

## Memorandum

**From:** Dave Dilks

**Date:** September 2, 2015

**Project:** SRRTTF3

**To:** SRRTTF

**SUBJECT:** 2014 Spokane River Synoptic Survey Field Audit

### Introduction

The goal of the Spokane River Regional Toxics Task Force (SRRTTF) is to develop a comprehensive plan to reduce PCB inputs to the Spokane River and to bring the river into compliance with applicable water quality standards for PCBs. A review of existing data indicated that sources of PCBs are very diffuse throughout the watershed, such that more data will be needed to support development of a management plan with targeted control actions (LimnoTech, 2013). To accomplish its goal, the SRRTTF had determined that it needed to develop a clearer understanding of in-stream loadings and source contribution to the Spokane River between its headwaters at the outlet of Lake Coeur d'Alene and the Nine Mile Dam. A dry weather synoptic survey was conducted in August 2014 to begin to address this need.

This document contains the results of a field audit conducted to verify that the field activities conducted were consistent with the requirements of the Quality Assurance Project Plan developed for the field monitoring (LimnoTech, 2014).

### Audit Findings

The Quality Assurance Project Plan (QAPP) identified numerous requirements related to field activities. These include:

- Field Staff Training
- Field Sampling Quality Control
- Field Measurements Quality Control
- Field Completeness
- Field Data and Information Management

Audit findings are provided below for each of these categories, along with a summary of deviations from the QAPP.

#### *Field Staff Training*

Consistent with the QAPP, training sessions were conducted by LimnoTech Field Manager Chris Behnke for all field staff on proper sampling technique, sample handling and submission and general field procedures prior to conducting the first sampling event. Field staff also received a safety briefing prior to the first sampling event.

Gravity Environmental provided training to field crews regarding the operation, maintenance and calibration of field equipment including multi-parameter probes and all other on-site equipment

used throughout the field program. Standard Operating Procedures (SOPs) for program elements included in the QAPP were distributed to staff and available at all times.

### ***Field Sampling Quality Control***

Field sampling QC consisted of collecting field QC samples to help evaluate conditions resulting from field activities. Field QC samples consisted of trip blanks, transfer blanks and replicate samples. Trip blanks (controlled water samples produced by the laboratory) were used to evaluate whether contaminants had been introduced into the samples due to exposure to ambient conditions or from the sample containers themselves. The trip blanks accompanied the sampling equipment into the field and were stored with the analytical samples. Transfer blanks were taken on days where wastewater effluents were sampled, requiring exposure of open sample bottles to the atmosphere. Transfer blanks were obtained by pouring deionized water into the sample container in the field. Trip/transfer blanks were collected at the required frequency of 10% or one blank per sampling round.

Field replicate samples were collected to evaluate the precision of sample collection through analysis. Field replicates were collected at designated sample locations by filling two distinct sample containers for each analysis. Field replicate samples were preserved, packaged, and sealed in the same manner described for the surface water samples. The samples were submitted as “blind” samples to the laboratory for analysis. Field replicates were collected for each analytical parameter at a frequency of 10% or one field replicate per sampling round, whichever was less.

### ***Field Measurements Quality Control***

Field instruments were calibrated according to the manufacturer’s requirements and were calibrated daily.

### ***Field Completeness***

Field completeness was determined by the number of measurements collected versus the number of measurements planned for collection. Due to a variety of circumstances, sometimes not all samples scheduled to be collected can be collected (e.g. a creek is dry, equipment malfunctions). The completeness criterion for all measurements and sample collection was 95 percent. 100 percent of the planned samples were obtained during the synoptic survey, so the field completeness requirement was satisfied.

### ***Field Data and Information Management***

Field data reporting was conducted principally through the transmission of field log sheets containing tabulated results of all measurements taken in the field, and documentation of all field calibration activities. Field log sheets served as a daily record of events, observations, and measurements during field activities. A full compilation of all field log sheets is provided in Gravity (2015), as well as Appendix B of the SRRTTF Phase 2 Technical Activities Report (LimnoTech, 2015)

### ***Field System Audits***

Field system audits were conducted by LimnoTech Field Manager Chris Behnke to ensure that the actual field procedures conformed to those documented in the QAPP and associated SOPs. The audit included a check of all field records and a review of all activities to document if procedures



were conducted in compliance with the specified documentation. Field notes related to these audits are included as an Appendix to this memorandum.

### ***Deviations from the QAPP***

As noted in Gravity (2015), a few minor deviations from the QAPP occurred during the field activities. They are listed below, along with a description of any corrective actions (CA) applied (when feasible):

- The Hayden Area Regional Sewer Board WWTP (SR-13) did not discharge to the Spokane River during the low flow season, such that that sampling SR-13 during August would not provide useful information for the mass loading model. Therefore, LimnoTech approved a deviation from the SAP to not sample at SR-13 during the August 2014 synoptic sampling event.
- Sample at SR-4 was not collected on August 12, 2014 due to storm with strong winds and lightning; CA: sample was collected the following day on August 13, 2014.
- Samples shipped to AXYS Analytical Services on 8/18/14 were held up overnight in Memphis, Tennessee by FedEx due to a FedEx system-wide computer shutdown. These samples arrived to the lab a day later than planned and were slightly above the recommended temperature. CA: none warranted.
- Flow at SR-9 was not measured on August 12, 2014 and on August 22, 2014 due to an equipment malfunction resulting from water exposure; CA: none warranted
- AXYS notified Gravity that two samples arrived broken; the samples included one blind duplicate (Replicate #6) and the SR9 sample collected on 8/20/14 locations; CA: the SR9 archive sample was picked up from SVL later to AXYS for PCB analysis.
- Sample collected at SR-15 a day (August 23, 2014) before planned due to overnight rainfall event: CA: none warranted.

### **Conclusions**

All aspects of the field sampling effort were conducted in accordance with the QAPP. For the few minor deviations from the original QAPP that occurred, corrective actions were taken to ensure that the data generated was consistent with the data quality objectives of the study.

### **References**

Gravity Consulting, L.L.C., 2015. 2014 Spokane River Field Sampling Report. Prepared for Spokane River Regional Toxics Task Force, Spokane WA. January, 2015

LimnoTech, 2015. Spokane River Regional Toxics Task Force Phase 2 Technical Activities Report: Identification of Potential Unmonitored Dry Weather Sources of PCBs to the Spokane River. Prepared for Spokane River Regional Toxics Task Force, Spokane WA. August, 2015.

LimnoTech, 2014. Quality Assurance Project Plan: Spokane River Toxics Reduction Strategy Study. Prepared for Spokane River Regional Toxics Task Force, Spokane WA. July, 2014.



LimnoTech, 2013. Identification of Data Gaps-Final. Memorandum from Dave Dilks, Tim Towey and Kat Ridolfi to Spokane River Regional Toxics Task Force. November 14, 2013.



## **Appendix: Field Manager Field Notes**



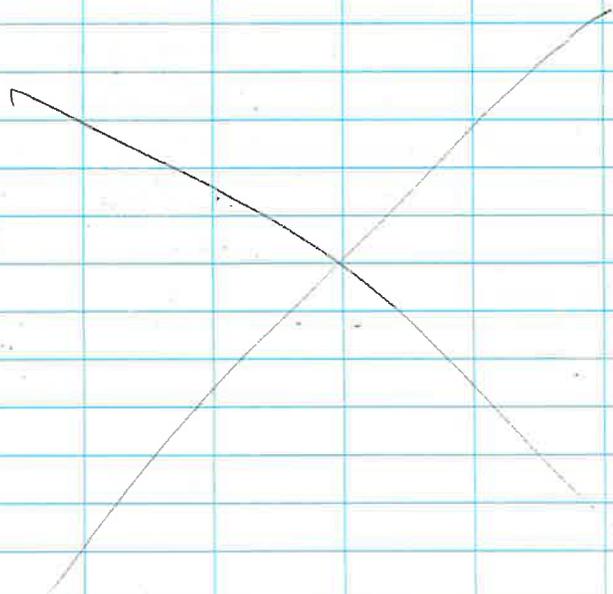




Location \_\_\_\_\_ Date 8/11/14

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- to pick up sample bottles.
- 1640- At SRL, picking up bottles.
- 1710- Going to Courre d'Alene boat launch.
- 1730- Found boat launch we can use for the Courre de Alene sample. Going back to Spokane.
- 1820- At gravity's hotel, laying out containers for tomorrow.
- 2000- Getting dinner.



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\* times in PDT

- 0630- Breakfast at hotel
- 0715- Left at hotel to pick me up.
- 0800- At SR1, setting up trailer and conducting health and safety plan.
- 0815- Setting up bottle kits, calibrating YSI, putting ice packs in freezer to begin getting cold.
- 0930 - labelling bottles, getting ready to sample.
- 0945- Collected "SR1-081214-0945" and "SR1-081214-0945-C". Also collected "Replicate 1" here.
- 1045- Done at SR1, packing up. Took YSI readings after sampling, recorded on separate sheets.
- 1120- Arrived @ HC1.
- 1130- Collected "HC1-081214-1130" and "HC1-081214-1130-C".
- flow measurements (instantaneous)
- HC1 = 9.3 cfs @ 1045
- SR3 = 1040 cfs @ 1045
- 1200- collected YSI measurements.

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recorded on separate sheets.

1215 - Arrived @ SR3

1225 - collected "SR3-081214-1225"  
and "SR3-081214-1225-C"

1235 - Collected YSI measurement,  
recorded on separate sheet.

1245 - eating some lunch

1310 - Done eating, driving out to  
Cove de'Alene

1405 - Arrived @ Cove d'Alene Sampling  
location.

1425 - Collected "SR15-081214-1425"  
and "SR15-081214-1425-C"

1445 - used carry-in boat and electric  
motor to get to the center of  
the channel at this location. Collected  
YSI measurements as well, recorded  
them on another sheet.

1500 - Done, driving to Post Falls. (SR-12)

1530 - At SR-12, unloading equipment

1545 - Collected "SR12-081214-1545". The  
only access to this location is  
by using a park upstream of  
the gauge location to get to the

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river, then walk down to  
as near to the gauge as possible.  
From previous reconnaissance, the  
water is too deep to wade  
right at the gauge, so we  
will sample slightly upstream.

1650 - leaving site, going to  
Greenacres (BARNER RD.)

1705 - At Greenacres, prepping  
equipment.

1720 - collected "SR9-081214-1720"  
and "SR9-081214-1720-C"

1750 - arrived @ SR-7, pulling out  
equipment.

1805 - Collected samples "SR7-081214-  
1805" and "SR7-081214-1805-C"

1810 - Collected YSI measurements,  
recorded them on a separate sheet.

1830 - Collected "BLANK-081214-1830"

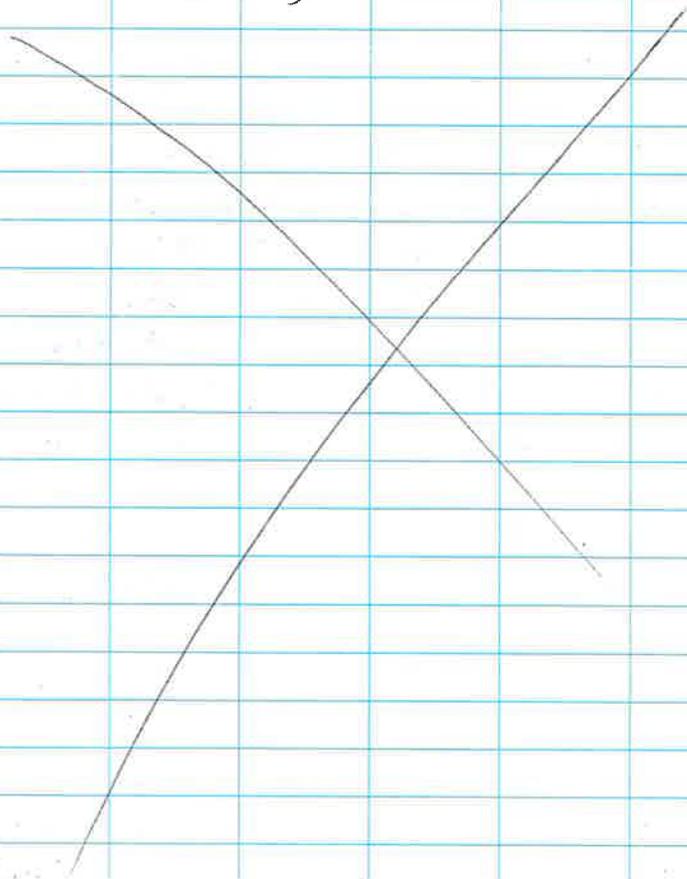
1840 - A severe wind storm just  
blew in, knocking branches down  
all around us. No rain yet.

1900 - Rain and lightning, waiting  
at the "below green st." location.

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1945 - Still raining, lightning in the area. Called Cathy Whiting to confirm that we are going to stop for the day. She has confirmed that we're done.  
2000 - getting dinner.



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0700 - C. Behrke leaving to meet Gravity at their hotel  
0715 - At Holiday Inn Express - Spokane Valley, getting organized for today.  
0800 - Leaving hotel for SVL labs in Coure d'Alene  
0850 - At lab, filling out paperwork  
0920 - Done, samples submitted to SVL. Going to Coure d'Alene WWT to collect sample. (SR-14) Called the lab to let them know we're coming. They said they had a "power bump" last night during the storm. He said there may be more "solids" than usual in the discharge.  
0940 - At WWT.  
1000 - Collected "SR14-081314-1000" and "SR14-081314-1000-c". Collected sample from a continuous stream that is being pumped up to the deck level. Bottle not submerged during sampling (not possible at this

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(location).

1020 - Done with samples, going to next location

1040 - Stopped at market to pick up ice.

1110 - At Post Falls WWTP (SR-11).  
prepping equipment, called Don Ellis to let him know we're here.

1130 - Collected "SR11-081314-1130" and "SR11-081314-1130-C"

1140 - Done sampling. Used "direct emersion" at this location. Going to Liberty Lake WWTP.

1155 - Arrived at (SR-10) Liberty Lake WWTP. prepping equipment.

1210 - Collected "SR10-081314-1210" and "SR10-081314-1210-C"

1220 - Done sampling, collected samples by direct immersion. Calling John Kern at SVL to talk about how to handle the composite samples.

1300 - At Kaiser Aluminum, waiting for the rest of the crew to get here. (needed to drop someone off).

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1325 - Collected "SR8-081314-1325" and "SR8-081314-1325-C"  
Collected by direct immersion. Some algae scum is coming through the pipe when we turn on the sampling port.

1345 - Collected "BLANK-081314-1345"

1410 - Going to city of Spokane riverside WWTP.

1440 - Arrived at Riverside WWTP. driving in gate #2

1500 - Collected "SR2-081314-1500" and "SR2-081314-1500-C" and "Replicate 2".

1520 - Done collecting sample, used dip pole off catwalk

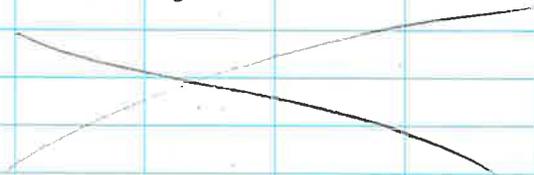
1600 - At Sphene County WWTP, prepping equipment.

1615 - Collected "SR5-081314-1615" and "SR5-081314-1615-C"

1630 - Done sampling at manhole, used dip pole. Going to Inland Empire.

1650 - At Inland Empire, signing in.

- driving around to secondary clarifier.
- 1705 - Collected "SR6-081314-1705"  
and "SR6-081314-1705-C"
- 1720 - Going to hotel to pick up flow  
equipment.
- 1800 - Arrived @ green street sample  
location that we missed yesterday  
(SR-4). Prepping equipment
- 1805 - Collected "SR4-081314-1805"  
and "SR4-081314-1805-C".  
We used boat to get to center  
channel and directly immersed the  
bottle.
- 1820 - Reviewing the flow equipment  
for use tomorrow
- 1900 - Back at Gravity's hotel.
- 2000 - Done packing up equipment, getting  
things together to ship in the  
morning. Getting dinner.



- 0715 - Picking up Melissa from the  
Oxford Inn.
- 0725 - At Gravity's hotel, getting  
ready to go
- 0735 - Leaving for Coeur d'Alene  
to go to the SVL lab.
- 0800 - At lab, dropping off  
samples.
- 0825 - Getting ice for the day.
- 0840 - At SR-15, Shawn, Mike  
and Melissa already here.
- 0835 - Collected "SR15-081414-0835"  
and "SR15-081414-0835-C"
- 0910 - Done, going to SR12.
- 0945 - At Post Falls (SR-12),  
prepping equipment.
- 1015 - Collected "SR12-081414-1015"  
and "SR12-081414-1015-C"
- 1040 - Done sampling, also packed  
the coolers for AXYS that we  
are shipping today. We added  
ice packs / bubble wrap.
- 1125 - At Greenacres site (SR-9),  
looking for flow location that

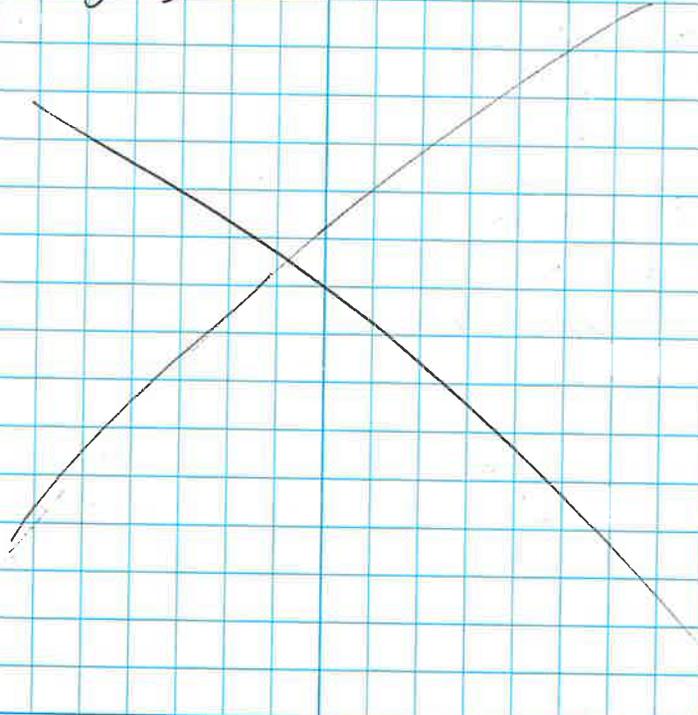
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- 15 wadeable.
- 1140 - Collected "SR9-081414-1140"  
and "SR9-081414-1140-C"
- 1250 - Completed flow measurements,  
cleaning up equipment. (271 CFS)
- 1350 - Going to ship the samples at  
Fed Ex while the rest of  
the crew continues to sample.  
They are going to SR1.
- 1500 - Done shipping samples to Anys,  
we sent out 10 coolers.  
Now going to gauge below  
Greene St. to meet the rest  
of the crew.
- 1630 - Filling in notes from the  
other team's sampling:
- 1435 - Collected "SR1-081414-1435"  
and "SR1-081414-1435-C"
- 1520 - Collected "HC1-081414-1520"  
and "HC1-081414-1520-C"
- 1600 - Collected "SR3-081414-1600"  
and "SR3-081414-1600-C". Also  
collected Replicate 3 here.
- 1645 - Collected "SR4-081414-1645" and

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- "SR4-081414-1645-C"
- 1715 - Collected "BLANK-081414-1715"
- 1725 - Done at SR4, going to SR7.
- 1750 - At SR7, prepping bottles
- 1800 - Collected "SR7-081414-1800"  
and "SR7-081414-1800-C"
- 1815 - going to get more ice,  
supplies
- 1845 - going to hotel
- 

0830 - Picking up Melissa from Oxford Inn, going to SVE in Coeur d'Alene to drop off samples.

0910 - At lab, picking up PCB bottles & inserts from Dave. Dropping off samples.

1000 - At SR-15 (Coeur d'Alene outlet) taking turns going out to the boat (which is already on location collecting high-volume sample).

1110 - Set up coolers for tomorrow's sample with AXYS

1130 - Going out to boat to check it out.

1304 - Collected "SR15-081514-1304-P" and "SR15-081514-1304-V"

(for pump and vortex.) Filters contained very fine grain sediment and some small bugs as well.

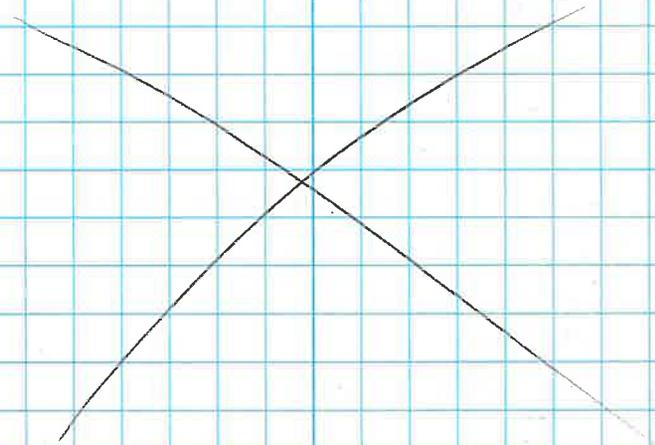
1640 - At Nine Mile Dam, setting up equipment for high-volume sample. There appears to be more flow at this location than yesterday, and the reservoir above the dam was

lower than normal as well, they must be releasing more water from the dam today.

2020 - Collected "SR1-081514-2020-P" and "SR1-081514-2020-V" for PCBs and "SR1-081514-2020" for physical parameters to SVE

2045 - Leaving site going back to hotel.

2115 - At hotel.



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- 0610 - Picking up Melissa from Oxford Inn.
- 0625 - At Gravity's hotel, getting breakfast
- 0645 - Leaving for Geer @ Alene.
- 0710 - At site, calibrating ysl, prepping bottles
- 0740 - Collected "SR15-081614-0740" and SR15-081614-0740-C"
- 0805 - Leaving slk, going to post falls.
- 0825 - At Post Falls, prepping bottles
- 0845 - Collected "SR12-081614-0845" and "SR12-081614-0845-C"
- 0900 - Done, going to SR-9.
- 0925 - At SR9, prepping equipment.
- 0940 - Collected "SR9-081614-0940" and "SR9-081614-0940-C" Gravity also collecting flows (347 cfs)
- 1010 - Collected "BLANK-081614-1010"
- 1030 - Arrived @ SR-7
- 1040 - Collected "SR7-081614-1040" and "SR7-081614-1040-C"
- 1100 - Done sampling, going to hotel.
- 1130 - Getting lunch.

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- 1200 - Leaving for SR4
- 1230 - Collected "SR4-081614-1230" and "SR4-081614-1230-C"
- 1330 - At SR1, prepping equipment
- 1350 - Collected "SR1-081614-1350" and "SR1-081614-1350-C"
- 1440 - at HC1, prepping equipment
- 1455 - Collected "HC1-081614-1455" and "HC1-081614-1455-C" and "Duplicate 4"
- 1520 - At SR-3, prepping equipment
- 1545 - Collected "SR3-081614-1545" and "SR3-081614-1545-C"
- 1600 - Done sampling, going to Gravity's hotel.

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- 0645 - Picking up Melissa from Oxford Inn.
- 0700 - At Gravity's hotel, getting ready.
- 0810 - At SVL dropping off samples.
- 0820 - Going to SR15.
- 0825 - At SR15 - prepping to sample.
- 0840 - Collected "SR15-081814-0840" and "SR15-081814-0840-C".
- 0900 - Leaving for SR-12.
- 0930 - Arrived at SR12, prepping equipment for sampling.
- 0945 - Collected "SR12-081814-0945" and "SR12-081814-0945-C".
- 1010 - Leaving site.
- 1045 - Collected "SR9-081814-1045" and "SR9-081814-1045-C".
- 1110 - Going to SR7 while the other team continues measuring flows (483.7 cfs).
- 1130 - Collected "SR7-081814-1130" and "SR7-081814-1130-C".
- 1150 - Leaving site, going to SR4.
- 1210 - At SR4.
- 1240 - Collected "SR4-081814-1240" and

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- "SR4-081814-1240-C" as well as "Replicate 5".
- 1245 - Collected "BLANK-081814-1245".
- 1310 - going to get ice/bags to ship Axy's samples via fed ex. Rest of crew will continue to collect samples.
- 1620 - 11 Coolers shipped out via Fed Ex to Axy's.
- 1800 - Back at Gravity's hotel, needed to buy coolers and ice. Copying notes from other crew.
- 1440 - Collected "SR2-081814-1440" and "SR2-081814-1440-C".
- 1550 - Collected "HC2-081814-1550" and "HC2-081814-1550-C".
- 1635 - Collected "SR3-081814-1635" and "SR3-081814-1635".
- 1730 - Done, going back to hotel.

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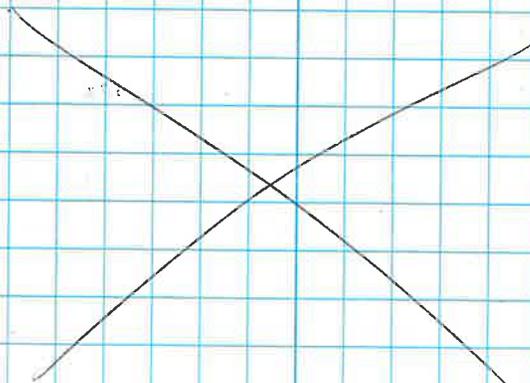
SRETTF

- 0700 - Picking up Melissa from Oxford Inn.  
 0730 - At Gravity's hotel, prepping coolers, calibrating YSI for day.  
 0805 - Leaving for SVL.  
 0900 - Dropped off samples at SVL, going to WWTP.  
 0935 - Collected "SR14-081914-0935" and "SR14-081914-0935-C"  
 0940 - Done, offsite.  
 1000 - At Post Falls WWTP.  
 1005 - Collected "SR11-081914-1005" and "SR11-081914-1005-C"  
 1035 - At Liberty Lake WWTP, prepping for sample.  
 1045 - Collected "SR10-081914-1045" and "SR10-081914-1045-C". We were just informed that Fed Ex had a "system failure" last night, so the samples we shipped to Axys are still in Memphis.  
 1200 - At Riverside WWTP.  
 1225 - Collected "SR2-081914-1225" and "SR2-081914-1225-C"  
 1300 - Leaving site, getting lunch.  
 1400 - At SRS, prepping equipment

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SRETTF

- 1410 - Collected "SR5-081914-1410" and "SR5-081914-1410-C" + "Replicate 6"  
 1420 - Collected "BLANK-081914-1420"  
 1430 - Going to SR6, inland Empire.  
 1505 - Collected "SR6-081914-1505" and "SR6-081914-1505-C"  
 1600 - At Kaiser, prepping equipment for sample.  
 1610 - Collected "SR8-081914-1610" and "SR8-081914-1610-C"  
 1700 - Back at Gravity's hotel, re-icing the coolers



Location \_\_\_\_\_ Date 8/20/14

Project / Client SRETTT

- 0645 - Picking up Melissa from Oxford Inn.  
 0705 - At Holiday Inn Express, prepping equipment.  
 0715 - Leaving for lab in Coeur d'Alene.  
 0810 - Dropped off samples @ SUL, also picked up empty coolers for samples.  
 0820 - Collected "SR15-082014-0820" and "SR15-082014-0820-c"  
 0850 - Done, going back to lab to get more coolers, try to drop off cardboard as well. Going to SR12 afterwards.  
 0915 - Done at lab, going to SR12.  
 0925 - At SR12.  
 0945 - Collected "SR12-082014-0945" and "SR12-082014-0945-c" and BLANK-082014-0940"  
 1005 - Leaving site, going to SR9.  
 1045 - Collected "SR9-082014-1045" and "SR9-082014-1045-c", Also measuring flows here.  
 1120 - Jeff and I are going to SR7 while they continue measuring flows. (572 ds)  
 1130 - At SR7

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Project / Client SRETTT

- 1145 - Collected "SR7-082014-1145" and "SR7-082014-1145-c" and Replicate 7.  
 1220 - At SR4 collected "SR4-082014-1220" and "SR4-082014-1220-c"  
 1305 - Jeff and I going to Fed Ex.  
 1440 - At fed Ex after packing up ice, taping coolers, etc. We have 8 coolers to ship today to Axys.  
 1500 - Coolers have been shipped, going to Kaiser to pick up coolers from Axys.  
 1640 - Gravity back, copying their sample times into the log.  
 1410 - Collected "SR1-082014-1410" and "SR1-082014-1410-c"  
 1515 - Collected "HC1-082014-1515" and "HC1-082014-1515-c"  
 1550 - collected "SR3-082014-1550" and "SR3-082014-1550-c"

- blank for 8/20/14 was @

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- 0630 - Breakfast
- 0650 - Melissa from Ecology picking me up today.
- 0715 - At Gravity's Hotel, getting ready to leave.
- 0725 - Leaving for lab.
- 0750 - At lab, dropping off samples.
- 0820 - Collected "SR14-082114-0820" and "SR14-082114-0820-C"
- 0835 - Offsite, going to Post Falls WWTP.
- 0855 - At SR11
- 0905 - Collected "SR11-082114-0905" and "SR11-082114-0905-C"
- 0930 - Leaving WWTP
- 0950 - At Liberty Lake WWTP, setting up.
- 1000 - Collected "SR10-082114-1000" and "SR10-082114-1000-C"
- 1025 - Collected "SR10-082114-1025"
- 1035 - Leaving site, going to Riverside WWTP. (SR-2)
- 1115 - At SR2, prepping equipment.
- 1130 - Collected "SR2-082114-1130" and "SR2-082114-1130-C"
- 1150 - Leaving site, getting lunch.
- 1250 - Done with lunch, going to SR-5

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- 1330 - Collected "SR5-082114-1330" and "SR5-082114-1330-C"
- 1345 - Offsite, going to Inland Empire (SR6)
- 1410 - Collected "SR6-082114-1410" and "SR6-082114-1410-C" AND "Replicate 8"
- 1435 - Done, leaving the site. Going to Kaiser.
- 1500 - At Kaiser, drive to sample shed after checking in at front gate.
- 1505 - Collected "SR8-082114-1505" and "SR8-082114-1505-C"
- 1545 - Back at Gravity's Hotel, prepping samples for shipment.
- 1615 - Ready to ship, Gravity is taking the samples to Fed Ex.

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SRITTF

- 0655 - Melissa picks me up.  
 0730 - Leaving for SVL from Gravity's hotel.  
 0800 - At SVL dropping off samples  
 0815 - At SR15, prepping equipment.  
 0830 + collected "SR15-082214-0830"  
 and "SR15-082214-0830-C".  
 0850 - Dore sampling here, going to SR12.  
 0915 - At SR12, getting bottles ready.  
 0935 - Collected "SR12-082214-0935"  
 and "SR12-082214-0935-C".  
 0945 - Leaving site, going to Becker Rd.  
 1010 - At SR9  
 1030 - Collected SR9-082214-1030  
 and collected Replicate 9  
 Also measure flows with  
 MF Pro - flow = cfs  
 1125 - Collected "Blank-082214-1125"  
 1205 - Collected "SR7-082214-1205" and  
 "SR7-082214-1205-C"  
 1225 - Leaving site, getting bags + lunch  
 from store  
 The flow meter fell into the water

8/22/14

SRITTF

- while we were taking measurements,  
 and is now non-responsive. we  
 are attempting to get it working  
 again.  
 1305 - we got a call from Axys.  
 2 samples were broken in shipment  
 from 8/19/14. Replicate 6 and  
 "SR9-082214-1045-C". Called  
 Chris Meyer at SVL, she  
 is sending down the archive  
 sample from Kellog, but there  
 is no way to keep it cool in  
 the Coeur d'Alene lab so we  
 have to pick it up at 4:30 pm  
 today.  
 1315 - Going to SR-4.  
 1345 - Collected "SR4-082214-1345"  
 and "SR4-082214-1345-C".  
 1405 - Leaving site, going to SR1  
 1450 - At SR1.  
 1500 - Collected "SR1-082214-1500"  
 and "SR1-082214-1500-C"  
 1510 - offsite, going to HCG  
 1540 - At HCG, sitting up.

8/22/14

SRETTF

1550 - collected "HC2-082214-1550"  
and "HC2-082214-1550-C"

1600 - Done, going to SR3

1610 - At site

1620 - Collected "SR3-082214-1620"  
and "SR3-082214-1620-C"

1635 - Done at the site, going back  
to the hotel to ice down  
the coolers.

1700 - Done with work, getting dinner.

08/23/14

SRETTF

0930 - C. Behrke leaving hotel

0945 - At Granty's hotel, icing up  
samples

1020 - Leaving for SR15,

1105 - At SR15

1130 - Collected "SR15-082314-1130"  
and "SR15-082314-1130-C".

1200 - Getting lunch

1200 - Going back to hotel

1345 - Done for the day,

1950 - Granty collected:

"BLANK-082314-1950-V" and  
"BLANK-082314-1950-P" through  
the high volume sampler once  
Steve and Jamie arrived with  
another boat (from another job).

8/24/14

SRETTF

- 0630 - Going over to Gravity's hotel  
 0655 - At hotel, getting ready.  
 0740 - Leaving for Cour d'Alene. Will get the high volume sampling going with Steve and Jamie, then begin the regular sampling.  
 0900 - At SR15, waiting for Mazama (Gravity's boat) to get on location for high volume sampling.  
 0930 - Collected "SR15-082414-0930" for SUL parameters and archive PCB sample (sent to SUL).  
 1010 - At SR12, setting up.  
 1030 - Collected "SR12-082414-1030" and "SR12-082414-1030-C" and Replicate 10.  
 1045 - Offsite going to SR9.  
 1100 - At SR9, prepping to sample and take flows.  
 1125 - Collected "SR9-082414-1125" and "SR9-082414-1125-C"  
 MFPRO flow measurements collected at transect = 323 cfs

8/24/14

SRETTF

- At SR7 at 1200  
 Collected SR7-082414-1215 and SR7-082414-1215-C at 1215.  
 1245 - Both teams at SR-4, prepping for sample.  
 1305 - Collected "SR4-082414-1305" and "SR4-082414-1305-C"  
 1320 - Done, leaving to get lunch  
 1410 - At SR3, getting equipment together to sample.  
 1430 - Collected "SR3-082414-1430" and "SR3-082414-1430-C"  
 1500 - Collected "HCl-082414-1500" and "HCl-082414-1500-C"  
 1510 - Done, moving on to SR1, picking up some ice first.  
 1535 - At SR1, getting equipment  
 1600 - Collected "SR1-082414-1600" and "SR1-082414-1600-C"  
 1330 - Collected "SR15-082414-1330-P" and "SR15-082414-1330-V" during high volume sampling.  
 1622 - Began high-volume sample @

8/24/14

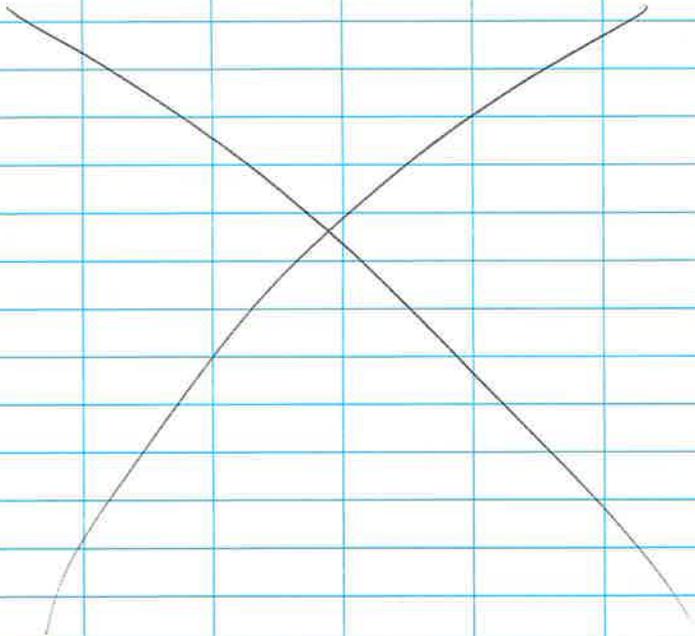
SRRTF

SR1. Pumping at 2 liters/minute  
this time instead of 1.5 liters/minute.

1912. Collected "SR1-082414-1912-P"  
and "SR1-082414-1912-V"

2010. Back at Gravity's hotel, icing  
samples for the night.

2100. Done for day, going back to  
hotel.



8/25/14

SRRTF

0700. Behrke leaving hotel, going  
to meet Jeff at his hotel.

0715. Going to SUL to drop off  
samples.

0830. Back from SUL, prepping  
Axys samples for shipment.

1030. At Fed Ex, shipping  
samples out. Shipped out  
(10) coolers to Axys.

