Canyon Fuel Company, LLC
A Subsidiary of Wolverine Fuels, LLC

Skyline Mine
Gregg A. Galecki, Sr. Environmental Engineer
HC35, Box 380
Helper, Utah 84526
(435) 448-2636
Fax (435) 448-2632

April 6, 2020

Steve Christensen
Coal Program Supervisor
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

RE: North Lease Water Monitoring Reduction, Canyon Fuel Company, LLC, Skyline Mine, C/007/005

Dear Mr. Christensen:

Attached is a "Water Monitoring Reduction Mined-out Areas North of Mine Facility" document outlining the demonstration for removing seventeen (17) water monitoring sites from the water monitoring program. Also included are portions of the M&RP to be modified to reflect the reduction.

Attached to this cover letter are completed C1 and C2 forms, and .pdf files of the information to be incorporated into the M&RP. The information is being submitted electronically. Two (2) hard copies will be sent upon Division approval.

If you have any questions, please call me at (435) 448-2636.

Sincerely,

Gregg A. Galecki

Gregg A. Galecki
Sr. Environmental Engineer, Skyline Mine
Canyon Fuel Company, LLC

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: Canyon Fuel Company, LLC
Mine: Skyline Mine **Permit Number:** C/007/005
Title: North Lease Water Monitoring Reduction
Description, Include reason for application and timing required to implement:
Removal of 17 Water Monitoring sites in the North Lease/North of Graben area

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: 3.0 ☐ increase ☒ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☒ Yes ☐ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes ☒ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations herein.

Rusty Tanner — GM 4/6/20
Print Name — Sign Name, Position, Date

Subscribed and sworn to before me this 6 day of April, 2020
Melissa S Willden
Notary Public
My commission Expires: 03-19, 2020
Attest: State of Utah } ss:
County of Carbon

MELISSA S. WILLDEN
NOTARY PUBLIC • STATE OF UTAH
COMMISSION# 705119
COMM. EXP. 03-19-2023

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining

Form DOGM- C1 (Revised March 12, 2002)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Canyon Fuel Company, LLC
Mine: Skyline Mine **Permit Number:** C/007/005
Title: North Lease Water Monitoring Reduction

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☒ Add	☐ Replace	☐ Remove	Appendix A-1, Volume 2, Water Monitoring Reduction Demonstration
☐ Add	☒ Replace	☐ Remove	Chapter 2, Section 2.3 pages 2-29d, 2-33(a), 2-34, 2-35, 2-35a, 2-36, 2-36a, 2-38
☐ Add	☒ Replace	☐ Remove	Chapter 2, Section 2.4 pages 2-44a, 2-44b
☐ Add	☐ Replace	☐ Remove	
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.	**Received by Oil, Gas & Mining**
Submitted electronically. Hard copies will be shipped for incorporation following approval.	

Chapter 2 Section 2.3

Wells W22-2-2 and W14-2B and W14-2A (2011-2016 apparent communication with surface run off) have failed casings associated with subsidence. Well W22-2-1 is the shallow well paired with W22-2-2. At the time of the Vaughn Hansen Associates (1979) report, the deeper of these two wells had an artesian potentiometric head which rose to a level above the water level in the shallower well. By 1982 the water level in W22-2-2 had dropped below that of W22-2-1. This was probably due to both the drought and dewatering of the area by the mining operations.

As of 2013 almost eight (8) years of mining have been completed in the North Lease. Groundwater conditions have remained consistent with minimal, short-lived inflows being encountered in the Mine. As 900-1300 feet of overburden separate the mine workings from the springs and streams, no impacts to the water resources are anticipated. Water Rights 91-3917 and 91-1039 and will be added to the Skyline water monitoring program as sites S26-1 and S25-32, respectively. These sites are located directly above longwall mining activity and should identify any impacts due to mining. Water Rights 91-1043 and 91-1044 will be monitored with site CS-26 located in Lower Wife Creek. See PHC Addendum Appendix L for baseline water monitoring in the area. As has been demonstrated in the 30 years of water monitoring in Mines 1 and 2 located in the Huntington drainage, and the multiple years of water monitoring in the Winter Quarters areas of Mine #3, there has been no adverse effects to water quality. Summarized in the Petersen Report (located in Appendix L), the low concentrations of TDS, total iron, and low manganese are due to a combination the flow regime, and abundance of carbonate minerals in the Blackhawk formation. Also, when increased total iron and total manganese concentrations have typically been noted they have been associated with high flow, high suspended sediment events, suggesting the increased load is associated with the presence of sediments in the surface water and not the stream water itself. The stiff diagrams included in the Petersen report identify how the water chemistry of the water monitoring sites is similar with the monitoring sites throughout the Skyline area.

In 2020, three years following mining in the North Lease and North of Graben areas of Mine #3, a total of seventeen (17) water monitoring sites were removed from the program due to no impacts associated with mining being observed. An evaluation of the monitoring sites is located Appendix A-1, Volume 2.

The ground water monitoring program outlined in this section is a continuation of a program approved with the original Mining and Reclamation Permit Application. It incorporates practices designed to provide the baseline data necessary to validate the determination of the probable hydrologic consequences of proposed and existing mining and reclamation operations. The program also is designed to meet site specific requirements and incorporates the flexibility for change if necessary. Selection of the monitoring sites was an arduous process using the following criteria. An original baseline survey or Hydrologic Inventory was compiled in 1979, utilizing data collected from 1974 through 1979, where all possible springs, seeps and streams were monitored. Additional water monitoring data was collected for the North Lease from 1991 through 1993. Following the completion of the inventory and consultation with both DOGM and the U.S. Forest Service (USFS), representative monitoring sites were selected. Important parameters included geologic unit, critical area where damage may occur, quantity of flow, reasonable year round access, and representative distribution.

A monitoring program is being conducted at each of the ground water stations identified on Table 2.3.7-3 and depicted on Plate 2.3.6-1. Samples are collected quarterly, with the 1st Quarter (January-March) having a shortened list of sites due to inaccessibity during winter months. Also due to weather conditions, sampling in the 2nd quarter (April-June) can be conducted through July 15 in years when snowmelt conditions prohibit monitoring completion by July 1.

In areas where mining has been completed and only field measurements are required, baseline laboratory analyses is conducted during the 3rd Quarter (July-September) every five (5) years beginning in 2010 and successively in 2015, 2020, 2025, etc. In other than the stated years, 3rd Quarter sampling will be identical to 2nd and 4th Quarter laboratory analyses. 4th Quarter monitoring (October-December) should be conducted prior to December due to snow conditions eliminating access.

Water quality samples are collected from the 26~~33~~ selected springs in the project area. A total of 13 spring were removed from the plan in 2020 following completion of mining in the North Lease and North of Graben areas of Mine #3. An evaluation of the sites is located in Appendix A-1, Volume 2.The samples are comprehensively analyzed each year for the parameters listed in Table 2.3.7-1 and Table 2.3.7-2. All water samples collected for use in this permit have been collected and analyzed according to methods in either the "Standard Methods for the Examination of Water and Wastewater" or the 40 CFR parts 136 and 434. A listing identifying the station types is shown on Table 2.3.7-3.

In addition to the collection of the outlined water quality data, water level data has been collected from each of the wells (if functional) as scheduled on Tables 2.3.7-1, 2.3.7-2,and 2.3.7-3, and noted on Plate 2.3.6-1. Water quality samples will be collected from the Waste Rock Disposal Site Well 92-91-03. Summary information on these observation wells is found on Table 2.3.7-4. Six (6) wells, W79-10-1A,79-14-2B 20-4-2, 99-28-1,79-22-2-1 and 79-22-2-2 have experienced casing failures, and have been properly abandoned. Well W79-10-1B failed with a blockage in 1st Quarter 2017, however close observation indicates it likely started to fail in late 2013 to early 2014. An analysis of Well W79-10-1B is available in Appendix A-1 Volume 2. There are no plans to replace these wells.

The amount of water discharged from each mine on each monitoring occasion will also be monitored at the mine mouth through the use of a totalizing flow meter or similar device. Significant changes in the source of water in the mine will be noted during the period of operation. Underground water pumped from each mine will be monitored for water quality. Mines #1,#2, #4 and #5 (Flat Canyon lease)discharge is sampled at Station CS-14. Mine #3 discharge from the North Lease is sampled at Station CS-12. Mine #2 water is also discharged at JC-3.

Should the concentrations result in a discharge which exceeds the UPDES discharge permit limitations or indicates potential disturbance to the hydrologic balance, an attempt will be made to isolate the contributing source and an evaluation made of possible appropriate remedial action. The best alternative remedial action will be implemented as soon as practicable to ensure protection of Eccles Creek water quality. A copy of pertinent sections of the current UPDES permit (expires April 30,2020) is appended to this section as Exhibit 2.3-1. The permit is renewed every five (5) years.

As required, ground water quality data collected from the property area will be submitted to the Utah Division of Oil, Gas, and Mining in an electronic format through the Electronic Data Input web site (http://linux3.ogm.utah.gov/cgi-bin/apx-ogm.cgi. Such reports will be submitted within 90 days after completion of the quarterly monitoring program. ~~An annual report which will include a summary of water quality data and water well level data for the previous year will be submitted within 90 days of the end of each year.~~

In 2002, several new sites were added to the monitoring program. Sites MC-1, MC-2, MC-3, MC-4, MC-5, and MC-6 are surface water sites on Mud Creek (Site MC-6 was added in November 2002 as agreed upon by the operator and the Division). These sites were identified as part of a study to determine the impacts of increase mine discharge on Mud and Eccles Creeks. EarthFax Engineering, Inc. was contracted to write and implement a work plan to evacuate the impacts in July 2002. A copy of the work plan is included in Volume 4 of this M&RP. The study calls for establishing and characterizing reference sites on Eccles and Mud Creeks to: 1)determine depth to ground water at the sites, 2) obtain historic flow data for the stream for comparative purposes, 3) gather and evacuate historic aerial photos of the streams, 4) collect additional water quality data, 5) evaluate bank stability indexes along with vegetation information, and conduct long-term monitoring at the selected sites. The initial field work for this project was

completed in August 2002. Annual updates to the study have been submitted with the annual reports. This study concluded after the 2005 information was submitted based on the initial parameters of the study which indicated the study would last through one (1) year after discharge from the mine decreased to a sustained flow less than 5,000 gpm.

Samples obtained at the MC-sites were monitored for total flow, TDS, TSS, and total phosphorous. In addition a stream stability cross-section and reach survey was conducted approximately 75 yards downstream of the MC-6 monitoring location. The results of these analyses were reported with the other mine water quality monitoring reports while the study was being conducted (2002-2005).

Sites MD-1, JC-1, JC-3,and ELD-1 were also added to the monitoring site list. MD-1 is a composite sample of the all the water discharged from Skyline Mine to Eccles Creek. JC-1 and JC-3 are samples of the water discharged from the two James Canyon ground and mine dewatering wells. ELD-1 reports the total flow-only from both JC-1 and JC-3. MD-1 and ELD-1 are monitored for total flow and the results are reported to the Division on a monthly basis. Quarterly, MD-1, JC-1, and JC-3 are also monitored for TSS, TDS, and total phosphorous. Total phosphorous was taken off the analysis for MD-1 in 2016 to coincide with the UPDES permit. Since JC-3 is a PacifiCorp UPDES site, it is monitored each month for flow, TSS, TDS, oil and grease, and total iron.
~~Spring monitoring sites WQ1-1, WQ1-39, WQ3-6, WQ3-26, WQ3-41 WQ3-43, and WQ4-12 were added to the permit. Surface water sites CS-19, CS-20,and CS-21 were added as were wells 91-26-1 and 91-35-1. Springs S26-1 and S25-32 and Stream CS-26 were added with the North Lease Modification in 2013.~~Springs and streams in the North Lease and North of Graben areas of Mine #3 were eliminated from monitoring following completion of mining. CS-20 and CS24 will continue to be monitored as long as the UPDES 004 (Winter Quarters portal) discharge is in place. ~~All of these sites are in the North Lease area.~~ Location of ~~these~~ ~~samples~~ water monitoring sites are illustrated on Drawing 2.3.6-1.

Skyline Mine has also obtained numerous water samples from within the mine for age-dating purposes. Samples have been analyzed for both stable and unstable isotopes; the majority being analyzed for tritium and carbon 14 content. The analyses results of these samples is discussed in detail in the July 2002 Addendum to the PHC. The results of repeated tritium sampling and analysis in a few location in the mine, specifically those in the 9 and 10 Left panel areas that began in August 2001, suggest that the majority of the water is not younger than 50 years. Only a few carbon 14 samples have been obtained from these

Table 2.3.7-1
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations)

Sample Site	1st Quarter							2nd[2] / 3rd[3] / 4th Quarters															
	Lab Analysis*[a]	Field parameters only*[1]	Monthly Flow	Dissolved Oxygen	TDS,TSS, T-P	TDS,TSS	O & G	Lab Analysis*[a]	Qtrly Field parameters* only[1]	Quarterly Flow	Monthly Flow	Flow Monitoring (HCWMP)[4, 5]	Water Level Monitoring (HCWMP)	Monthly Seasonal Flow	Manual Quarterly Water Level	Dissolved Oxygen	TDS,TSS, T-P	TDS,TSS	O & G	Carbon 14	Tritium	Deuterium	Oxygen 18
Streams																							
CS-3								X											X				
CS-6**	X			X			X	X								X			X				
CS-7 (F-5)									X			X											
CS-8									X			X											
CS-9								X															
CS-10 (C-1)									X			X											
CS-11								X											X				
CS-12	X							X															
CS-13	X							X															
CS-14***	X							X															
CS-16 (C-3)								X				X							X				
CS-17 (C-2)								X				X											
CS-18 (C-4)								X															
CS-19 (remove)								X															
CS-20								X											X				
CS-21 (remove)								X															
CS-22										X													
CS-23										X													
CS-24								X								X			X				
CS-25 (remove)								X															
CS-26 (remove)								X															
CS-27								X															
CS-28																		X	X				
CS-29 (C-6)								X															
CS-30 (C-8)								X															
CS-31								X				X											
CS-32										X													
CS-33										X													
CS-34										X													
CS-35										X													
MD-1			X	X		X					X							X					
SRD-1			X								X												
F-10									X			X											
UP&L-10								X															
VC-6	X			X			X	X								X			X				
VC-9	X			X			X	X								X			X				
VC-10		X							X														
VC-11										X													
VC-12										X													

Revised 4-3-20

Table 2.3.7-1
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations) (continued)

Sample Site	1st Quarter							2nd[2] / 3rd[3] / 4th Quarters															
	Lab Analysis*[a]	Field parameters only*[1]	Monthly Flow	Dissolved Oxygen	TDS,TSS, T-P	O & G		Lab Analysis*[a]	Qtrly Field parameters* only[1]	Quarterly Flow	Monthly Flow	Flow Monitoring (HCWMP)[4,5]	Water Level Monitoring (HCWMP)	Monthly Seasonal Flow	Manual Quarterly Water Level	Dissolved Oxygen	TDS,TSS, T-P	TDS,TSS	O & G	Carbon 14	Tritium	Deuterium	Oxygen 18
Streams (cont.)																							
WRDS #1								X											X				
WRDS #2								X											X				
WRDS #3								X											X				
WRDS #4								X											X				
EL-1																					X		
EL-2																					X		
Springs																							
S10-1 (remove)								X															
S12-1 (remove)								X															
S13-2									X														
S13-7 (remove)								X															
S14-4									X														
S15-3									X												X		
S17-2								X															
S22-5									X														
S22-11									X														
S23-4									X														
S24-1 Sulfur Spring									X												X		
S24-12									X														
S25-32 (remove)									X														
S26-1 (remove)									X														
S26-13									X														
S34-12									X														
S35-8									X														
S36-12									X														
SW21-104								X															
SW28-110								X															
SW28-111									X														
SW4-169									X														
SW4-173								X															
SW4-429								X															
SW5-590								X															
SW32-276 (remove)									X														
SW32-277								X															
SW-33-268								X															
2-413									X												X		
3-290									X														
8-253																					X		
WQ1-1 (remove)									X														
WQ1-39 (remove)								X															
WQ3-6 (remove)								X															
WQ3-26 (remove)								X															
WQ3-41 (remove)								X															
WQ3-43 (remove)								X															
WQ4-12 (remove)								X															
WQ36-1 (remove)								X															

Table 2.3.7-3

MONITORING STATION IDENTIFICATION

ECCLES CANON/MUD/FISH CREEK DRAINAGES

STREAM STATIONS 15 Stations

CS-3	CS-6	CS-9	CS-11	CS-19	CS-20	CS-24
CS-21	VC-6	VC-9	VC-10	VC-11	VC-12	CS-25
CS-26						

HUNTINGTON CANYON

STREAM STATIONS 21 Stations

CS-7 (F-5)	CS-8	CS-10	CS-16	CS-17	CS-18
CS-22	CS-23	UPL-10	F-10	EL-1	EL-2
CS-27	CS-28	CS-29	CS-30	CS-31	CS-32
CS-33	CS-34	CS-35			

MINE DISCHARGE STATIONS 4 Stations

CS-12 (Mine #3) CS-14 (Mines #1, #2, #4) MD-1 (Composite CS-12 & CS-14)

SRD-1 (Total Mine Site Discharge to Eccles Creek/Scofield reservoir)*

FRENCH DRAIN STATIONS 1 Station

CS-13

WASTE ROCK DISPOSAL SITE

STREAM STATIONS 4 Stations

WRDS #1 WRDS #2 WRDS #3 WRDS #4

GROUNDWATER STATIONS

SPRINGS 26 Stations

S10-1	S12-1	S13-2	S13-7	S14-4	S15-3	S17-2
S22-5	S22-11	S23-4	S24-1 Sulfur	S24-12	S36-13	S34-12
S35-8	S36-12	2-413	3-290	WQ1-39	WQ3-6	WQ3-26
WQ3-41	WQ3-43	WQ4-12	8-253	WQ1-1	WQ36-1	S25-32
S26-1	SW21-104	SW28-110	SW28-111	SW4-169	SW4-173	SQ4-429
SW5-590	S26-13	SW32-277	SW33-268			

WELLS (MONITORING)** 25 Well Stations

	92-91-03	W79-26-1 (B)	W2-1 (98-2-1) (S)		W99-4-1 (S)
JC-1 (S)	JC-2 (S)	JC-3 (S)	W20-28-1 (S)	W08-1-5 (S)	15-21-2 (S)
W16-24-1 (S)	W17-21-1 (B)	W17-34-1B	W17-34-1S	W18-28-1B	W18-32-1B
W18-32-1S	W18-5-1S	W19-5-1B	P17-4-1(E & W)	P17-33-1(E&W)	P17-34-1(N&S)

ELD-1 (Total of JC-1 and JC-3)

WELLS, CULINARY -Referenced but not monitored

W13-1 W13-2 W17-1 W17-3 W24-1

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

001 Portal Area 002 Loadout 003 Waste Rock Area 004 Winter Quarters JC-3 James Cyn

* Sites are monitored for total flow only and the results are reported to the Division on a monthly basis

** See Table 2.3.7-4 for well detail

*** (S) or (B) has been added to pre-existing wells representing screened formation(i.e. Star Point or Blackhawk)

Chapter 2, Section 2.4

Surface water stations in Eccles Canyon were sampled more frequently than those on Huntington Creek during the initial phases of mining.

With the addition of the Flat Canyon lease, a total of eight (8) stream sites were added to the water monitoring program to insure any impacts to the surface hydrology of the area were documented. The sites were primarily added in locations upstream of areas proposed for mining, with stream locations already being monitored downstream of the proposed areas to be mined. Sites added upstream of mining include Little Swens (CS-27), Swens (CS-28), Flat Canyon (CS-29), and Boulger above the reservoir (CS-30), respectively. To monitor tributaries of the prominent streams within the areas to be mined, flow-only sites were added to auxiliary tributaries in Swens (CS-35) and Boulger Creek (CS-32 through CS-34). The added sites provide additional sites to monitor any potential in-stream impacts.

As additional monitoring for the stream flows (and required in Special Stipulations for Coal Lease UTU-77114 #27), the stream gradient of perennial streams to be undermined will be monitored as outlined in Section 4.17.4 Mitigation of Subsidence Effects of the M&RP. Monitoring of the sections of perennial streams being undermined using longwall mining methods will be monitored both before and after mining takes place, with the information being added to Appendix A-1. The method of monitoring will include an on-ground survey using survey-grade equipment. Monitoring of the vegetation along the streams is also outlined in Section 2.7 of the M&RP if specific low-flow criteria are encountered.

Stream monitoring station CS-24 was added in Winter Quarters Canyon, with the addition of sediment pond discharge point UPDES-004 from the Winter Quarters Ventilation Facility. Stream site CS-24 is located downstream of the ventilation facility pad, and UPDES-004 represents the discharge from the pad site. Sampling frequency and analysis are located in Tables 2.3.7-1 and 2.3.7-2, respectively.

Stream monitoring station CS-28 was added in Swens Canyon upstream of the Swens Canyon Ventilation Facility. Site CS-16, located at the mouth of Swens Canyon, which previously had been reduced to field parameters-only analysis will return to 2nd-4th quarter lab analysis monitoring with CS-28. Refer to Tables 2.3.7-1 and 2.3.7-2 for monitoring details.

Stream monitoring station CS-25 was added in Woods Canyon as mining progressed east in Section 36, T12S, R6E. CS-25 is located downstream of any mining activity. In addition, nine (9) piezometers (WC-1 through WC-9N) were added in the canyon to monitor the near surface groundwater associated with Woods Canyon Creek.

Stream locations CS-19, CS-25 (both in Woods Canyon) and CS-26 (Wife Creek) were removed from monitoring in 2020 in conjunction with the completion of mining in Mine #3. An evaluation of the monitoring sites is located in Appendix A-2, Volume 2

Sampling will continue at all surface water stations throughout the post-mining period and until the reclamation effort is determined successful by the regulatory authority. Samples will also continue to be analyzed for the parameters outlined in Tables 2.3.7-1, 2.3.7-2, and 2.3.7-3 throughout the post-mining period, unless deletions in the list of parameters is determined to be appropriate.

Several monitoring stations were added to the monitoring schedule with the incorporation of the North

Lease Tract. CS-19 and CS-21 have been added to monitor the quantity and quality of the water in
Woods Canyon Creek and CS-20 has been added to monitor the quantity and quality of the water in Winter Quarters Creek - monitoring both mining upstream and water quality upstream of the Winter Quarters Ventilation Facility (WQVF). CS-24 was added in Winter Quarters Creek below the (WQVF) to monitor any affects associated with the pad.

As part of the Skyline Mine subsidence monitoring plan, a total of 42 new water monitoring sites have been identified in the North Lease area (Plate 2.3.6-2 Table 2.3.7-2A). Sites NL-1 through NL-42 have been selected to monitor flows on the perennial reaches of both Winter Quarters and Woods Canyon drainages one year prior to , during,and one year following longwall undermining of the perennial section of stream. The sites will be monitored monthly in June through October. Ifaccessible earlier than June or later than October, the mine will monitor the sites. The results of the monitoring will be reported with the other required monitoring data. The purpose of this monitoring is to determine the effects, if any, on the stretches of perennial streams in the Winter Quarters Creek and Woods Canyon Creek drainage that will be subsided due to mining. Monitoring points, in perennial reaches running perpendicular to the longwall panels, are positioned above the gate-roads and center of each panel. Longwall panels are approximately 850-feet wide, creating a flow-monitoring spacing of approximately 425-feet. Monitoring points in perennial reaches running parallel to the longwall panels are spaced at approximately 850-feet. Since monitoring is dependent on the timing of mining, monitoring points will be added and dropped as mining advances. As mining advances through the perennial sections of the drainage, and the monitoring indicates no affects to flow, the Permittee may modify the spacing of the monitoring points. This monitoring will also help indicate if mitigation is required for loss of surface or ground water and, subsequently, habitat associated with the water. The program was discontinued after the 2016 field season as mining in the 11-Left panel undermining Woods Canyon creek was completed in May 2015.

Skyline has conducted field studies to determine the location of the perennial portions of both Winter Quarters and Woods Canyon Creeks, The perennial nature of the streams were determined using a variety of parameters including vegetation and surface flow monitoring. Field studies were initiated and completed in October and November 2002 and October 2003. Copies of the studies are included in Volume A-1, Volume 2 Hydrology Section. The studies will be used by the Forest in their environmental assessment of the potential effects of undermining Winter Quarters and Wood Canyon Creeks. As mining progressed north of Winter Quarters Canyon, the longwall panels were rotated 90 degrees which extended mining further east. Agapito Associates, Inc. conducted an evaluation of the impacts to the surface based on extending mining to the east. The study indicated longwall mining can be safely extended to the east as outlined without having adverse affects to the surface. The study is located in Appendix A-1, Volume 2.

Stream locations CS-19, CS-25 (both in Woods Canyon) and CS-26 (Wife Creek) were removed from monitoring in 2020 in conjunction with the completion of mining in Mine #3. No hydrologic impacts related to mining were observed. An evaluation of the monitoring sites is located in Appendix A-2, Volume 2

Sampling will continue according to Tables 2.3.7-1, 2.3.7-2, and 2.3.7-3 as approved at all surface water stations throughout the post-mining period and until the reclamation effort is determined

Water Monitoring Reduction

Mined-out Areas North of the Mine Facility

Skyline Mine

6 April 2020

Canyon Fuel Company, LLC

Skyline Mine

Helper, Utah

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Water Monitoring Reduction

Mined-out Areas North of Mine Facility

Skyline Mine

April 2020

Summary

The following is intended to serve as a demonstration to reduce the Skyline Mine water monitoring program by seventeen (17) sites. All the sites are streams or springs that have monitoring data from a total of seven (7) to nineteen (19) years. The sites are located above areas that were mined predominantly between 2005-2017. One very small panel was mined in early 2018. Figure 1 illustrates the location of the monitoring sites and when the area was undermined. The areas have achieved full-subsidence and there is no intention of re-entering the districts in the future.

Selected data has been downloaded from the Division database in Table 1. Data includes Field pH, Specific Conductivity, Flow, TDS, Total Iron, Total Manganese, and Sulfate. Additional water quality data is available in the Division Data base, but for this analysis water quantity, total dissolved solids, and sulfate are the best indicators of impacts to the hydrologic regime in this area. There are two (2) graphs for each monitoring site; one graph illustrating flow compared to the Palmer Hydrologic Drought Index (PHDI); the other graph provides an indication of water quality by plotting Total Iron (T-Fe), Total Manganese (T-Mn), Total Dissolved Solids (TDS), and Sulfate (SO4). Total Iron and Total Manganese have been provided as they are required parameters by regulation. The graphs show that Total Iron and Total Manganese have never been an issue at any of the sites and are near non-detect most of the time. Most of the data presented starts in 2000 and extends through 2019. The exception are sites that were added as part of the North of Graben district that were initiated in approximately 2012. Discussion of the sites will be grouped by hydrologic basin addressing both water quantity and quality data.

Ridge Top Springs

Quantity - Springs S12-1, S13-7, and S10-1 straddle Granger Ridge and have all been monitored since 1982. For this exercise graphing of data extends from 2000 to present for graphing purposes. All three springs consistently have base flows less than a gallon and are often dry. High flows are generally less than 4 gpm in the spring and drop off below a gallon quickly. When compared to the PHDI, seasonal increased flows correspond to wet years. Flows that are exponentially high (>25 gpm) are questionable and may be influenced by surface flow. Notable in the flows of all three (3) springs is almost forty (40) years of monitoring indicate there has no notable impacts to the flow. When sufficient recharge is available in the area, the springs typically discharge, albeit at a very low rate which is likely reflective of the recharge area. With no full-extraction mining occurring in the vicinity of these sites for at least 20 years, future impacts to these springs due to mining is unlikely.

Quality – The quality graphs look slightly skewed due to the number of no-flow sampling events, but when data is available it is consistent. T-Fe and T-Mn are typically non-detect or slightly above non-detect and never registering values above 0.05 mg/l for the entire sampling period. The TDS values are all below 200 mg/l for S10-1 and S13-7 the exception being a few outliers that do not show an increasing

trend. TDS values for S12-1 were all below 140 mg/l. All three (3) springs continue to provide very clean water when flowing water is available.

Winter Quarters Canyon

A total of seven (7) water monitoring sites exist in Winter Quarters Canyon including four (4) springs, one (1) well, and two (2) stream sites, respectively. It is proposed that all four (4) springs are eliminated from monitoring as no impacts due to mining have been observed during monitoring. The streams will continue to be monitored as Winter Quarters continues to have a UPDES discharge point with these stream locations being located above and below the site (CS-20 and CS-24 respectively). Well 08-1-5 will continue monitor the Starpoint Sandstone.

Quantity – Springs WQ3-26, WQ4-12, WQ3-6 have all been monitored since at least 2001. WQ1-1 was added in 2008 prior to the installation of the Winter Quarters Ventilation facility. WQ3-6 yielded the highest baseline flows in the 4-10 gpm range; WQ1-1 ranged from 0-2 gpm; and WQ4-12 and WQ3-41 consistently in the 0-1 gpm respectively. It's notable that all four (4) springs track well with the PHDI, showing peak flows in the wet months and low flows in the dry ones. Over the span of the 15-year monitoring period, no notable impacts to the hydrologic regime have been observed in the springs. The area surrounding WQ3-6 was undermined from October 2011 through June 2012. Panel 7-Left was mined on the south-facing slope located northwest of CS-20 from August 2017 through January 2018 with no observable impacts. None of the other three (3) springs were in the vicinity of being undermined.

Quality – The water quality for all four (4) springs remained consistent through the sampling period showing no impacts through mining. Except for individual sample outliers, the water quality for all parameters monitored remained consistent. Total Iron and Total Manganese were plotted but were essentially non-detect for all for sites the entire sampling period with concentrations below 0.1 mg/l for all sites. As a better gauge of water quality, Total Dissolved Solids (TDS) and Sulfate (SO4) were graphed. No upward trends in either TDS or SO4 were noted, however there was a typically an increase in SO4 in the low-flow fall samples. TDS increased in springs heading down the canyon with WQ3-26 (~125 mg/l) having the lowest concentration, and WQ1-1 (~450 mg/l) having the highest concentration. WQ1-1 had lab analysis only every five (5) years, so Specific Conductivity was also graphed to illustrate the consistency of the water quality. The approximate 750 umhos/cm Specific Conductivity correlates well with the TDS being approximately 60 percent of the conductivity. Sulfate was consistently below 50 mg/l for all four (4) sites throughout the sampling period.

Woods Canyon

A total of four (4) springs and three (3) stream monitoring sites exist in Woods Canyon. It is proposed that all seven (7) sites be eliminated from the monitoring program based on 1) no impacts associated with mining have been observed; and 2) No additional mining is proposed in the area that was last mined in the North of Graben district in July 2017. Undermining of the Woods Creek last occurred in May 2015 with monthly flow monitoring of the creek last occurring in 2017. All the monitoring showed no impacts due to mining.

Quantity - Spring WQ1-39 is located upstream and west of mining by roughly 0.5 miles providing a good baseline example of responses to the PHDI outside the mining area within Woods Canyon. Baseline low

flow values were near zero in the drier years while the seasonal high flows were in the 10-20 gpm range in dry years and 20-50 gpm in the wet years; showing no overall discernible change. Springs W3-43 and WQ3-41 appeared to be impacted from a combination of drought conditions and logging from 2012 through 2017 with both springs going dry in 2015 and 2016. Both springs showed decreased baseline flows beginning in 2012 from greater than 1 gpm to less than 0.5 gpm, well before the area was undermined in 2015. A significant logging operation on the entire north-facing slope of Woods Canyon immediately above WQ3-43 likely contributed to the recharge of the spring. No obvious modifications were noted to the recharge area of WQ3-41 that is located on the south-facing slope of the canyon. It is reassuring that both springs appear to have rebounded to close to baseline flows beginning in 2017. WQ36-1 went dry in the 2015-2017 timeframe and is easily explained by a logging trail that ran directly through the source of the spring in 2014. The combination the dry years and disruption of the flow path and recharge area likely impacted the spring. Since 2017 the spring flows quite well in the wet months but dries up in late summer. The spring flowed in 2017 and 2019 during wet months but was dry through 2018 which was a historically dry year. The zero-values baseline flow combined with increase high flows observed in wet months in 2017 and 2019 suggests the recharge area has been impacted by the logging operation.

Streams, CS-19, CS-21 and CS-25 were all installed to monitor the downstream impacts from mining. Initial mine plans had CS-21 downstream of mining activities. The final mine plan was approximately ½-mile further east than originally projected so CS-25 was added as site immediately downstream of mining. CS-19 is located at the mouth of Woods Canyon, approximately two-miles downstream from the mining. Panel 11-Left undermined approximately 1.2 miles of Woods Creek from December 2014 through May 2015 with no noticeable impacts in either the monthly flow monitoring or the overall quarterly. The attached Woods Creek Stream Comparison graph illustrates that all the streams tracked well with the PHDI and that CS-25 is typically flowing at a higher rate suggesting the creek is 'gaining' through that section. This was observable mainly because both CS-21 and CS-25 were sampled on the same day, and the monthly flow sites that were monitored during active undermining of the stream. The downstream location of CS-19 provided overall flows for the stream, but did not observe the subtle observations of the two other stream sites.

Based on 10-15 years of flow monitoring records of the monitoring locations, no impacts due to mining have been observed.

Quality – All three stream monitoring sites illustrated TDS values consistent for flowing through the Blackhawk formation with concentrations ranging from approximately 200 mg/l to 350 mg/l. Although all three sites show a slight upward trend in the last few years, the concentrations are well-within excepted parameters. There was also a slight increase SO4 over the same timeframe, but with the highest concentrations still being less than 50 mg/l. The slight increases may be associated with the extensive logging that has occurred in the canyon beginning in 2014 providing additional sedimentation to the stream. Whatever is influencing the marginal increases will likely be short-lived. T-Fe and T-Mn remained near non-detect for the entire sampling period suggesting there was no contribution association to mining.

The water quality of the Springs has remained good based on the TDS and SO4 values plotted. Spring WQ1-39 remained the most consistent as its recharge area was not impacted by logging. Springs WQ3-

43, WQ3-41, and WQ36-1 illustrated slightly elevated concentrations of TDS and SO4, yet well within the range anticipated for the Blackhawk Formation. Total Iron and Total Manganese showed minimal to non-detect concentrations for all four springs the entire sampling period.

Wife / Andrew Dairy Canyons

Stream CS-26 and Springs S26-1 and S25-32 were installed to monitor impacts to Wife and Andrew Dairy Canyons. The 15-Left panel, mined from February through June 2017, was the only mining that remotely went into those two basins.

Quantity - Stream CS-26 was added as a downstream sample location when the Lease UTU-67939 was extended north of Granger Ridge allowing for the 14-Left and 15-Left longwall panels. The site is approximately two-miles downstream of mining. The flow data did not provide much information as the site was dry or nearly dry nine of the 23 times monitored. The highest low-flow measured in October 2012 at 7.1 gpm, with a high-flow in June of 2019 of 565 gpm. Mid-summer flows were often 15-40 gpm range but without correlation to the PHDI. High flows observed in 2017 and 2019 corresponded to positive PHDI values.

Springs S26-1 and S25-32 were added in 2012 as the mine realized mining would move into the top of those basins. S26-1 has historically had very low flows ranging from 0.3 to 3.6 gpm. The flow graph for S26-1 does not track well with the PHDI; possibly due to a limited recharge area that doesn't adhere to a regional hydrologic regime. Two of the higher flows were recorded in years where the PHDI showed drought conditions. It's important to note that one of the higher flows were recorded in June 2017 which followed mining in the area. Both base and high flows show no discernible effects from mining. Flows for Spring S25-32 showed no impacts from mining as the two highest flows in the seven-year monitoring period were noted in 2017 and 2019 following mining. Baseflows have shown no impacts following mining even when significant drought conditions were noted in the summer of 2018. High flows responded well in 2019 with the highest flow being observed during the monitoring cycle.

Quality – Both Springs S26-1 and S25-32 were sites where only field parameters were collected, the exception being one sample being collected at each site in 2015 during baseline sampling. From those samples sulfate, total iron, and total manganese were very low for both sites. The TDS values of 320 mg/l and 395 mg/l for S26-1 and S25-32 were anticipated values for the Blackhawk formation. Both were approximately 67% of the recorded specific conductivity ranges of 450-550 umhos/cm and 450-650 umhos/cm for S26-1 and S25-32 respectively, which has been common for the area. When viewing the more extensive specific conductivity data, only anticipated variation in the data was noted. Based on the field parameters noted, no impacts to the quality of the water due to mining was observed.

Summary

Skyline personnel believes the information provided demonstrates no impacts to the hydrologic regime have occurred due to mining. There has been at least two years of post-mining data to support this conclusion. In conjunction with this analysis, modifications to amend the M&RP to remove these sites from the sampling program are submitted.

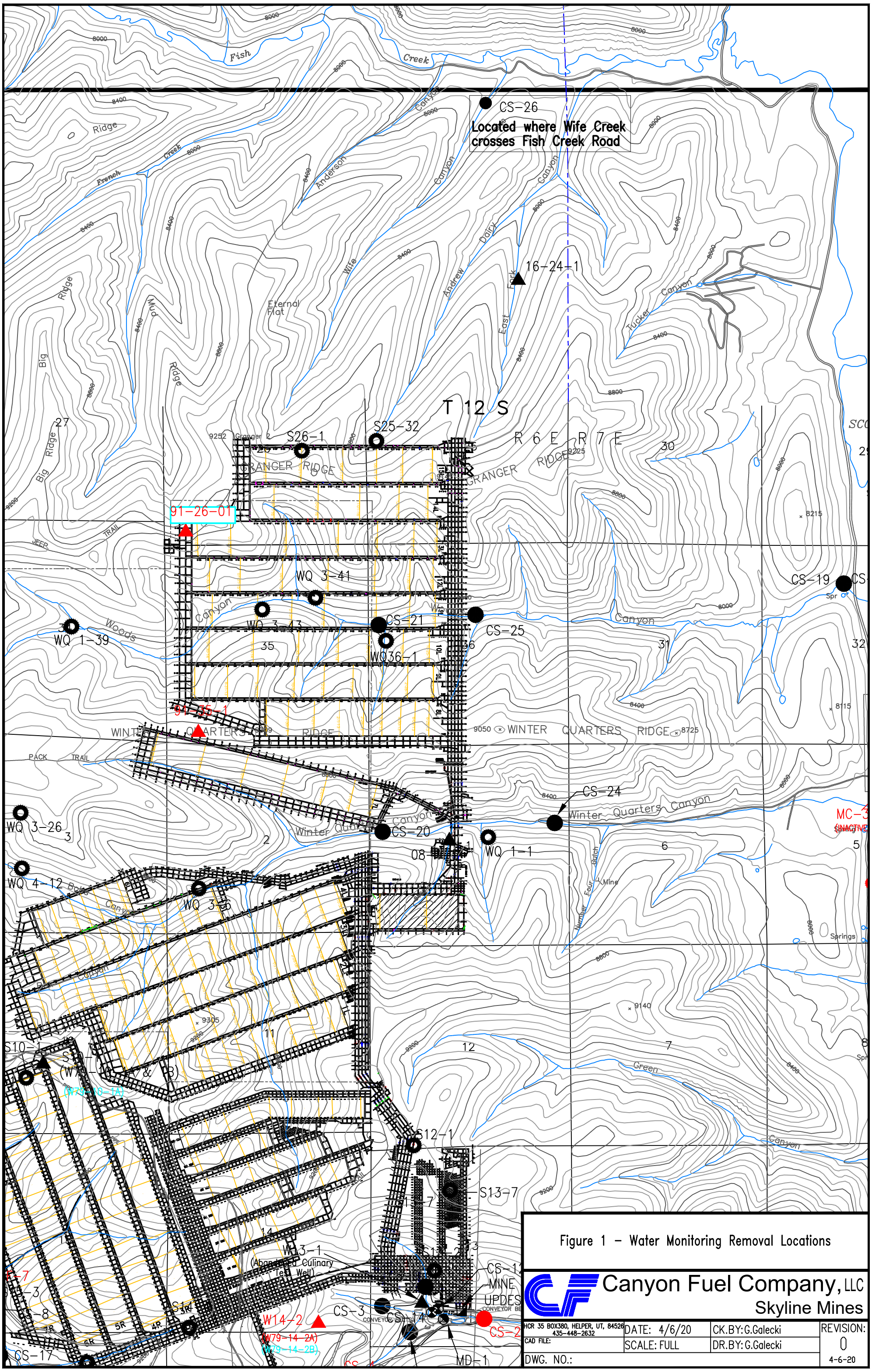


Figure 1 – Water Monitoring Removal Locations

Canyon Fuel Company, LLC
Skyline Mines

HCR 35 BOX380, HELPER, UT, 84526 435-448-2632	DATE: 4/6/20	CK.BY:G.Galecki	REVISION: 0 4-6-20
CAD FILE:	SCALE: FULL	DR.BY:G.Galecki	
DWG. NO.:			

Water Monitoring Reduction
Table 1

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
	36-1		10/25/2019			0				
	36-1		8/7/2019	7.78	636	5	350	0.05	0.002	25
Spring	36-1	Woods Canyon spring	7/7/2019	7.47	606	22.2	369	< .05	< .002	24
Spring	36-1	Woods Canyon spring	10/26/2018			0				
Spring	36-1	Woods Canyon spring	9/14/2018			0				
Spring	36-1	Woods Canyon spring	6/20/2018			0				
Spring	36-1	Woods Canyon spring	10/17/2017			0				
Spring	36-1	Woods Canyon spring	7/31/2017	7.29	591	4.81	352	0.06	< .002	23
Spring	36-1	Woods Canyon spring	6/26/2017	7.34	527	19.8	363	< .05	< .002	21
Spring	36-1	Woods Canyon spring	10/12/2016			0				
Spring	36-1	Woods Canyon spring	8/23/2016			0				
Spring	36-1	Woods Canyon spring	6/21/2016			0				
Spring	36-1	Woods Canyon spring	10/13/2015			0				
Spring	36-1	Woods Canyon spring	9/1/2015			0				
Spring	36-1	Woods Canyon spring	6/26/2015			0				
Spring	36-1	Woods Canyon spring	10/23/2014			0				
Spring	36-1	Woods Canyon spring	9/17/2014	0	0	0				
Spring	36-1	Woods Canyon spring	6/20/2014	7.2	662	9.5	363	3.01	0.046	22
Spring	36-1	Woods Canyon spring	10/24/2013	7.21	597	0.17				
Spring	36-1	Woods Canyon spring	9/24/2013	7.31	596	0.31	320	2.85	0.077	19
Spring	36-1	Woods Canyon spring	6/5/2013	7.8	630	1.6	352	0.05	< .005	17
Spring	36-1	Woods Canyon spring	11/8/2012	7.8	674	1.4	362	0.15	0.007	17
Spring	36-1	Woods Canyon spring	8/29/2012	7.34	588	2.2	354	0.16	0.006	18
Spring	36-1	Woods Canyon spring	6/14/2012	7.09	585	6.4	346	0.07	0.005	17
Spring	36-1	Woods Canyon spring	10/31/2011	7.5	665	8.57	306	< .02	< .005	16
Spring	36-1	Woods Canyon spring	9/19/2011	7.23	570	11.54	324	< .02	< .005	15
Spring	36-1	Woods Canyon spring	6/24/2011	7.11	553	37.3	324	< .02	< .005	13
Spring	36-1	Woods Canyon spring	11/2/2010	7.31	606	0.8	341	0.07	< .005	18
Spring	36-1	Woods Canyon spring	9/17/2010	7.24	586	1.97	346	1.14	0.047	17
Spring	36-1	Woods Canyon spring	6/15/2010	7.38	499	12.9	335	< .05	< .002	16
Spring	36-1	Woods Canyon spring	11/11/2009	7.09	589	2.68	350	< .05	< .002	17
Spring	36-1	Woods Canyon spring	9/22/2009	7.04	581	3.89	363	0.53	0.014	16
Spring	36-1	Woods Canyon spring	6/29/2009	7.1	591	18.2	339	< .05	< .002	16
Spring	36-1	Woods Canyon spring	10/30/2008	7.09	574	4.08	320	0.06	0.003	17
Spring	36-1	Woods Canyon spring	7/29/2008	7.28	555	4.75	346	0.57	0.02	15
	S10-1		10/14/2019	6.9	297	0.2	200	2.63	0.101	19
	S10-1		8/28/2019			0				
Spring	S10-1	Spring	6/16/2017	7.17	123	6.9	74	0.09	< .002	6
Spring	S10-1	Spring	10/11/2016			0				
Spring	S10-1	Spring	8/17/2016			0				
Spring	S10-1	Spring	6/15/2016	7.04	152	3.4	89	0.17	< .002	6
Spring	S10-1	Spring	10/14/2015							
Spring	S10-1	Spring	9/26/2015							
Spring	S10-1	Spring	6/16/2015	6.78	158	2.7	116	0.11	0.003	6
Spring	S10-1	Spring	11/11/2014	7.59	302	0.07	193	0.06	0.007	18
Spring	S10-1	Spring	9/5/2014	7.17	282	0.144	152	0.05	0.006	16
Spring	S10-1	Spring	6/14/2014	6.6	139	3.1	117	0.2	0.003	7
Spring	S10-1	Spring	10/18/2013			0				
Spring	S10-1	Spring	9/13/2013			0				
Spring	S10-1	Spring	6/10/2013	6.54	148	2.33	104	0.25	< .005	7
Spring	S10-1	Spring	11/7/2012			0				
Spring	S10-1	Spring	9/20/2012			0				
Spring	S10-1	Spring	6/12/2012	8.1	217	0.94	122	0.08	< .005	9
Spring	S10-1	Spring	11/11/2011	8.4	312	0.2	116	0.04	< .005	17

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	S10-1	Spring	9/20/2011	8.15	255	0.19	128	0.07	< .005	14
Spring	S10-1	Spring	7/8/2011	6.58	103	6.82	80	0.41	< .005	7
Spring	S10-1	Spring	11/17/2010	8.2	272	0.04	120	0.39	0.014	18
Spring	S10-1	Spring	9/8/2010	8.01	250	0.06	146	0.15	0.007	16
Spring	S10-1	Spring	6/20/2010	7.09	126	4.2	163	0.28	< .002	7
Spring	S10-1	Spring	10/27/2009			0				
Spring	S10-1	Spring	9/11/2009	6.5	273	0.04	170	0.41	0.026	15
Spring	S10-1	Spring	6/8/2009	6.15	135	10.1	82	0.52	0.008	7
Spring	S10-1	Spring	10/28/2008			0				
Spring	S10-1	Spring	9/23/2008	8.08	222	0.11	175	0.26	0.015	16
Spring	S10-1	Spring	6/24/2008	7.27	132.5	12	103	0.3	< .002	7
Spring	S10-1	Spring	11/1/2007			0				
Spring	S10-1	Spring	9/28/2007			0				
Spring	S10-1	Spring	6/16/2007	7.93	160	1.33	135	0.14	0.007	9
Spring	S10-1	Spring	11/2/2006	8.1	263	0.097				
Spring	S10-1	Spring	9/26/2006	7.76	259	0.13	176	0.26	0.008	16
Spring	S10-1	Spring	6/29/2006	8.08	81	1.57	125	0.15	< .002	11
Spring	S10-1	Spring	10/13/2005	8.02	210	0.102	184	< .05	0.004	16
Spring	S10-1	Spring	9/7/2005	8.31	249	0.116	158	< .05	< .002	16
Spring	S10-1	Spring	6/22/2005	7.88	129	6.09	112	0.28	< .002	8
Spring	S10-1	Spring	10/29/2004	No Access						No Access
Spring	S10-1	Spring	9/2/2004			0				
Spring	S10-1	Spring	6/22/2004	8.11	188	1.23	116	0.15	< .005	10
Spring	S10-1	Spring	11/5/2003			0				
Spring	S10-1	Spring	9/17/2003	8.01	251	0.0683	153	0.142	0.01	16
Spring	S10-1	Spring	6/16/2003	8.23	167	3.17	103	0.12	< .005	8
Spring	S10-1	Spring	10/16/2002			0				
Spring	S10-1	Spring	9/5/2002			0				
Spring	S10-1	Spring	6/17/2002	7.52	241	1.15	117	0.3	< .05	8
Spring	S10-1	Spring	10/23/2001	7.86	264	0.0125	157	< .1	< .05	16.6
Spring	S10-1	Spring	9/3/2001	7.49	256		165	0.2	< .05	13
Spring	S10-1	Spring	6/18/2001	7.97	162	1.35	80	0.2	< .1	8
Spring	S10-1	Spring	10/2/2000			0				
Spring	S10-1	Spring	8/7/2000	7.55	306	0.04488	125	< .1	< .1	13
Spring	S10-1	Spring	6/28/2000	7.8	228	0.49368	50	0.2	< .1	8
Spring	S10-1	Spring	10/6/1999			0				
Spring	S10-1	Spring	8/17/1999	7.2	305	0.26928	141	0.8	< .1	12
Spring	S10-1	Spring	6/29/1999	7.58	177	5.8344	98	3	< .1	
Spring	S10-1	Spring	3/24/1999	No Access						No Access
Spring	S10-1	Spring	10/17/1998			0				
Spring	S10-1	Spring	8/19/1998	7.67	272	0.18	132	< .1	< .1	13
Spring	S10-1	Spring	6/22/1998	8	174	4.9	103	0.3	< .1	
Spring	S10-1	Spring	10/9/1997	7.18	301	0.26928	150	0.4	< .1	
Spring	S10-1	Spring	8/13/1997	7.74	279	0.4488	140	0.8	< .1	15
Spring	S10-1	Spring	6/23/1997	7.21	169	4.488	110	0.2	< .1	
Spring	S10-1	Spring	10/29/1996	No Access						No Access
Spring	S10-1	Spring	9/11/1996	7.76	314	0	161	0.3	< .1	14
Spring	S10-1	Spring	6/24/1996	7.4	157	3.59	85	0.5	< .1	6
Spring	S10-1	Spring	9/4/1995	7.98	264	0.22	100	< .1	< .1	11
Spring	S10-1	Spring	7/17/1995	7.37	164	3.7	70	0.5	< .1	5
Spring	S10-1	Spring	10/18/1993	7.63	162	0.33	64	0.065	< .005	5.6
Spring	S10-1	Spring	8/25/1993	7.66	152	0.54	122	< .04	< .02	5.2
Spring	S10-1	Spring	6/23/1993	8.18	113	8.82	40	0.35	< .02	3.7
Spring	S10-1	Spring	10/20/1992	7.41	232	< .1	128	0.04	< .01	6.6
Spring	S10-1	Spring	9/1/1992	7.24	214	0.11	90	< .03	< .001	6.1
Spring	S10-1	Spring	6/10/1992	6.55	109	2.65	78	0.12	0.01	3.9
Spring	S10-1	Spring	10/15/1991	7.24	173	0.16	94	0.1	< .02	< 14.
Spring	S10-1	Spring	9/3/1991	7.1	143	0.19	52	0.12	< .018	5.5

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	S10-1	Spring	6/18/1991	7.07	77	15.67	62	0.52	< .033	4.7
Spring	S10-1	Spring	10/24/1990	6.8	166	0.27	110	0.06	< .01	5.2
Spring	S10-1	Spring	9/10/1990	6.3	177	0.114	94	0.06	< .01	5.5
Spring	S10-1	Spring	6/4/1990	6.7	77	8.11	82	0.31	< .01	4
Spring	S10-1	Spring	10/16/1989	7.62	160	0.23	102	0.06	< .01	8
Spring	S10-1	Spring	9/5/1989	6.7	216	< .1	102	0.06	< .01	5
Spring	S10-1	Spring	10/11/1988	6.9	202	0.17	115	0.08	< .01	5
Spring	S10-1	Spring	8/17/1988	6.4	172	0.31	155	0.09	0.02	10
Spring	S10-1	Spring	6/27/1988	7.2	115	3.06	75	0.25	< .01	13
Spring	S10-1	Spring	12/15/1987	No Access						No Access
Spring	S10-1	Spring	11/19/1987	No Access						No Access
Spring	S10-1	Spring	10/20/1987	7.8	166	0.19	126	< .01	< .01	20
Spring	S10-1	Spring	9/21/1987	7.6	176	0.15				
Spring	S10-1	Spring	8/17/1987	7.6	137	0.31	92	0.03	< .01	6
Spring	S10-1	Spring	7/14/1987	7.5	112	0.84				
Spring	S10-1	Spring	6/9/1987	7.5	97	7.28	66	0.17	< .01	10
Spring	S10-1	Spring	5/18/1987	6.9	80	17.2				
Spring	S10-1	Spring	4/22/1987	No Access						No Access
Spring	S10-1	Spring	3/19/1987	No Access						No Access
Spring	S10-1	Spring	2/23/1987	No Access						No Access
Spring	S10-1	Spring	1/22/1987	No Access						No Access
Spring	S10-1	Spring	12/11/1986	No Access						No Access
Spring	S10-1	Spring	11/11/1986	No Access						No Access
Spring	S10-1	Spring	10/15/1986	7.3	127	0.4	90	0.09	< .01	9
Spring	S10-1	Spring	9/23/1986	7.3	183	0.32				
Spring	S10-1	Spring	8/19/1986	7.3	193	0.63	98	0.05	< .01	7
Spring	S10-1	Spring	7/21/1986	7	165	1.32				
Spring	S10-1	Spring	6/18/1986	6.4	99	17.21	68	0.21	< .01	4
Spring	S10-1	Spring	5/28/1986	No Access						No Access
Spring	S10-1	Spring	4/17/1986	No Access						No Access
Spring	S10-1	Spring	3/20/1986	No Access						No Access
Spring	S10-1	Spring	2/20/1986	No Access						No Access
Spring	S10-1	Spring	1/24/1986	No Access						No Access
Spring	S10-1	Spring	12/11/1985	No Access						No Access
Spring	S10-1	Spring	11/19/1985	No Access						No Access
Spring	S10-1	Spring	10/15/1985	6.8	127	0.68	94	0.1	0.02	6
Spring	S10-1	Spring	9/18/1985	7.1	148	0.71				
Spring	S10-1	Spring	8/27/1985	7.3	157	0.74	118	0.26	0.01	6
Spring	S10-1	Spring	7/10/1985	7.5	241	2.39				
Spring	S10-1	Spring	6/18/1985	6.6	160	9.38	90	0.22	< .01	15
Spring	S10-1	Spring	9/26/1984	6.7	131	1.06				
Spring	S10-1	Spring	8/22/1984	6.9	161	1.54	119	0.36	0.01	21
Spring	S10-1	Spring	7/30/1984	6.5	128	3.04				
Spring	S10-1	Spring	6/26/1984	6.1	101	19.67	112	0.46	0.02	40
Spring	S10-1	Spring	10/19/1983	7.1	129	0.75	95	0.19	0.02	22
Spring	S10-1	Spring	9/27/1983	6.6	152	1.13				
Spring	S10-1	Spring	8/22/1983	6.6	157	1.67	82	0.32	0.01	28
Spring	S10-1	Spring	7/19/1983	6.5	140	6.7				
Spring	S10-1	Spring	6/29/1983	7.3	77	33.33	64	0.37	0.004	12
Spring	S10-1	Spring	10/12/1982	8	137	0.58	98	0.27	0.003	44.5
Spring	S10-1	Spring	9/22/1982	7.6	147	0.52				
Spring	S10-1	Spring	8/18/1982	8.5	120	0.86	78	0.26	0.002	14
Spring	S10-1	Spring	7/20/1982	7.1	242	2.5				
Spring	S10-1	Spring	6/29/1982	7.3	187	11.3	66	0.42	0.002	32
Spring	S10-1	Spring	10/22/1981	No Access						No Access
Spring	S10-1	Spring	8/18/1981			0.48	68	0.14	0.01	8
	S12-1		11/1/2019			0				
	S12-1		8/28/2019			0				

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	S12-1	Spring	7/1/2019	7.87	811	30	73	0.24	0.015	2
Spring	S12-1	Spring	10/30/2018			0				
Spring	S12-1	Spring	7/20/2018			0				
Spring	S12-1	Spring	5/25/2018	7.87	204	4.65	120	0.6	0.032	3
Spring	S12-1	Spring	10/13/2017			0				
Spring	S12-1	Spring	9/4/2017			0				
Spring	S12-1	Spring	6/19/2017	8.39	105	35.3	70	0.23	0.029	2
Spring	S12-1	Spring	10/11/2016			0				
Spring	S12-1	Spring	8/17/2016			0				
Spring	S12-1	Spring	6/15/2016	7.97	162	2.3	118	2.22	1.445	3
Spring	S12-1	Spring	10/14/2015							
Spring	S12-1	Spring	8/25/2015							
Spring	S12-1	Spring	6/22/2015							
Spring	S12-1	Spring	11/11/2014			0				
Spring	S12-1	Spring	9/5/2014			0				
Spring	S12-1	Spring	6/13/2014	8.52	132	7.7	80	0.26	0.039	3
Spring	S12-1	Spring	10/18/2013			0				
Spring	S12-1	Spring	9/13/2013			0				
Spring	S12-1	Spring	6/10/2013	8.49	1499	1.92	88	0.41	0.034	4
Spring	S12-1	Spring	11/15/2012			0				
Spring	S12-1	Spring	9/20/2012			0				
Spring	S12-1	Spring	6/12/2012			0				
Spring	S12-1	Spring	10/25/2011			0				
Spring	S12-1	Spring	9/20/2011			0				
Spring	S12-1	Spring	7/5/2011	7.87	142	35.7	72	0.17	0.032	4
Spring	S12-1	Spring	12/10/2010			0				
Spring	S12-1	Spring	9/8/2010			0				
Spring	S12-1	Spring	6/20/2010	8.72	149	6.24	99	0.49	0.055	4
Spring	S12-1	Spring	11/10/2009			0				
Spring	S12-1	Spring	9/9/2009			0				
Spring	S12-1	Spring	6/23/2009	8.71	182.8	3.36	116	0.85	0.124	4
Spring	S12-1	Spring	11/17/2008			0				
Spring	S12-1	Spring	9/23/2008			0				
Spring	S12-1	Spring	7/2/2008	8.52	162.5	10.42	101	0.32	0.031	4
Spring	S12-1	Spring	11/13/2007			0				
Spring	S12-1	Spring	9/21/2007			0				
Spring	S12-1	Spring	6/16/2007	8.14	159	0.069	118	0.38	0.035	4
Spring	S12-1	Spring	11/3/2006			0				
Spring	S12-1	Spring	9/26/2006			0				
Spring	S12-1	Spring	6/29/2006	8.91	102	3.26	107	0.3	0.042	6
Spring	S12-1	Spring	10/18/2005			0				
Spring	S12-1	Spring	9/7/2005			0				
Spring	S12-1	Spring	6/29/2005	8.74	160	6.85	120	0.5	0.07	4
Spring	S12-1	Spring	10/29/2004	No Access						No Access
Spring	S12-1	Spring	9/6/2004			0				
Spring	S12-1	Spring	6/23/2004	8.05	167	0.247	88	0.76	0.151	3
Spring	S12-1	Spring	10/3/2003			0				
Spring	S12-1	Spring	9/18/2003			0				
Spring	S12-1	Spring	6/16/2003	8.46	161	1.15	114	0.46	0.113	4
Spring	S12-1	Spring	10/16/2002			0				
Spring	S12-1	Spring	9/11/2002			0				
Spring	S12-1	Spring	6/17/2002	7.58	231	0.468	113	1	0.26	3
Spring	S12-1	Spring	10/8/2001			0				
Spring	S12-1	Spring	9/3/2001			0				
Spring	S12-1	Spring	6/18/2001	7.97	186	0.283	97	0.9	0.2	4
Spring	S12-1	Spring	10/2/2000			0				
Spring	S12-1	Spring	8/7/2000			0				
Spring	S12-1	Spring	6/20/2000	7.96	234	0.62832	136	1	0.4	4

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	S12-1	Spring	10/12/1999			0				
Spring	S12-1	Spring	8/17/1999			0				
Spring	S12-1	Spring	6/29/1999	8.85	212	9.8736	117	0.4	< .1	
Spring	S12-1	Spring	3/24/1999	No Access						No Access
Spring	S12-1	Spring	10/17/1998			0				
Spring	S12-1	Spring	8/19/1998			0				
Spring	S12-1	Spring	7/6/1998	8.53	207	5.9	35	1.1	< .1	
Spring	S12-1	Spring	10/9/1997	No Access						No Access
Spring	S12-1	Spring	8/13/1997			0				
Spring	S12-1	Spring	6/23/1997	7.64	193	13.464	100	0.3	< .1	
Spring	S12-1	Spring	10/29/1996	No Access						No Access
Spring	S12-1	Spring	9/11/1996			0				
Spring	S12-1	Spring	6/24/1996	7.99	179	8.53	84	0.2	< .1	2
Spring	S12-1	Spring	9/4/1995			0				
Spring	S12-1	Spring	7/24/1995	8.43	215	1.57	140	1.1	0.1	4
Spring	S12-1	Spring	10/18/1993			0				
Spring	S12-1	Spring	8/25/1993			0				
Spring	S12-1	Spring	6/23/1993	7.11	143	39.56	52	0.39	0.04	3
Spring	S12-1	Spring	10/20/1992			0				
Spring	S12-1	Spring	9/1/1992			0				
Spring	S12-1	Spring	6/9/1992			0				
Spring	S12-1	Spring	10/15/1991			0				
Spring	S12-1	Spring	9/3/1991			0				
Spring	S12-1	Spring	6/18/1991	7.44	111	29.41	58	0.27	< .033	4.4
Spring	S12-1	Spring	10/24/1990			0				
Spring	S12-1	Spring	9/10/1990			0				
Spring	S12-1	Spring	6/4/1990	6.8	98	30.77	48	0.22	< .01	2
Spring	S12-1	Spring	10/16/1989			0				
Spring	S12-1	Spring	9/6/1989			0				
Spring	S12-1	Spring	6/21/1989	7.1	224	1.33	105	0.19	0.13	4
Spring	S12-1	Spring	6/27/1988	8.1	185	1.66	110	0.21	0.12	4
Spring	S12-1	Spring	12/15/1987	No Access						No Access
Spring	S12-1	Spring	11/19/1987	No Access						No Access
Spring	S12-1	Spring	10/19/1987			0				
Spring	S12-1	Spring	9/24/1987			0				
Spring	S12-1	Spring	8/17/1987			0				
Spring	S12-1	Spring	7/14/1987			0				
Spring	S12-1	Spring	6/9/1987	8.9	155	4.35	92	0.11	< .01	4
Spring	S12-1	Spring	5/18/1987	No Access						No Access
Spring	S12-1	Spring	4/22/1987	No Access						No Access
Spring	S12-1	Spring	3/19/1987	No Access						No Access
Spring	S12-1	Spring	2/23/1987	No Access						No Access
Spring	S12-1	Spring	1/22/1987	No Access						No Access
Spring	S12-1	Spring	12/11/1986	No Access						No Access
Spring	S12-1	Spring	11/11/1986	No Access						No Access
Spring	S12-1	Spring	10/15/1986	7.6	205	0.4	136	0.73	0.17	11
Spring	S12-1	Spring	9/23/1986	7.4	284	0.05				
Spring	S12-1	Spring	8/19/1986	7.2	231	0.58	118	0.3	0.12	11
Spring	S12-1	Spring	7/21/1986	8	339	3.63				
Spring	S12-1	Spring	6/18/1986	6.7	96	84.38	54	0.18	< .01	3
Spring	S12-1	Spring	5/27/1986	No Access						No Access
Spring	S12-1	Spring	4/17/1986	No Access						No Access
Spring	S12-1	Spring	3/20/1986	No Access						No Access
Spring	S12-1	Spring	2/20/1986	No Access						No Access
Spring	S12-1	Spring	1/24/1986	No Access						No Access
Spring	S12-1	Spring	12/11/1985	No Access						No Access
Spring	S12-1	Spring	11/19/1985	No Access						No Access
Spring	S12-1	Spring	10/16/1985	No Access						No Access

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	S12-1	Spring	9/10/1985	No Access						No Access
Spring	S12-1	Spring	8/27/1985			0				
Spring	S12-1	Spring	7/10/1985	8.1	266	0.45				
Spring	S12-1	Spring	6/18/1985	7.8	204	8.7	96	0.18	0.04	6
Spring	S12-1	Spring	9/26/1984	7.3	260	< .1				
Spring	S12-1	Spring	8/22/1984	7.1	236	0.34	170	0.33	0.12	10
Spring	S12-1	Spring	7/31/1984	7.9	199	1.01				
Spring	S12-1	Spring	6/26/1984	6.4	135	26.47	105	0.31	0.02	11
Spring	S12-1	Spring	10/19/1983	7.2	201	0.17	100	0.62	0.39	8
Spring	S12-1	Spring	9/27/1983	8	241	1.3				
Spring	S12-1	Spring	8/22/1983	7.2	233	0.63	124	0.32	0.76	10
Spring	S12-1	Spring	7/19/1983	8.9	168	3.86				
Spring	S12-1	Spring	6/29/1983	6.6	86	75	58	0.05	0.007	5
Spring	S12-1	Spring	10/16/1982	7.5	148	0.16	125	0.22	0.31	15
Spring	S12-1	Spring	9/22/1982			0				
Spring	S12-1	Spring	8/18/1982	7.9	155	0.32	132	0.65	0.315	< 3.
Spring	S12-1	Spring	7/20/1982	7.5	235	2.86				
Spring	S12-1	Spring	6/29/1982	7.6	128	78.95	56	0.21	0.01	3
Spring	S12-1	Spring	10/22/1981	No Access						No Access
	S13-7		11/1/2019			0				
	S13-7		8/28/2019			0				
Spring	S13-7	Spring	7/1/2019	6.9	488	29.89	80	0.19	< .002	< 1.
Spring	S13-7	Spring	10/30/2018			0				
Spring	S13-7	Spring	7/20/2018			0				
Spring	S13-7	Spring	5/30/2018	7.36	213	0.45	127	0.06	< .002	2
Spring	S13-7	Spring	12/21/2017	7.96	313	0.09	165	< .05	< .002	3
Spring	S13-7	Spring	9/4/2017	7.44	323	0.18	193	< .05	< .002	3
Spring	S13-7	Spring	6/21/2017	7.44	109	26.3	60	0.05	< .002	< 1.
Spring	S13-7	Spring	10/11/2016			0				
Spring	S13-7	Spring	8/17/2016	7.39	329	0.06	195	< .05	< .002	2
Spring	S13-7	Spring	6/15/2016	7.57	193	1	111	0.07	< .002	2
Spring	S13-7	Spring	10/14/2015							
Spring	S13-7	Spring	8/25/2015	7.86	329	0.067	194	< .05	< .002	2
Spring	S13-7	Spring	6/22/2015	7.35	252	0.51	154	< .05	< .002	3
Spring	S13-7	Spring	11/11/2014			0				
Spring	S13-7	Spring	9/5/2014	7.26	325	0.103	177	< .05	< .002	2
Spring	S13-7	Spring	6/13/2014	6.69	170	2.53	216	0.09	< .002	2
Spring	S13-7	Spring	10/18/2013	7.29	299	0.02	172	< .02	< .005	3
Spring	S13-7	Spring	9/13/2013	7.43	314	0.04	200	0.15	< .005	3
Spring	S13-7	Spring	6/10/2013	6.56	204	1.04	132	0.12	< .005	3
Spring	S13-7	Spring	11/15/2012			0				
Spring	S13-7	Spring	9/20/2012	7.6	362	0.22	130	< .02	< .005	3
Spring	S13-7	Spring	6/12/2012	7.5	312	0.73	162	< .02	< .005	3
Spring	S13-7	Spring	10/25/2011	6.99	366	0.32	232	< .02	< .005	6
Spring	S13-7	Spring	9/20/2011	7.29	380	0.64	212	< .02	< .005	6
Spring	S13-7	Spring	6/29/2011	7.21	113.5	40	420	0.14	< .005	2
Spring	S13-7	Spring	11/12/2010	7.8	304	0.1	222	0.02	< .005	3
Spring	S13-7	Spring	9/8/2010	7.33	307	0.14	184	< .02	< .005	3
Spring	S13-7	Spring	6/20/2010	7.69	158	3.3	101	0.12	< .002	2
Spring	S13-7	Spring	11/10/2009	6.89	337	0.06	197	< .05	< .002	3
Spring	S13-7	Spring	9/9/2009	7.13	327	0.12	195	< .05	< .002	3
Spring	S13-7	Spring	6/23/2009	7.24	227	2.4	147	0.41	0.007	4
Spring	S13-7	Spring	11/17/2008	7.83	284	0.08	197	0.22	0.015	3
Spring	S13-7	Spring	9/23/2008	7.84	276	0.55	201	7.05	0.202	3
Spring	S13-7	Spring	7/2/2008	7.16	158.4	11.36	86	0.26	0.004	2
Spring	S13-7	Spring	11/13/2007	8.07	276	0.05	206	2.28	0.071	2
Spring	S13-7	Spring	9/21/2007	7.93	284	0.067	179	0.36	0.008	3
Spring	S13-7	Spring	6/16/2007	7.52	230	1.03	170	1.2	0.03	3

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	S13-7	Spring	11/3/2006	7.53	302	0.11	176	0.66	0.026	3
Spring	S13-7	Spring	9/26/2006	7.91	310	0.21	197	0.24	0.005	3
Spring	S13-7	Spring	6/29/2006	7.57	133	1.65	157	0.76	0.013	5
Spring	S13-7	Spring	10/18/2005	7.83	246	0.111	149	0.79	0.013	3
Spring	S13-7	Spring	9/7/2005	7.69	281	0.219	186	0.3	0.014	3
Spring	S13-7	Spring	6/29/2005	7.66	205	1.39	139	0.21	0.007	3
Spring	S13-7	Spring	10/29/2004	No Access						No Access
Spring	S13-7	Spring	9/6/2004	8.08	302	0.059	171	0.24	0.007	3
Spring	S13-7	Spring	6/23/2004	7.53	235	0.515	97	0.63	0.009	3
Spring	S13-7	Spring	10/3/2003			0				
Spring	S13-7	Spring	9/18/2003	7.95	276	0.048	189	0.235	0.009	4
Spring	S13-7	Spring	6/16/2003	7.72	209	1.05	137	0.915	0.024	3
Spring	S13-7	Spring	10/16/2002			0				
Spring	S13-7	Spring	9/11/2002			0				
Spring	S13-7	Spring	6/17/2002	7.12	298	0.725	149	2	0.06	2
Spring	S13-7	Spring	10/8/2001			0				
Spring	S13-7	Spring	9/3/2001	7.21	242	0.086	175	1.4	< .05	30
Spring	S13-7	Spring	6/18/2001	7.18	254	0.968	151	0.7	< .1	3
Spring	S13-7	Spring	10/2/2000			0				
Spring	S13-7	Spring	8/7/2000			0				
Spring	S13-7	Spring	6/20/2000	6.91	315	0.94248	167	0.7	< .1	4
Spring	S13-7	Spring	10/12/1999			0				
Spring	S13-7	Spring	8/17/1999	6.59	417	0.40392	0	0	< .1	0
Spring	S13-7	Spring	6/29/1999	7.26	266	1.3464	139	0.2	< .1	
Spring	S13-7	Spring	3/24/1999	No Access						No Access
Spring	S13-7	Spring	10/11/1998			0				
Spring	S13-7	Spring	8/19/1998	6.21	400	0.404	201	1	< .1	6
Spring	S13-7	Spring	7/6/1998	6.64	283	2.56	136	0.3	< .1	
Spring	S13-7	Spring	10/9/1997	No Access						No Access
Spring	S13-7	Spring	8/13/1997	7.24	415	0.4488	210	0.3	< .1	8
Spring	S13-7	Spring	7/3/1997	7.36	266	4.76	120	0.2	< .1	
Spring	S13-7	Spring	10/29/1996	No Access						No Access
Spring	S13-7	Spring	6/27/1996	8.02	127	5.8	99	1.2	0.1	
Spring	S13-7	Spring	10/17/1995			0				
Spring	S13-7	Spring	9/4/1995			0				
Spring	S13-7	Spring	7/17/1995	7.11	255	3.35	90	0.4		2
Spring	S13-7	Spring	10/18/1993			0				
Spring	S13-7	Spring	8/25/1993			0				
Spring	S13-7	Spring	6/23/1993	7.78	142	25.78	48	0.23	< .02	1.5
Spring	S13-7	Spring	10/20/1992			0				
Spring	S13-7	Spring	9/1/1992			0				
Spring	S13-7	Spring	6/9/1992	7.08	236	0.19	124	0.12	0.01	2.8
Spring	S13-7	Spring	10/15/1991			0				
Spring	S13-7	Spring	9/3/1991			0				
Spring	S13-7	Spring	6/18/1991	6.88	142	9.52	78	0.29	< .033	4
Spring	S13-7	Spring	10/24/1990			0				
Spring	S13-7	Spring	9/10/1990			0				
Spring	S13-7	Spring	6/4/1990	6.8	110	13.6	74	0.06	< .01	2
Spring	S13-7	Spring	10/16/1989			0				
Spring	S13-7	Spring	9/6/1989			0				
Spring	S13-7	Spring	6/21/1989	6.5	263	0.97	122	0.38	< .01	2
Spring	S13-7	Spring	8/17/1988			0				
Spring	S13-7	Spring	6/27/1988	7.5	267	0.42	140	0.13	< .01	3
Spring	S13-7	Spring	12/15/1987	No Access						No Access
Spring	S13-7	Spring	11/19/1987			0				
Spring	S13-7	Spring	10/19/1987			0				
Spring	S13-7	Spring	9/24/1987			0				
Spring	S13-7	Spring	8/17/1987			0				

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	S13-7	Spring	7/14/1987			0				
Spring	S13-7	Spring	6/9/1987	7.7	219	2.25	118	0.06	< .01	4
Spring	S13-7	Spring	5/18/1987	No Access						No Access
Spring	S13-7	Spring	4/22/1987	No Access						No Access
Spring	S13-7	Spring	3/19/1987	No Access						No Access
Spring	S13-7	Spring	2/23/1987	No Access						No Access
Spring	S13-7	Spring	1/22/1987	No Access						No Access
Spring	S13-7	Spring	12/11/1986	No Access						No Access
Spring	S13-7	Spring	11/11/1986	No Access						No Access
Spring	S13-7	Spring	10/15/1986			0				
Spring	S13-7	Spring	9/23/1986			0				
Spring	S13-7	Spring	8/19/1986	7.3	387	0.24	205	0.02	< .01	16
Spring	S13-7	Spring	7/21/1986	7.2	339	1.81				
Spring	S13-7	Spring	6/18/1986	6.5	121	36.36	70	0.14	< .01	2
Spring	S13-7	Spring	5/28/1986	No Access						No Access
Spring	S13-7	Spring	4/17/1986	No Access						No Access
Spring	S13-7	Spring	3/20/1986	No Access						No Access
Spring	S13-7	Spring	2/20/1986	No Access						No Access
Spring	S13-7	Spring	1/24/1986	No Access						No Access
Spring	S13-7	Spring	12/11/1985	No Access						No Access
Spring	S13-7	Spring	11/19/1985	No Access						No Access
Spring	S13-7	Spring	10/16/1985			0				
Spring	S13-7	Spring	9/10/1985	No Access						No Access
Spring	S13-7	Spring	8/27/1985			0				
Spring	S13-7	Spring	7/10/1985	7.5	451	1.25				
Spring	S13-7	Spring	6/18/1985	6.6	250	12.21	120	0.18	< .01	14
Spring	S13-7	Spring	9/26/1984			0				
Spring	S13-7	Spring	8/22/1984	7.4	361	0.34	240	0.13	0.01	19
Spring	S13-7	Spring	7/31/1984	7.1	337	1.79				
Spring	S13-7	Spring	6/26/1984	6	125	35.53	107	0.32	0.04	25
Spring	S13-7	Spring	9/27/1983			0				
Spring	S13-7	Spring	8/22/1983	6.9	369	0.71	210	0.13	0.01	12
Spring	S13-7	Spring	7/19/1983	7.2	261	5.1				
Spring	S13-7	Spring	6/29/1983	6.5	111	39.13	110	0.19	0.002	4
Spring	S13-7	Spring	10/19/1982	No Access						No Access
Spring	S13-7	Spring	9/22/1982			0				
Spring	S13-7	Spring	9/15/1982	8	340	98.74				
Spring	S13-7	Spring	8/18/1982	8.4	235	1.76	165	0.06	0.002	< 3.
Spring	S13-7	Spring	7/20/1982	7.5	378	3.75				
Spring	S13-7	Spring	6/29/1982	7.6	217	39.13	64	1.2	0.01	15
Spring	S13-7	Spring	10/22/1981	No Access						No Access
	S25-32		10/14/2019		590	5.94				
	S25-32		8/29/2019		512	11.5				
Spring	S25-32		6/28/2019		524	50				
Spring	S25-32		11/1/2018	7.16	664	2.69				
Spring	S25-32		7/20/2018	7.58	667	3.5				
Spring	S25-32		5/30/2018	7.34	656	5.1				
Spring	S25-32		10/13/2017	7.62	588	3.47				
Spring	S25-32		8/14/2017	7.52	553	4.35				
Spring	S25-32		6/15/2017	7.15	480	38.07				
Spring	S25-32		10/7/2016	7.56	375	0.71				
Spring	S25-32		9/16/2016	7.57	610	1.48				
Spring	S25-32		6/16/2016		461					
Spring	S25-32		10/27/2015	7.33	605	1.87				
Spring	S25-32		9/26/2015	7.36	589	1.98	395	0.16	0.012	32
Spring	S25-32		6/16/2015	7.42	594	10.3				
Spring	S25-32		10/25/2014	7.28	577	3.82				
Spring	S25-32		9/26/2014	7.28	612	4.35				

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	S25-32		6/14/2014		537	18.25				
Spring	S25-32		11/1/2013	7.14	584	4.1				
Spring	S25-32		8/30/2013	7.1	602	5.45				
Spring	S25-32		6/24/2013	7.4	613	6.88				
Spring	S25-32		5/30/2013	7.25	587	12				
Spring	S25-32		10/31/2012	7.02	586	3.61				
Spring	S25-32		9/25/2012	7.23	573	4.93				
Spring	S25-32		9/25/2011	7.39	562	12.1				
	S26-1		10/14/2019		441	0.21				
	S26-1		8/29/2019		535	0.46				
Spring	S26-1		6/28/2019	7.43	394	1.7				
Spring	S26-1		5/30/2018	7.72	475	0.56				
Spring	S26-1		10/13/2017	8.14	454	0.3				
Spring	S26-1		8/14/2017	7.45	433	0.73				
Spring	S26-1		6/15/2017	7.4	343	3.64				
Spring	S26-1		10/7/2016	7.51	495	0.11				
Spring	S26-1		10/7/2016	7.51	495	0.11				
Spring	S26-1		9/16/2016	7.74	486	0.16				
Spring	S26-1		6/16/2016	7.52	431	0.8				
Spring	S26-1		10/27/2015	7.56	533	0.16				
Spring	S26-1		9/26/2015	7.28	479	0.16	320	< .05	< .002	19
Spring	S26-1		6/16/2015	7.52	439	1.4				
Spring	S26-1		10/25/2014	7.47	493	0.33				
Spring	S26-1		9/26/2014	7.18	493	0.34				
Spring	S26-1		6/14/2014		358	3.5				
Spring	S26-1		10/24/2013	6.95	494	0.28				
Spring	S26-1		8/30/2013	7	478	0.29				
Spring	S26-1		6/24/2013	7.21	429	1.23				
Spring	S26-1		5/30/2013	7.34	423	2.8				
Spring	S26-1		10/31/2012	7.16	495	0.33				
Spring	S26-1		10/3/2012	7.05	494	0.33				
Spring	S26-1		10/1/2012	6.76	499	0.33				
	WQ1-1		10/22/2019	7.56	793	8.3	461	0.05	0.002	50
	WQ1-1		8/8/2019	7.57	419	11.5	463	0.05	0.002	49
Spring	WQ1-1	Spring	6/15/2019	7.35	668	1.48				
Spring	WQ1-1	Spring	10/18/2018		756					
Spring	WQ1-1	Spring	8/29/2018	7.29	795	0.79				
Spring	WQ1-1	Spring	5/21/2018	7.56	769	3.35				
Spring	WQ1-1	Spring	11/16/2017	7.65	744	8.7				
Spring	WQ1-1	Spring	7/8/2017	7.53	708	14.04				
Spring	WQ1-1	Spring	5/31/2017	7.41	695	32.7				
Spring	WQ1-1	Spring	10/13/2016	7.49	752	4.3				
Spring	WQ1-1	Spring	10/13/2016	7.49	752	4.3				
Spring	WQ1-1	Spring	8/17/2016	7.26	782	2				
Spring	WQ1-1	Spring	6/21/2016		550					
Spring	WQ1-1	Spring	10/14/2015	7.68	774	2	468	0.06	0.006	43
Spring	WQ1-1	Spring	10/14/2015	7.68	774	2.01				
Spring	WQ1-1	Spring	7/28/2015	7.7	694	3.4	425	< .05	0.004	40
Spring	WQ1-1	Spring	5/31/2015	7.48	704	5.1				
Spring	WQ1-1	Spring	10/30/2014	7.6	777	2.4				
Spring	WQ1-1	Spring	9/10/2014	7.4	772	4.32				
Spring	WQ1-1	Spring	6/25/2014	7.21	743	6.42				
Spring	WQ1-1	Spring	12/11/2013	7.37	785	2.14				
Spring	WQ1-1	Spring	9/26/2013	7.35	769	2.4				
Spring	WQ1-1	Spring	6/7/2013	7.4	788	4.8				
Spring	WQ1-1	Spring	10/15/2012		891					
Spring	WQ1-1	Spring	9/17/2012	7.15	788	2.87				
Spring	WQ1-1	Spring	4/16/2012	7.33	765	5.3				

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	WQ1-1	Spring	11/4/2011	7.17	745	3.54				
Spring	WQ1-1	Spring	9/2/2011	7.44	741	7.2				
Spring	WQ1-1	Spring	6/20/2011	7.4	698	59.7				
Spring	WQ1-1	Spring	11/19/2010	7.32	760	3.8				
Spring	WQ1-1	Spring	9/27/2010	7.3	760	4.6	492	< .02	< .005	45
Spring	WQ1-1	Spring	6/15/2010	7.43	610	10.1	410	0.31	0.012	36
Spring	WQ1-1	Spring	11/12/2009	6.94	792	3.7				
Spring	WQ1-1	Spring	7/28/2009	7.08	790	7.8				
Spring	WQ1-1	Spring	6/16/2009	7.24	747	16.1	434	< .05	< .002	42
Spring	WQ1-1	Spring	10/30/2008	7.12	737	6.47	444	0.12	0.004	48
Spring	WQ1-1	Spring	9/27/2008	7.12	738	7.35	471	0.15	0.004	48
Spring	WQ1-1	Spring	6/27/2008	7.23	697	24.4				
	WQ1-39		10/25/2019	7.89	411	0.99	253	0.05	0.002	20
	WQ1-39		8/7/2019	7.34	365	20	204	0.16	0.007	17
Spring	WQ1-39		7/7/2019	7.26	269	3.47	173	0.07	< .002	11
Spring	WQ1-39		10/26/2018	7.6	446	1.94	259	0.19	0.014	25
Spring	WQ1-39		9/14/2018	7.42	442	0.91	251	0.62	0.048	22
Spring	WQ1-39		6/20/2018	7.63	245	2	196	0.06	< .002	15
Spring	WQ1-39		10/17/2017	7.56	406	2	241	0.11	< .002	19
Spring	WQ1-39		7/31/2017	7.51	443	2.55	200	< .05	< .002	15
Spring	WQ1-39		6/26/2017	7.19	242	14.4	151	0.07	< .002	9
Spring	WQ1-39		10/12/2016	7.82	443	1.04	257	4.26	0.181	21
Spring	WQ1-39		8/23/2016	7.41	404	1.05	244	0.2	0.007	20
Spring	WQ1-39		6/21/2016	7.31	278	7.6	179	0.58	0.015	10
Spring	WQ1-39		10/13/2015	7.37	435	0.86	285	0.07	0.004	26
Spring	WQ1-39		9/1/2015	7.24	425	0.84	258	0.11	0.005	20
Spring	WQ1-39		6/26/2015	7.74	296	4.62	183	< .05	< .002	11
Spring	WQ1-39		10/23/2014	7.37	435	1.03	245	< .05	< .002	19
Spring	WQ1-39		9/17/2014	8.42	425	51.6	232	0.06	0.004	19
Spring	WQ1-39		6/20/2014	7.17	269	5.28	164	0.12	0.005	24
Spring	WQ1-39		10/24/2013	7.08	429	0.75	228	0.39	0.016	20
Spring	WQ1-39		9/24/2013	7.41	415	1.1	224	0.28	0.009	20
Spring	WQ1-39		6/5/2013	6.84	25	10.9	156	0.08	< .005	9
Spring	WQ1-39		11/8/2012	8.08	422	1.37	266	0.25	0.013	19
Spring	WQ1-39		8/29/2012	7.3	445	0.72	246	< .02	< .005	19
Spring	WQ1-39		6/14/2012	7.2	346	5.6	184	0.03	< .005	12
Spring	WQ1-39		10/31/2011	7.16	366	1.24	182	< .02	< .005	17
Spring	WQ1-39		9/19/2011	7.2	357	2	218	0.28	0.011	15
Spring	WQ1-39		6/24/2011	7	179	35.9	126	0.14	< .005	5
Spring	WQ1-39		11/2/2010	7.43	404	1.04	242	0.36	0.012	19
Spring	WQ1-39		9/17/2010	7.33	397	1.42	232	0.06	< .005	18
Spring	WQ1-39		6/15/2010	7.37	182	33.1	139	0.22	0.008	7
Spring	WQ1-39		10/27/2009	7.2	424	1.5	245	0.06	0.002	19
Spring	WQ1-39		8/19/2009	7.03	385	2.05	240	< .05	0.008	18
Spring	WQ1-39		6/19/2009	6.86	260	12.3	299	0.08	< .002	21
Spring	WQ1-39		10/23/2008	7.3	343	1.66	232	0.46	0.013	18
Spring	WQ1-39		9/26/2008	7.3	340	1.72	256	0.14	0.003	18
Spring	WQ1-39		7/3/2008	6.85	207	21.43	157	0.11	< .002	9
Spring	WQ1-39		11/13/2007	7.5	348	1.44	260	0.44	0.013	19
Spring	WQ1-39		9/11/2007	7.18	372	1.76	236	1.1	0.016	19
Spring	WQ1-39		6/27/2007	7.28	331	5.36	198	0.14	0.006	12
Spring	WQ1-39		11/2/2006	7.24	399	2.17	230	0.2	0.006	17
Spring	WQ1-39		9/26/2006	7.35	398	2.26	244	0.14	0.004	17
Spring	WQ1-39		6/28/2006	7.17	344	11.8	169	0.06	< .002	11
Spring	WQ1-39		10/13/2005	7.96	374	2.08	248	0.07	0.002	16
Spring	WQ1-39		9/6/2005	7.59	327	1.99	224	< .05	< .002	17
Spring	WQ1-39		6/22/2005	7.05	201	26.3	212	0.16	0.003	8
Spring	WQ1-39		9/2/2004	7.34	415	1.6	230	0.08	0.006	17

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	WQ1-39		6/22/2004	7.27	267	8.82	170	< .05	< .002	12
Spring	WQ1-39		10/28/2003	7.79	351	1.52	231	0.17	< .005	20
Spring	WQ1-39		9/17/2003	7.12	387	1.6	233	0.144	< .005	18
Spring	WQ1-39		6/16/2003	7.27	238	16.8	167	0.062	< .005	9
Spring	WQ1-39		10/16/2002	7.6	375	1.21	269	< .1	< .05	19
Spring	WQ1-39		9/11/2002	7.47	386	1.31	222	0.3	< .05	19
Spring	WQ1-39		6/18/2002	7.15	273	9.09	178	< .1	< .05	11
	WQ3-26		10/22/2019	7	171	0.7	120	0.05	0.002	29
	WQ3-26		8/15/2019	7.2	176	0.97	107	0.2	0.002	24
Spring	WQ3-26		6/24/2019	7.06	134	27.3	68	0.27	< .002	5
Spring	WQ3-26		10/24/2018	7.41	252	0.29	113	0.48	0.02	35
Spring	WQ3-26		8/31/2018	7.27	237	0.47	131	0.15	0.006	35
Spring	WQ3-26		6/13/2018	7.07	165	1.3	97	0.21	0.012	18
Spring	WQ3-26		10/16/2017	7.21	105	0.3	116	0.08	0.003	27
Spring	WQ3-26		9/20/2017	7.23	196	0.23	122	< .05	< .002	29
Spring	WQ3-26		6/16/2017	6.83	104	13.3	53	0.09	< .002	5
Spring	WQ3-26		10/11/2016	7.36	201	0.38	130	0.2	0.012	32
Spring	WQ3-26		9/29/2016	7.75	210	0.3	139	0.25	0.015	33
Spring	WQ3-26		6/17/2016	7.02	95	3.07	93	0.16	< .002	8
Spring	WQ3-26		10/14/2015	6.95	156	0.24	143	< .05	< .002	33
Spring	WQ3-26		9/28/2015	7.33	211	0.3	159	0.09	0.005	33
Spring	WQ3-26		6/19/2015	7	105	4.4	154	0.1	0.003	10
Spring	WQ3-26		10/30/2014	7.52	174	0.87	109	0.08	< .002	26
Spring	WQ3-26		9/10/2014	7.39	142	0.68	133	0.29	0.005	38
Spring	WQ3-26		6/10/2014	7.2	107.2	9.49	101	0.24	0.003	7
Spring	WQ3-26		9/17/2013	7.04	166	0.63	140	0.4	0.014	28
Spring	WQ3-26		6/3/2013	6.7	99	9.49	56	0.15	< .005	8
Spring	WQ3-26		10/19/2012	7.9	205	0.84	118	0.2	< .005	28
Spring	WQ3-26		9/17/2012	7.27	186	0.54	38	0.15	0.005	31
Spring	WQ3-26		6/16/2012	6.85	127	2	108	0.31	0.012	15
Spring	WQ3-26		10/28/2011	7.3	171	1.39	72	0.3	0.005	23
Spring	WQ3-26		8/30/2011	7.03	156	1.39	90	0.22	0.008	21
Spring	WQ3-26		6/23/2011	7.21	805	41.7	72	0.18	< .005	4
Spring	WQ3-26		11/3/2010	7.16	163	0.54	120	0.16	< .005	24
Spring	WQ3-26		9/23/2010	7.02	172	0.43	346	0.02	< .005	40
Spring	WQ3-26		6/14/2010	7.28	88	18.88	92	0.26	0.004	5
Spring	WQ3-26		10/27/2009	7.7	186	0.9	121	0.09	< .002	25
Spring	WQ3-26		8/18/2009	7.69	196.3	0.97	115	0.08	0.003	26
Spring	WQ3-26		6/9/2009	6.4	102	21	72	0.23	< .002	6
Spring	WQ3-26		10/29/2008	7.81	150	0.73	89	0.13	0.003	26
Spring	WQ3-26		9/24/2008	7.49	161	0.75	142	0.2	0.01	29
Spring	WQ3-26		7/11/2008	7.36	1405	4.29	107	0.54	0.011	11
Spring	WQ3-26		10/25/2007	7.46	172	1.39	83	0.18	0.004	23
Spring	WQ3-26		9/11/2007	7.22	161	0.97	110	0.47	0.007	28
Spring	WQ3-26		6/26/2007	7.12	153	2.73	92	0.17	< .002	12
Spring	WQ3-26		11/1/2006	7.57	162	1.88	120	0.09	< .002	18
Spring	WQ3-26		9/25/2006	7.7	166	1.15	95	0.16	0.003	21
Spring	WQ3-26		6/26/2006	7.73	103	6.73	85	0.41	0.003	10
Spring	WQ3-26		10/18/2005	7.98	142	1.1	75	< .05	< .002	26
Spring	WQ3-26		9/15/2005	7.89	167	0.92	108	< .05	< .002	29
Spring	WQ3-26		6/23/2005	7.5	86	13.8	84	0.24	< .002	6
Spring	WQ3-26		11/10/2004	7.75	132	1.83	103	0.25	> .002	21
Spring	WQ3-26		9/6/2004	7.84	185	0.63	105	< .05	< .002	31
Spring	WQ3-26		6/23/2004	8.14	106	4.19	86	0.16	< .002	11
Spring	WQ3-26		10/30/2003	7.75	177	0.654	94	0.165	< .005	32
Spring	WQ3-26		9/18/2003	7.82	183	0.62	135	0.072	< .005	32
Spring	WQ3-26		6/17/2003	7.34	99	7.59	62	0.194	< .005	8
Spring	WQ3-26		11/4/2002	7.3	191	0.610368	148	< .1	< .05	31

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	WQ3-26		9/5/2002	7.93	187	0.424	130	0.4	< .05	34
Spring	WQ3-26		6/17/2002	7.53	111	3.85	98	0.4	< .05	11
	WQ3-41		10/25/2019	8.1	781	0.28	478	0.93	0.107	79
	WQ3-41		8/7/2019	7.75	786	1.82	454	2.74	0.181	74
Spring	WQ3-41		7/7/2019	7.63	801	13.3	482	< .05	< .002	75
Spring	WQ3-41		10/17/2017	8.28	7.28	0.08	446	1.41	0.079	71
Spring	WQ3-41		7/31/2017	7.53	890	0.25	444	< .05	< .002	68
Spring	WQ3-41		6/26/2017	7.39	720	3	457	0.52	0.047	69
Spring	WQ3-41		10/23/2014	7.61	558	0.11	346	1.98	0.23	48
Spring	WQ3-41		9/17/2014	7.69	692	0.1	364	1.12	0.126	49
Spring	WQ3-41		6/20/2014	7.66	589	0.27	386	0.55	0.03	51
Spring	WQ3-41		10/24/2013	7.84	684	0.09	356	0.23	0.019	46
Spring	WQ3-41		9/24/2013	7.95	667	0.07	388	2.04	0.108	46
Spring	WQ3-41		6/5/2013	7.65	652	0.29	416	0.18	0.006	47
Spring	WQ3-41		11/8/2012	8.26	686	0.24	402	1.19	0.065	42
Spring	WQ3-41		8/29/2012	7.9	730	0.11	414	0.34	0.016	40
Spring	WQ3-41		6/14/2012	7.7	760	0.75	422	0.15	0.008	44
Spring	WQ3-41		10/31/2011	7.42	676	2.5	392	2.01	0.162	42
Spring	WQ3-41		9/19/2011	7.3	689	3.43	420	0.19	0.008	40
Spring	WQ3-41		6/24/2011	7.49	667	17.65	406	< .02	< .005	37
Spring	WQ3-41		11/2/2010	7.62	700	1.1	430	0.35	0.016	52
Spring	WQ3-41		9/17/2010	7.76	703	0.63	416	1.22	0.082	51
Spring	WQ3-41		6/15/2010	7.76	595	3.11	418	0.27	0.014	52
Spring	WQ3-41		10/27/2009	7.65	729	0.5	431	3.55	0.156	50
Spring	WQ3-41		8/19/2009	7.35	708	1.32	435	< .05	< .002	49
Spring	WQ3-41		6/19/2009	7.35	718	8.3	430	0.13	0.004	53
Spring	WQ3-41		10/23/2008	7.42	587	0.81	421	3.01	0.138	51
Spring	WQ3-41		9/26/2008	7.36	583	0.55	425	1.27	0.052	50
Spring	WQ3-41		7/3/2008	7.49	595	12.3	433	1.87	0.084	51
Spring	WQ3-41		11/13/2007	8.18	573	0.1	410	3.38	0.208	51
Spring	WQ3-41		9/11/2007	7.24	586	0.88	425	1.37	0.039	50
Spring	WQ3-41		6/27/2007	7.69	682	0.15	425	1.66	0.047	49
Spring	WQ3-41		11/2/2006	7.53	695	1.78	406	1.54	0.06	50
Spring	WQ3-41		9/26/2006	7.79	609	0.42	395	1.24	0.047	49
Spring	WQ3-41		6/28/2006	7.55	723	8.98	419	0.33	0.024	47
Spring	WQ3-41		10/13/2005	7.95	669	2.22	432	0.51	0.023	53
Spring	WQ3-41		9/6/2005	7.56	648	2.21	439	< .05	0.003	59
Spring	WQ3-41		6/22/2005	7.47	615	16	469	0.38	0.011	57
Spring	WQ3-41		11/11/2004	8.41	628	0.41	392	1.78	26.4	53
Spring	WQ3-41		9/2/2004	7.73	651	0.106	394	1.75	0.134	51
Spring	WQ3-41		6/22/2004	7.95	596	1.49	410	0.45	0.017	56
Spring	WQ3-41		10/28/2003	7.91	521	0.781	413	0.931	0.047	54
Spring	WQ3-41		9/17/2003	7.95	657	0.659	398	0.436	0.026	51
Spring	WQ3-41		6/16/2003	7.95	629	3.58	394	0.353	0.011	55
Spring	WQ3-41		10/16/2002	7.97	627	0.661	422	0.6	< .05	48
Spring	WQ3-41		9/11/2002	7.66	591	0.534	369	4.2	0.23	46
Spring	WQ3-41		6/18/2002	7.94	630	1.78	369	< .1	< .05	49
	WQ3-43		8/7/2019	7.52	613	1.84	359	0.11	0.002	0.97
Spring	WQ3-43		7/7/2019	7.48	612	12	373	< .05	< .002	47
Spring	WQ3-43		6/26/2017	7.25	546	15	339	< .05	< .002	34
Spring	WQ3-43		10/23/2014	7.38	463	0.13	273	0.15	0.013	24
Spring	WQ3-43		9/17/2014	7.62	452	0.26	290	0.72	0.041	23
Spring	WQ3-43		6/20/2014	7.39	474	1.84	283	0.11	0.007	19
Spring	WQ3-43		10/24/2013	7.25	447	0.29	268	0.1	0.005	20
Spring	WQ3-43		9/24/2013	7.38	461	0.47	252	3.05	0.22	20
Spring	WQ3-43		6/5/2013	7.28	478	3.2	304	0.31	0.021	17
Spring	WQ3-43		11/8/2012	8.03	490	0.24	262	0.83	0.042	19
Spring	WQ3-43		8/29/2012	7.9	527	0.42	298	0.07	< .005	20

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	WQ3-43		6/14/2012	7.7	550	2.8	264	0.19	0.008	18
Spring	WQ3-43		10/31/2011	7.38	480	1.39	264	0.95	0.038	18
Spring	WQ3-43		9/19/2011	7.35	490	1.89	298	0.17	0.016	17
Spring	WQ3-43		6/24/2011	7.33	467	29.2	296	< .02	< .005	16
Spring	WQ3-43		11/2/2010	7.4	479	0.24	284	0.5	0.026	20
Spring	WQ3-43		9/17/2010	7.39	477	0.47	294	0.1	< .005	21
Spring	WQ3-43		6/15/2010	7.46	417	13.4	288	< .05	< .002	19
Spring	WQ3-43		10/27/2009	7.98	528	0.3	299	0.85	0.05	20
Spring	WQ3-43		8/19/2009	7.16	540	1.91	308	0.07	0.005	19
Spring	WQ3-43		6/19/2009	7.18	529	14.4	160	0.73	0.024	9
Spring	WQ3-43		10/23/2008	7.44	438	0.83	288	0.54	0.028	20
Spring	WQ3-43		9/26/2008	7.23	433	1.2	310	0.42	0.015	20
Spring	WQ3-43		7/3/2008	7.14	441	19.74	303	0.08	0.003	21
Spring	WQ3-43		11/13/2007	8.12	428	0.23	300	0.93	0.058	20
Spring	WQ3-43		9/11/2007	7.25	440	0.49	295	0.79	0.039	19
Spring	WQ3-43		6/27/2007	7.42	526	3	317	1.32	0.067	19
Spring	WQ3-43		11/2/2006	7.31	514	1.5	286	0.53	0.016	19
Spring	WQ3-43		9/26/2006	7.63	484	1.84	268	0.37	0.013	19
Spring	WQ3-43		6/28/2006	7.34	519	13.8	291	< .05	< .002	18
Spring	WQ3-43		10/13/2005	7.94	451	0.69	312	0.09	0.004	18
Spring	WQ3-43		9/6/2005	7.6	449	1.43	304	0.09	0.003	20
Spring	WQ3-43		6/22/2005	7.17	435	14.9	344	0.18	0.006	19
Spring	WQ3-43		11/12/2004	8.39	445	0.84	267	0.24	0.01	20
Spring	WQ3-43		9/2/2004	7.68	443	0.17	281	0.5	0.031	19
Spring	WQ3-43		6/22/2004	7.24	435	1.29	297	0.27	0.005	20
Spring	WQ3-43		10/28/2003	7.83	379	0.116	337	0.415	0.021	22
Spring	WQ3-43		9/17/2003	7.57	468	0.171	262	0.233	0.01	20
Spring	WQ3-43		6/16/2003	7.61	470	3.16	277	0.075	< .005	19
Spring	WQ3-43		10/16/2002	7.98	448	0.127	318	0.3	< .05	20
Spring	WQ3-43		9/11/2002	7.91	386	0.236	239	1.9	0.06	17
Spring	WQ3-43		6/18/2002	7.67	468	1.52	291	0.1	< .05	20
	WQ3-6		10/22/2019	7.51	592	6.3	344	0.05	0.002	40
	WQ3-6		8/15/2019	7.49	659	14.6	325	0.05	0.002	36
Spring	WQ3-6		6/24/2019	7.46	616	31.6	318	< .05	< .002	27
Spring	WQ3-6		8/31/2018	7.61	631	2.65	369	< .05	0.004	44
Spring	WQ3-6		6/13/2018	7.64	577	3.87	335	0.15	0.015	41
Spring	WQ3-6		10/16/2017	7.33	542	1.87	313	0.34	0.006	40
Spring	WQ3-6		9/20/2017	7.27	594	3.2	298	0.14	0.005	39
Spring	WQ3-6		6/16/2017	7.2	495	27.3	291	0.06	< .002	28
Spring	WQ3-6		10/11/2016	7.3	588	1.91	360	0.35	0.005	44
Spring	WQ3-6		9/29/2016	7.35	582	1.04	322	0.64	0.06	44
Spring	WQ3-6		6/17/2016	7.52	539	7.8	308	0.14	0.014	35
Spring	WQ3-6		10/14/2015	7.36	525	2.69	353	0.28	0.098	43
Spring	WQ3-6		9/28/2015	7.39	543	2.4	352	0.11	0.008	43
Spring	WQ3-6		6/19/2015	7.5	539	5.7	335	< .05	< .002	39
Spring	WQ3-6		10/30/2014	7.63	548	3.6	332	0.24	0.02	42
Spring	WQ3-6		9/10/2014	7.54	570	3.6	354	0.12	< .002	33
Spring	WQ3-6		6/10/2014	7.45	512	9.3	317	< .05	< .002	35
Spring	WQ3-6		9/17/2013	7.44	572	3.87	344	2.66	0.043	41
Spring	WQ3-6		9/17/2012	7.15	575	3	202	0.24	0.006	40
Spring	WQ3-6		6/12/2012	7.14	546	7.55	318	< .02	< .005	35
Spring	WQ3-6		10/24/2011	7.55	569	13.2	350	0.12	< .005	33
Spring	WQ3-6		9/21/2011	7.5	541	49.9	314	0.32	0.009	30
Spring	WQ3-6		6/20/2011	7.35	539	34.67	318	0.04	< .005	22
Spring	WQ3-6		10/25/2010	7.42	558	5	360	0.8	0.026	41
Spring	WQ3-6		9/23/2010	7.2	539	4.11	136	0.58	0.065	30
Spring	WQ3-6		6/14/2010	7.46	516	13.9	332	0.09	0.004	32

SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	WQ3-6		10/26/2009	6.87	592	10.6	349	< .05	< .002	40
Spring	WQ3-6		8/18/2009	7.08	577	8.9	337	< .05	0.003	35
Spring	WQ3-6		6/15/2009	7.13	537	16.6	331	0.24	0.006	31
Spring	WQ3-6		10/31/2008	7.2	485	6.37	320	0.07	0.002	40
Spring	WQ3-6		9/25/2008	7.18	495	8.3	348	0.17	0.006	38
Spring	WQ3-6		7/11/2008	7.02	444	19.74	326	0.22	0.004	31
Spring	WQ3-6		10/25/2007	7.45	484	4.55	349	0.58	0.021	42
Spring	WQ3-6		9/11/2007	7.09	500	5.99	341	< .05	< .002	40
Spring	WQ3-6		6/26/2007	7.46	554	9.33	327	0.14	0.004	33
Spring	WQ3-6		11/1/2006	7.38	626	7.43	344	0.31	0.007	36
Spring	WQ3-6		9/25/2006	7.47	466	8	332	0.16	0.004	36
Spring	WQ3-6		6/26/2006	7.35	533	22.3	313	< .05	< .002	29
Spring	WQ3-6		10/18/2005	7.51	522	6.01	315	< .05	< .002	41
Spring	WQ3-6		9/15/2005	7.44	575	5.84	327	0.38	0.012	40
Spring	WQ3-6		6/23/2005	7.36	459	21.4	317	0.06	< .002	30
Spring	WQ3-6		11/10/2004	7.88	477	3.58	350	0.21	0.005	41
Spring	WQ3-6		9/6/2004	7.58	541	3.28	325	0.07	0.003	41
Spring	WQ3-6		6/23/2004	7.3	494	8.21	298	0.08	0.002	33
Spring	WQ3-6		10/30/2003	7.64	573	3.73	327	0.168	0.005	42
Spring	WQ3-6		9/18/2003	7.84	564	4.23	345	0.08	< .005	41
Spring	WQ3-6		6/17/2003	7.48	476	24.1	316	0.258	0.005	31
Spring	WQ3-6		11/4/2002	7.45	543	1.395768	352	< .1	< .05	42
Spring	WQ3-6		9/5/2002	7.47	541	1.64	343	< .1	< .05	42
Spring	WQ3-6		6/17/2002	7.55	513	5.17	331	< .1	< .05	34
	WQ4-12		10/22/2019	7.41	268	0.83	245	0.07	0.004	40
	WQ4-12		8/15/2019	7.37	483	1.4	242	0.05	0.002	37
Spring	WQ4-12		6/24/2019	7.21	313	2.3	174	0.48	0.029	24
Spring	WQ4-12		10/24/2018	7.44	488	0.87	252	0.42	0.045	44
Spring	WQ4-12		8/31/2018	7.66	478	0.9	249	< .05	0.004	40
Spring	WQ4-12		6/13/2018	7.58	324	1.27	254	0.3	0.029	38
Spring	WQ4-12		10/16/2017	7.25	406	0.5	253	< .05	0.003	38
Spring	WQ4-12		9/20/2017	7.29	440	0.73	206	< .05	< .002	38
Spring	WQ4-12		6/16/2017	6.97	302	1.48	170	< .05	< .002	27
Spring	WQ4-12		10/11/2016	7.34	450	0.54	266	0.15	0.023	41
Spring	WQ4-12		9/29/2016	7.37	428	0.21	271	0.16	0.02	41
Spring	WQ4-12		6/17/2016	7.5	344	0.75	208	0.09	0.011	32
Spring	WQ4-12		10/14/2015	7.35	429	0.56	267	< .05	< .002	39
Spring	WQ4-12		9/28/2015	7.59	393	0.67	269	< .05	0.008	38
Spring	WQ4-12		6/19/2015	7.48	255	0.77	285	0.12	0.015	35
Spring	WQ4-12		10/30/2014	7.54	422	0.6	249	0.07	0.008	39
Spring	WQ4-12		9/10/2014	7.4	324	0.6	277	0.1	0.011	42
Spring	WQ4-12		6/10/2014	7.42	321	0.4	210	< .05	0.002	31
Spring	WQ4-12		10/31/2013	7.23	449	0.92	236	0.15	0.007	38
Spring	WQ4-12		9/17/2013	7.3	408	0.86	244	0.77	0.065	38
Spring	WQ4-12		6/3/2013	7.15	339	0.87	184	0.06	< .005	31
Spring	WQ4-12		10/19/2012	7.3	447	0.77	236	< .02	< .005	37
Spring	WQ4-12		9/17/2012	7.04	414	0.93	116	< .02	< .005	37
Spring	WQ4-12		6/12/2012	7.22	372	1	236	0.8	0.039	34
Spring	WQ4-12		10/28/2011	7.5	424	1.85	212	0.18	0.008	34
Spring	WQ4-12		8/26/2011	6.93	366	0.94	222	0.08	< .005	31
Spring	WQ4-12		6/23/2011	7.46	226	4.04	152	0.2	< .005	16
Spring	WQ4-12		11/3/2010	7.16	381	1.13	248	0.04	< .005	42
Spring	WQ4-12		9/23/2010	7.17	375	0.74	252	0.04	0.006	36
Spring	WQ4-12		6/14/2010	7.35	259	1.8	191	0.1	< .002	24
Spring	WQ4-12		10/27/2009	7.64	436	1.1	250	0.11	0.005	36
Spring	WQ4-12		8/18/2009	7.15	398	0.79	238	0.07	< .002	33
Spring	WQ4-12		6/9/2009	6.9	279	2.5	168	0.17	0.004	24
Spring	WQ4-12		10/29/2008	7.23	338	1.33	223	< .05	< .002	36

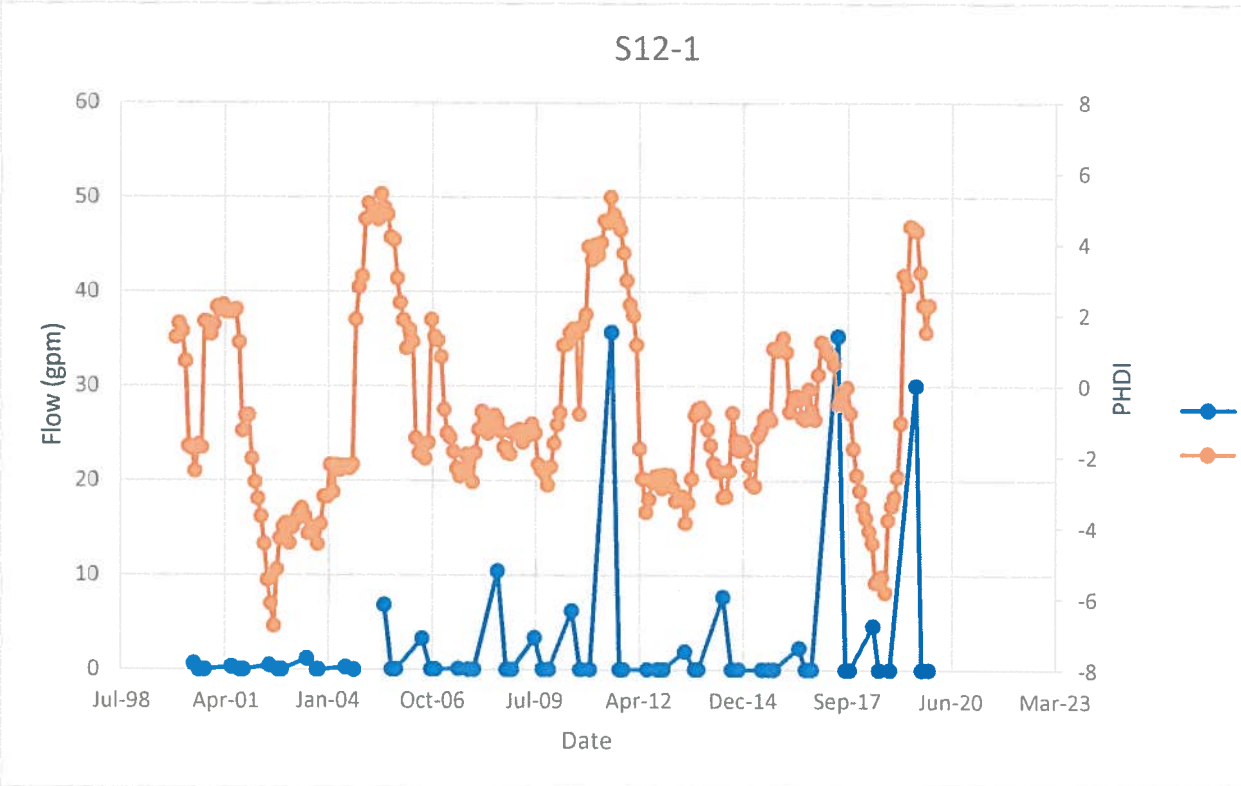
SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Spring	WQ4-12		9/24/2008	7.05	333	1.25	256	0.22	0.016	35
Spring	WQ4-12		7/11/2008	7.09	297	1.88	235	0.71	0.033	29
Spring	WQ4-12		10/25/2007	7.4	330	1.4	231	0.26	0.012	37
Spring	WQ4-12		9/11/2007	7.15	350	0.81	240	0.11	0.004	36
Spring	WQ4-12		6/26/2007	7.71	381	1.36	230	0.1	0.004	32
Spring	WQ4-12		11/1/2006	7.61	414	0.94	239	0.83	0.029	33
Spring	WQ4-12		9/25/2006	7.87	318	3	231	0.72	0.043	34
Spring	WQ4-12		6/26/2006	7.49	345	2.4	219	0.31	0.013	28
Spring	WQ4-12		10/18/2005	7.61	341	1.14	211	< .05	0.009	37
Spring	WQ4-12		9/15/2005	7.75	402	1.03	224	0.11	0.014	36
Spring	WQ4-12		6/23/2005	7.35	267	2.15	206	0.22	0.009	25
Spring	WQ4-12		11/10/2004	7.88	336	0.42	238	0.95	0.073	35
Spring	WQ4-12		9/6/2004	7.66	404	0.49	225	0.5	0.036	36
Spring	WQ4-12		6/23/2004	7.66	334	1.3	222	< .05	0.003	32
Spring	WQ4-12		10/30/2003	7.75	401	0.809	251	0.545	0.034	38
Spring	WQ4-12		9/18/2003	7.71	384	0.414	349	0.133	0.012	36
Spring	WQ4-12		6/17/2003	7.71	303	1.69	217	0.193	0.009	29
Spring	WQ4-12		11/4/2002	7.38	373	0.428604	252	0.2	< .05	38
Spring	WQ4-12		9/5/2002	7.73	382	1.08	244	0.3	< .05	36
Spring	WQ4-12		6/17/2002	7.89	344	1.73	248	< .1	< .05	31
	CS-19		10/12/2019	8.42	611	279.2	351	0.24	0.031	48
	CS-19		7/29/2019	8.42	526	365.55	319	0.42	0.039	42
Stream	CS-19		6/10/2019	9.01	314	8475.6	171	1.15	0.046	21
Stream	CS-19		10/17/2018	8.2	1677	43.5	325	0.21	0.033	36
Stream	CS-19		7/23/2018	7.87	485	61.93	309	< .05	0.02	28
Stream	CS-19		5/21/2018	8.83	453	399	283	0.77	0.052	27
Stream	CS-19		11/9/2017	8.37	596	127	367	0.23	0.041	43
Stream	CS-19		9/19/2017	8.39	534	283	337	0.52	0.045	37
Stream	CS-19		5/30/2017	8.62	273	2015	195	0.39	0.025	17
Stream	CS-19		10/10/2016	8.07	561	52	305	0.12	0.019	25
Stream	CS-19		7/26/2016	8.2	506	57.2	288	0.28	0.03	21
Stream	CS-19		6/14/2016	8.47	416	442.1	267	1.31	0.069	22
Stream	CS-19		10/16/2015	8.32	535	61.7	315	0.11	0.02	18
Stream	CS-19		7/29/2015	8.07	511	42.8	303	0.18	0.025	20
Stream	CS-19		5/20/2015	8.68	379	602.6	216	0.67	0.037	21
Stream	CS-19		10/20/2014	8.19	498	178.9	294	0.15	0.021	24
Stream	CS-19		8/13/2014	8.08	461	146.8	275	0.25	0.022	21
Stream	CS-19		6/19/2014	8.12	394	371.3	220	0.75	0.043	20
Stream	CS-19		11/18/2013	7.58	490	93.3	284	0.2	0.018	22
Stream	CS-19		9/26/2013	7.9	441	763	228	0.31	0.011	21
Stream	CS-19		6/7/2013	8.5	392	509	280	0.55	0.034	16
Stream	CS-19		11/5/2012	8.2	564	147.6	300	0.32	0.03	22
Stream	CS-19		9/24/2012	8.1	545	122.7	306	0.29	0.036	19
Stream	CS-19		6/22/2012	8.4	523	205	264	0.29	0.027	22
Stream	CS-19		11/7/2011	8.6	541	303.9	254	0.11	0.017	26
Stream	CS-19		9/2/2011	8.5	451	405.4	286	0.17	0.015	23
Stream	CS-19		7/7/2011	8.52	387	2337	244	0.35	0.026	18
Stream	CS-19		12/6/2010	8.14	475	200.8	306	0.1	0.015	24
Stream	CS-19		9/27/2010	8.28	473	122	304	0.1	0.013	21
Stream	CS-19		6/22/2010	8.43	375	740	200	0.36	0.024	17
Stream	CS-19		12/10/2009	8.06	532	75.5	301	0.46	0.032	23
Stream	CS-19		9/11/2009	7.93	460	141.2	270	0.15	0.012	21
Stream	CS-19		6/23/2009	8.46	415	1036	259	0.58	0.029	19
Stream	CS-19		10/28/2008	8.34	422	228	273	0.25	0.014	23
Stream	CS-19		9/22/2008	8.16	404	196	309	0.24	0.014	22
Stream	CS-19		6/27/2008	8.75	315	1760	208	0.34	0.02	16
Stream	CS-19		11/19/2007	8.1	388	115	308	0.22	0.018	22
Stream	CS-19		9/25/2007	8.26	434	124	286	0.26	0.014	22

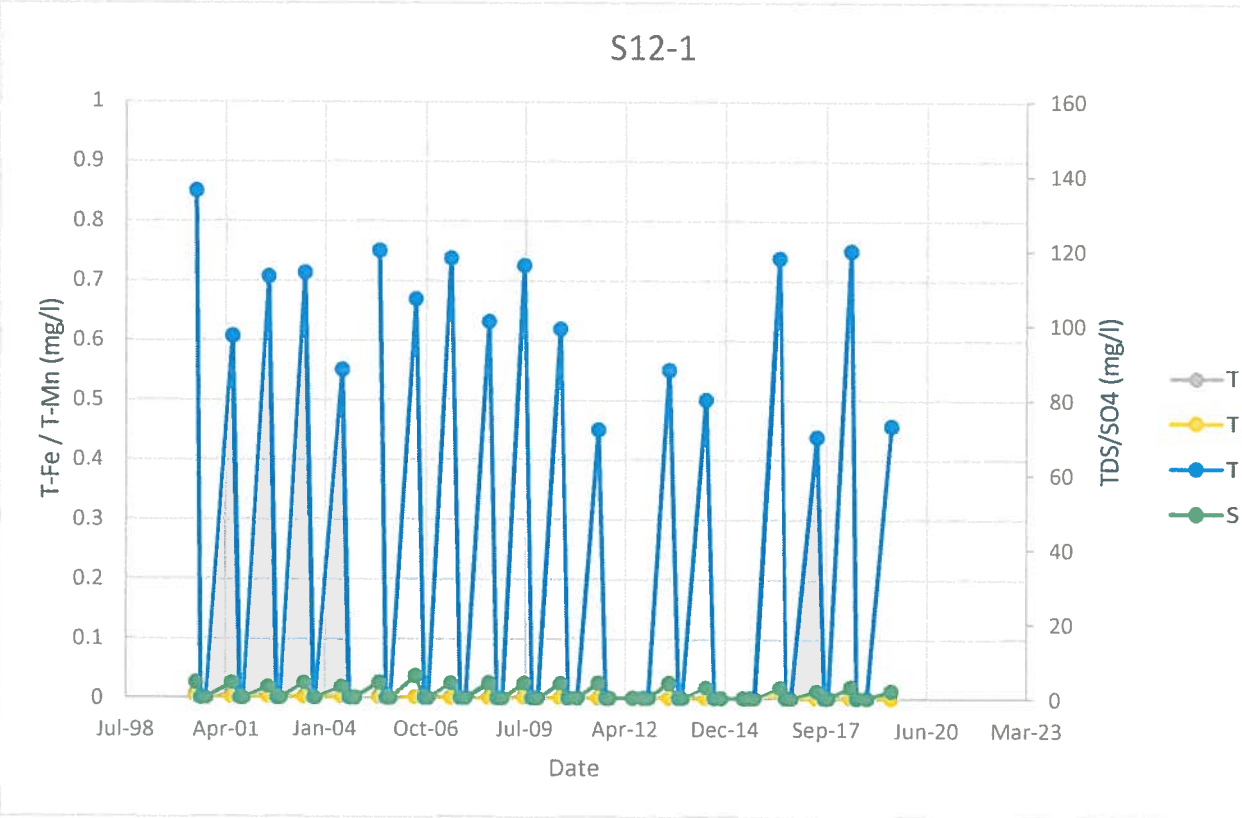
SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Stream	CS-19		6/29/2007	8.43	432	218	229	0.32	0.022	19
Stream	CS-19		11/3/2006	8.18	440	184	281	0.18	0.017	26
Stream	CS-19		9/25/2006	8.05	465	365	282	0.11	0.011	24
Stream	CS-19		6/28/2006	8.58	416	853	246	0.77	0.036	21
Stream	CS-19		10/13/2005	7.96	446	138	273	0.24	0.019	24
Stream	CS-19		9/6/2005	8.18	426	150	264	0.12	0.006	23
Stream	CS-19		6/22/2005	8.31	340	1300	256	0.77	0.042	17
Stream	CS-19		11/11/2004	8.42	471	95	277	0.29	0.029	25
Stream	CS-19		9/2/2004	8.09	502	23.9	277	0.32	0.017	17
Stream	CS-19		6/22/2004	8.13	411	167	244	0.46	0.034	22
Stream	CS-19		10/28/2003	8.12	498	70.4	271	0.562	0.032	23
Stream	CS-19		9/17/2003	8.05	502	42	285	0.202	0.022	19
Stream	CS-19		6/16/2003	8.05	364	410	246	0.488	0.036	20
Stream	CS-19		10/16/2002	7.37	564	32.8	293	0.1	< .05	22
Stream	CS-19		6/18/2002	7.7	466	123	235	0.1	< .05	22
	CS-21		10/25/2019	8.9	605	100.75	362	0.05	0.006	49
	CS-21		8/7/2019	8.44	561	200.8	332	0.11	0.017	42
Stream	CS-21		7/7/2019	8.7	472	1520	283	0.06	0.01	33
Stream	CS-21		10/26/2018	8.57	576	7.2	334	< .05	0.006	50
Stream	CS-21		9/14/2018	8.33	573	2.83	333	0.06	0.009	45
Stream	CS-21		6/20/2018	8.75	382	170.54	311	0.24	0.019	45
Stream	CS-21		10/17/2017	8.7	537	73.6	325	< .05	< .002	42
Stream	CS-21		6/26/2017	8.41	432	1064.6	273	< .05	< .002	28
Stream	CS-21		10/12/2016	8.39	580	13.2	339	0.11	0.014	39
Stream	CS-21		8/23/2016	8.38	551	5.5	327	0.3	0.032	38
Stream	CS-21		6/21/2016	8.54	361	147.1	258	0.13	0.018	22
Stream	CS-21		10/13/2015	8.64	574	4.85	360	0.09	0.009	38
Stream	CS-21		9/1/2015	8.23	580	2.8	338	0.43	0.028	35
Stream	CS-21		6/8/2015	8.51	305	315.3	208	0.18	0.018	15
Stream	CS-21		10/23/2014	8.64	516	75.5	310	< .05	< .002	28
Stream	CS-21		9/17/2014	8.57	459	43	261	0.07	0.007	24
Stream	CS-21		6/20/2014	8.36	357	467.6	210	< .05	0.006	18
Stream	CS-21		10/24/2013	8.07	453	107.7	264	0.03	< .005	22
Stream	CS-21		9/24/2013	8.52	445	67.3	252	0.23	0.014	20
Stream	CS-21		6/5/2013	8.8	310	509.2	188	0.15	0.007	13
Stream	CS-21		11/8/2012	8.8	585	28.2	316	0.04	< .005	23
Stream	CS-21		8/29/2012	8.13	442	71.8	258	0.06	0.007	22
Stream	CS-21		6/14/2012	8.27	390	372.2	238	0.1	0.009	18
Stream	CS-21		10/31/2011	8.8	452	207.8	266	0.03	0.005	22
Stream	CS-21		9/19/2011	8.43	463	340.4	284	0.24	0.013	19
Stream	CS-21		6/24/2011	8.44	258	5395.6	164	0.49	0.017	9
Stream	CS-21		11/2/2010	8.58	472	68.1	270	0.04	0.006	23
Stream	CS-21		9/17/2010	8.48	447	67.5	266	0.06	0.006	22
Stream	CS-21		6/15/2010	8.47	262	1067	190	0.29	0.015	12
Stream	CS-21		11/2/2009	8.17	536	104.5	295	< .05	0.003	23
Stream	CS-21		8/28/2009	8.37	453	121.6	265	< .05	0.006	20
Stream	CS-21		6/29/2009	8.37	403	605	242	0.14	0.013	18
Stream	CS-21		10/30/2008	8.33	471	125	263	0.05	0.005	23
Stream	CS-21		9/27/2008	8.48	455	139	291	< .05	0.004	21
Stream	CS-21		6/27/2008	8.34	330	2080	221	0.13	0.009	14
Stream	CS-21		11/19/2007	8.2	391	100	335	0.06	0.006	23
Stream	CS-21		9/25/2007	8.62	414	67	304	0.07	0.009	20
Stream	CS-21		6/30/2007	8.53	344	455	201	0.29	0.022	20
Stream	CS-21		11/2/2006	8.43	493	124	276	0.15	0.01	23
Stream	CS-21		9/26/2006	8.3	442	134	302	0.07	0.007	21
Stream	CS-21		6/28/2006	8.46	427	512	250	0.13	0.011	18
Stream	CS-21		10/13/2005	8.25	409	78	304	0.07	0.008	21
Stream	CS-21		9/6/2005	8.43	403	126	275	0.09	0.009	23

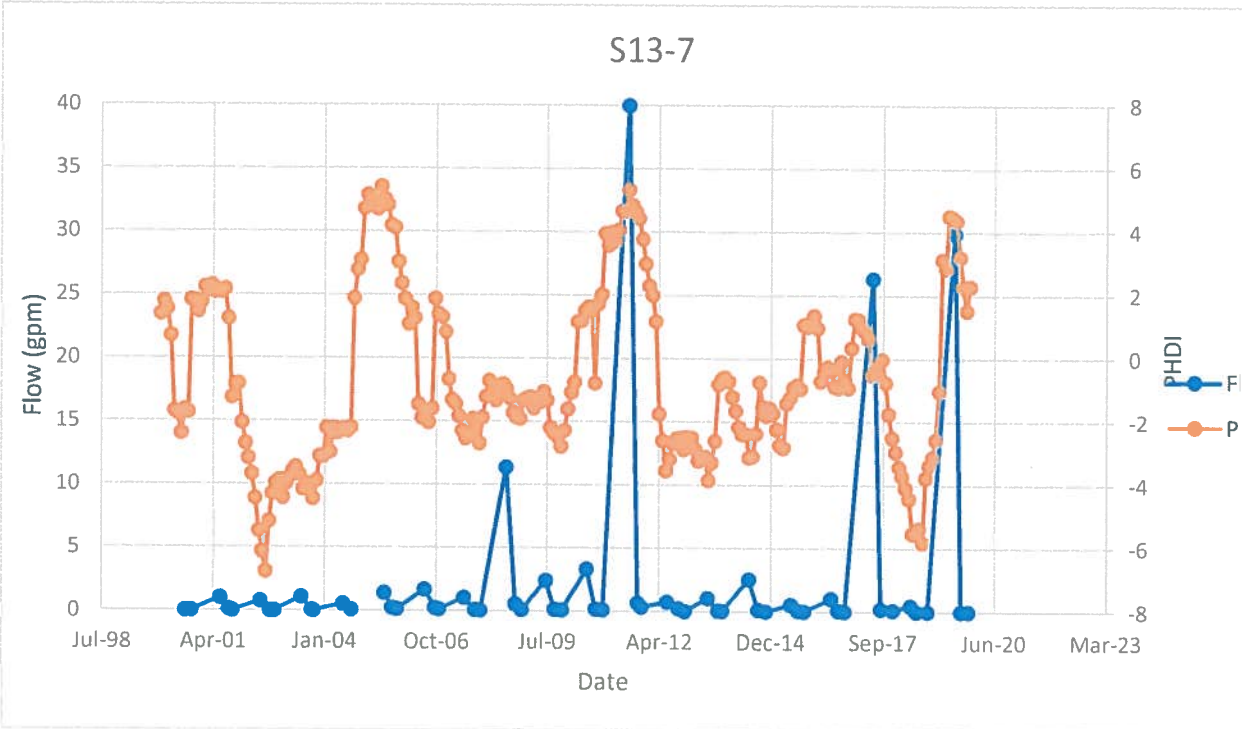
SITE TYPE	SITE NAME	SITE DESCRIPTION	DATE	F-pH pH units	Cond(FLD) umhos/cm	Flow GPM	TDS mg/l	T-Fe mg/l	T-Mn mg/l	SO4 mg/l
Stream	CS-21		6/22/2005	8.25	301	1795	229	0.42	0.015	14
Stream	CS-21		11/11/2004	8.51	415	63	255	0.08	0.008	22
Stream	CS-21		9/2/2004	8.17	421	32.5	251	0.09	0.008	20
Stream	CS-21		6/22/2004	8.35	341	138	230	0.21	0.019	19
Stream	CS-21		10/28/2003	8.56	351		265	0.11	0.007	24
Stream	CS-21		9/17/2003	8.39	441	37	278	0.065	< .005	21
			10/25/2019			228.9				
			8/7/2019	8.55	584	227	354	0.31	0.033	47
Stream	CS-25	Woods Canyon below sub	7/7/2019	8.86	496	1242	300	0.1	0.015	38
Stream	CS-25	Woods Canyon below sub	10/26/2018	8.77	613	30.1	356	0.07	0.012	58
Stream	CS-25	Woods Canyon below sub	9/14/2018	8.59	600	13.5	369	< .05	0.007	56
Stream	CS-25	Woods Canyon below sub	6/20/2018	8.75	364	71.8	295	< .05	0.011	45
Stream	CS-25	Woods Canyon below sub	10/17/2017	8.85	583	242.3	350	0.16	0.017	51
Stream	CS-25	Woods Canyon below sub	7/31/2017	8.3	535	373.4	332	< .05	< .002	44
Stream	CS-25	Woods Canyon below sub	6/26/2017	8.31	430	1294.3	286	< .05	< .002	32
Stream	CS-25	Woods Canyon below sub	10/12/2016	8.79	607	67.9	335	0.24	0.028	46
Stream	CS-25	Woods Canyon below sub	8/23/2016	8.75	578	41.7	311	0.08	0.012	45
Stream	CS-25	Woods Canyon below sub	6/21/2016	8.63	436	277.1	296	0.17	0.026	29
Stream	CS-25	Woods Canyon below sub	10/13/2015	8.55	554	42.3	388	< .05	0.012	44
Stream	CS-25	Woods Canyon below sub	9/1/2015	8.56	613	59.9	361	0.09	0.016	42
Stream	CS-25	Woods Canyon below sub	6/8/2015	8.6	381	453.5	247	0.11	0.013	22
Stream	CS-25	Woods Canyon below sub	10/23/2014	8.61	491	102.5	314	< .05	0.008	34
Stream	CS-25	Woods Canyon below sub	9/17/2014	8.59	449	70.7	287	0.1	0.013	27
Stream	CS-25	Woods Canyon below sub	6/20/2014	8.6	350	354.4	210	0.07	0.009	19
Stream	CS-25	Woods Canyon below sub	10/24/2013			58.3	260	0.6	0.045	24
Stream	CS-25	Woods Canyon below sub	9/24/2013	8.7	460	130.2	256	0.18	0.019	23
Stream	CS-25	Woods Canyon below sub	6/5/2013				192	0.16	0.011	14
Stream	CS-25	Woods Canyon below sub	11/8/2012	8.8	591	97.9	330	0.1	0.014	25
Stream	CS-25	Woods Canyon below sub	8/29/2012	8.23	435	98.7	258	0.12	0.015	24
Stream	CS-25	Woods Canyon below sub	6/14/2012	8.38	392	260.1	240	0.07	0.009	20
Stream	CS-25	Woods Canyon below sub	10/31/2011	8.9	584	149.3	280	0.05	0.01	24
Stream	CS-25	Woods Canyon below sub	9/19/2011	8.53	493	414	298	0.06	0.01	21
Stream	CS-25	Woods Canyon below sub	6/24/2011	8.33	284	5903	184	6	0.427	11
Stream	CS-25	Woods Canyon below sub	11/2/2010	8.58	484	121.8	279	0.08	0.012	25
Stream	CS-25	Woods Canyon below sub	9/17/2010	8.54	443	68.38	258	0.06	0.009	25
Stream	CS-26	Lower Wife Creek	6/10/2019	8.86	565	427	314	0.32	915	35
Stream	CS-26	Lower Wife Creek	10/17/2018			0			1200	
Stream	CS-26	Lower Wife Creek	7/23/2018			0			1230	
Stream	CS-26	Lower Wife Creek	5/21/2018			0			950	
Stream	CS-26	Lower Wife Creek	11/9/2017	8.49	632	2.97	414	0.31	902	44
Stream	CS-26	Lower Wife Creek	10/10/2017	8.45	632	2.97	414	0.21	1310	44
Stream	CS-26	Lower Wife Creek	9/4/2017	8.54	599	20.4	373	0.67	1130	36
Stream	CS-26	Lower Wife Creek	5/30/2017	8.5	551	336.6	343	0.13	1225	34
Stream	CS-26	Lower Wife Creek	10/10/2016			0			1220	
Stream	CS-26	Lower Wife Creek	7/26/2016			0			1215	
Stream	CS-26	Lower Wife Creek	6/14/2016			0			940	
Stream	CS-26	Lower Wife Creek	10/16/2015						920	
Stream	CS-26	Lower Wife Creek	7/29/2015	8.66	548	4.1	300	1.5	1215	37
Stream	CS-26	Lower Wife Creek	5/20/2015	8.74	612	5.8	347	0.78	845	42
Stream	CS-26	Lower Wife Creek	10/27/2014						1035	
Stream	CS-26	Lower Wife Creek	8/13/2014	8.45	561	14.5	359	3.88	1120	38
Stream	CS-26	Lower Wife Creek	6/19/2014	7.54	497	32.3	350	2.43	1100	42
Stream	CS-26	Lower Wife Creek	11/18/2013			0			1330	
Stream	CS-26	Lower Wife Creek	8/29/2013	7.96	557	10.2			1350	
Stream	CS-26	Lower Wife Creek	6/25/2013	8.6	573	40.4			939	
Stream	CS-26	Lower Wife Creek	5/29/2013	8.02	571	34			1300	

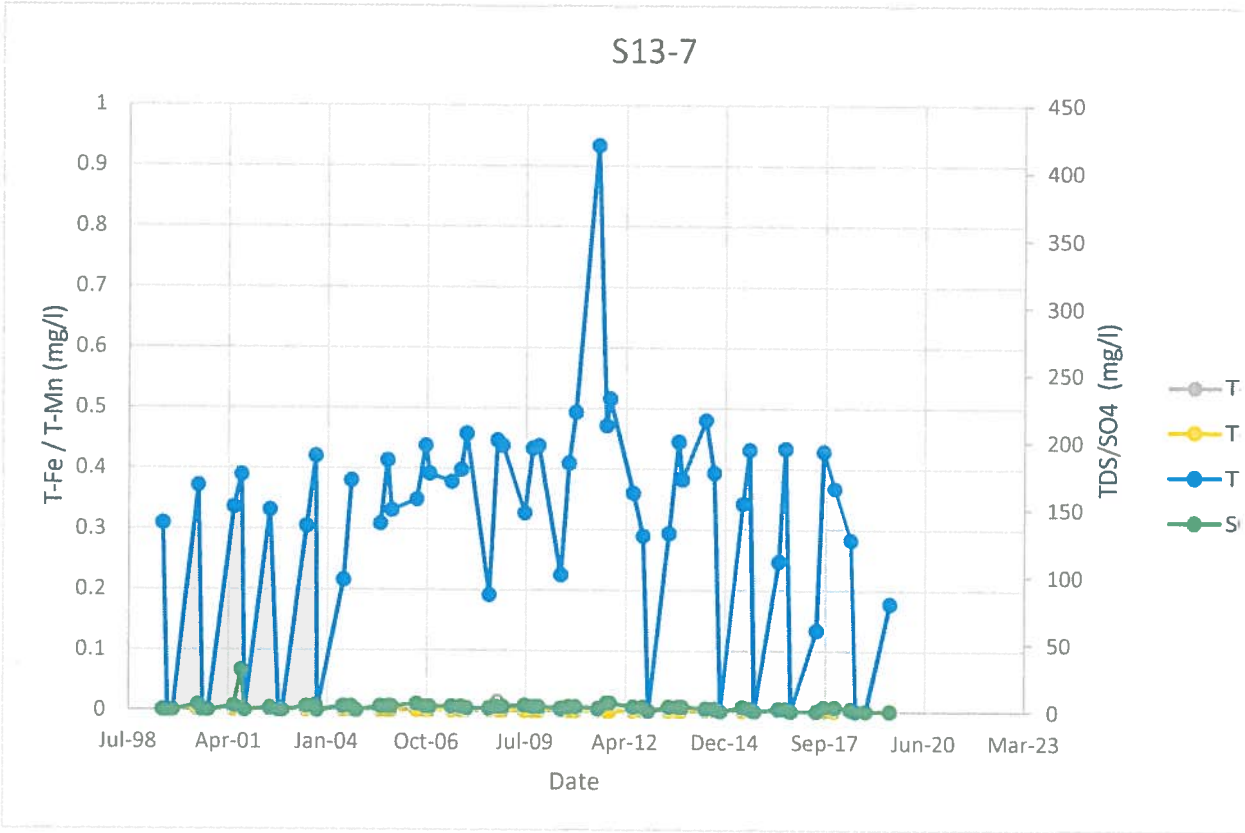
Stream	CS-26	Lower Wife Creek	11/15/2012	7.96	625	0.45			1430	
Stream	CS-26	Lower Wife Creek	10/4/2012	8.11	565	7.1			1300	

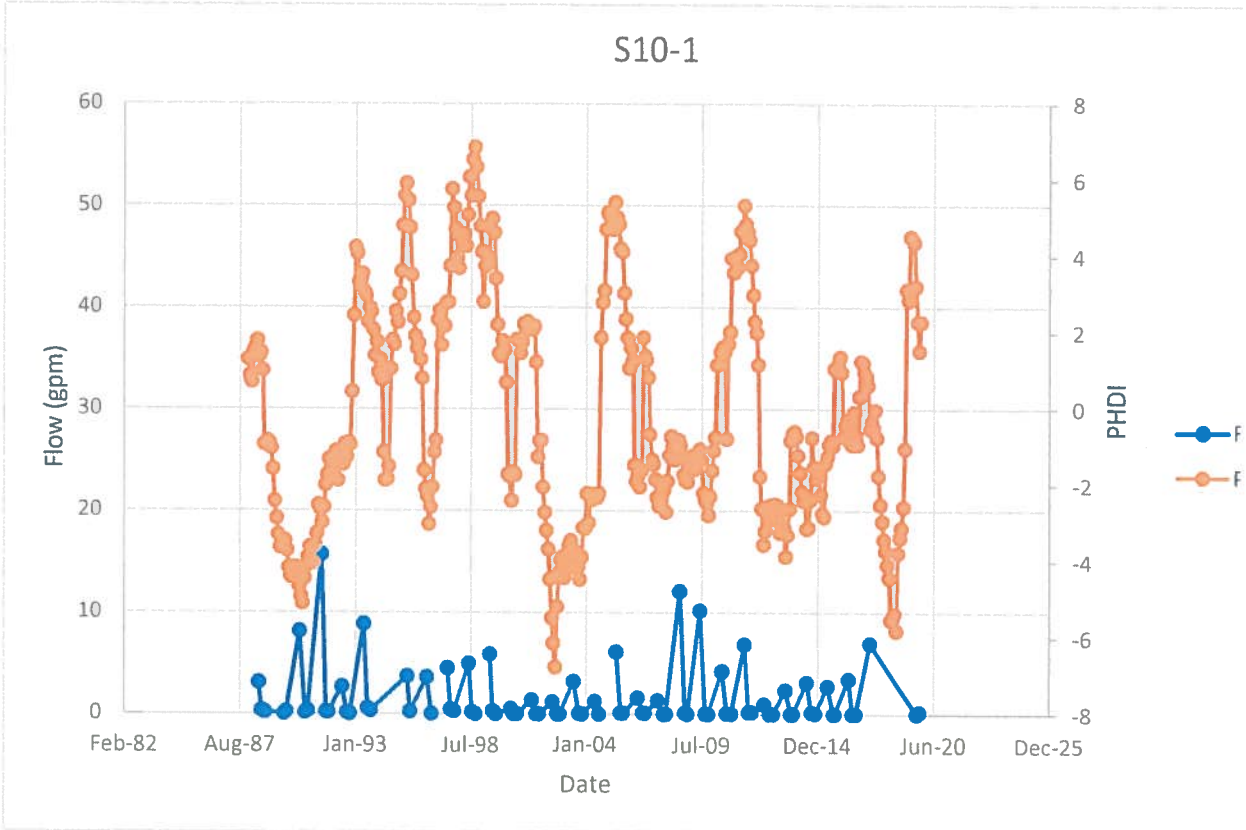
Ridge Top Springs

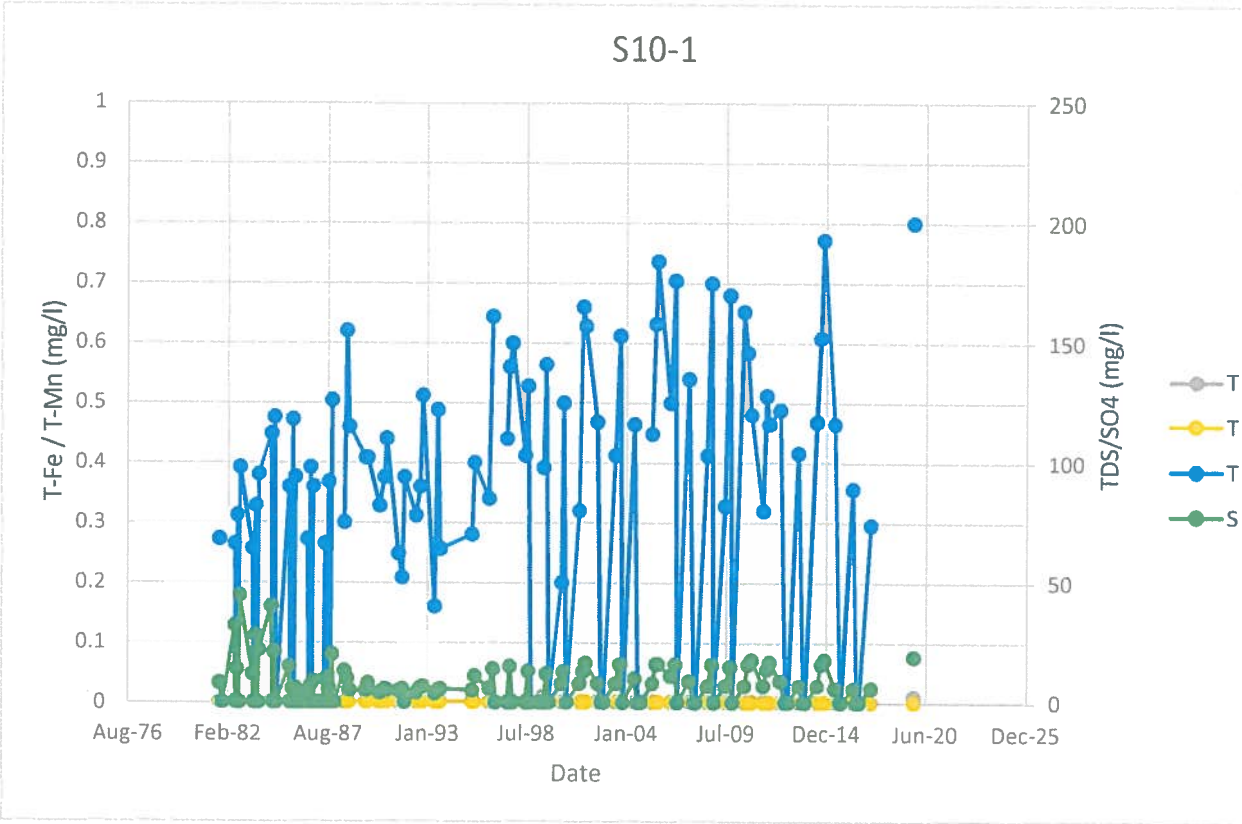

S12-1
Flow (gpm)
PHDI
Date
60
50
40
30
20
10
0
8
6
4
2
0
-2
-4
-6
-8
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23


S12-1
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
160
140
120
100
80
60
40
20
0
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23
T
T
T
S

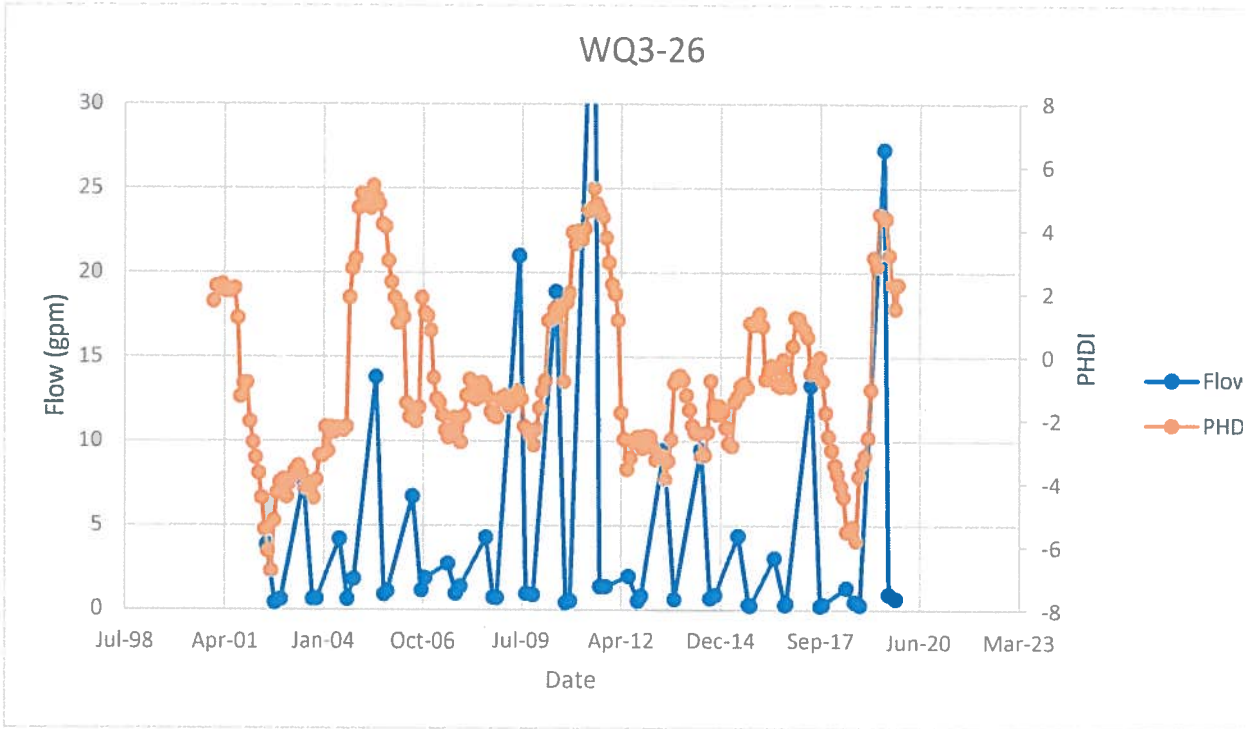

S13-7
Flow (gpm)
PHDI
Date
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

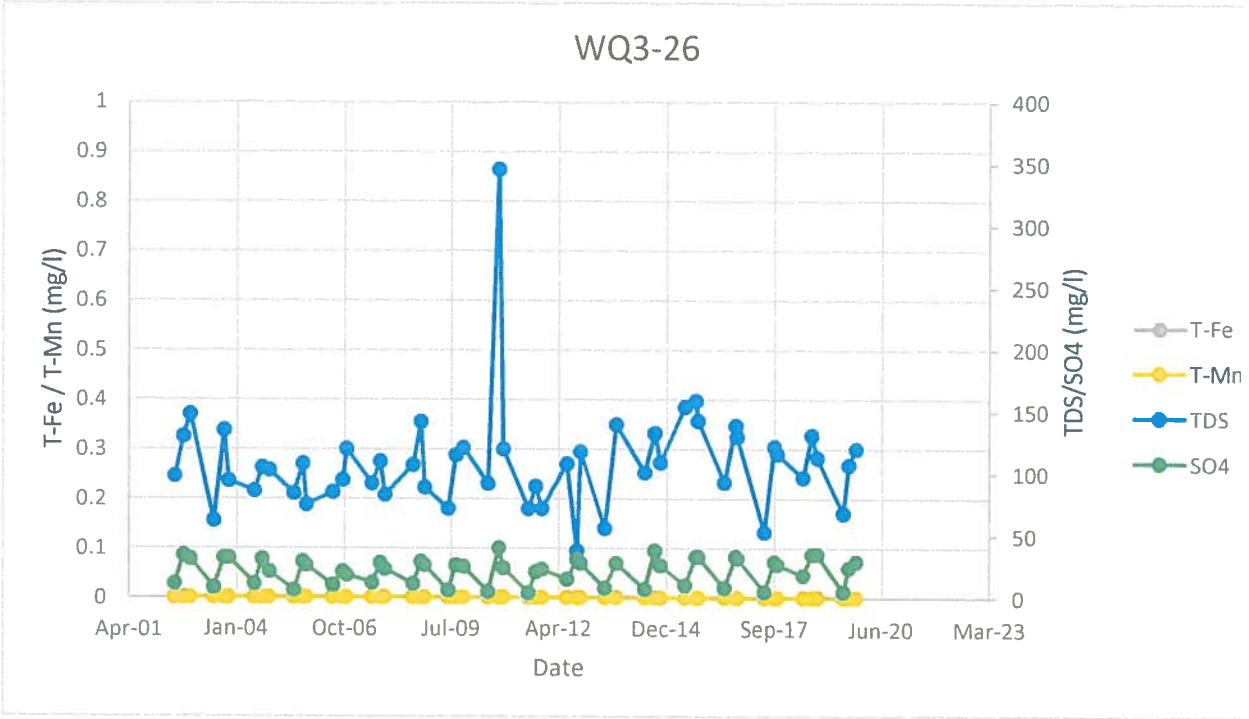

S13-7
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

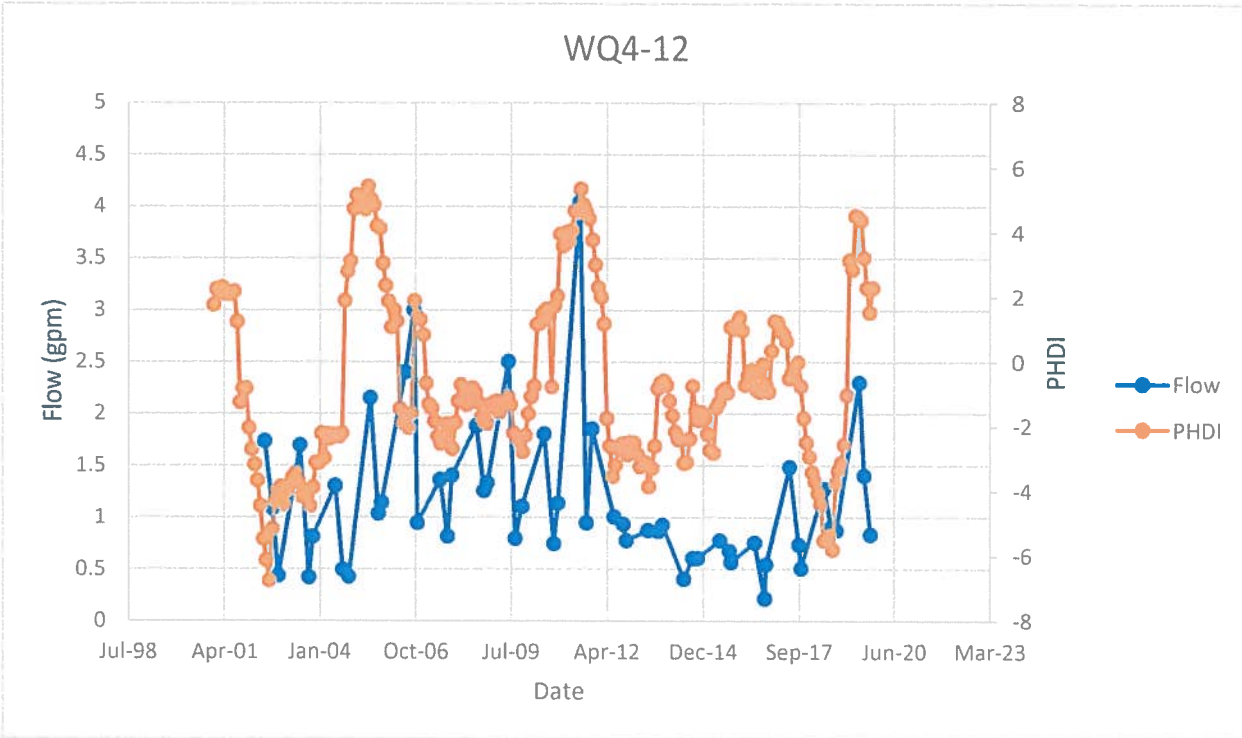

S10-1
Flow (gpm)
PHDI
Date
60
50
40
30
20
10
0
8
6
4
2
0
-2
-4
-6
-8
Feb-82
Aug-87
Jan-93
Jul-98
Jan-04
Jul-09
Dec-14
Jun-20
Dec-25

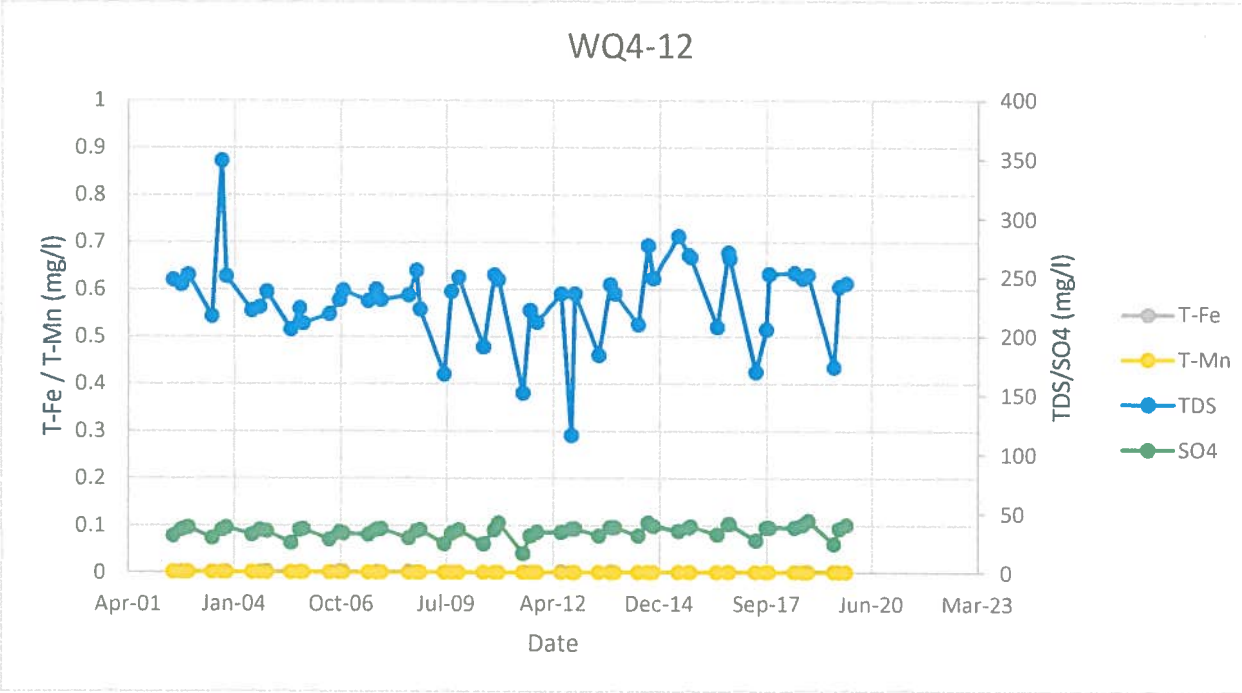

S10-1
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
250
200
150
100
50
0
Aug-76
Feb-82
Aug-87
Jan-93
Jul-98
Jan-04
Jul-09
Dec-14
Jun-20
Dec-25
T
T
T
S

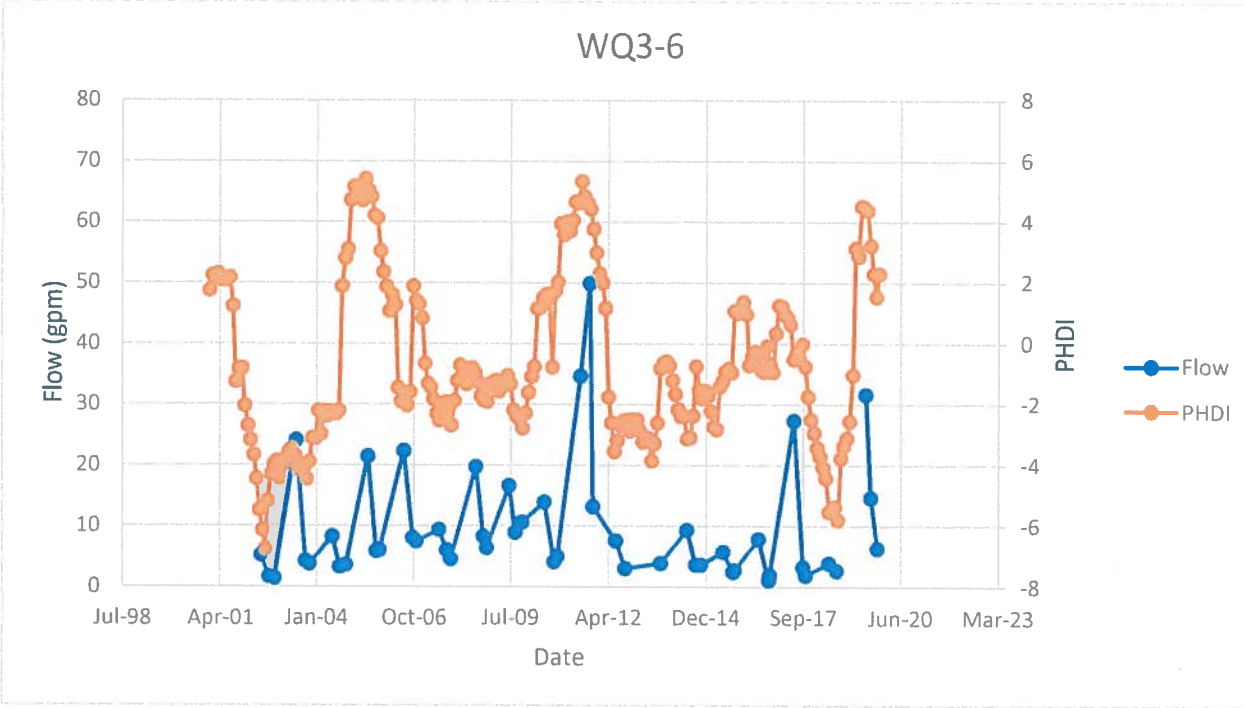
Winter Quarters Canyon

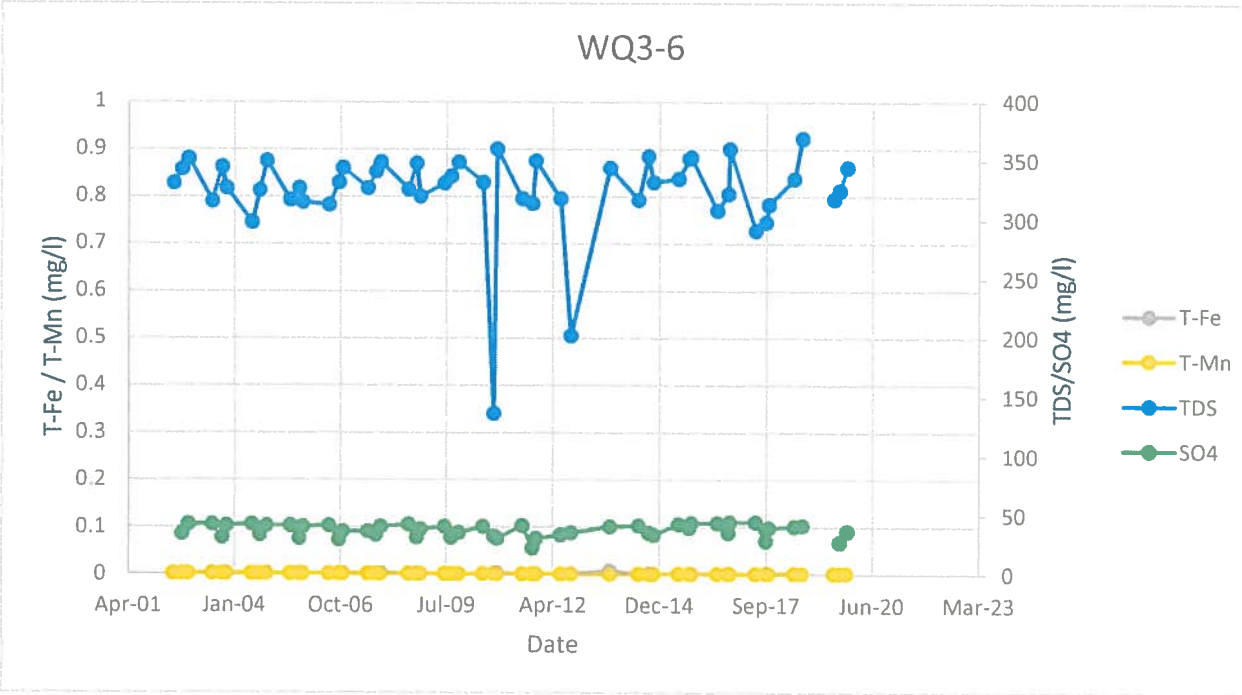

WQ3-26
Flow (gpm)
PHDI
Date
Flov
PHD
30
25
20
15
10
5
0
8
6
4
2
0
-2
-4
-6
-8
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

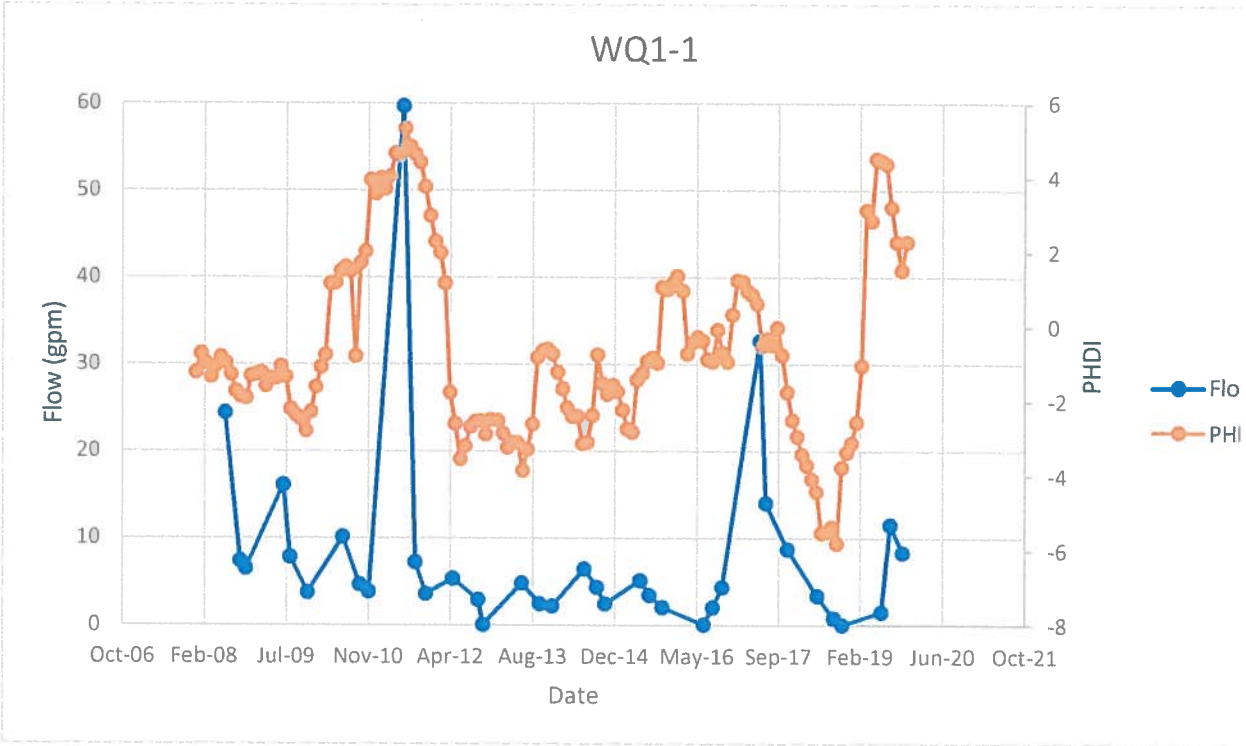

WQ3-26
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
400
350
300
250
200
150
100
50
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

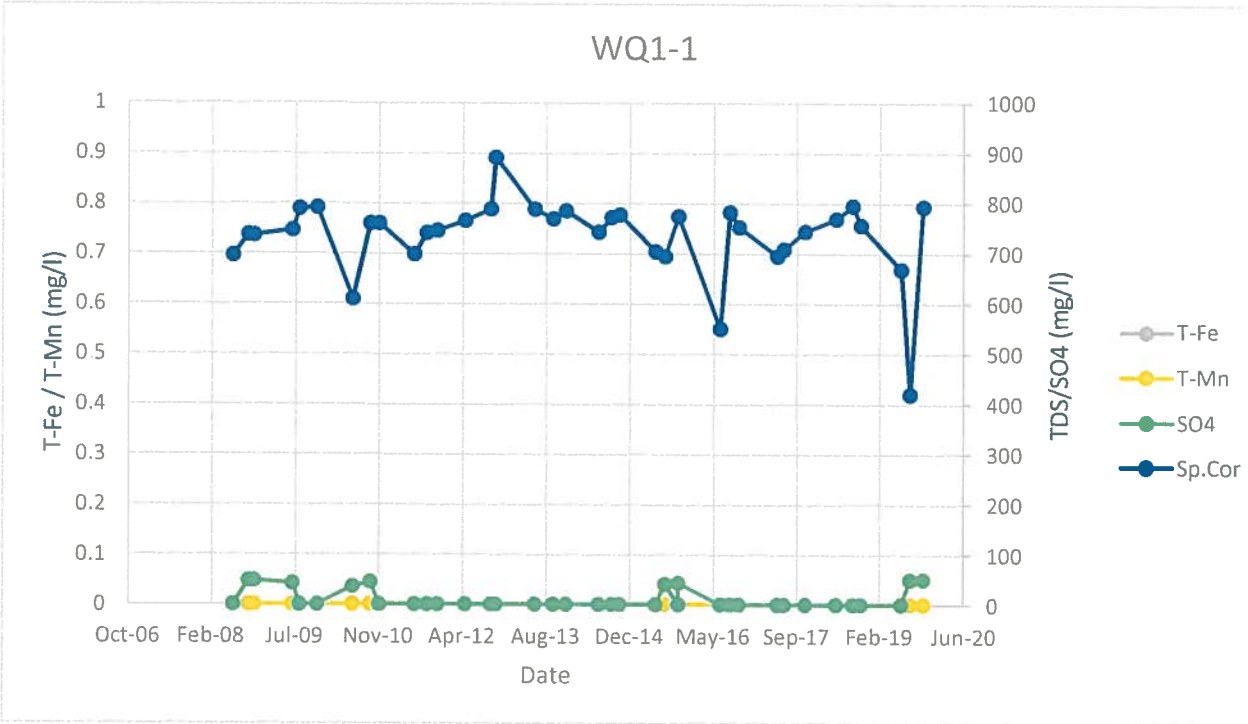

WQ4-12
Flow (gpm)
PHDI
Date
Flow
PHDI
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
8
6
4
2
0
-2
-4
-6
-8
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23


WQ4-12
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
400
350
300
250
200
150
100
50
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

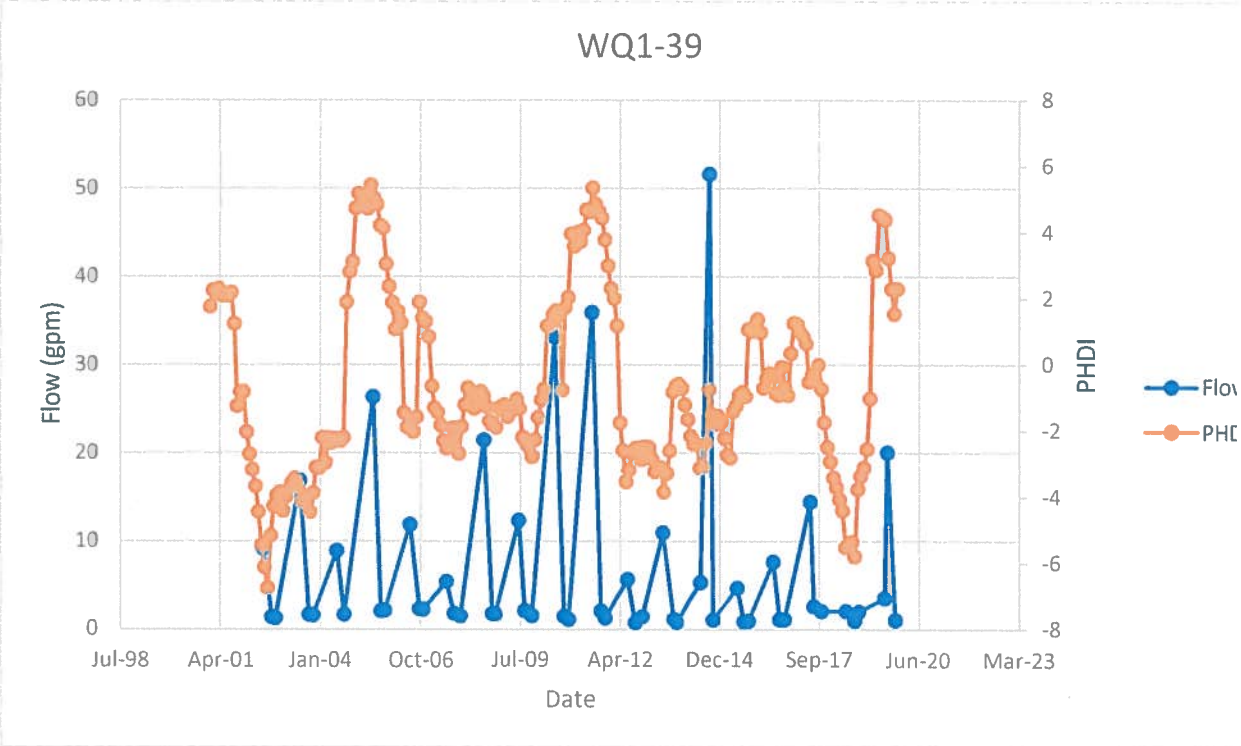

WQ3-6
Flow (gpm)
PHDI
Date
Flow
PHDI
80
70
60
50
40
30
20
10
0
8
6
4
2
0
-2
-4
-6
-8
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

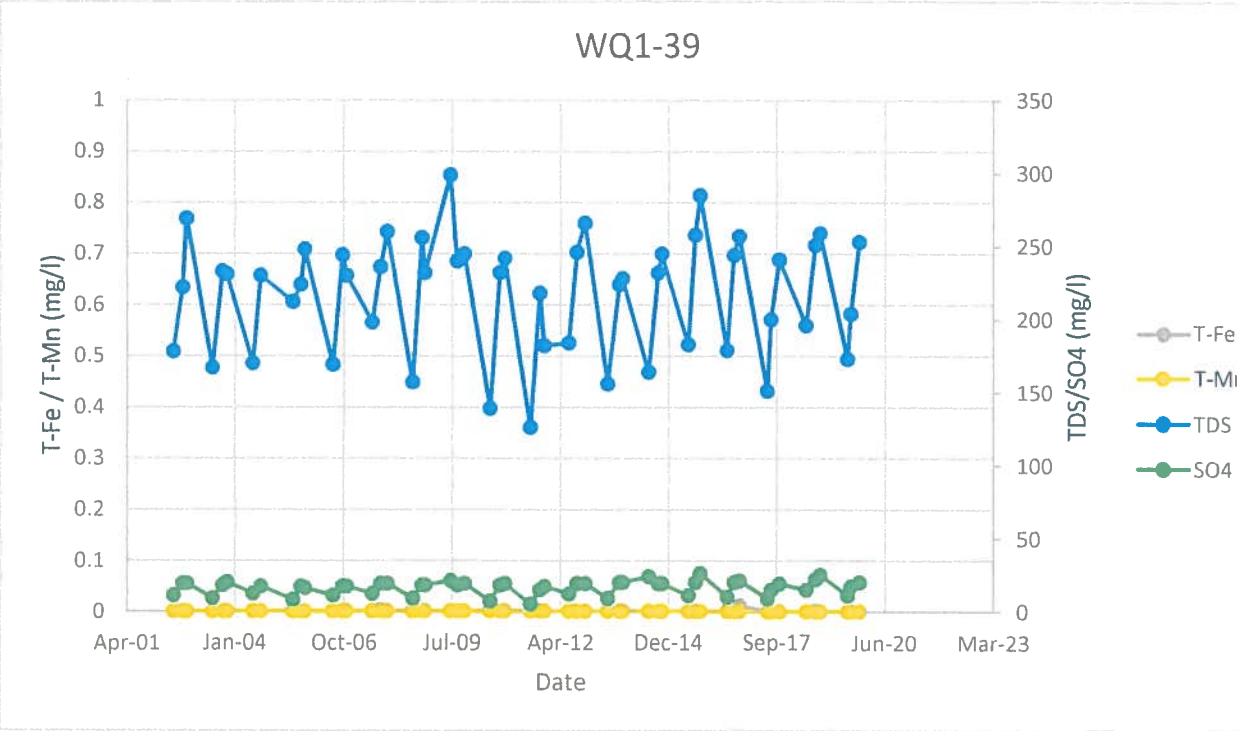

WQ3-6
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
400
350
300
250
200
150
100
50
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

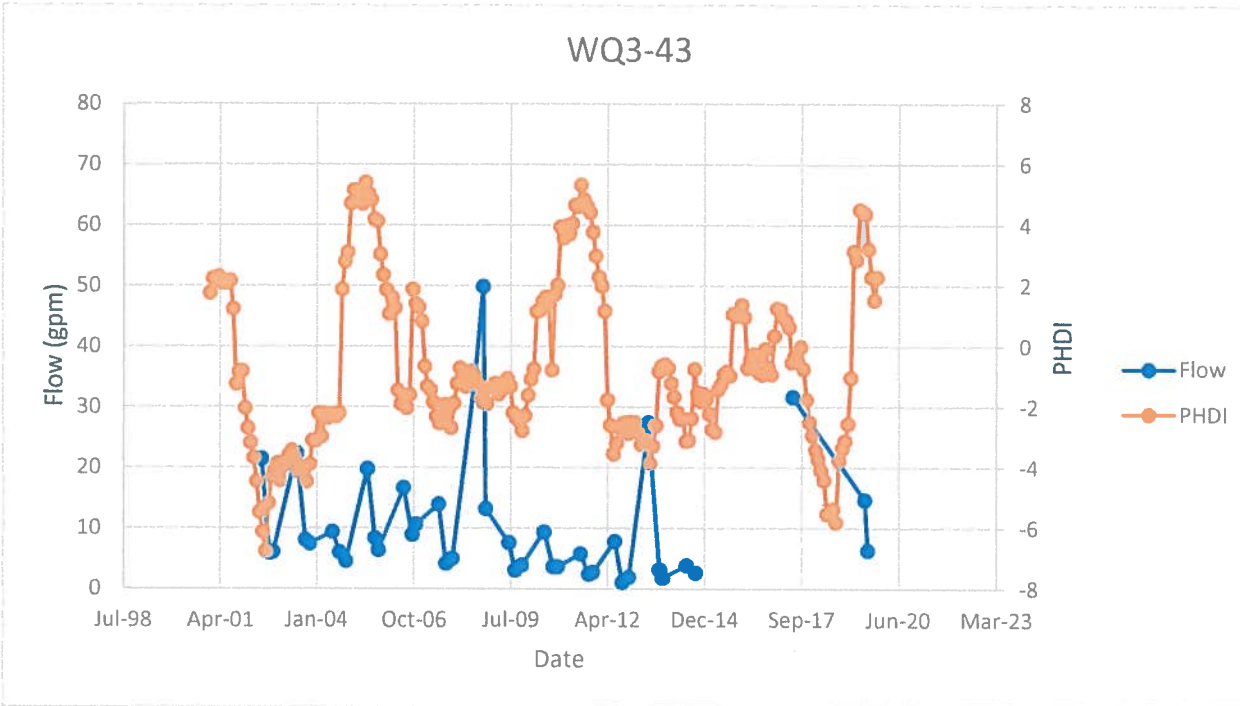

WQ1-1
Flow (gpm)
PHDI
Date
Flo
PHI
60
50
40
30
20
10
0
6
4
2
0
-2
-4
-6
-8
Oct-06
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20
Oct-21

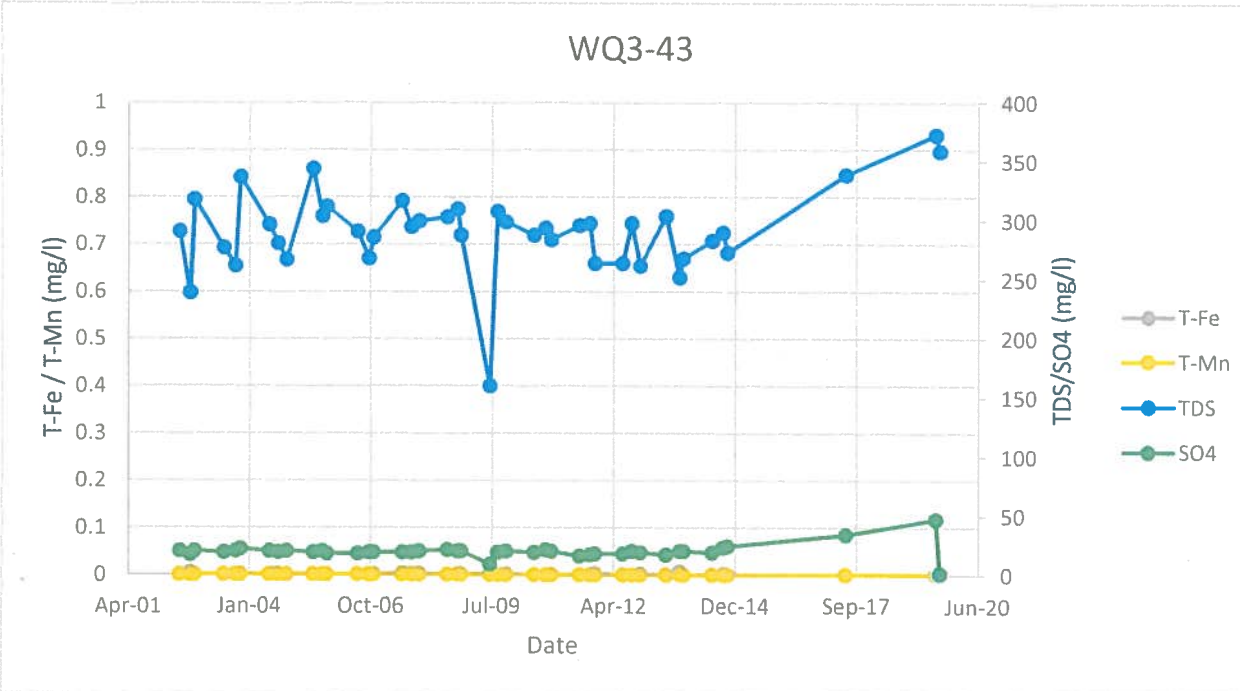

WQ1-1
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
SO4
Sp.Cor
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1000
900
800
700
600
500
400
300
200
100
0
Oct-06
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20

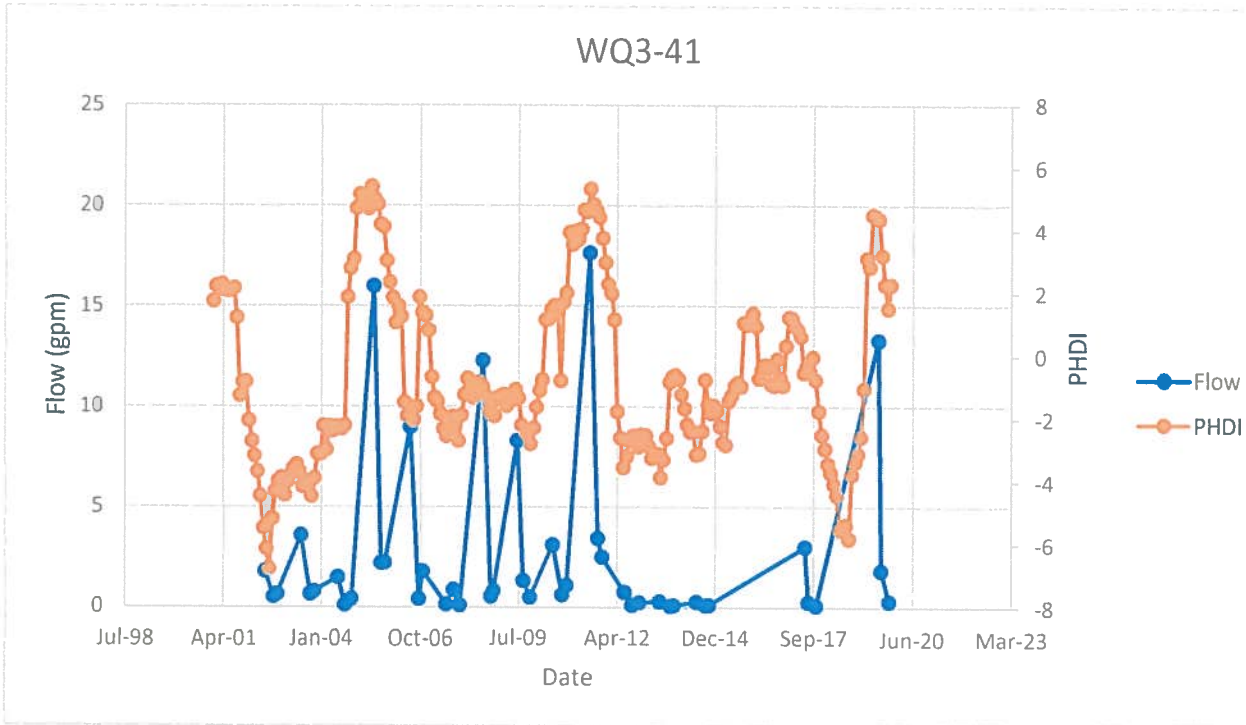
Woods Canyon

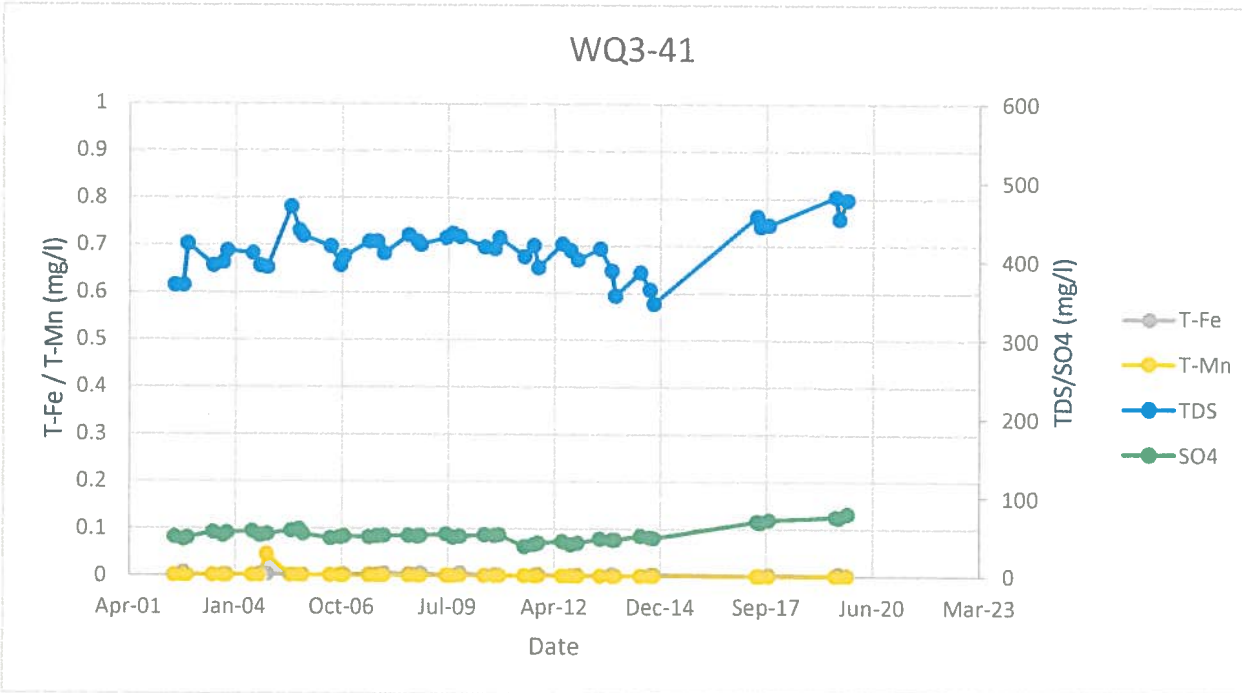

WQ1-39
Flow (gpm)
PHDI
Date
60
50
40
30
20
10
0
8
6
4
2
0
-2
-4
-6
-8
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23
Flo
PHD

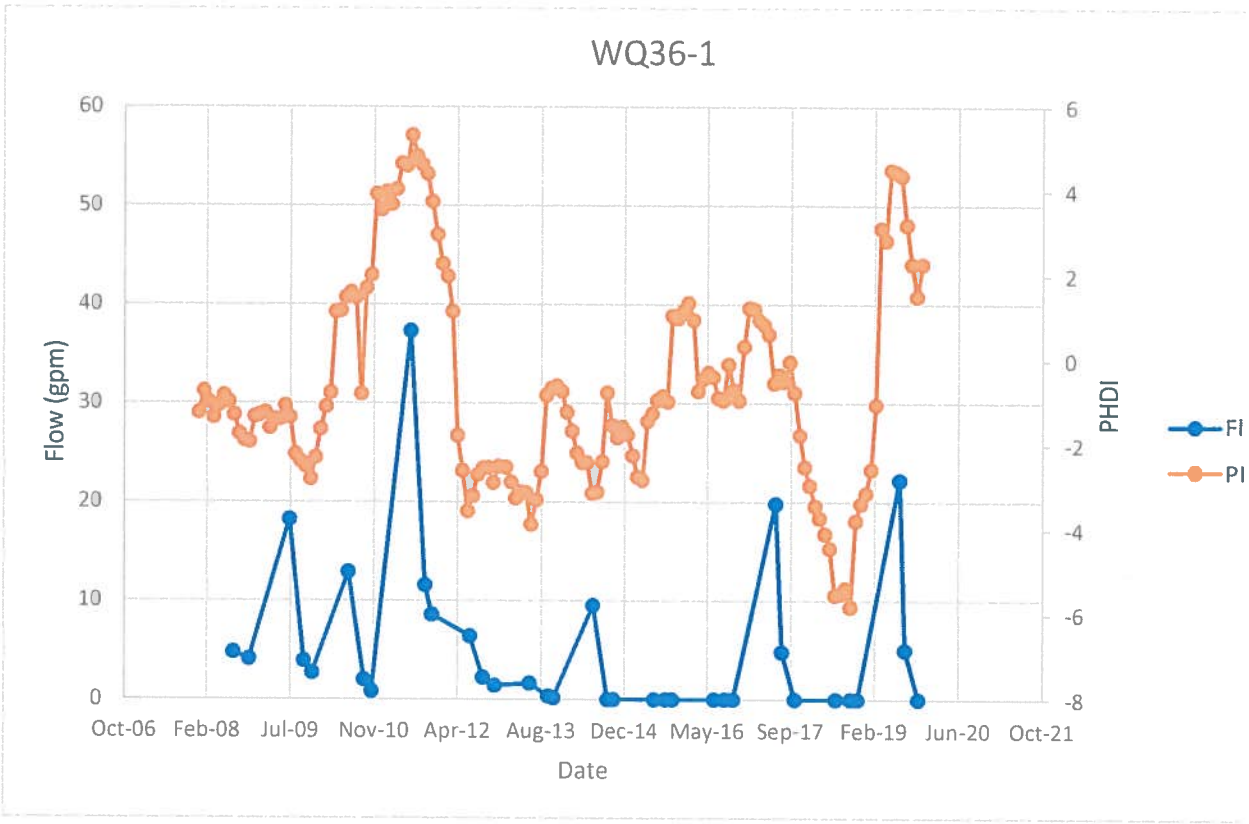

WQ1-39
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
350
300
250
200
150
100
50
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23
T-Fe
T-Mn
TDS
SO4

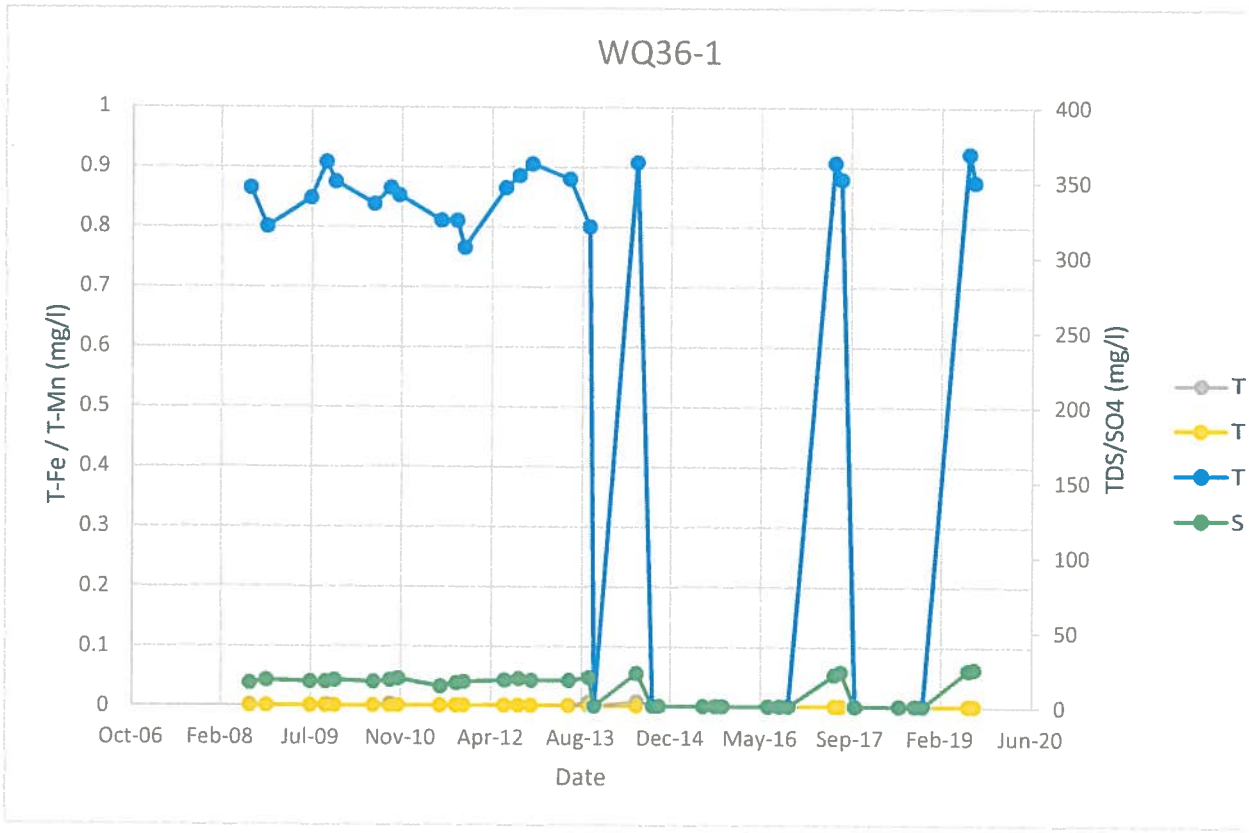

WQ3-43
Flow (gpm)
PHDI
Date
Flow
PHDI
80
70
60
50
40
30
20
10
0
8
6
4
2
0
-2
-4
-6
-8
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

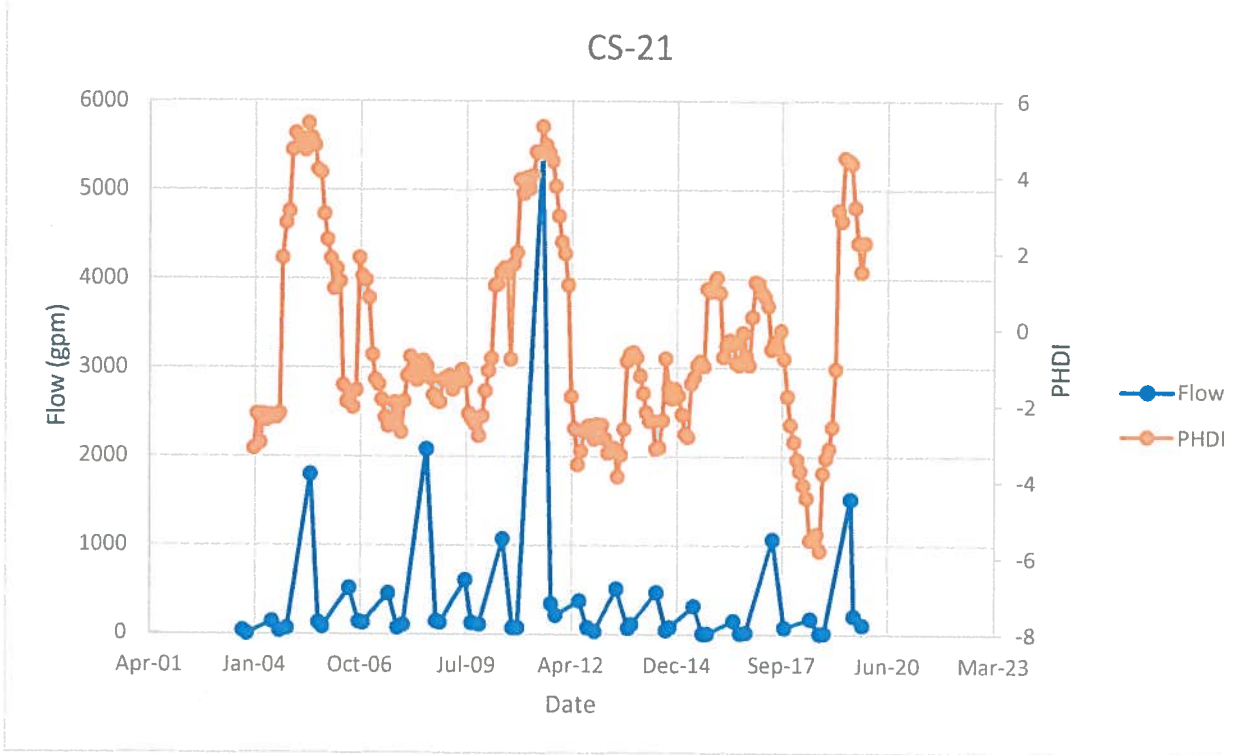

WQ3-43
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
400
350
300
250
200
150
100
50
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20

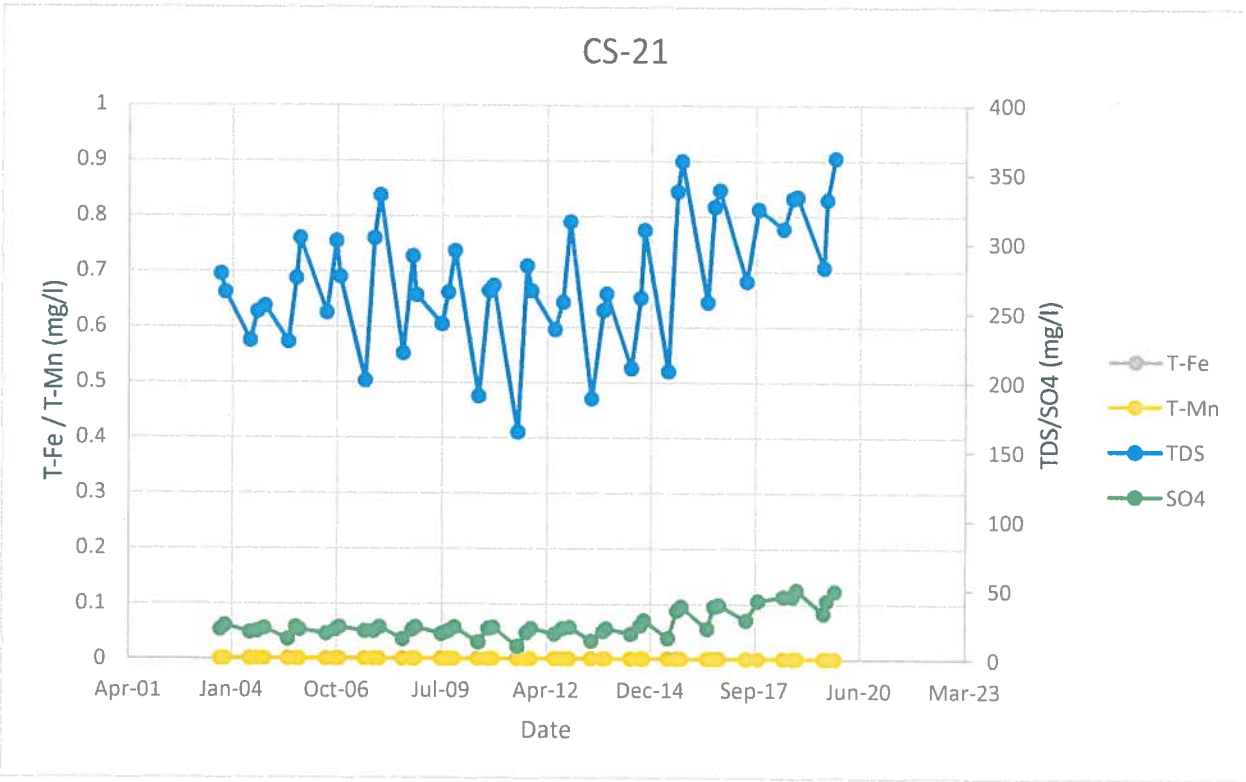

WQ3-41
Flow (gpm)
PHDI
Date
Flow
PHDI
25
20
15
10
5
0
8
6
4
2
0
-2
-4
-6
-8
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

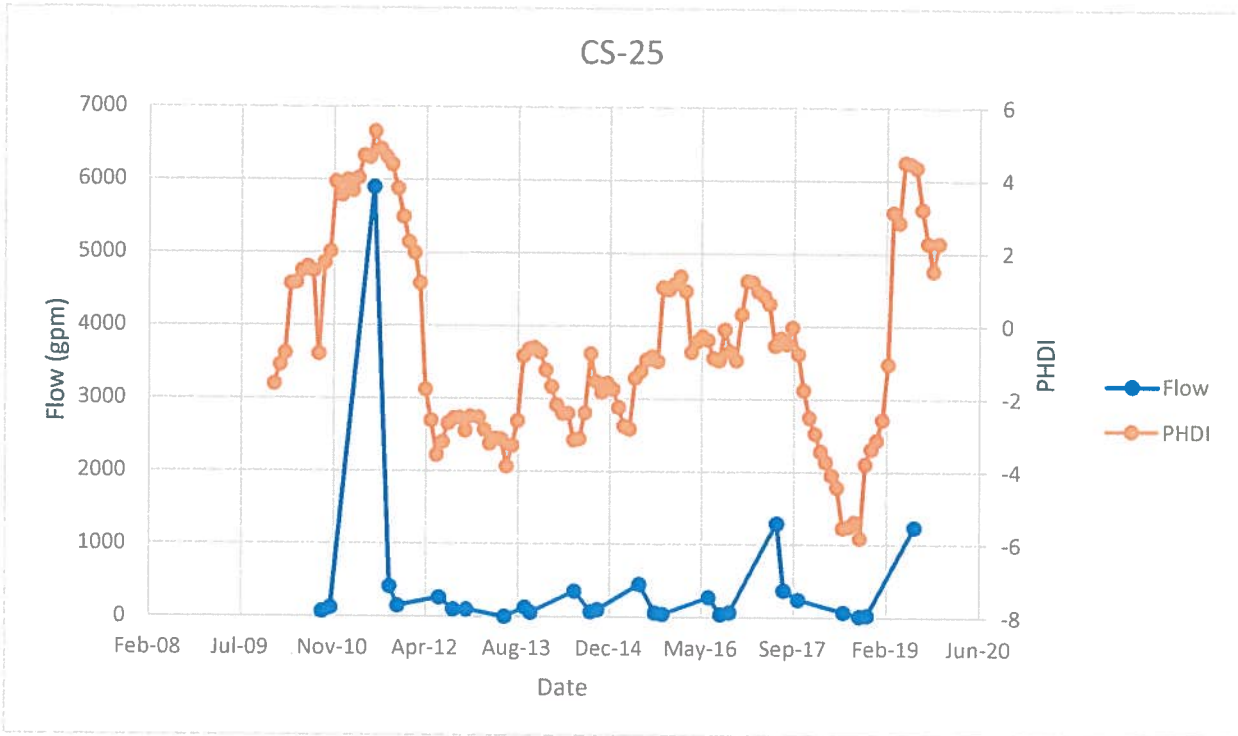

WQ3-41
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
600
500
400
300
200
100
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

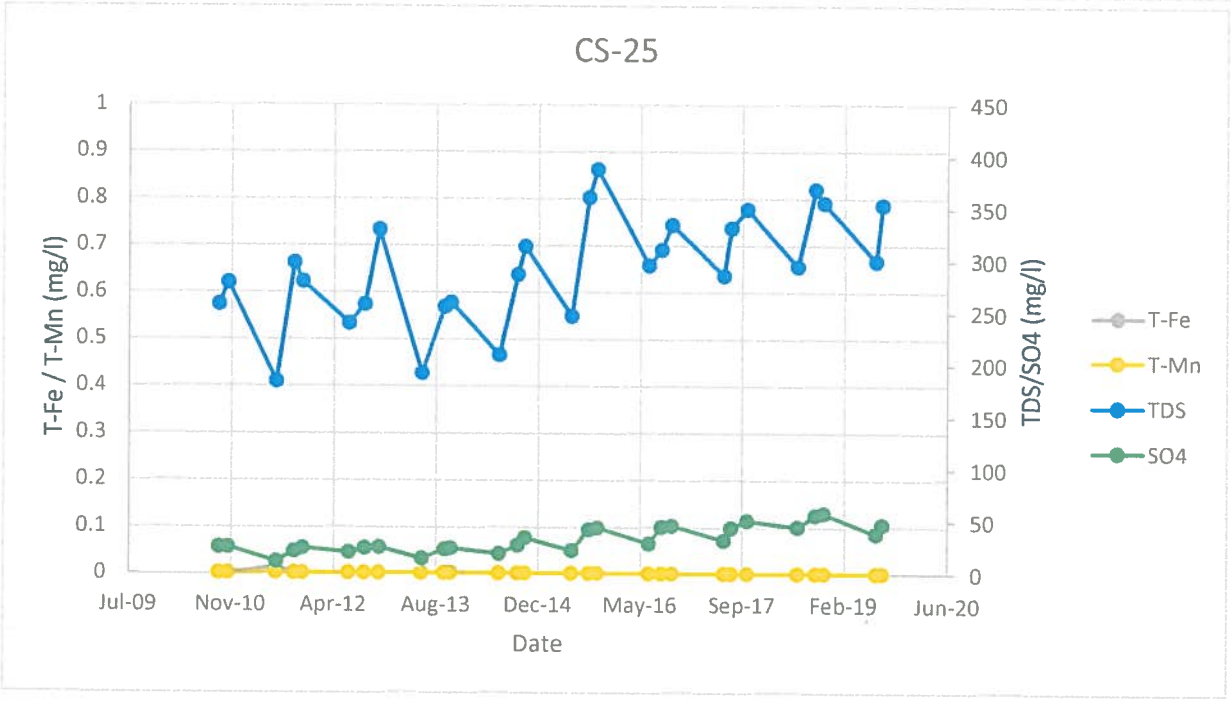

WQ36-1
Flow (gpm)
PHDI
Date
Oct-06
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20
Oct-21
Fl
Pl

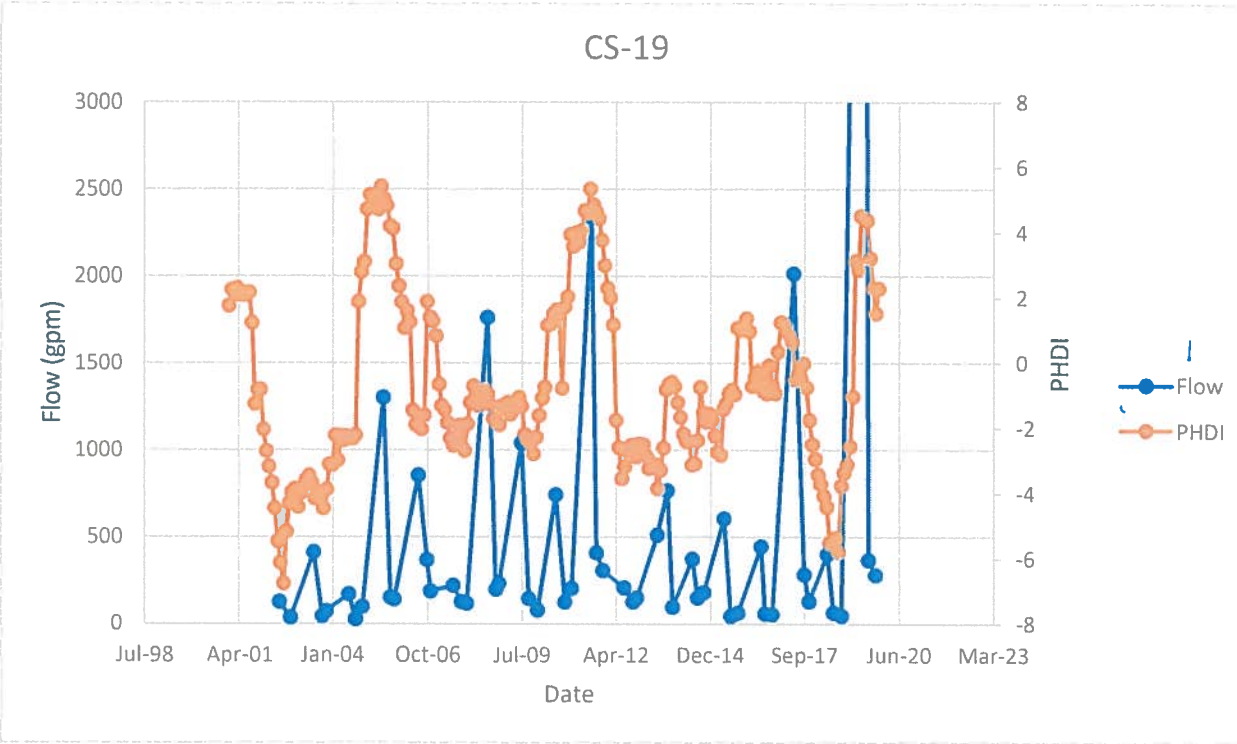

WQ36-1
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
Oct-06
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20
T
T
T
S

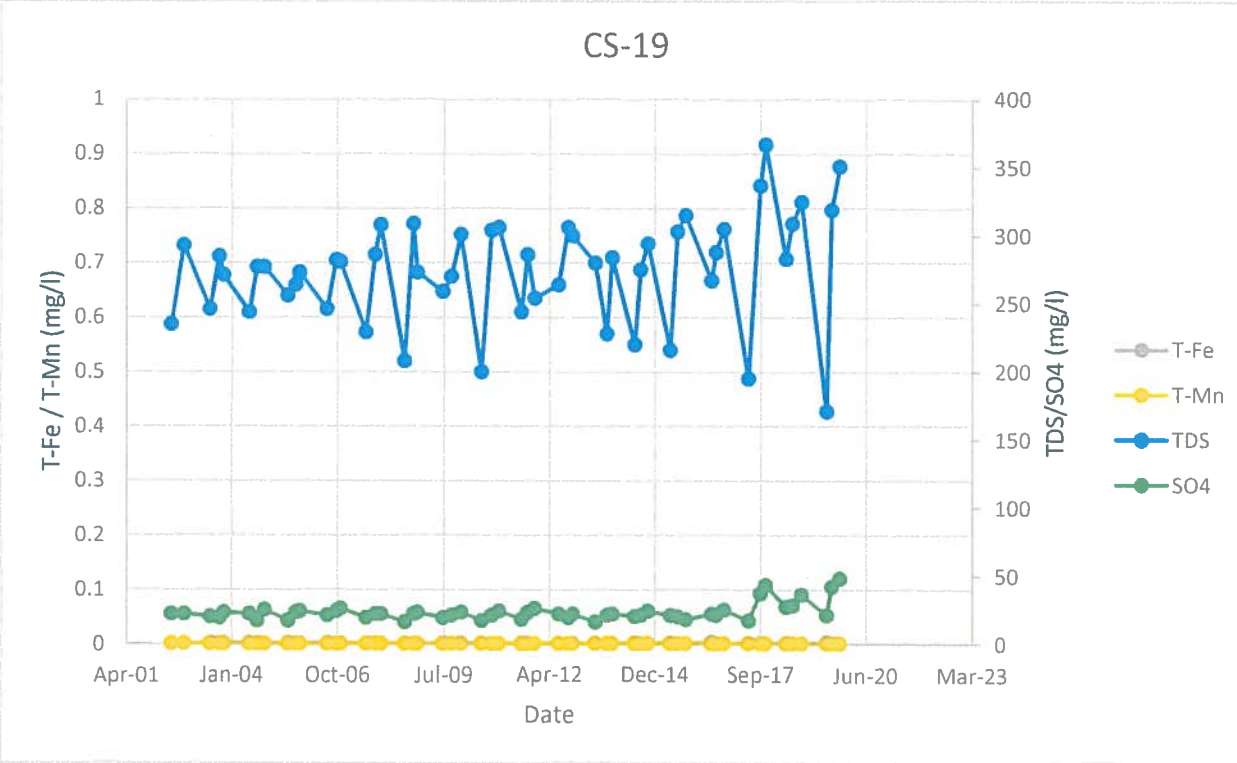

CS-21
Flow (gpm)
PHDI
Date
Flow
PHDI
6000
5000
4000
3000
2000
1000
0
6
4
2
0
-2
-4
-6
-8
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23


CS-21
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
400
350
300
250
200
150
100
50
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

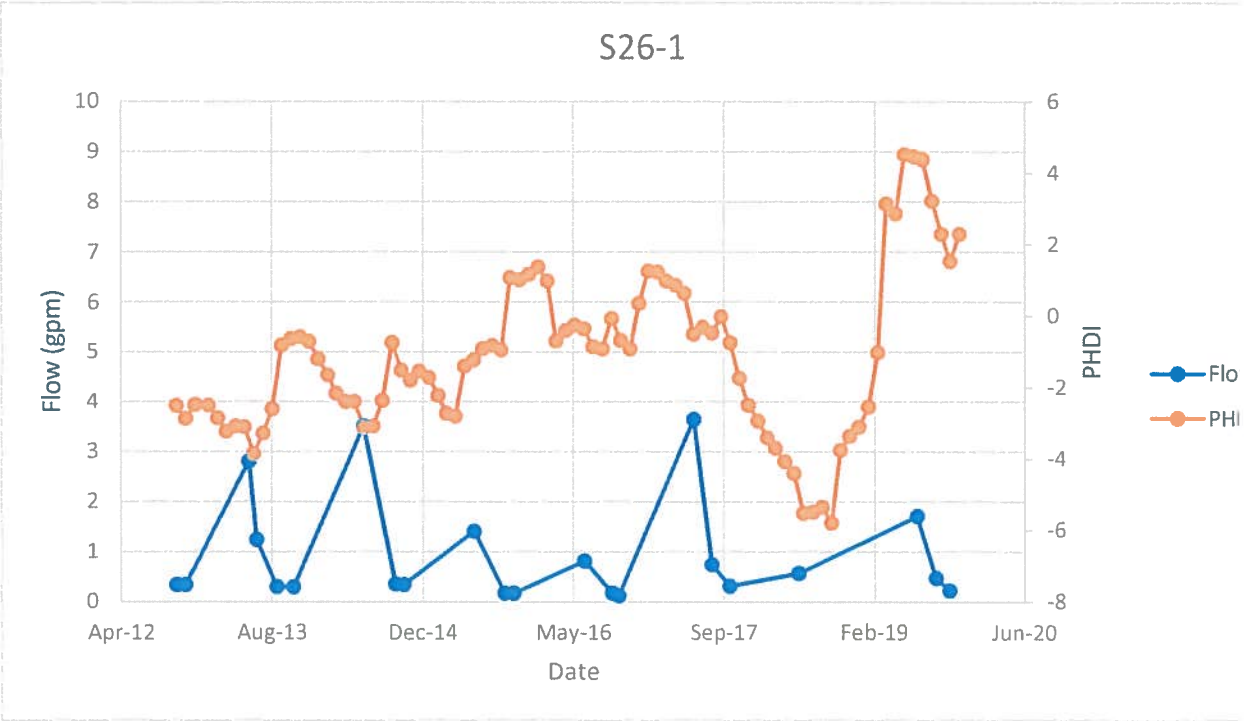

CS-25
Flow (gpm)
PHDI
Date
Flow
PHDI
7000
6000
5000
4000
3000
2000
1000
0
6
4
2
0
-2
-4
-6
-8
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20

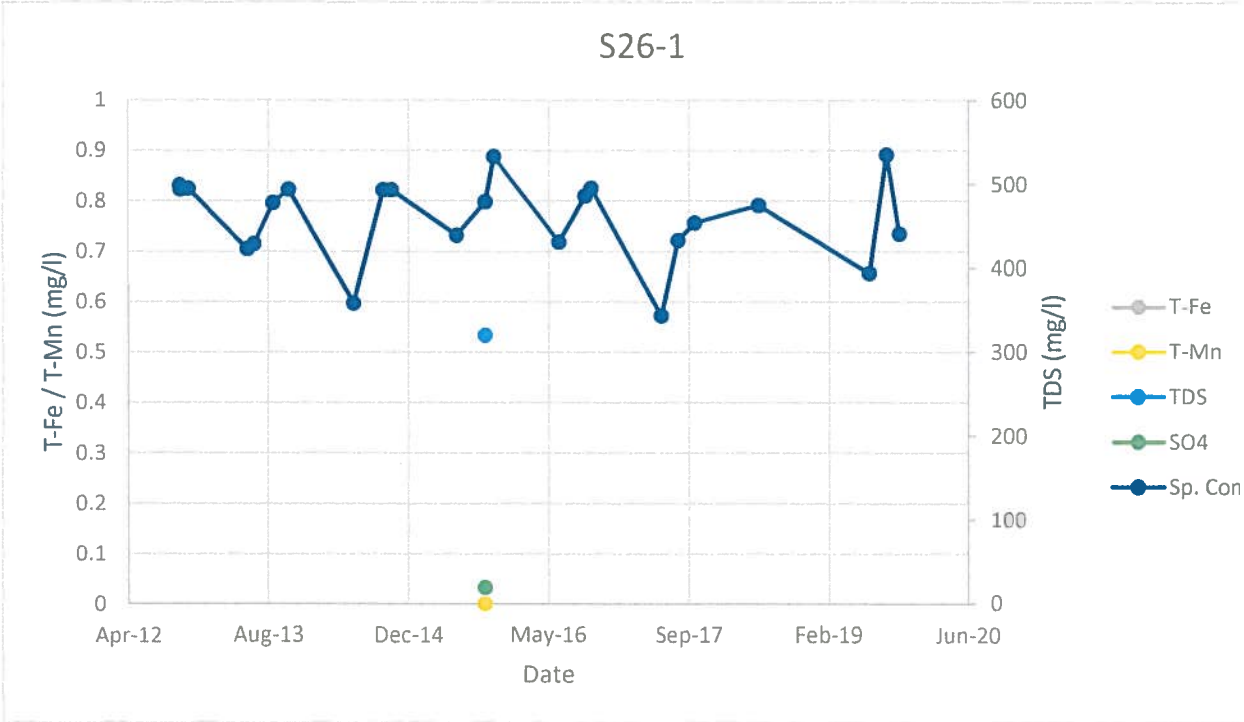

CS-25
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
450
400
350
300
250
200
150
100
50
0
Jul-09
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20

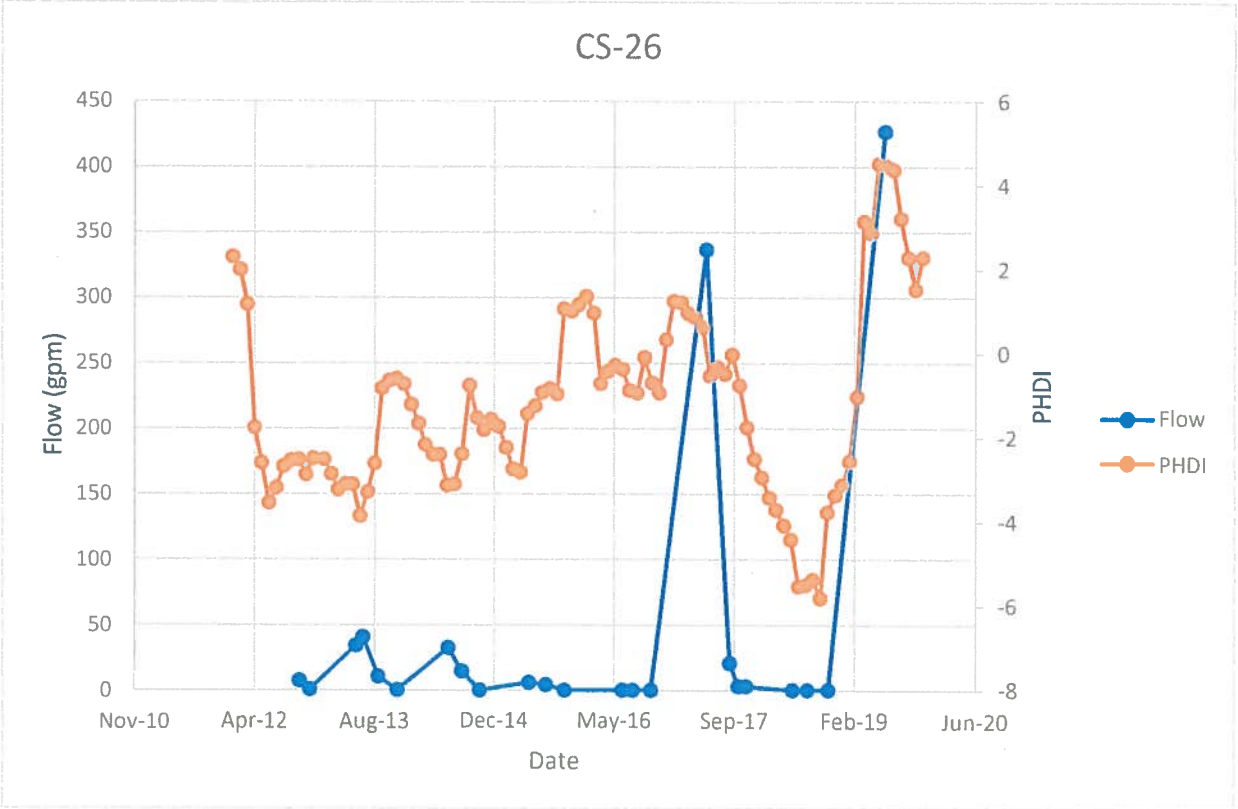

CS-19
Flow (gpm)
PHDI
Date
Flow
PHDI
3000
2500
2000
1500
1000
500
0
8
6
4
2
0
-2
-4
-6
-8
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

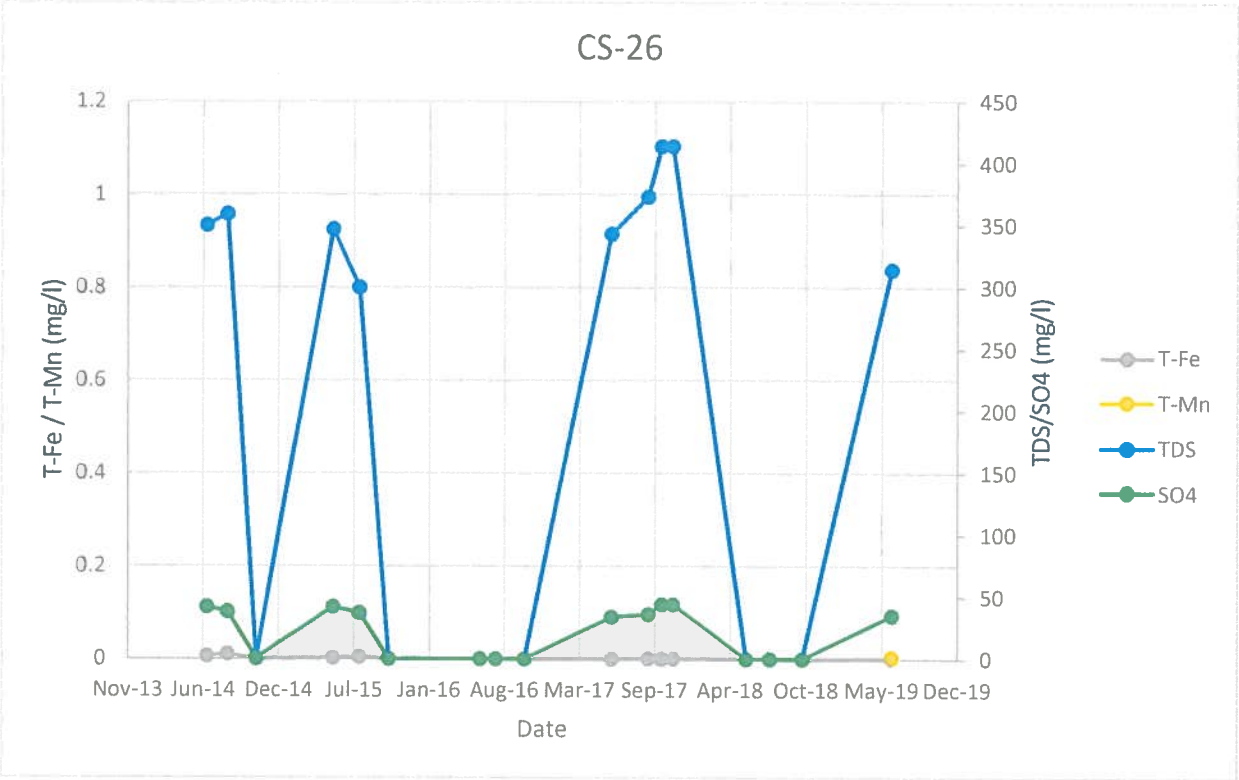

CS-19
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
400
350
300
250
200
150
100
50
0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Mar-23

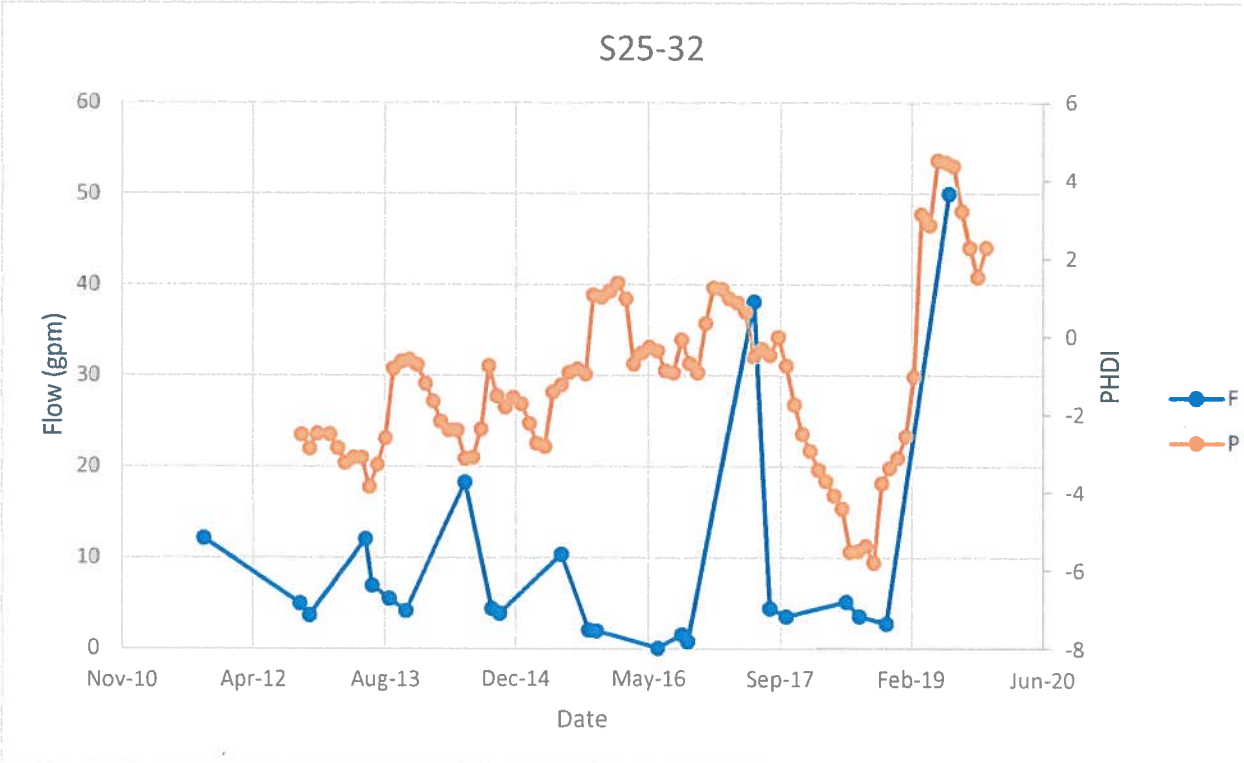
Wife / Andrew Dairy Canyons

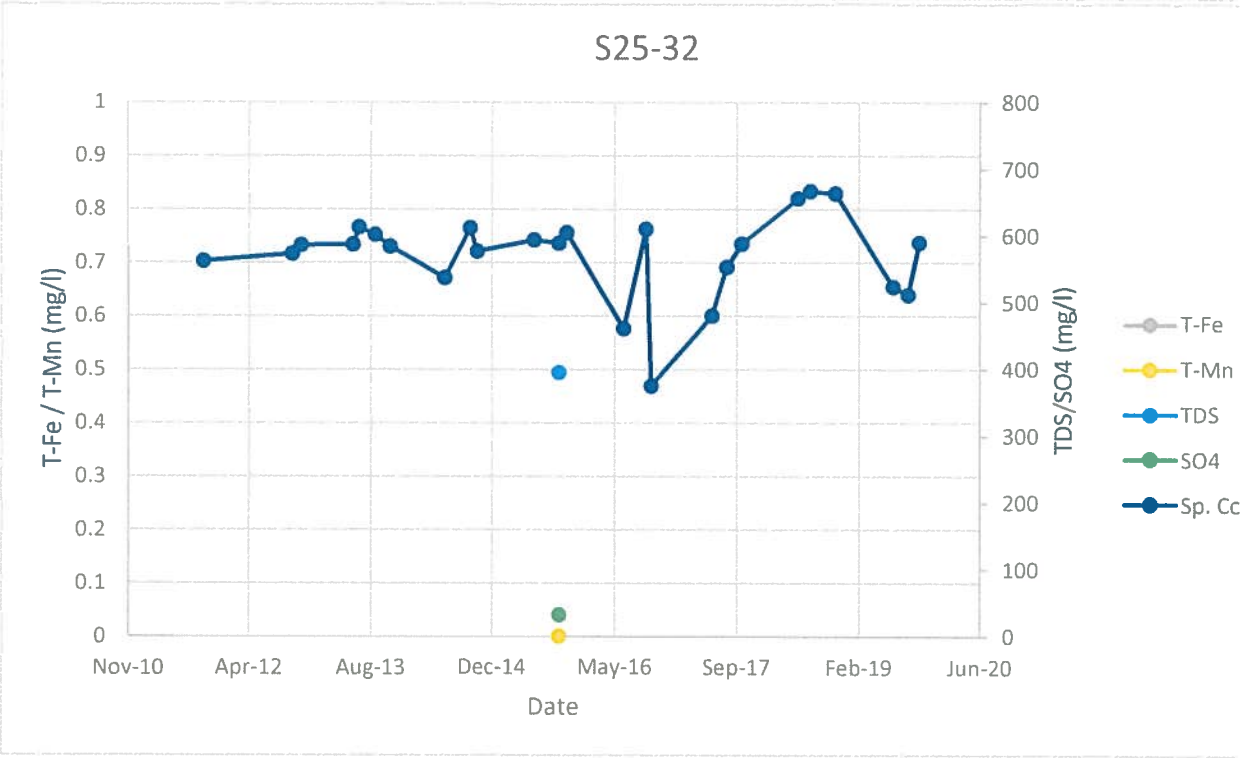

S26-1
Flow (gpm)
PHDI
Date
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20
Flo
PHI

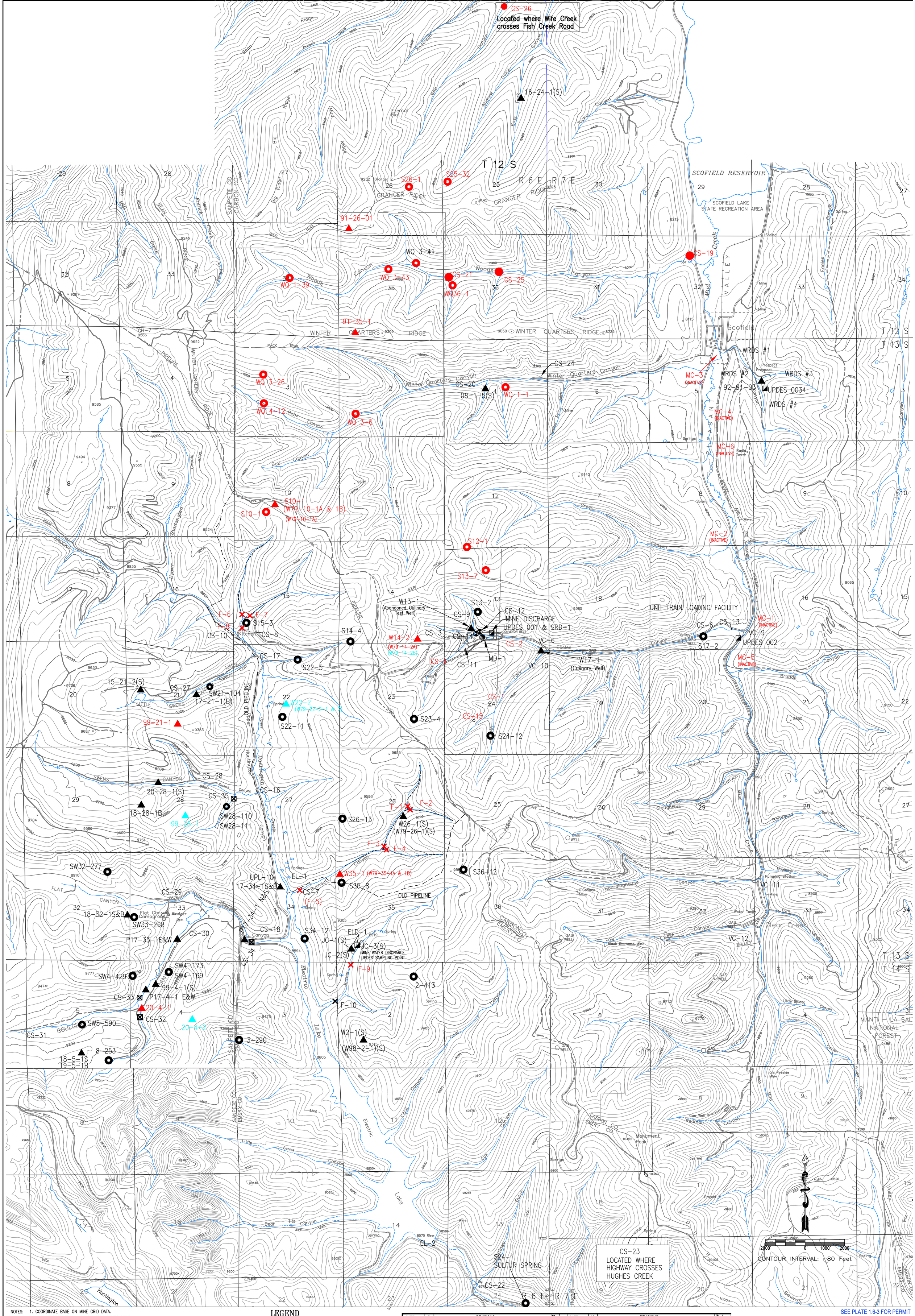

S26-1
T-Fe / T-Mn (mg/l)
TDS (mg/l)
Date
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20
T-Fe
T-Mn
TDS
SO4
Sp. Con


CS-26
Flow (gpm)
PHDI
Date
Flow
PHDI
450
400
350
300
250
200
150
100
50
0
6
4
2
0
-2
-4
-6
-8
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20


CS-26
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
T-Fe
T-Mn
TDS
SO4
1.2
1
0.8
0.6
0.4
0.2
0
450
400
350
300
250
200
150
100
50
0
Nov-13
Jun-14
Dec-14
Jul-15
Jan-16
Aug-16
Mar-17
Sep-17
Apr-18
Oct-18
May-19
Dec-19


S25-32
Flow (gpm)
PHDI
Date
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20
F
P


S25-32
T-Fe / T-Mn (mg/l)
TDS/SO4 (mg/l)
Date
Nov-10
Apr-12
Aug-13
Dec-14
May-16
Sep-17
Feb-19
Jun-20
T-Fe
T-Mn
TDS
SO4
Sp. Cc



NOTES:
1. COORDINATE BASE ON MINE GRID DATA.
2. MAP DIGITIZED FROM 1:24000 USGS QUADRANGLE MAPS, SCOFIELD, UTAH AND FAIRVIEW LAKES, UTAH.
3. MINE FACILITY, CONVEYOR, AND NEW ECCLES CANYON ROAD LOCATIONS FROM EXISTING RECORD DATA AND INCORPORATED TO MAP IN BEST FIT LOCATIONS.
4. UTM GRID TICK VALUES SHOWN ARE IN METERS.

LOCATIONS F-1 THROUGH F-4 AND F-6 THROUGH F-8 ARE PART OF A USFS SUBSIDENCE STUDY ON BURNOUT CREEK AND NOT PART OF THE M&RP WATER MONITORING PROGRAM

F-5 AND CS-7 ARE THE SAME LOCATION

BASE PREPARED BY INTERMOUNTAIN AERIAL SURVEYS, SALT LAKE CITY, UTAH – M96147

LEGEND

- STREAM
- STREAM– Flow Only
- SPRING
- WELL – MONITORING
- MINE DISCHARGE
- STREAM SUBSIDENCE POINTS
- FLUME LOCATION
- UPDES DISCHARGE POINTS
- DISCONTINUED
- ABANDONED

DATE	No.	REVISIONS	DR/CHKD.
09/04/02	1		/GAG
10/07/02	2		/GAG
04/03/03	3		/GAG
06/04/03	4		/GAG
03/19/04	5		/GAG
06/18/04	6		/GAG
11/19/04	7		/CDH
05/05/05	8		/CDH
JUNE 07	9	MODIFIED PERMIT BOUNDARY (IBC & WASTE ROCK) ADDED WQ1–1; INACTIVATED MC SITES	BR/GG
Jan 20	19	Discontinued North Lease / NOG sites	GG/GG

DATE	No.	REVISIONS	DR/CHKD.
AUG 09	10	Updated Current Water Monitoring Sites, Discontinued W99–28–1, CS–4, F–9 and Removed the Permit Boundary	ARB/GAG
DEC 09	11	MODIFIED PERMIT BOUNDARY and Discontinued F–1 – F–8	ARB/GAG
JULY 10	12	REMOVED PERMIT BOUNDARY, ADDED LOCATION NOTE	JLH/GAG
SEPT	13	RELOCATED CS–24, ADDED CS–25 AND WQ36–1	ARB/GAG
JULY 11	14	Added WC–1 thru WC–9S, Discontinued W20–4–2	ARB/GAG
OCT 12	15	Added NOG Sites S25–32. S26–1and CS–26	ARB/GAG
May 27	16	Added Sites CS–28	GAG/GAG
Dec 16	17	Added CS–27, –29 thru –35; Nine (9) SW–springs, 15–22–2, Boulger Cr. Piezometers, Discontinued WC (Woods Cyn) piezometers, (6) failed wells: (W14–2, W79–35–1 A & B, 20–4–1, 91–35–1, 91–26–1)	GAG/GAG
Jan 20	18	Added Huntington Canyon monitoring sites Added formation designation to wells	TWE/GAG

SEE PLATE 1.6-3 FOR PERMIT AND ADJACENT AREAS

Location of Hydrologic Monitoring Stations

Canyon Fuel Company, LLC
Skyline Mines
HC35 BOX 380, HELPER, UTAH 84526
435–448–6463

SCALE: 1" = 2000'	DATE: 04/04/01	CK.BY: GGalecki
DWG. NO.: 2.3.6–1		DR.BY: TEarl
CAD FILE: 2.3.6–1REV18		

REVISION: 19
4/3/2020