649**
Client ID: **LCSW**	Batch ID: **R74649**		Analysis Date: **4/11/2022**	SeqNo: **1531743**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.40	0.500	2.000	0	70.0	55.8	124				

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **2204119-005DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **4/11/2022** RunNo: **74649**
Client ID: **GRMW-GRML-0405202** Batch ID: **R74649** Analysis Date: **4/11/2022** SeqNo: **1531745**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.500						0		30	

Sample ID: **2204119-005DMS** SampType: **MS** Units: **mg/L** Prep Date: **4/11/2022** RunNo: **74649**
Client ID: **GRMW-GRML-0405202** Batch ID: **R74649** Analysis Date: **4/11/2022** SeqNo: **1531746**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	4.40	0.500	2.000	0.4000	200	21.5	190				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2204119-005DMSD** SampType: **MSD** Units: **mg/L** Prep Date: **4/11/2022** RunNo: **74649**
Client ID: **GRMW-GRML-0405202** Batch ID: **R74649** Analysis Date: **4/11/2022** SeqNo: **1531747**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	4.60	0.500	2.000	0.4000	210	21.5	190	4.400	4.44	30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-36042** SampType: **MBLK** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **MBLKW** Batch ID: **36042** Analysis Date: **4/8/2022** SeqNo: **1531843**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **2204119-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36042** Analysis Date: **4/8/2022** SeqNo: **1531846**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00						0		30	
Copper	ND	2.00						0		30	
Iron	124	100						59.60	70.5	30	
Nickel	ND	1.30						0		30	
Selenium	ND	1.90						0		30	
Zinc	ND	3.80						0		30	

Sample ID: **2204119-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36042** Analysis Date: **4/8/2022** SeqNo: **1531847**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	527	1.00	500.0	0	105	70	130				
Chromium	611	0.750	500.0	1.494	122	70	130				
Copper	507	2.00	500.0	0	101	70	130				
Iron	5,350	100	5,000	59.60	106	50	150				
Nickel	555	1.30	500.0	0.7335	111	70	130				
Selenium	58.2	1.90	50.00	0	116	70	130				

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2204119-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36042** Analysis Date: **4/8/2022** SeqNo: **1531847**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	705	3.80	500.0	0	141	70	130				S

Sample ID: **2204119-001AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36042** Analysis Date: **4/8/2022** SeqNo: **1531848**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	561	1.00	500.0	0	112	70	130	526.5	6.30	30	
Chromium	631	0.750	500.0	1.494	126	70	130	610.7	3.34	30	
Copper	521	2.00	500.0	0	104	70	130	506.8	2.71	30	
Iron	5,510	100	5,000	59.60	109	50	150	5,346	3.07	30	
Nickel	575	1.30	500.0	0.7335	115	70	130	554.9	3.52	30	
Selenium	57.4	1.90	50.00	0	115	70	130	58.20	1.39	30	
Zinc	520	3.80	500.0	0	104	70	130	704.7	30.1	30	R

Sample ID: **2204121-002CMS** SampType: **MS** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **BATCH** Batch ID: **36042** Analysis Date: **4/8/2022** SeqNo: **1531867**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	560	1.00	500.0	1.256	112	70	130				
Chromium	641	0.750	500.0	1.338	128	70	130				
Copper	528	2.00	500.0	0	106	70	130				
Iron	5,450	100	5,000	66.75	108	50	150				
Nickel	577	1.30	500.0	2.468	115	70	130				
Selenium	56.3	1.90	50.00	0	113	70	130				
Zinc	537	3.80	500.0	0	107	70	130				

Work Order: 2204119
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-36041FB** SampType: **MBLK** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **MBLKW** Batch ID: **36042** Analysis Date: **4/12/2022** SeqNo: **1532754**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **LCS-36042** SampType: **LCS** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **LCSW** Batch ID: **36042** Analysis Date: **4/12/2022** SeqNo: **1532755**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	465	1.00	500.0	0	93.0	85	115				
Chromium	466	0.750	500.0	0	93.1	85	115				
Copper	488	2.00	500.0	0	97.5	85	115				
Iron	4,740	100	5,000	0	94.9	85	115				
Nickel	472	1.30	500.0	0	94.5	85	115				
Selenium	46.8	1.90	50.00	0	93.6	85	115				
Zinc	460	3.80	500.0	0	92.0	85	115				

Sample ID: **2204119-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **4/8/2022** RunNo: **74654**
Client ID: **GRMW-GRIC-04052022** Batch ID: **36042** Analysis Date: **4/12/2022** SeqNo: **1532757**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2.04	0.750						2.088	2.08	30	

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assessment
Work Order Number: 2206010

June 14, 2022

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 11 sample(s) on 6/1/2022 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess
Work Order: 2206010

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2206010-001	GRMW-CCSP-05282022	05/28/2022 12:10 PM	06/01/2022 11:05 AM
2206010-002	GRMW-CCU8-05282022	05/28/2022 12:45 PM	06/01/2022 11:05 AM
2206010-003	GRMW-CCWL-05282022	05/28/2022 11:20 AM	06/01/2022 11:05 AM
2206010-004	GRMW-LCPL-05282022	05/28/2022 10:55 AM	06/01/2022 11:05 AM
2206010-005	GRMW-GRIC-05282022	05/28/2022 7:50 AM	06/01/2022 11:05 AM
2206010-006	GRMW-GRML-05282022	05/28/2022 10:00 AM	06/01/2022 11:05 AM
2206010-007	GRMW-CCML-05282022	05/28/2022 9:35 AM	06/01/2022 11:05 AM
2206010-008	GRMW-WCCL-05282022	05/28/2022 8:50 AM	06/01/2022 11:05 AM
2206010-009	GRMW-GR82-05282022	05/28/2022 8:15 AM	06/01/2022 11:05 AM
2206010-010	GRMW-GRFC-05282022	05/28/2022 1:45 PM	06/01/2022 11:05 AM
2206010-011	GRMW-CCU8-FD-05282022	05/28/2022 12:45 PM	06/01/2022 11:05 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2206010**
Date: **6/14/2022**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assessment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.
2206010-001D
C-SULFIDE has been Sub Contracted.
2206010-002D
C-SULFIDE has been Sub Contracted.
2206010-003D
C-SULFIDE has been Sub Contracted.
2206010-004D
C-SULFIDE has been Sub Contracted.
2206010-005D
C-SULFIDE has been Sub Contracted.
2206010-006D
C-SULFIDE has been Sub Contracted.
2206010-007D
C-SULFIDE has been Sub Contracted.
2206010-008D
C-SULFIDE has been Sub Contracted.
2206010-009D
C-SULFIDE has been Sub Contracted.
2206010-010D
C-SULFIDE has been Sub Contracted.
2206010-011D
C-SULFIDE has been Sub Contracted.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 5/28/2022 12:10:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-001
Matrix: Water
Client Sample ID: **GRMW-CCSP-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36676		Analyst: ALT
Chloride	0.358	0.200	D	mg/L	2	6/2/2022 9:20:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	17.7	1.00		mg/L CaCO3	1	6/13/2022 9:26:04 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:05:57 PM
Chromium	ND	0.750		µg/L	1	6/13/2022 4:05:57 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:05:57 PM
Iron	ND	100		µg/L	1	6/13/2022 4:05:57 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:05:57 PM
Selenium	ND	1.90		µg/L	1	6/13/2022 4:05:57 PM
Zinc	7.24	3.80		µg/L	1	6/13/2022 4:05:57 PM
Total Alkalinity by SM 2320B				Batch ID: R75872		Analyst: TN
Alkalinity, Total (As CaCO3)	21.8	2.50		mg/L	1	6/3/2022 10:02:39 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 1:43:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 10:34:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 5/28/2022 12:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-002
Matrix: Water
Client Sample ID: **GRMW-CCU8-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36676		Analyst: ALT
Chloride	0.412	0.200	D	mg/L	2	6/2/2022 10:53:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	17.6	1.00		mg/L CaCO3	1	6/13/2022 9:30:38 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:08:46 PM
Chromium	ND	0.750		µg/L	1	6/13/2022 4:08:46 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:08:46 PM
Iron	ND	100		µg/L	1	6/13/2022 4:08:46 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:08:46 PM
Selenium	ND	1.90		µg/L	1	6/13/2022 4:08:46 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 4:08:46 PM
Total Alkalinity by SM 2320B				Batch ID: R75872		Analyst: TN
Alkalinity, Total (As CaCO3)	23.8	2.50		mg/L	1	6/3/2022 10:02:39 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 1:48:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:18:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 5/28/2022 11:20:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-003
Matrix: Water
Client Sample ID: **GRMW-CCWL-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36676		Analyst: ALT
Chloride	0.466	0.200	D	mg/L	2	6/2/2022 11:16:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	18.5	1.00		mg/L CaCO3	1	6/13/2022 9:39:46 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 3:57:29 PM
Chromium	1.69	0.750	B	µg/L	1	6/13/2022 3:57:29 PM
Copper	ND	2.00		µg/L	1	6/13/2022 3:57:29 PM
Iron	ND	100		µg/L	1	6/13/2022 3:57:29 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 3:57:29 PM
Selenium	ND	1.90		µg/L	1	6/13/2022 3:57:29 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 3:57:29 PM
Total Alkalinity by SM 2320B				Batch ID: R75872		Analyst: TN
Alkalinity, Total (As CaCO3)	22.5	2.50		mg/L	1	6/3/2022 10:02:39 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 1:53:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:20:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 5/28/2022 10:55:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-004
Matrix: Water
Client Sample ID: **GRMW-LCPL-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36676		Analyst: ALT
Chloride	27.9	2.00	D	mg/L	20	6/4/2022 1:08:00 AM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	69.2	1.00	E	mg/L CaCO3	1	6/13/2022 9:44:20 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:11:36 PM
Chromium	ND	0.750		µg/L	1	6/13/2022 4:11:36 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:11:36 PM
Iron	129	100		µg/L	1	6/13/2022 4:11:36 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:11:36 PM
Selenium	ND	1.90		µg/L	1	6/13/2022 4:11:36 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 4:11:36 PM
Total Alkalinity by SM 2320B				Batch ID: R75872		Analyst: TN
Alkalinity, Total (As CaCO3)	85.7	2.50		mg/L	1	6/3/2022 10:02:39 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 1:58:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:22:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 5/28/2022 7:50:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-005
Matrix: Water
Client Sample ID: **GRMW-GRIC-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36695		Analyst: ALT
Chloride	0.866	0.200	D	mg/L	2	6/3/2022 6:58:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	18.0	1.00		mg/L CaCO3	1	6/13/2022 9:48:54 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:14:25 PM
Chromium	ND	0.750		µg/L	1	6/13/2022 4:14:25 PM
Copper	6.51	2.00		µg/L	1	6/13/2022 4:14:25 PM
Iron	ND	100		µg/L	1	6/13/2022 4:14:25 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:14:25 PM
Selenium	ND	1.90		µg/L	1	6/13/2022 4:14:25 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 4:14:25 PM
Total Alkalinity by SM 2320B				Batch ID: R75979		Analyst: TN
Alkalinity, Total (As CaCO3)	23.9	2.50		mg/L	1	6/8/2022 11:18:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 2:04:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:50:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 5/28/2022 10:00:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-006 **Matrix:** Water
Client Sample ID: **GRMW-GRML-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36695		Analyst: ALT
Chloride	0.904	0.200	D	mg/L	2	6/3/2022 7:21:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	18.3	1.00		mg/L CaCO3	1	6/13/2022 9:53:27 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:22:55 PM
Chromium	1.08	0.750	B	µg/L	1	6/13/2022 4:22:55 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:22:55 PM
Iron	ND	100		µg/L	1	6/13/2022 4:22:55 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:22:55 PM
Selenium	ND	1.90	Q	µg/L	1	6/13/2022 4:22:55 PM
Zinc	6.45	3.80		µg/L	1	6/13/2022 4:22:55 PM

NOTES:
Q - Associated calibration verification is below acceptance criteria (89.4%). Result may be marginally low-biased.

Total Alkalinity by SM 2320B				Batch ID: R75979		Analyst: TN
Alkalinity, Total (As CaCO3)	24.5	2.50		mg/L	1	6/8/2022 11:18:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 2:09:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:28:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 5/28/2022 9:35:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-007 **Matrix:** Water
Client Sample ID: **GRMW-CCML-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36695		Analyst: ALT
Chloride	0.846	0.200	D	mg/L	2	6/3/2022 7:44:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	21.2	1.00	E	mg/L CaCO3	1	6/13/2022 9:58:01 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:25:45 PM
Chromium	ND	0.750		µg/L	1	6/13/2022 4:25:45 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:25:45 PM
Iron	ND	100		µg/L	1	6/13/2022 4:25:45 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:25:45 PM
Selenium	ND	1.90	Q	µg/L	1	6/13/2022 4:25:45 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 4:25:45 PM

NOTES:
Q - Associated calibration verification is below acceptance criteria (89.4%). Result may be marginally low-biased.

Total Alkalinity by SM 2320B				Batch ID: R75979		Analyst: TN
Alkalinity, Total (As CaCO3)	29.1	2.50		mg/L	1	6/8/2022 11:18:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 3:15:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:30:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 5/28/2022 8:50:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-008 **Matrix:** Water
Client Sample ID: **GRMW-WCCL-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36695		Analyst: ALT
Chloride	0.738	0.200	D	mg/L	2	6/3/2022 8:07:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	35.0	1.00	E	mg/L CaCO3	1	6/13/2022 10:11:45 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:28:34 PM
Chromium	55.5	0.750		µg/L	1	6/13/2022 4:28:34 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:28:34 PM
Iron	267	100		µg/L	1	6/13/2022 4:28:34 PM
Nickel	26.1	1.30		µg/L	1	6/13/2022 4:28:34 PM
Selenium	ND	1.90	Q	µg/L	1	6/13/2022 4:28:34 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 4:28:34 PM

NOTES:
Q - Associated calibration verification is below acceptance criteria (89.4%). Result may be marginally low-biased.

Total Alkalinity by SM 2320B				Batch ID: R75979		Analyst: TN
Alkalinity, Total (As CaCO3)	43.0	2.50		mg/L	1	6/8/2022 11:18:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 3:35:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:33:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 5/28/2022 8:15:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-009 **Matrix:** Water
Client Sample ID: **GRMW-GR82-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36695		Analyst: ALT
Chloride	1.04	0.200	D	mg/L	2	6/3/2022 8:30:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	19.9	1.00	E	mg/L CaCO3	1	6/13/2022 10:16:19 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:31:24 PM
Chromium	1.20	0.750	B	µg/L	1	6/13/2022 4:31:24 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:31:24 PM
Iron	ND	100		µg/L	1	6/13/2022 4:31:24 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:31:24 PM
Selenium	ND	1.90	Q	µg/L	1	6/13/2022 4:31:24 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 4:31:24 PM

NOTES:
Q - Associated calibration verification is below acceptance criteria (89.4%). Result may be marginally low-biased.

Total Alkalinity by SM 2320B				Batch ID: R75979		Analyst: TN
Alkalinity, Total (As CaCO3)	27.3	2.50		mg/L	1	6/8/2022 11:18:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 3:41:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:36:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 5/28/2022 1:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-010 **Matrix:** Water
Client Sample ID: **GRMW-GRFC-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36695		Analyst: ALT
Chloride	0.450	0.200	D	mg/L	2	6/3/2022 10:03:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	15.8	1.00		mg/L CaCO3	1	6/13/2022 10:20:53 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:34:13 PM
Chromium	0.962	0.750	B	µg/L	1	6/13/2022 4:34:13 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:34:13 PM
Iron	ND	100		µg/L	1	6/13/2022 4:34:13 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:34:13 PM
Selenium	ND	1.90	Q	µg/L	1	6/13/2022 4:34:13 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 4:34:13 PM

NOTES:
Q - Associated calibration verification is below acceptance criteria (89.4%). Result may be marginally low-biased.

Total Alkalinity by SM 2320B				Batch ID: R75979		Analyst: TN
Alkalinity, Total (As CaCO3)	20.5	2.50		mg/L	1	6/8/2022 11:18:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 36683		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/3/2022 3:46:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36685		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/6/2022 11:38:00 AM

Analytical Report

Work Order: **2206010**
Date Reported: **6/14/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 5/28/2022 12:45:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2206010-011 **Matrix:** Water
Client Sample ID: **GRMW-CCU8-FD-05282022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 36695		Analyst: ALT
Chloride	0.410	0.200	D	mg/L	2	6/3/2022 11:12:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 36661		Analyst: EH
Total Hardness (as CaCO3)	16.7	1.00		mg/L CaCO3	1	6/13/2022 10:25:27 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 36664		Analyst: EH
Arsenic	ND	1.00		µg/L	1	6/13/2022 4:37:03 PM
Chromium	1.47	0.750	B	µg/L	1	6/13/2022 4:37:03 PM
Copper	ND	2.00		µg/L	1	6/13/2022 4:37:03 PM
Iron	ND	100		µg/L	1	6/13/2022 4:37:03 PM
Nickel	ND	1.30		µg/L	1	6/13/2022 4:37:03 PM
Selenium	ND	1.90	Q	µg/L	1	6/13/2022 4:37:03 PM
Zinc	ND	3.80		µg/L	1	6/13/2022 4:37:03 PM

NOTES:
Q - Associated calibration verification is below acceptance criteria (89.4%). Result may be marginally low-biased.

Total Alkalinity by SM 2320B				Batch ID: R75979		Analyst: TN
Alkalinity, Total (As CaCO3)	22.2	2.50		mg/L	1	6/8/2022 11:18:16 AM
Ammonia by SM 4500 NH3G				Batch ID: 36709		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	6/6/2022 3:30:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 36711		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	6/7/2022 2:58:00 PM

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R75872**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **6/3/2022**		RunNo: **75872**		
Client ID: **MBLKW**	Batch ID: **R75872**					Analysis Date: **6/3/2022**		SeqNo: **1556188**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R75872**	SampType: **LCS**			Units: **mg/L**		Prep Date: **6/3/2022**		RunNo: **75872**		
Client ID: **LCSW**	Batch ID: **R75872**					Analysis Date: **6/3/2022**		SeqNo: **1556189**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	95.7	2.50	100.0	0	95.7	84	121				

Sample ID: **2206033-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **6/3/2022**		RunNo: **75872**		
Client ID: **BATCH**	Batch ID: **R75872**					Analysis Date: **6/3/2022**		SeqNo: **1556191**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	80.2	2.50						80.19	0.0492	20	

Sample ID: **MB-R75979**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **6/8/2022**		RunNo: **75979**		
Client ID: **MBLKW**	Batch ID: **R75979**					Analysis Date: **6/8/2022**		SeqNo: **1558064**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R75979**	SampType: **LCS**			Units: **mg/L**		Prep Date: **6/8/2022**		RunNo: **75979**		
Client ID: **LCSW**	Batch ID: **R75979**					Analysis Date: **6/8/2022**		SeqNo: **1558065**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.4	2.50	100.0	0	97.4	84	121				

Date: *6/14/2022*

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **2206010-005BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **6/8/2022** RunNo: **75979**
Client ID: **GRMW-GRIC-05282022** Batch ID: **R75979** Analysis Date: **6/8/2022** SeqNo: **1558067**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	24.3	2.50						23.86	1.90	20	

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **LCS-36683**	SampType: **LCS**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75991**		
Client ID: **LCSW**	Batch ID: **36683**					Analysis Date: **6/3/2022**			SeqNo: **1558222**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.507	0.100	0.5000	0	101	80.1	103				

Sample ID: **MB-36683**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75991**		
Client ID: **MBLKW**	Batch ID: **36683**					Analysis Date: **6/3/2022**			SeqNo: **1558224**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **2206010-007EDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75991**		
Client ID: **GRMW-CCML-0528202**	Batch ID: **36683**					Analysis Date: **6/3/2022**			SeqNo: **1558234**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2206010-007EMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75991**		
Client ID: **GRMW-CCML-0528202**	Batch ID: **36683**					Analysis Date: **6/3/2022**			SeqNo: **1558235**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.458	0.100	0.5000	0	91.6	51.9	133				

Sample ID: **2206010-007EMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75991**		
Client ID: **GRMW-CCML-0528202**	Batch ID: **36683**					Analysis Date: **6/3/2022**			SeqNo: **1558236**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.460	0.100	0.5000	0	92.0	51.9	133	0.4580	0.436	30	

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-36709**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **6/6/2022**			RunNo: **76038**	
Client ID: **MBLKW**	Batch ID: **36709**					Analysis Date: **6/6/2022**			SeqNo: **1559171**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-36709**	SampType: **LCS**			Units: **mg/L**		Prep Date: **6/6/2022**			RunNo: **76038**	
Client ID: **LCSW**	Batch ID: **36709**					Analysis Date: **6/6/2022**			SeqNo: **1559172**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.441	0.100	0.5000	0	88.2	80.1	103				

Sample ID: **2206010-011EDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **6/6/2022**			RunNo: **76038**	
Client ID: **GRMW-CCU8-FD-05282**	Batch ID: **36709**					Analysis Date: **6/6/2022**			SeqNo: **1559174**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2206010-011EMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **6/6/2022**			RunNo: **76038**	
Client ID: **GRMW-CCU8-FD-05282**	Batch ID: **36709**					Analysis Date: **6/6/2022**			SeqNo: **1559175**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	0	51.9	133				S

NOTES:
S - Outlying spike recovery(ies) observed.

Sample ID: **2206015-004DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **6/6/2022**			RunNo: **76038**	
Client ID: **BATCH**	Batch ID: **36709**					Analysis Date: **6/6/2022**			SeqNo: **1559180**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2206015-004DMS** SampType: **MS** Units: **mg/L** Prep Date: **6/6/2022** RunNo: **76038**
Client ID: **BATCH** Batch ID: **36709** Analysis Date: **6/6/2022** SeqNo: **1559181**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.429	0.100	0.5000	0	85.8	51.9	133				

Sample ID: **2206015-004DMSD** SampType: **MSD** Units: **mg/L** Prep Date: **6/6/2022** RunNo: **76038**
Client ID: **BATCH** Batch ID: **36709** Analysis Date: **6/6/2022** SeqNo: **1559184**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.454	0.100	0.5000	0	90.8	51.9	133	0.4290	5.66	30	

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-36661** SampType: **MBLK** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **76115**
Client ID: **MBLKW** Batch ID: **36661** Analysis Date: **6/13/2022** SeqNo: **1560936**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **LCS-36661** SampType: **LCS** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **76115**
Client ID: **LCSW** Batch ID: **36661** Analysis Date: **6/13/2022** SeqNo: **1560937**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.06	0.350	1.000	0	106	50	150				
Magnesium	0.925	0.150	1.000	0	92.5	50	150				

Sample ID: **2205567-002FDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **6/2/2022** RunNo: **76115**
Client ID: **BATCH** Batch ID: **36661** Analysis Date: **6/13/2022** SeqNo: **1560941**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	22.8	1.00						22.47	1.31	20	

Sample ID: **2205567-002FMS** SampType: **MS** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **76115**
Client ID: **BATCH** Batch ID: **36661** Analysis Date: **6/13/2022** SeqNo: **1560942**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	8.93	0.350	1.000	8.027	90.0	50	150				E
Magnesium	1.52	0.150	1.000	0.5887	93.5	50	150				

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2206010-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **76115**
Client ID: **GRMW-CCU8-05282022** Batch ID: **36661** Analysis Date: **6/13/2022** SeqNo: **1560945**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.61	0.350	1.000	4.585	102	50	150				E
Magnesium	2.45	0.150	1.000	1.506	94.0	50	150				

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-36676** SampType: **MBLK** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **75913**
Client ID: **MBLKW** Batch ID: **36676** Analysis Date: **6/2/2022** SeqNo: **1557031**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-36676** SampType: **LCS** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **75913**
Client ID: **LCSW** Batch ID: **36676** Analysis Date: **6/2/2022** SeqNo: **1557032**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.723	0.100	0.7500	0	96.4	90	110				

Sample ID: **2206010-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **75913**
Client ID: **GRMW-CCSP-05282022** Batch ID: **36676** Analysis Date: **6/2/2022** SeqNo: **1557036**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.356	0.200						0.3580	0.560	20	D

Sample ID: **2206010-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **75913**
Client ID: **GRMW-CCSP-05282022** Batch ID: **36676** Analysis Date: **6/2/2022** SeqNo: **1557037**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.63	0.200	1.500	0.3580	84.9	80	120				D

Sample ID: **2206010-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **6/2/2022** RunNo: **75913**
Client ID: **GRMW-CCSP-05282022** Batch ID: **36676** Analysis Date: **6/2/2022** SeqNo: **1557038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.66	0.200	1.500	0.3580	86.8	80	120	1.632	1.70	20	D

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-36695**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75985**		
Client ID: **MBLKW**	Batch ID: **36695**					Analysis Date: **6/3/2022**			SeqNo: **1558163**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-36695**	SampType: **LCS**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75985**		
Client ID: **LCSW**	Batch ID: **36695**					Analysis Date: **6/3/2022**			SeqNo: **1558164**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.704	0.100	0.7500	0	93.9	90	110				

Sample ID: **2206010-009BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75985**		
Client ID: **GRMW-GR82-05282022**	Batch ID: **36695**					Analysis Date: **6/3/2022**			SeqNo: **1558170**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.03	0.200						1.036	0.581	20	D

Sample ID: **2206010-009BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75985**		
Client ID: **GRMW-GR82-05282022**	Batch ID: **36695**					Analysis Date: **6/3/2022**			SeqNo: **1558171**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.43	0.200	1.500	1.036	93.2	80	120				D

Sample ID: **2206010-009BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **6/3/2022**			RunNo: **75985**		
Client ID: **GRMW-GR82-05282022**	Batch ID: **36695**					Analysis Date: **6/3/2022**			SeqNo: **1558172**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.45	0.200	1.500	1.036	94.5	80	120	2.434	0.818	20	D

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **LCS-36685**	SampType: **LCS**			Units: **mg/L**		Prep Date: **6/3/2022**		RunNo: **76018**		
Client ID: **LCSW**	Batch ID: **36685**					Analysis Date: **6/6/2022**		SeqNo: **1558945**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.524	0.250	0.5000	0	105	65	135				

Sample ID: **MB-36685**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **6/3/2022**		RunNo: **76018**		
Client ID: **MBLKW**	Batch ID: **36685**					Analysis Date: **6/6/2022**		SeqNo: **1558947**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **2206010-001EDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **6/3/2022**		RunNo: **76018**		
Client ID: **GRMW-CCSP-05282022**	Batch ID: **36685**					Analysis Date: **6/6/2022**		SeqNo: **1558949**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2206010-001EMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **6/3/2022**		RunNo: **76018**		
Client ID: **GRMW-CCSP-05282022**	Batch ID: **36685**					Analysis Date: **6/6/2022**		SeqNo: **1558950**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.556	0.250	0.5000	0	111	65	135				

Sample ID: **2206010-001EMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **6/3/2022**		RunNo: **76018**		
Client ID: **GRMW-CCSP-05282022**	Batch ID: **36685**					Analysis Date: **6/6/2022**		SeqNo: **1558951**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.533	0.250	0.5000	0	107	65	135	0.5562	4.22	30	

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **MB-36711**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **6/6/2022**		RunNo: **76035**		
Client ID: **MBLKW**	Batch ID: **36711**					Analysis Date: **6/7/2022**		SeqNo: **1559078**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **LCS-36711**	SampType: **LCS**			Units: **mg/L**		Prep Date: **6/6/2022**		RunNo: **76035**		
Client ID: **LCSW**	Batch ID: **36711**					Analysis Date: **6/7/2022**		SeqNo: **1559079**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.512	0.250	0.5000	0	102	65	135				

Sample ID: **2206015-009DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **6/6/2022**		RunNo: **76035**		
Client ID: **BATCH**	Batch ID: **36711**					Analysis Date: **6/7/2022**		SeqNo: **1559092**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2206015-009DMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **6/6/2022**		RunNo: **76035**		
Client ID: **BATCH**	Batch ID: **36711**					Analysis Date: **6/7/2022**		SeqNo: **1559093**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.536	0.250	0.5000	0	107	65	135				

Sample ID: **2206015-009DMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **6/6/2022**		RunNo: **76035**		
Client ID: **BATCH**	Batch ID: **36711**					Analysis Date: **6/7/2022**		SeqNo: **1559094**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.619	0.250	0.5000	0	124	65	135	0.5360	14.3	30	

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **2206079-002CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **6/6/2022** RunNo: **76035**
Client ID: **BATCH** Batch ID: **36711** Analysis Date: **6/7/2022** SeqNo: **1559105**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2206079-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **6/6/2022** RunNo: **76035**
Client ID: **BATCH** Batch ID: **36711** Analysis Date: **6/7/2022** SeqNo: **1559106**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.668	0.250	0.5000	0.1654	101	65	135				

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-36664** SampType: **MBLK** Units: **µg/L** Prep Date: **6/2/2022** RunNo: **76113**
Client ID: **MBLKW** Batch ID: **36664** Analysis Date: **6/13/2022** SeqNo: **1560812**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **LCS-36664** SampType: **LCS** Units: **µg/L** Prep Date: **6/2/2022** RunNo: **76113**
Client ID: **LCSW** Batch ID: **36664** Analysis Date: **6/13/2022** SeqNo: **1560813**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	477	1.00	500.0	0	95.4	85	115				
Chromium	461	0.750	500.0	0	92.3	85	115				
Copper	471	2.00	500.0	0	94.2	85	115				
Iron	4,620	100	5,000	0	92.4	85	115				
Nickel	471	1.30	500.0	0	94.3	85	115				
Selenium	45.4	1.90	50.00	0	90.9	85	115				
Zinc	465	3.80	500.0	0	93.0	85	115				

Sample ID: **2206010-003ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **6/2/2022** RunNo: **76113**
Client ID: **GRMW-CCWL-0528202** Batch ID: **36664** Analysis Date: **6/13/2022** SeqNo: **1560815**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00						0		30	
Chromium	1.68	0.750						1.690	0.326	30	B
Copper	ND	2.00						0		30	
Iron	ND	100						0		30	
Nickel	ND	1.30						0		30	

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2206010-003ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **6/2/2022** RunNo: **76113**
Client ID: **GRMW-CCWL-0528202** Batch ID: **36664** Analysis Date: **6/13/2022** SeqNo: **1560815**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	1.90						0		30	
Zinc	ND	3.80						0		30	

Sample ID: **2206010-003AMS** SampType: **MS** Units: **µg/L** Prep Date: **6/2/2022** RunNo: **76113**
Client ID: **GRMW-CCWL-0528202** Batch ID: **36664** Analysis Date: **6/13/2022** SeqNo: **1560816**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	487	1.00	500.0	0	97.4	70	130				
Chromium	463	0.750	500.0	1.690	92.4	70	130				
Copper	475	2.00	500.0	0	95.0	70	130				
Iron	4,680	100	5,000	42.13	92.7	50	150				
Nickel	475	1.30	500.0	1.036	94.8	70	130				
Selenium	48.3	1.90	50.00	0	96.7	70	130				
Zinc	478	3.80	500.0	0	95.5	70	130				

Sample ID: **2205547-003BMS** SampType: **MS** Units: **µg/L** Prep Date: **6/2/2022** RunNo: **76113**
Client ID: **BATCH** Batch ID: **36664** Analysis Date: **6/13/2022** SeqNo: **1560832**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	511	1.00	500.0	0	102	70	130				
Chromium	484	0.750	500.0	0.8640	96.6	70	130				
Copper	513	2.00	500.0	7.379	101	70	130				
Iron	5,100	100	5,000	280.4	96.4	50	150				
Nickel	497	1.30	500.0	3.146	98.7	70	130				
Selenium	49.9	1.90	50.00	0	99.8	70	130				
Zinc	558	3.80	500.0	52.26	101	70	130				

Work Order: 2206010
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-36665FB** SampType: **MBLK** Units: **µg/L** Prep Date: **6/2/2022** RunNo: **76113**
Client ID: **MBLKW** Batch ID: **36664** Analysis Date: **6/14/2022** SeqNo: **1561594**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	0.994	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2206010**
Logged by:	**Clare Griggs**	Date Received:	**6/1/2022 11:05:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	UPS				

Log In

3.	Coolers are present?	Yes	☑	No ☐	NA	☐
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☑	No ☐	Not Present	☐
6.	Was an attempt made to cool the samples?	Yes	☑	No ☐	NA	☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☐	No ☑	NA	☐
		Approved by client.				
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☑	No ☐	NA	☐

Person Notified:	Shiloh Simrell	Date:	6/2/2022
By Whom:	Clare Griggs	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Sample temperature & confirming sulfide subcontracting.		
Client Instructions:	Proceed		

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	8.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Jun 8 2022
Fremont Analytical
3600 FREMONT AVE N
Seattle, WA 98103
Attention: BRIANNA BARNES AND MATT LANGSTON

Dear BRIANNA BARNES AND MATT LANGSTON:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
2206010-001D	Water	22-A008940	CONV
2206010-002D	Water	22-A008941	CONV
2206010-003D	Water	22-A008942	CONV
2206010-004D	Water	22-A008943	CONV
2206010-005D	Water	22-A008944	CONV
2206010-006D	Water	22-A008945	CONV
2206010-007D	Water	22-A008946	CONV
2206010-008D	Water	22-A008947	CONV
2206010-009D	Water	22-A008948	CONV
2206010-010D	Water	22-A008949	CONV
2206010-011D	Water	22-A008950	CONV

Your samples were received on Thursday, June 2, 2022. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

Aaron W. Young
Vice President

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

Fremont Analytical
3600 FREMONT AVE N
Seattle, WA 98103
Attention: BRIANNA BARNES AND MATT LANGSTON
All results reported on an as received basis.

Date Received: 06/02/22
Date Reported: 6/ 8/22

AMTEST Identification Number **22-A008940**
Client Identification **2206010-001D**
Sampling Date **05/28/22, 12:10**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008941**
Client Identification **2206010-002D**
Sampling Date **05/28/22, 12:45**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008942**
Client Identification **2206010-003D**
Sampling Date **05/28/22, 11:20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008943**
Client Identification **2206010-004D**
Sampling Date **05/28/22, 10:55**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008944**
Client Identification **2206010-005D**
Sampling Date **05/28/22, 07:50**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008945**
Client Identification **2206010-006D**
Sampling Date **05/28/22, 10:00**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008946**
Client Identification **2206010-007D**
Sampling Date **05/28/22, 09:35**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008947**
Client Identification **2206010-008D**
Sampling Date **05/28/22, 08:50**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008948**
Client Identification **2206010-009D**
Sampling Date **05/28/22, 08:15**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008949**
Client Identification **2206010-010D**
Sampling Date **05/28/22, 13:45**

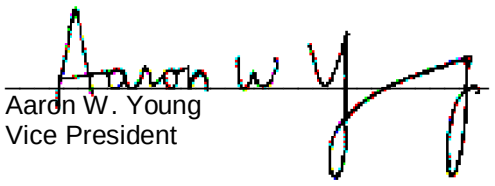
Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22

AMTEST Identification Number **22-A008950**
Client Identification **2206010-011D**
Sampling Date **05/28/22, 12:45**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.05	mg/l		0.05	SM 4500-S2-D	MD	06/03/22



Aaron W. Young
Vice President

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample numbers: 22-A008940 to 22-A008950

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
22-A008949	Total Sulfide	mg/l	< 0.05	0.22	0.25	88.00 %
22-A008949	Total Sulfide	mg/l	< 0.05	0.25	0.25	100.00 %
22-A008950	Total Sulfide	mg/l	< 0.05	0.27	0.25	108.00 %
22-A008950	Total Sulfide	mg/l	< 0.05	0.23	0.25	92.00 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Total Sulfide	mg/l	0.22	0.25	13.
Spike	Total Sulfide	mg/l	0.27	0.23	16.

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Sulfide	mg/l	0.50	0.48	96.0 %

BLANKS

ANALYTE	UNITS	RESULT
Total Sulfide	mg/l	< 0.05

CHAIN OF CUSTODY RECORD

Omega COCID 1389 | PAGE: 1 | OF: 2

ADDRESS
Fremont Analytical, Inc.
3600 Fremont Ave. N.
Seattle, WA 98103
TEL: 206-352-3790
FAX: 206-352-7178
Website: www.fremontanalytical.com

SUB CONTRATOR: **AmTest** COMPANY: **AmTest**

ADDRESS: **13600 NE 126th Place**

CITY, STATE, ZIP: **Kirkland, WA 98034**

PHONE: FAX: EMAIL:

ACCOUNT #:

SPECIAL INSTRUCTIONS / COMMENTS:

Standard TAT. Please note hold time. Email results to Brianna Barnes at bbarnes@fremontanalytical.com and Matt Langston at mlangston@fremontanalytical.com.

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
8940 1	2206010-001D	GRMW-CCSP-0528	500 ML HDPE Z	Water	5/28/2022 12:10:00 PM	1	
	C-SULFIDE						
41 2	2206010-002D	GRMW-CCU8-0528	500 ML HDPE Z	Water	5/28/2022 12:45:00 PM	1	
	C-SULFIDE						
42 3	2206010-003D	GRMW-CCWL-0528	500 ML HDPE Z	Water	5/28/2022 11:20:00 AM	1	
	C-SULFIDE						
43 4	2206010-004D	GRMW-LCPL-05282	500 ML HDPE Z	Water	5/28/2022 10:55:00 AM	1	
	C-SULFIDE						
44 5	2206010-005D	GRMW-GRIC-05282	500 ML HDPE Z	Water	5/28/2022 7:50:00 AM	1	
	C-SULFIDE						
45 6	2206010-006D	GRMW-GRML-0528	500 ML HDPE Z	Water	5/28/2022 10:00:00 AM	1	
	C-SULFIDE						
46 7	2206010-007D	GRMW-CCML-0528	500 ML HDPE Z	Water	5/28/2022 9:35:00 AM	1	
	C-SULFIDE						
47 8	2206010-008D	GRMW-WCCL-0528	500 ML HDPE Z	Water	5/28/2022 8:50:00 AM	1	
	C-SULFIDE						
48 9	2206010-009D	GRMW-GR82-0528	500 ML HDPE Z	Water	5/28/2022 8:15:00 AM	1	
	C-SULFIDE						

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Yeyi Chen	6/2/22	9:16	F.G.	6/2/22	11:41
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 4.0 °C Attempt to Cool ? _____

Comments: _____

CHAIN OF CUSTODY RECORD

Omega COCID 1389 | PAGE: 2 | OF: 2

ADDRESS
Fremont Analytical, Inc.
3600 Fremont Ave. N.
Seattle, WA 98103
TEL: 206-352-3790
FAX: 206-352-7178
Website: www.fremontanalytical.com

SUB CONTRATOR: **AmTest** COMPANY: **AmTest**	SPECIAL INSTRUCTIONS / COMMENTS: Standard TAT. Please note hold time. Email results to Brianna Barnes at bbarnes@fremontanalytical.com and Matt Langston at mlangston@fremontanalytical.com.
ADDRESS: **13600 NE 126th Place**	
CITY, STATE, ZIP: **Kirkland, WA 98034**	
PHONE: FAX: EMAIL:	
ACCOUNT #:	

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
49 10	2206010-010D	GRMW-GRFC-0528	500 ML HDPE Z	Water	5/28/2022 1:45:00 PM	1	
	C-SULFIDE						
50 11	2206010-011D	GRMW-CCU8-FD-0	500 ML HDPE Z	Water	5/28/2022 12:45:00 PM	1	
	C-SULFIDE						

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Yiqi Chen	6/2/22	9:16	F.G.	6/2/22	11:41
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 4.8 °C Attempt to Cool ? _____

Comments: _____

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Anderson Perry & Associates, Inc.
Shiloh Simrell
1901 N Fir St
LaGrande, OR 97850

RE: Grande Ronde Basin Water Quality Assessment
Work Order Number: 2210050

November 01, 2022

Attention Shiloh Simrell:

Fremont Analytical, Inc. received 9 sample(s) on 10/4/2022 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by SM 2320B
Total Hardness by EPA Method 200.8/SM 2340B
Total Phosphorous by EPA Method 365.3

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *11/01/2022*

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess
Work Order: 2210050

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2210050-001	GRMW-GRIC-09302022	09/30/2022 7:25 AM	10/04/2022 9:19 AM
2210050-002	GRMW-GRB2-09302022	09/30/2022 8:05 AM	10/04/2022 9:19 AM
2210050-003	GRMW-WCCL-09302022	09/30/2022 8:45 AM	10/04/2022 9:19 AM
2210050-004	GRMW-CCML-09302022	09/30/2022 9:40 AM	10/04/2022 9:19 AM
2210050-005	GRMW-GRML-09302022	09/30/2022 10:10 AM	10/04/2022 9:19 AM
2210050-006	GRMW-CCWL-09302022	09/30/2022 11:05 AM	10/04/2022 9:19 AM
2210050-007	GRMW-CCSP-09302022	09/30/2022 11:50 AM	10/04/2022 9:19 AM
2210050-008	GRMW-CCUB-09302022	09/30/2022 12:25 PM	10/04/2022 9:19 AM
2210050-009	GRMW-GRFC-09302022	09/30/2022 1:25 PM	10/04/2022 9:19 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2210050**
Date: **11/1/2022**

CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assessment

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.
2210050-001D
C-SULFIDE has been Sub Contracted.
2210050-002D
C-SULFIDE has been Sub Contracted.
2210050-003D
C-SULFIDE has been Sub Contracted.
2210050-004D
C-SULFIDE has been Sub Contracted.
2210050-005D
C-SULFIDE has been Sub Contracted.
2210050-006D
C-SULFIDE has been Sub Contracted.
2210050-007D
C-SULFIDE has been Sub Contracted.
2210050-008D
C-SULFIDE has been Sub Contracted.
2210050-009D
C-SULFIDE has been Sub Contracted.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 9/30/2022 7:25:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-001 **Matrix:** Water
Client Sample ID: **GRMW-GRIC-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	2.90	1.00	D	mg/L	10	10/12/2022 2:46:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	51.8	1.00		mg/L CaCO3	1	10/6/2022 6:34:39 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 3:07:24 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 3:07:24 PM
Copper	ND	2.00		µg/L	1	10/6/2022 3:07:24 PM
Iron	ND	100		µg/L	1	10/6/2022 3:07:24 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 3:07:24 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 3:07:24 PM
Zinc	ND	3.80		µg/L	1	10/6/2022 3:07:24 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	58.4	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 3:49:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 12:29:00 PM

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 9/30/2022 8:05:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-002 **Matrix:** Water
Client Sample ID: **GRMW-GRB2-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	1.63	1.00	D	mg/L	10	10/12/2022 3:09:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	63.3	1.00		mg/L CaCO3	1	10/6/2022 6:38:54 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 3:10:07 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 3:10:07 PM
Copper	ND	2.00		µg/L	1	10/6/2022 3:10:07 PM
Iron	ND	100		µg/L	1	10/6/2022 3:10:07 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 3:10:07 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 3:10:07 PM
Zinc	ND	3.80		µg/L	1	10/6/2022 3:10:07 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	69.0	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 3:55:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 12:31:00 PM

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc.
Collection Date: 9/30/2022 8:45:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-003
Matrix: Water
Client Sample ID: **GRMW-WCCL-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	0.620	0.100		mg/L	1	10/12/2022 8:35:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	48.3	1.00		mg/L CaCO3	1	10/6/2022 6:43:09 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 3:12:51 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 3:12:51 PM
Copper	ND	2.00		µg/L	1	10/6/2022 3:12:51 PM
Iron	ND	100		µg/L	1	10/6/2022 3:12:51 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 3:12:51 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 3:12:51 PM
Zinc	ND	3.80		µg/L	1	10/6/2022 3:12:51 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	52.2	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 4:10:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 12:33:00 PM

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 9/30/2022 9:40:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-004 **Matrix:** Water
Client Sample ID: **GRMW-CCML-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	3.00	1.00	D	mg/L	10	10/12/2022 3:56:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	41.0	1.00		mg/L CaCO3	1	10/6/2022 6:47:24 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 3:21:04 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 3:21:04 PM
Copper	ND	2.00		µg/L	1	10/6/2022 3:21:04 PM
Iron	ND	100		µg/L	1	10/6/2022 3:21:04 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 3:21:04 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 3:21:04 PM
Zinc	ND	3.80		µg/L	1	10/6/2022 3:21:04 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	58.8	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 4:15:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 12:36:00 PM

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 9/30/2022 10:10:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-005 **Matrix:** Water
Client Sample ID: **GRMW-GRML-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	2.92	0.500	D	mg/L	5	10/12/2022 4:19:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	54.9	1.00		mg/L CaCO3	1	10/6/2022 7:00:11 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 3:23:47 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 3:23:47 PM
Copper	ND	2.00		µg/L	1	10/6/2022 3:23:47 PM
Iron	ND	100		µg/L	1	10/6/2022 3:23:47 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 3:23:47 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 3:23:47 PM
Zinc	7.89	3.80		µg/L	1	10/6/2022 3:23:47 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	64.0	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 4:21:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 12:38:00 PM

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 9/30/2022 11:05:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-006 **Matrix:** Water
Client Sample ID: **GRMW-CCWL-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	1.90	0.500	D	mg/L	5	10/12/2022 4:42:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	45.1	1.00		mg/L CaCO3	1	10/6/2022 7:04:26 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 3:26:30 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 3:26:30 PM
Copper	ND	2.00		µg/L	1	10/6/2022 3:26:30 PM
Iron	ND	100		µg/L	1	10/6/2022 3:26:30 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 3:26:30 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 3:26:30 PM
Zinc	12.8	3.80		µg/L	1	10/6/2022 3:26:30 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	48.6	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 4:26:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 12:41:00 PM

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 9/30/2022 11:50:00 AM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-007 **Matrix:** Water
Client Sample ID: **GRMW-CCSP-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	0.730	0.500	D	mg/L	5	10/12/2022 5:05:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	33.1	1.00		mg/L CaCO3	1	10/6/2022 7:08:41 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 3:29:14 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 3:29:14 PM
Copper	51.6	2.00		µg/L	1	10/6/2022 3:29:14 PM
Iron	ND	100		µg/L	1	10/6/2022 3:29:14 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 3:29:14 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 3:29:14 PM
Zinc	57.3	3.80		µg/L	1	10/6/2022 3:29:14 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	34.4	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 4:59:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 12:44:00 PM

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 9/30/2022 12:25:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-008 **Matrix:** Water
Client Sample ID: **GRMW-CCUB-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	1.28	0.500	D	mg/L	5	10/12/2022 6:15:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	33.9	1.00		mg/L CaCO3	1	10/6/2022 6:17:40 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 2:56:31 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 2:56:31 PM
Copper	ND	2.00		µg/L	1	10/6/2022 2:56:31 PM
Iron	ND	100		µg/L	1	10/6/2022 2:56:31 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 2:56:31 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 2:56:31 PM
Zinc	5.88	3.80		µg/L	1	10/6/2022 2:56:31 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	37.7	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 5:04:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 12:51:00 PM

Analytical Report

Work Order: **2210050**
Date Reported: **11/1/2022**

Client: Anderson Perry & Associates, Inc. **Collection Date:** 9/30/2022 1:25:00 PM
Project: Grande Ronde Basin Water Quality Assessment
Lab ID: 2210050-009 **Matrix:** Water
Client Sample ID: **GRMW-GRFC-09302022**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 38124		Analyst: ALT
Chloride	0.775	0.500	D	mg/L	5	10/12/2022 7:48:00 PM
Total Hardness by EPA Method 200.8/SM 2340B				Batch ID: 38044		Analyst: EH
Total Hardness (as CaCO3)	35.4	1.00		mg/L CaCO3	1	10/6/2022 7:12:55 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 38057		Analyst: EH
Arsenic	ND	1.00		µg/L	1	10/6/2022 3:31:57 PM
Chromium	ND	0.750		µg/L	1	10/6/2022 3:31:57 PM
Copper	ND	2.00		µg/L	1	10/6/2022 3:31:57 PM
Iron	ND	100		µg/L	1	10/6/2022 3:31:57 PM
Nickel	ND	1.30		µg/L	1	10/6/2022 3:31:57 PM
Selenium	ND	1.90		µg/L	1	10/6/2022 3:31:57 PM
Zinc	18.2	3.80		µg/L	1	10/6/2022 3:31:57 PM
Total Alkalinity by SM 2320B				Batch ID: R78884		Analyst: CB
Alkalinity, Total (As CaCO3)	42.3	2.50		mg/L	1	10/10/2022 7:46:20 AM
Ammonia by SM 4500 NH3G				Batch ID: 38108		Analyst: ALT
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/11/2022 5:24:00 PM
Total Phosphorous by EPA Method 365.3				Batch ID: 38053		Analyst: ALT
Phosphorus, Total (As P)	ND	0.250		mg/L	1	10/6/2022 1:29:00 PM

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R78884**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **10/10/2022**		RunNo: **78884**		
Client ID: **MBLKW**	Batch ID: **R78884**					Analysis Date: **10/10/2022**		SeqNo: **1623727**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R78884**	SampType: **LCS**			Units: **mg/L**		Prep Date: **10/10/2022**		RunNo: **78884**		
Client ID: **LCSW**	Batch ID: **R78884**					Analysis Date: **10/10/2022**		SeqNo: **1623728**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.9	2.50	100.0	0	97.9	81.3	118				

Sample ID: **2210050-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **10/10/2022**		RunNo: **78884**		
Client ID: **GRMW-GRIC-09302022**	Batch ID: **R78884**					Analysis Date: **10/10/2022**		SeqNo: **1623730**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	59.6	2.50						58.37	2.09	20	

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **LCS-38108** SampType: **LCS** Units: **mg/L** Prep Date: **10/11/2022** RunNo: **79018**
Client ID: **LCSW** Batch ID: **38108** Analysis Date: **10/11/2022** SeqNo: **1627067**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.511	0.100	0.5000	0	102	75.5	116				

Sample ID: **MB-38108** SampType: **MBLK** Units: **mg/L** Prep Date: **10/11/2022** RunNo: **79018**
Client ID: **MBLKW** Batch ID: **38108** Analysis Date: **10/11/2022** SeqNo: **1627068**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **2209478-003BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **10/11/2022** RunNo: **79018**
Client ID: **BATCH** Batch ID: **38108** Analysis Date: **10/11/2022** SeqNo: **1627073**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2209478-003BMS** SampType: **MS** Units: **mg/L** Prep Date: **10/11/2022** RunNo: **79018**
Client ID: **BATCH** Batch ID: **38108** Analysis Date: **10/11/2022** SeqNo: **1627074**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.259	0.100	0.5000	0	51.8	46.1	130				

Sample ID: **2210050-008EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **10/11/2022** RunNo: **79018**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38108** Analysis Date: **10/11/2022** SeqNo: **1627085**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2210050-008EMS** SampType: **MS** Units: **mg/L** Prep Date: **10/11/2022** RunNo: **79018**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38108** Analysis Date: **10/11/2022** SeqNo: **1627086**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.444	0.100	0.5000	0	88.8	46.1	130				

Sample ID: **2210050-008EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **10/11/2022** RunNo: **79018**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38108** Analysis Date: **10/11/2022** SeqNo: **1627087**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.457	0.100	0.5000	0	91.4	46.1	130	0.4440	2.89	30	

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **MB-38044** SampType: **MBLK** Units: **mg/L** Prep Date: **10/5/2022** RunNo: **78843**
Client ID: **MBLKW** Batch ID: **38044** Analysis Date: **10/6/2022** SeqNo: **1622826**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.350									
Magnesium	ND	0.150									
Total Hardness (as CaCO3)	ND	1.00									

Sample ID: **LCS-38044** SampType: **LCS** Units: **mg/L** Prep Date: **10/5/2022** RunNo: **78843**
Client ID: **LCSW** Batch ID: **38044** Analysis Date: **10/6/2022** SeqNo: **1622827**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.04	0.350	1.000	0	104	50	150				
Magnesium	1.08	0.150	1.000	0	108	50	150				

Sample ID: **2210050-008CDUP** SampType: **DUP** Units: **mg/L CaCO3** Prep Date: **10/5/2022** RunNo: **78843**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38044** Analysis Date: **10/6/2022** SeqNo: **1622829**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Hardness (as CaCO3)	37.0	1.00						33.85	8.93	20	

Sample ID: **2210050-008CMS** SampType: **MS** Units: **mg/L** Prep Date: **10/5/2022** RunNo: **78843**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38044** Analysis Date: **10/6/2022** SeqNo: **1622830**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	8.89	0.350	1.000	8.662	23.0	50	150				S
Magnesium	3.87	0.150	1.000	2.968	90.6	50	150				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2210050-008CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **10/5/2022** RunNo: **78843**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38044** Analysis Date: **10/6/2022** SeqNo: **1622831**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.31	0.350	1.000	8.662	64.5	50	150	8.892	4.56	20	

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Hardness by EPA Method 200.8/SM 2340B

Sample ID: **2210050-008CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **10/5/2022** RunNo: **78843**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38044** Analysis Date: **10/6/2022** SeqNo: **1622831**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	3.99	0.150	1.000	2.968	102	50	150	3.875	2.93	20	

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-38124**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **10/12/2022**		RunNo: **78991**			
Client ID: **MBLKW**	Batch ID: **38124**					Analysis Date: **10/12/2022**		SeqNo: **1626325**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									

Sample ID: **LCS-38124**	SampType: **LCS**			Units: **mg/L**		Prep Date: **10/12/2022**		RunNo: **78991**			
Client ID: **LCSW**	Batch ID: **38124**					Analysis Date: **10/12/2022**		SeqNo: **1626326**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.755	0.100	0.7500	0	101	90	110				

Sample ID: **2210050-008BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **10/12/2022**		RunNo: **78991**			
Client ID: **GRMW-CCUB-0930202**	Batch ID: **38124**					Analysis Date: **10/12/2022**		SeqNo: **1626337**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.32	0.500						1.285	2.69	20	D

Sample ID: **2210050-008BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **10/12/2022**		RunNo: **78991**			
Client ID: **GRMW-CCUB-0930202**	Batch ID: **38124**					Analysis Date: **10/12/2022**		SeqNo: **1626338**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.93	0.500	3.750	1.285	97.2	80	120				D

Sample ID: **2210050-008BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **10/12/2022**		RunNo: **78991**			
Client ID: **GRMW-CCUB-0930202**	Batch ID: **38124**					Analysis Date: **10/12/2022**		SeqNo: **1626339**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.92	0.500	3.750	1.285	96.9	80	120	4.930	0.203	20	D

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Total Phosphorous by EPA Method 365.3

Sample ID: **MB-38053**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **10/5/2022**		RunNo: **78856**		
Client ID: **MBLKW**	Batch ID: **38053**					Analysis Date: **10/6/2022**		SeqNo: **1623038**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250									

Sample ID: **LCS-38053**	SampType: **LCS**			Units: **mg/L**		Prep Date: **10/5/2022**		RunNo: **78856**		
Client ID: **LCSW**	Batch ID: **38053**					Analysis Date: **10/6/2022**		SeqNo: **1623039**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.469	0.250	0.5000	0	93.7	65	135				

Sample ID: **2210050-008EDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **10/5/2022**		RunNo: **78856**		
Client ID: **GRMW-CCUB-0930202**	Batch ID: **38053**					Analysis Date: **10/6/2022**		SeqNo: **1623051**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.250						0		30	

Sample ID: **2210050-008EMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **10/5/2022**		RunNo: **78856**		
Client ID: **GRMW-CCUB-0930202**	Batch ID: **38053**					Analysis Date: **10/6/2022**		SeqNo: **1623052**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.531	0.250	0.5000	0	106	65	135				

Sample ID: **2210050-008EMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **10/5/2022**		RunNo: **78856**		
Client ID: **GRMW-CCUB-0930202**	Batch ID: **38053**					Analysis Date: **10/6/2022**		SeqNo: **1623053**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.561	0.250	0.5000	0	112	65	135	0.5310	5.53	30	

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-38057** SampType: **MBLK** Units: **µg/L** Prep Date: **10/6/2022** RunNo: **78844**
Client ID: **MBLKW** Batch ID: **38057** Analysis Date: **10/6/2022** SeqNo: **1622936**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

Sample ID: **MB-38060FB** SampType: **MBLK** Units: **µg/L** Prep Date: **10/6/2022** RunNo: **78844**
Client ID: **MBLKW** Batch ID: **38057** Analysis Date: **10/6/2022** SeqNo: **1622937**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00									
Chromium	ND	0.750									
Copper	ND	2.00									
Iron	ND	100									
Nickel	ND	1.30									
Selenium	ND	1.90									
Zinc	ND	3.80									

NOTES:
Filter Blank

Sample ID: **LCS-38057** SampType: **LCS** Units: **µg/L** Prep Date: **10/6/2022** RunNo: **78844**
Client ID: **LCSW** Batch ID: **38057** Analysis Date: **10/6/2022** SeqNo: **1622938**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	481	1.00	500.0	0	96.1	85	115				
Chromium	475	0.750	500.0	0	95.1	85	115				
Copper	495	2.00	500.0	0	98.9	85	115				
Iron	4,930	100	5,000	0	98.6	85	115				
Nickel	488	1.30	500.0	0	97.6	85	115				
Selenium	45.8	1.90	50.00	0	91.6	85	115				

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **LCS-38057** SampType: **LCS** Units: **µg/L** Prep Date: **10/6/2022** RunNo: **78844**
Client ID: **LCSW** Batch ID: **38057** Analysis Date: **10/6/2022** SeqNo: **1622938**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	484	3.80	500.0	0	96.8	85	115				

Sample ID: **2210050-008ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **10/6/2022** RunNo: **78844**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38057** Analysis Date: **10/6/2022** SeqNo: **1622940**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.00						0		30	
Chromium	ND	0.750						0		30	
Copper	ND	2.00						0		30	
Iron	ND	100						0		30	
Nickel	ND	1.30						0		30	
Selenium	ND	1.90						0		30	
Zinc	ND	3.80						5.884	67.1	30	

Sample ID: **2210050-008AMS** SampType: **MS** Units: **µg/L** Prep Date: **10/6/2022** RunNo: **78844**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38057** Analysis Date: **10/6/2022** SeqNo: **1622941**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	492	1.00	500.0	0	98.5	70	130				
Chromium	487	0.750	500.0	0	97.4	70	130				
Copper	500	2.00	500.0	0	100	70	130				
Iron	5,020	100	5,000	61.00	99.1	50	150				
Nickel	492	1.30	500.0	0	98.5	70	130				
Selenium	48.8	1.90	50.00	0	97.7	70	130				
Zinc	502	3.80	500.0	5.884	99.2	70	130				

Work Order: 2210050
CLIENT: Anderson Perry & Associates, Inc.
Project: Grande Ronde Basin Water Quality Assess

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2210050-008AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **10/6/2022** RunNo: **78844**
Client ID: **GRMW-CCUB-0930202** Batch ID: **38057** Analysis Date: **10/6/2022** SeqNo: **1622942**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	492	1.00	500.0	0	98.5	70	130	492.3	0.0136	30	
Chromium	486	0.750	500.0	0	97.2	70	130	487.1	0.271	30	
Copper	516	2.00	500.0	0	103	70	130	500.2	3.07	30	
Iron	5,120	100	5,000	61.00	101	50	150	5,017	2.05	30	
Nickel	495	1.30	500.0	0	99.1	70	130	492.4	0.621	30	
Selenium	47.7	1.90	50.00	0	95.3	70	130	48.83	2.40	30	
Zinc	501	3.80	500.0	5.884	99.1	70	130	502.1	0.173	30	

Sample ID: **2210011-004BMS** SampType: **MS** Units: **µg/L** Prep Date: **10/6/2022** RunNo: **78844**
Client ID: **BATCH** Batch ID: **38057** Analysis Date: **10/6/2022** SeqNo: **1622957**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	514	1.00	500.0	6.970	101	70	130				
Chromium	479	0.750	500.0	0	95.8	70	130				
Copper	483	2.00	500.0	0	96.6	70	130				
Iron	4,980	100	5,000	48.47	98.7	50	150				
Nickel	485	1.30	500.0	0.9475	96.8	70	130				
Selenium	50.0	1.90	50.00	0	100	70	130				
Zinc	508	3.80	500.0	1.914	101	70	130				

Sample Log-In Check List

Client Name:	**APA**	Work Order Number:	**2210050**
Logged by:	**Clare Griggs**	Date Received:	**10/4/2022 9:19:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2.	How was the sample delivered?	UPS			

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐	
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑	
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐	
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐	
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐		
10.	Are samples properly preserved?	Yes ☑	No ☐		
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐	
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑	
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐		
14.	Does paperwork match bottle labels?	Yes ☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐		
16.	Is it clear what analyses were requested?	Yes ☑	No ☐		
17.	Were all holding times able to be met?	Yes ☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑	

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	1.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Analytical Resources, LLC
Analytical Chemists and Consultants

28 October 2022

Brianna Barnes
Fremont Analytical
3600 Fremont Avenue N.
Seattle, WA 98103

RE: Sulfide (2210050)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22J0054	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Shelly Fishel, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GRMW-GRIC-0930	22J0054-01	Water	30-Sep-2022 07:25	05-Oct-2022 13:28
GRMW-GRB2-0930	22J0054-02	Water	30-Sep-2022 08:05	05-Oct-2022 13:28
GRMW-WCCL-0930	22J0054-03	Water	30-Sep-2022 08:45	05-Oct-2022 13:28
GRMW-CCML-0930	22J0054-04	Water	30-Sep-2022 09:40	05-Oct-2022 13:28
GRMW-GRML-0930	22J0054-05	Water	30-Sep-2022 10:10	05-Oct-2022 13:28
GRMW-CCWL-0930	22J0054-06	Water	30-Sep-2022 11:05	05-Oct-2022 13:28
GRMW-CCSP-0930	22J0054-07	Water	30-Sep-2022 11:50	05-Oct-2022 13:28
GRMW-CCUB-0930	22J0054-08	Water	30-Sep-2022 12:25	05-Oct-2022 13:28
GRMW-GRFC-0121	22J0054-09	Water	30-Sep-2022 13:25	05-Oct-2022 13:28

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

Work Order Case Narrative

Client: Fremont Analytical
Project: Sulfide
Project Number: 2210050
Work Order: 22J0054

Sample receipt

Sample(s) as listed on the preceding page were received 05-Oct-2022 13:28 under ARI work order 22J0054. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

WORK ORDER

22J0054

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Fremont Analytical | **Project Manager: Shelly Fishel**

Project: Sulfide | **Project Number: 2210050**

Report To:
Fremont Analytical
Brianna Barnes
3600 Fremont Avenue N.
Seattle, WA 98103
Phone: (206) 352-3790
Fax: (206) 352-7178

Invoice To:
Fremont Analytical
Mike Ridgeway
3600 Fremont Avenue N.
Seattle, WA 98103
Phone :(206) 352-3790
Fax: (206) 352-7178

Date Due: 20-Oct-2022 18:00 (10 day TAT)

Received By: Truett Smith | Date Received: 05-Oct-2022 13:28

Logged In By: Truett Smith | Date Logged In: 05-Oct-2022 13:17

Samples Received at: 1.8°C

Intact, properly signed and dated custody seals attached to outside of coole(s)	No	Custody papers included with the cooler	Yes
Custody papers properly filled out(in, signed, analyses requested, etc)	Yes	Was a temperature blank included in the cooler	No
Was sufficient ice used (if appropriate)	No	All bottles sealed in individual plastic bags	Yes
All bottles arrived in good condition(unbroken)	Yes	All bottle labels complete and legible	Yes
Number of containers listed on COC match number received	Yes	Bottle labels and tags agree with COC	Yes
Correct bottles used for the requested analyses	Yes	All VOC vials free of air bubbles	No
Analyses/bottles require preservation (attach preservation sheet excluding VOC)	No	Sufficient amount of sample sent in each bottle	Yes
Sample split at ARI	No		

22J0054-01 GRMW-GRIC-0930 [Water] Sampled 30-Sep-2022 07:25				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	
22J0054-02 GRMW-GRB2-0930 [Water] Sampled 30-Sep-2022 08:05				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	
22J0054-03 GRMW-WCCL-0930 [Water] Sampled 30-Sep-2022 08:45				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	
22J0054-04 GRMW-CCML-0930 [Water] Sampled 30-Sep-2022 09:40				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	
22J0054-05 GRMW-GRML-0930 [Water] Sampled 30-Sep-2022 10:10				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	
22J0054-06 GRMW-CCWL-0930 [Water] Sampled 30-Sep-2022 11:05				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	
22J0054-07 GRMW-CCSP-0930 [Water] Sampled 30-Sep-2022 11:50				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	
22J0054-08 GRMW-CCUB-0930 [Water] Sampled 30-Sep-2022 12:25				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	MS/MSD
22J0054-09 GRMW-GRFC-0121 [Water] Sampled 30-Sep-2022 01:25				
Sulfide, SM 4500-S2 D-0, Water	10/20/2022	10	10/7/2022	

WORK ORDER

22J0054

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Fremont Analytical | Project Manager: Shelly Fishel

Project: Sulfide | Project Number: 2210050

Preservation Confirmation

Container ID	Container Type	pH
22J0054-01 A	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-02 A	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-03 A	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-04 A	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-05 A	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-06 A	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-07 A	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-08 A	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-08 B	HDPE NM, 500 mL, Zn Acetate	>12
22J0054-09 A	HDPE NM, 500 mL, Zn Acetate	>12

Preservation Confirmed By

10/5/22
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Fremont | Project Name: Sub Contract

COC No(s): _____ NA | Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22J0054 | Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 13:17 | 1.8

If cooler temperature is out of compliance fill out form 00070F | Temp Gun ID#: 200908

Cooler Accepted by: Jennifer Emiley | Date: 10/5/22 | Time: 13:18

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: Jennifer Emiley | Date: 10/5/22 | Time: 13:17 | Labels checked by: Trudy Smith

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-GRIC-0930

22J0054-01 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 07:25

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-01 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-GRB2-0930

22J0054-02 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 08:05

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-02 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-WCCL-0930

22J0054-03 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 08:45

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-03 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-CCML-0930

22J0054-04 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 09:40

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-04 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-GRML-0930

22J0054-05 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 10:10

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-05 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-CCWL-0930

22J0054-06 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 11:05

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-06 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-CCSP-0930

22J0054-07 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 11:50

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-07 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-CCUB-0930

22J0054-08 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 12:25

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:13

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-08 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

GRMW-GRFC-0121

22J0054-09 (Water)

Wet Chemistry

Method: SM 4500-S2 D-00 — Sampled: 09/30/2022 13:25

Instrument: UV1800-2 Analyst: CDE — Analyzed: 10/06/2022 20:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22J0054-09 A

Preparation Batch: BKJ0147 — Sample Size: 5 mL

Prepared: 10/06/2022 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfide	18496-25-8	1	0.050	0.050	ND	mg/L	U

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKJ0147 - SM 4500-S2 D-00

Instrument: UV1800-2 Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKJ0147-BLK1)				Prepared: 06-Oct-2022 Analyzed: 06-Oct-2022 19:53							
Sulfide	ND	0.050	0.050	mg/L							U
LCS (BKJ0147-BS1)				Prepared: 06-Oct-2022 Analyzed: 06-Oct-2022 19:53							
Sulfide	0.491	0.050	0.050	mg/L	0.497		98.8	75-125			
Duplicate (BKJ0147-DUP1)		**Source: 22J0054-08**		Prepared: 06-Oct-2022 Analyzed: 06-Oct-2022 20:14							
Sulfide	ND	0.050	0.050	mg/L		ND					U
Matrix Spike (BKJ0147-MS1)		**Source: 22J0054-08**		Prepared: 06-Oct-2022 Analyzed: 06-Oct-2022 20:14							
Sulfide	0.469	0.050	0.050	mg/L	0.497	ND	94.4	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

Certified Analyses included in this Report

Analyte	Certifications
SM 4500-S2 D-00 in Water	
Sulfide	DoD-ELAP,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023

Fremont Analytical	Project: Sulfide	
3600 Fremont Avenue N.	Project Number: 2210050	**Reported:**
Seattle WA, 98103	Project Manager: Brianna Barnes	28-Oct-2022 15:47

Notes and Definitions

U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

APPENDIX F
Data Validation and Qualifications

Data Validation and Qualifications

Field Documentation

Field forms and other documentation were reviewed for completeness. All sample preservation and transportation requirements were met. The chain-of-custody (COC) forms were signed by Anderson Perry & Associates, Inc., at the time of shipping and Fremont Analytical Laboratory or Pacific Agricultural Laboratory at the time of sample receipt (see Appendix D of the Data Report). All documentation was complete in terms of identifying the laboratory receiving and conducting the analysis, and the COC was completed to identify the samples submitted for analysis. The samples were received in good condition with temperatures in the recommended range of 0.0 to 6.0° Celsius (C), with the exception of one cooler (August 2021 event), which arrived at 19.5°C, and another (May 2022 event), which arrived at 8.1°C.

Data validation verified the accuracy and precision of chemical determinations. Data qualifiers assigned because of the data validation are provided in the results table (Table 4 of the Data Report). The following qualifiers were used:

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

Q - Hold time exceeded

H - Associated calibration verification is above acceptance criteria; result may be high-biased

T - Shipping temperature exceeded

D - Dilution required

S - Outlying spike recovery

U - Non-detect

No data were rejected. These data qualifications are not expected to impact the data quality objectives.

All water data were determined to be useable as reported from the laboratory or as qualified in this report.

Holding Times, Preservation, and Dilutions

Holding times and preservation requirements were met throughout the sampling process with the following exceptions.

- During the November 2020 sampling event, the following polyaromatic hydrocarbons exceeded holding times for preparation or analysis: 2-methylnaphthalene, acenaphthylene, acenaphthene, anthracene, pyrene, benz(a)anthracene, and benzo(a)pyrene. These data were qualified on Table 4 with a “Q” to indicate hold time was exceeded.

- During the November 2020 sampling event, chloride required dilution. These data are qualified on Table 4 with a “D” to indicate dilution was required.

- During the January 2021 sampling event, chloride required dilution. These data are qualified on Table 4 with a "D" to indicate dilution was required. Chloride was also analyzed for GRIC[1] out of hold time so is qualified with a "Q" to indicate hold time was exceeded.

- During the March 2021 event, chloride required dilution for GR82, CCML, GRML, and GRIC. These data are qualified on Table 4 with a "D" to indicate dilution was required.

- During the April 2021 event, chloride required dilution for GR82, CCML, GRML, and GRIC and LCPL. These data are qualified on Table 4 with a "D" to indicate dilution was required.

- During the April 2021 event, sulfide samples were preserved with zinc acetate as they arrived at Fremont Analytical Laboratory on April 2021. These samples were not preserved in the field due to an oversight from the lab. The samples were preserved by Fremont Analytical Laboratory upon receipt. The lack of preservation is a potential reason for high relative percent differences (RPD) in sulfide duplicates, discussed below.

- During the August 2021 event, sulfide exceeded holding times for preparation or analysis. These data are qualified "Q" to indicate hold time was exceeded.

- During the August 2021 event, dilution was required for chloride at LCPL, GRIC, and GRML. Dilution was required for phosphorous at LCPL. These data are qualified on Table 4 with a "D" to indicate dilution was required.

- During the October 2021 event, dilution was required for total hardness at all locations and dilution was required for chloride at GRIC. These data are qualified on Table 4 with a "D" to indicate dilution was required.

- During the January 2022 event, dilution was required for chloride at GRIC, CCML, GR82, LCPL, and CCWL. Data are qualified on Table 4 with a "D." Dilution was required for total hardness at all locations, and data are qualified on Table 4 with a "D." Total hardness was also qualified with an "H" at GRIC because associated calibration verification was above acceptance criteria and the result may be high-biased. Ammonia and phosphorus required dilution at LCPL, and data are qualified on Table 4 with a "D."

- During the January 2022 event, sulfide exceeded hold time for GRIC. Data are qualified with a "Q" to indicate hold time exceeded.

[1] CCSP = Catherine Creek State Park
CCUB = Catherine Creek below the City of Union WWTP outfall
CCWL = Catherine Creek at Wilkinson Lane
LCPL = Ladd Creek at Peach Lane
GRIC = Grande Ronde River in Island City
GRML = Grande Ronde River at Market Lane
CCML = Catherine Creek Market Lane Bridge
WCCL = Willow Creek at Courtney Lane
GR82 = Grande Ronde River - Highway 82 near Indian Creek
GRFC Grande Ronde River near confluence with Fly Creek

- During the April 2022 event, dilution was required for all locations for total hardness, and for GRIC, GR82, CCML, GRML, LCPL, and CCWL for chloride. These data are qualified on Table 4 with a "D" to indicate dilution was required.

- During the May 2022 event, chloride required dilution for all locations. These data were qualified with a "D."

- During the September 2022 event, chloride dilution was required for GRIC, GR82, CCML, GRML, CCWL, CCSP, CCUB, and GRFC. These data were qualified with a "D."

The remaining samples were processed within the holding time and at lab-recommended temperatures upon arrival. All remaining samples were extracted and analyzed within recommended holding times. The requested analytical methods were performed, and the dates of analysis were listed for each analysis.

Lab Reporting

Requested target analytes were reported with the original laboratory data qualifiers, and definitions were provided in the lab report. All units were correctly provided with results.

Detection limits were below the acute water quality screening level for all analytes for which screening level information was available, with the exception of silver. Detection limits were below the chronic water quality screening level for all analytes for which screening level information was available, with the exception of lead. Reporting limits were below the acute water quality screening level for all analytes for which screening level information was available, with the exception of cyanide and silver. Reporting limits were below the chronic water quality screening level for all analytes for which screening level information was available, with the exception of cadmium, cyanide, lead, selenium, silver, and mercury. These parameters were excluded from Phase 2 sampling with the exception of selenium due to lack of detections. Results were evaluated by comparing sample conditions upon receipt by the laboratory (all samples were correctly preserved, with the exception of some sulfide samples as discussed above), hold times, and sample-related quality control (QC) data. All sample-related QC data and acceptance criteria were provided and linked to the appropriate samples.

Because water quality screening levels were below detection limits and reporting limits for some metals, there is the potential that acute and chronic water quality screening levels were exceeded for more analytes than described in this report.

Method Blanks

All method blanks yielded percent recoveries within the laboratory control limits with the following exceptions:

- During the November 2020 sampling event, nitrogen and ammonia were detected in the method blank associated with the laboratory control sample (LCS), the matrix spike (MS), and the matrix spike duplicate (MSD). No data were qualified on Table 4.

- During the November 2020 event, the chloride data were qualified "D" by Fremont Analytical Laboratory because dilution was required for the sample, a duplicate, MS, and MSD.

- During the November 2020 event, sulfide data were qualified “S” because outlying spike recoveries were observed.

- During the May 2022 event, chromium was detected in the method blank. Data from CCWL, GRML, CCUB, GR82, and GRFC were qualified with “B.”

- During the September 2022 event, calcium data was qualified “S” because outlying spike recoveries were observed.

Field Duplicates

Duplicate samples were analyzed at the required frequencies for all analyses. All field duplicate analyses yielded percent recoveries within the laboratory control limits.

Matrix Spike/Matrix Spike Duplicate

MS samples were analyzed at the required frequencies for all analyses. All MS/MSD analyses yielded percent recoveries within the laboratory control limits with the following exceptions:

- An outlying spike recovery was noted in one MS and one MSD for sulfide at GR82 (November 2020 sampling event). Sulfide was not detected for this sample. A duplicate analysis was performed with similar results, indicating a possible matrix effect. These data were qualified on Table 4 with “S” to indicate the outlying spike recovery.

- For the January 2021 event, the concentrations detected in the MS and MSD for chloride exceeded the working range of the instrument, so these values were estimated and diluted.

- An outlying spike recovery was noted in one MS and one MSD for sulfide at CCWL (January 2021 event). A duplicate analysis was performed and recovered within range.

- An outlying spike recovery was noted in one MSD for nickel at CCWL (January 2021 event). A duplicate analysis was performed and recovered within range.

- An outlying spike recovery was noted in one MSD for silver at CCWL (January 2021 event). A duplicate analysis was performed with similar results indicating a possible matrix effect. These data were qualified on Table 4 with “S” to indicate the outlying spike recovery.

- During the March 2021 event, the analyte concentration was too high for accurate spike recovery for one chloride MS.

- An outlying spike recovery was noted in one MS and one MSD for sulfide at GR82 (March 2021 sampling event). A duplicate analysis was performed with similar results, indicating a possible matrix effect.

- During the March 2021 event, an outlying spike recovery was noted in one MS and one MSD for sulfide. A duplicate analysis was performed with similar results, indicating a possible matrix effect.

- In the March 2021 event, calcium and magnesium exceeded the working range of the instrument and were estimated in an MS and MSD.

- During the April 2021 event, a spike recovery was above the control limit; however, sample results were not detected so data quality was not affected for captan and disulfoton.

- An outlying spike recovery was noted in one MS and one MSD for sulfide at GR82 (April 2021 sampling event). A duplicate analysis was performed with similar results, indicating a possible matrix effect. The data are qualified on Table 4 with a "U" (non-detect) and an "S."

- During the April 2021 event, an MS and MSD for calcium exceeded the working range of the instrument.

- During the April 2021 event, a laboratory duplicate, MS, and MSD for chloride required dilution.

- During the August 2021 event, a spike recovery (MS) indicated a possible matrix effect for nitrogen and ammonia.

- During the October 2021 event, an outlying spike recovery was noted in one MS and one MSD for total phosphorus. A duplicate analysis was performed with similar results, indicating a possible matrix effect.

- During the October 2021 event, chloride was estimated for an MS and MSD at GRML. These data are qualified with "E" to indicate that the value was above quantitation range.

- An outlying spike recovery was noted in one MS and one MSD for sulfide at GR82 (October 2021 sampling event). A duplicate analysis was performed with similar results, indicating a possible matrix effect. The data are qualified on Table 4 with an "S."

- Outlying spike recoveries were associated with the CCUB sulfide sample in one MS (October 2021 sampling event). These data are qualified on Table 4 with an "S."

- During the January 2022 event, a batch laboratory duplicate and duplicate for GRML were estimated for total hardness. GRIC total harness in a duplicate was noted as associated calibration verification is above acceptance criteria. Result may be high-biased. GRIC data for total hardness were qualified with an "H" to indicate high bias.

- During the January 2022 event, the calcium concentration was too high for accurate spike recovery in the MS for GRML and GRIC.

- During the January 2022 event, chloride required dilution due to matrix, and estimated results for a laboratory duplicate, MS, and MSD. GRIC chloride duplicate results, MS, and MSD were estimated.

- During the January 2022 event, nickel and zinc MSDs for GRIC had a high RPD observed.

- During the January 2022 event, the magnesium concentration was too high for accurate spike recovery in the GRIC MSD.

- During the April 2022 event, an MSD for GRIC identified an outlying spike recovery for sulfide. A duplicate analysis was performed and recovered within range. An outlying spike was identified for the GRML sulfide MSD. A duplicate analysis was performed with similar results, indicating a possible matrix effect. GRML data are qualified with an "S."

- Spike recovery indicated a possible matrix effect in one MS for nitrogen ammonia (April 2022 sampling event).

- During the April 2022 event, calcium values were estimated for the MS and MSD for GRIC, as well as for chloride for the batch MS and MSD.

- During the April 2022 event, an outlying spike recovery was noted for the GRIC MS for zinc, and the MSD had a high RPD. Outlying spike recoveries were associated with the CCUB nitrogen ammonia sample in one MS (May 2022 sampling event).

- During the May 2022 event, an MS for nitrogen ammonia identified an outlying spike recovery.

- During the May 2022 event, the MS indicated that calcium values were estimated.

- During the September 2022 event, an MS for CCUB identified that the spiked amount was low relative to the sample concentration, and outlying spike recoveries may be expected.

- During the September 2022 event, chloride required dilution due to matrix and estimated results for a laboratory duplicate, MS, and MSD. CCUB chloride duplicate results, MS, and MSD were estimated.

Laboratory Control Sample and Laboratory Control Sample Duplicate

All laboratory control limits analyses yielded percent recoveries within the laboratory control limits with the following exceptions:

- During the November 2020 event, a high relative percent difference was observed between the LCS and laboratory control sample duplicate (LCSD) for 1-methylnaphthalene, phenanthrene, chrysene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene. The spike recovery was within range, and none of these analytes were detected in samples; therefore, data were not qualified on Table 4.

- During the November 2020 event, outlying spike recoveries were observed in the LCS for 1-methylnaphthalene, phenanthrene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene. A duplicate analysis was performed and recovered within range.

- During the January 2021 event, an outlying spike recovery was observed for silver; however, samples were non-detect for this analyte, so no further action was taken.

Laboratory Duplicates

All laboratory duplicates analyses yielded percent recoveries within the laboratory control limits with the following exceptions:

- During the November 2020 event, a high relative percent difference between lab duplicate results was observed for arsenic and zinc.

- During the January 2021 event, a laboratory duplicate for chromium had a high RPD; however, the method was within control as indicated by the LCS.

- During the March 2021 event, total hardness exceeded the working range of the instrument.

- During the March 2021 event, a laboratory duplicate for GR82 exceeded the working range of the instrument for chloride. An MS and MSD indicated the same result. An MS indicated the analyte concentration was too high for accurate spike recovery. The lab appeared to correct this issue through dilution for the GR82 sample.

- During the April 2021 event, a laboratory duplicate, MS, and MSD for chloride required dilution.

- During the April 2021 event, a laboratory duplicate, MS, and MSD at LCPL required dilution.

- During the April 2021 event, a high relative percent difference between lab duplicate results was observed for arsenic.

- During the August 2021 event, a laboratory duplicate and MS exceeded the working range of the instrument for chloride.

- During the September 2022 event, a laboratory duplicate, MS, and MSD at CCUB required dilution.

- During the September 2022 event, a high relative percent difference between lab duplicate results was observed for zinc.

Method Reporting Limits

Reporting limits are acceptable as reported. All values were reported within the laboratory's reporting limits.

Initial Calibrations

These data were not provided by the laboratories; however, case narratives provided indicated that all analyses were performed consistent with the laboratories' quality assurance (QA) programs with the following exceptions:

- During the May 2022 event, total hardness was estimated at LCPL, CCML, WCCL, and GR82. These data were qualified with "E."

- During the May 2022 event, selenium calibration verification was outside acceptance criteria. Results may be low-biased. These data were qualified with an "H" for GRML, CCML, WCCL, GR82, GRFC, and CCUB.

Laboratory Continuing Calibrations

These data were not provided by the laboratories; however, case narratives provided indicated that all analyses were performed consistent with the laboratories' QA programs.

Internal Standard Areas

These data were not provided by the laboratories; however, case narratives provided indicated that all analyses were performed consistent with the laboratories' QA programs.

APPENDIX G
Biotic Ligand Model Results

Ver 3.41.2.12g, build 2015-10-12
C:\Program Files (x86)\Biotic Ligand Model - Research Mode\Model\CuOH5%Ie_10-11-07.dat
C:\Users\fisht\OneDrive - Ecozoic Environmental Consulting LLC\Documents\~EcoZoic Environmental\Grande Ronde\x.blme.blm
/S C:\USERS\FISHT\ONEDRIVE - ECOZOIC ENVIRONMENTAL CONSULTING LLC\DOCUMENTS\~ECOZOIC ENVIRONMENTAL\GRANDE RONDE\X.BLME.SCR, /W /QQ /VER3.41 /O3 /CO23.2 /K1 /L

				Simplified BLM Input					BLM Output						
Date	Site Number	Site Label	Sample Label	Temp (°C)	pH	Cu (µg/L)	Estimated DOC (mg C/L)	Hardness (mg/L $CaCO_3$)	Final Acute Value (FAV), ug/L	CMC (CMC=FAV/2), ug/L	CCC (CCC=FAV/ACR), ug/L	Cu ug/L	Acute Toxic Units (Acute TU=Cu/CMC)	Chronic Toxic Units (Chronic TU=Cu/CCC)	Censored Flag (0 = quantified, 1 = BDL)
11062020	2	"CCUB "	"CCUB-11062020 "	7.9	7.54	14.6	1.35	47	9.78	4.89	3.04	14.60	2.99	4.81	0.00
11062020	3	"CCWL "	"CCWL-11062020 "	8.7	7.53	1.05	1.35	47	9.68	4.84	3.01	1.05	0.22	0.35	0.00
11062020	5	"GRIC "	"GRIC-11062020 "	7.8	7.72	1	1.35	47	12.13	6.07	3.77	1.00	0.16	0.27	0.00
11062020	9	"GR82 "	"GR82-11062020 "	8.5	8.34	1.28	1.35	47	21.78	10.89	6.76	1.28	0.12	0.19	0.00
01132021	2	"CCUB "	"CCUB-01132021 "	2.7	7.7	1.1	1.35	30.4	11.81	5.90	3.67	1.10	0.19	0.30	0.00
01132021	3	"CCWL "	"CCWL-01132021 "	2.2	7.59	1.93	1.35	41.3	10.26	5.13	3.19	1.93	0.38	0.61	0.00
01132021	5	"GRIC "	"GRIC-01132021 "	2.6	7.81	22.2	1.35	37.9	13.24	6.62	4.11	22.20	3.35	5.40	0.00
01132021	9	"GR82 "	"GR82-01132021 "	2.4	7.66	1.19	1.35	36.8	11.17	5.59	3.47	1.19	0.21	0.34	0.00
03092021	1	"CCSP "	"CCSP-03092021 "	4.6	8.1	2	1.35	29.3	17.83	8.91	5.54	2.00	0.22	0.36	0.00
03092021	2	"CCUB "	"CCUB-03092021 "	4.4	8.59	2	1.35	32.9	23.78	11.89	7.39	2.00	0.17	0.27	0.00
03092021	3	"CCWL "	"CCWL-03092021 "	3.8	7.91	2	1.35	38.8	14.78	7.39	4.59	2.00	0.27	0.44	0.00
03092021	4	"LCPL "	"LCPL-03092021 "	3.8	7.24	2	1.35	89.3	6.96	3.48	2.16	2.00	0.57	0.92	0.00
03092021	5	"GRIC "	"GRIC-03092021 "	2.3	7.69	2	1.35	29.4	11.69	5.84	3.63	2.00	0.34	0.55	0.00
03092021	6	"GRML "	"GRML-03092021 "	2.1	7.82	2	1.35	32.2	13.49	6.74	4.19	2.00	0.30	0.48	0.00
03092021	7	"CCML "	"CCML-03092021 "	4.2	7.76	2	1.35	48.8	12.56	6.28	3.90	2.00	0.32	0.51	0.00
03092021	8	"WCCL "	"WCCL-03092021 "	2.6	7.43	2	1.35	9.45	9.80	4.90	3.04	2.00	0.41	0.66	0.00
03092021	9	"GR82 "	"GR82-03092021 "	3.1	7.55	2.47	1.35	7.96	11.71	5.86	3.64	2.47	0.42	0.68	0.00
03092021	10	"GRFC "	"GRFC-03092021 "	1.6	7.93	7.2	1.35	38.1	15.00	7.50	4.66	7.20	0.96	1.55	0.00
-8022021	1	"CCSP "	"CCSP-8022021 "	15.2	7.78	2	1.35	26.6	13.69	6.85	4.25	2.00	0.29	0.47	0.00
-8022021	2	"CCUB "	"CCUB-8022021 "	18.4	7.72	2	1.35	29.8	12.82	6.41	3.98	2.00	0.31	0.50	0.00
-8022021	3	"CCWL "	"CCWL-8022021 "	23.6	7.69	2	1.35	40.7	12.77	6.38	3.97	2.00	0.31	0.50	0.00
-8022021	4	"LCPL "	"LCPL-8022021 "	26	7.99	2	1.35	225	24.48	12.24	7.60	2.00	0.16	0.26	0.00
-8022021	5	"GRIC "	"GRIC-8022021 "	27	8.88	2	1.35	59	48.97	24.49	15.21	2.00	0.08	0.13	0.00
-8022021	6	"GRML "	"GRML-8022021 "	26.2	9.16	2	1.35	72.8	58.37	29.19	18.13	2.00	0.07	0.11	0.00
-8022021	7	"CCML "	"CCML-8022021 "	24.4	6.96	5.84	1.35	66.7	4.60	2.30	1.43	5.84	2.54	4.09	0.00
-8022021	8	"WCCL "	"WCCL-8022021 "	21.1	8.36	2	1.35	42.4	26.64	13.32	8.27	2.00	0.15	0.24	0.00
-8022021	9	"GR82 "	"GR82-8022021 "	27.1	8.43	2	1.35	47.6	32.68	16.34	10.15	2.00	0.12	0.20	0.00
-8022021	10	"GRFC "	"GRFC-8022021 "	22.2	8.67	2	1.35	38.4	35.14	17.57	10.91	2.00	0.11	0.18	0.00

All data are preliminary and do not include the full data set.
Yellow = exceedance of water quality criteria
Red = exceedance values

APPENDIX H
Union County Pesticide List

File Name: Deb Koopman - 0825150089

Date Printed 10/18/2021

Inventory On Hand - Chemical

Cat	Cat Name	Desc	Qty	UOM	Bin	Price	Total Value
60	CH	Alg Drift	3.85	Quart	WC	$6.85	$26.3725
60	CH	Aquaneat	63.00	Quart	WC	$5.26	$331.38
60	CH	Brimstone - Brimstone	36.10	Quart		$6.1875	$223.3688
60	CH	Broadrange 55	0.00	Quart	WC	$8.00	$0.00
60	CH	Bronc Max	10.00	Quart	WC	$5.4074	$54.074
60	CH	Chlorsulfuron 75	56.00	Ounce		$14.7856	$827.9936
60	CH	Cimarron Max - Part A&B / Package	2.50	Each	WC	$123.73	$309.325
60	CH	Climb	2,545.02	Ounce	WC	$0.3961	$1,008.0824
60	CH	Crossbow	0.00	Quart	WC	$12.50	$0.00
60	CH	Crosshair	3,060.00	Ounce	WC	$0.2762	$845.172
60	CH	Curtail	1.00	Quart	WC	$8.75	$8.75
60	CH	Desperado - Desperado	0.00	Quart		$14.50	$0.00
60	CH	Detail	192.00	Ounce	WC	$5.0805	$975.456
60	CH	Detonate - Detonate Herbicide	1,000.00	Ounce		$0.4844	$484.40
60	CH	Dicamba HD - Dicamba HD	0.00	Ounce		$0.4219	$0.00
60	CH	Diuron 80 DF - Dry	55.00	Pound	WC	$4.3334	$238.337
60	CH	Efficax - Efficax	2.00	Quart		$0.1933	$0.3866
60	CH	Escort XP	273.00	Ounce	WC	$2.5156	$686.7588
60	CH	Esplanade	17.68	Quart	WC	$304.629	$5,385.8407
60	CH	Foundation	1.00	Quart	WC	$14.6222	$14.6222
60	CH	Gallery	1.20	Pound	WC	$125.00	$150.00
60	CH	Imazapyr 4SL	417.88	Quart	WC	$22.0061	$9,195.9091
60	CH	In-Place	0.00	Quart	WC	$8.3281	$0.00
60	CH	Insist 90	133.68	Quart	WC	$2.4287	$324.6686
60	CH	Krenite	0.00	Quart	WC	$12.09	$0.00
60	CH	MERA Milestone	0.00	Quart	WC	$91.02	$0.00
60	CH	MERA Range Star	0.00	Quart	WC	$1.25	$0.00
60	CH	MERA Syl-Tac	0.00	Quart	WC	$8.00	$0.00
60	CH	MERA Weedmaster	0.00	Gallon	WC	$32.50	$0.00
60	CH	Method	160.00	Ounce	WC	$2.49	$398.40
60	CH	Milestone	12.80	Quart	WC	$66.257	$848.0896
60	CH	Opensight	46.23	Pound	WC	$86.00	$3,975.78
60	CH	Oust XP - Granular	8.00	Ounce	WC	$1.6794	$13.4352
60	CH	Pathfinder II	10.00	Quart	WC	$12.488	$124.88
60	CH	Piper	4.84	Pound	WC	$90.20	$436.568
60	CH	Portfolio	18.32	Quart	WC	$119.991	$2,198.2351
60	CH	Range Star	10.00	Quart	WC	$6.185	$61.85
60	CH	Ranger Pro	0.00	Quart	WC	$3.70	$0.00
60	CH	Renegade	5.00	Quart	WC	$5.50	$27.50
60	CH	Roundup Pro - Roundup Pro	590.00	Quart	WC	$4.1375	$2,441.125

Inventory On Hand - Chemical

Cat	Cat Name	Desc	Qty	UOM	Bin	Price	Total Value
60	CH	SFM 75	0.00	Ounce	WC	$1.91	$0.00
60	CH	Spike 80DF	20.00	Pound	WC	$17.815	$356.30
60	CH	Sulfomet	0.00	Ounce	WC	$1.94	$0.00
60	CH	Super Spread 90	0.00	Quart	WC	$5.125	$0.00
60	CH	Super Spread MSO	10.00	Quart	WC	$2.7594	$27.594
60	CH	Support	28.00	Quart	WC	$7.50	$210.00
60	CH	Syl-Tac	144.89	Quart	WC	$7.5765	$1,097.7591
60	CH	Telar XP	330.00	Ounce	WC	$12.6739	$4,182.387
60	CH	Tordon 22K	24.00	Quart	WC	$10.7176	$257.2224
60	CH	Vengence Plus	57.60	Quart	WC	$12.50	$720.00
60	CH	Weedmaster	319.38	Quart	WC	$5.8121	$1,856.2685
						GT	**$40,324.2912**