SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

Your Northwest renewables utility

June 29, 2016

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission (FERC)
888 First Street NE
Washington, DC 20426

Re: Jackson Hydroelectric Project, FERC No. 2157
Water Quality Monitoring Plan – 2015 Annual Report
License Article 401(b)

Dear Secretary Bose:

Enclosed is Public Utility District No. 1 of Snohomish County's Water Quality Monitoring Plan Annual Report for 2015 pursuant to License Article 401(b) for the Jackson Hydroelectric Project. The draft report was provided to the Aquatic Resource Committee for a 30-day review and comment period; comments were received from the City of Everett. Consultation documentation is included in the report's appendices.

If you have any questions on the Water Quality Monitoring Plan Annual Report for 2015, please contact Keith Binkley, Natural Resources Manager, at (425) 783-1769 or KMBinkley@snopud.com.

Sincerely,

/s/ Tom DeBoer

Tom DeBoer
Assistant General Manager of Generation, Power, Rates, and Transmission Management
TADeBoer@snopud.com
(425) 783-1825

Enclosed: Water Quality Monitoring Plan Annual Report for 2015

cc: ARC members
Monika Kannadaguli, Ecology Northwest Regional Office Water Quality Program
Keith Binkley, District

Henry M. Jackson Hydroelectric Project
(FERC No. 2157)

License Article 401: Water Quality Monitoring Plan – 2015 Annual Report

SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

Everett, WA

June 2016

Final – This document has been prepared for the District. It has been peer-reviewed by the District for accuracy and formatting based on information known at the time of its preparation and with that understanding is considered complete by the District. The document may be cited as:

District. 2016. Water Quality Monitoring Plan 2015 Annual Report, License Article 401, for the Henry M. Jackson Hydroelectric Project, FERC No. 2157. June 2016.

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List of Acronyms and Abbreviations

7-DAD Max	seven-day average of the daily maximum
ARC	Aquatic Resource Committee
District	Public Utility District No. 1 of Snohomish County
Ecology	Washington Department of Ecology
FERC	Federal Energy Regulatory Commission
Project	Henry M. Jackson Hydroelectric Project, FERC No 2157
RM	river mile
USGS	U.S. Geological Survey
WQMP	Water Quality Monitoring Plan

1. INTRODUCTION

Public Utility District No. 1 of Snohomish County (the District) received a license on September 2, 2011 (License), from the Federal Energy Regulatory Commission (FERC) for the Henry M. Jackson Hydroelectric Project (Project). The FERC approved the Water Quality Monitoring Plan (WQMP) on March 30, 2012, pursuant to License Article 401(a). The District is to file a report with the FERC by June 30 of each year detailing the monitoring efforts of the previous calendar year, pursuant to License Article 401(b).

This WQMP Annual Report covers activities conducted in calendar year 2015. Monthly measurements of reservoir water quality are presented in Appendix A. Appendices B, C, and D present the data from continuous monitoring of water temperature in the river and tributary systems. Appendix B shows graphical data, Appendix C shows tabular data, and Appendix D shows seven-day average of the daily maximum water temperature in tabular format. This WQMP Annual Report was provided to the Aquatic Resources Committee (ARC) [consisting of the City of Everett, City of Sultan, Snohomish County, Washington Department of Ecology (Ecology), Washington Department of Fish and Wildlife, Tulalip Tribes, U.S. Forest Service, National Marine Fisheries Service, U.S. Fish and Wildlife Service and American Whitewater] for a 30-day review and comment period. Consultation documentation regarding the draft report will be included in Appendix E.

The annual report fulfills monitoring and reporting requirements as stipulated in Ecology's 401 Water Quality Certification Order (Order No. 7918, October 18, 2010). As described in the 401 Certification Order (Section 9.0, Monitoring and Reporting Requirements), the report includes summaries of the water quality data, and includes sample dates, times, locations, and results. Compliance with state water quality standards is discussed, as well. The report will be submitted to the hydropower certification manager at Ecology's Water Quality Program Northwest Regional Office, and the FERC.

The WQMP requires the District to collect water quality data in and around Spada Lake Reservoir, Sultan River between river mile (RM) 16.2 and RM 0.2, and Skykomish River at RM 14.1 and RM 13.2 (Table 1-1).

Table 1-1. Parameters to be monitored, locations and sampling frequency.

Parameter	South Fork Sultan River	Spada Lake Reservoir (near log boom)	RM 16.1	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skyko. RM 14.1	Skyko. RM 13.2	Frequency
Water temperature	●	●	●	●	●	●	●	●	●	●	Year-round (hourly) in stream reaches. Monthly between May 1 and October 31 for lake profile.
Dissolved oxygen	●	●		●			●				May 1 to October 31. Monthly in stream reaches. Monthly for lake profile.
Turbidity	●	●		●			●				May 1 to October 31. Monthly in stream reaches. Monthly for lake profile.
pH	●	●		●			●				May 1 to October 31. Monthly in stream reaches. Monthly for lake profile.
Secchi transparency		●									May 1 to October 31. Monthly.
Flow discharge	●		●	●	●	●	●				Year-round. Daily.
Reservoir elevation		●									Year-round. Daily.

The following sections of this report are organized and structured as water flows, beginning in the upper portion of the Sultan watershed.

2. RESERVOIR MONITORING

2.1. Climatic Conditions

2.1.1. Rainfall Data

During 2015, a total rainfall of 134.58 inches was recorded at the Culmback Dam Weather Station. The rainfall measured during 2015 was less than the historical annual average of 162.42 inches. Monthly rainfall averaged 11.22 inches and ranged between a low of 1.27 inches in July and 30.02 inches in December (Table 2-1). During 2015, the highest recorded daily rainfall (5.90 inches) occurred on December 8, 2015.

Table 2-1. Monthly rainfall, Culmback Dam Weather Station, 2015.

Month	Rainfall (inches)
January	13.34
February	13.12
March	12.68
April	6.74
May	2.36
June	2.04
July	1.27
August	7.29
September	6.64
October	15.54
November	23.54
December	30.02

2.1.2. Snow Survey Measurements

Beginning in 1986, the District has conducted annual surveys of the snowpack during late March. Since inception, the annual mean snow and water depth at Stickney Ridge (elevation 3,600 feet) are 98.0 and 41.5 inches, respectively. During the March 2015 survey, there was an absence of snow at the Stickney Ridge station (Figure 2-1) resulting in 0% of historical mean for both snow depth and water content.

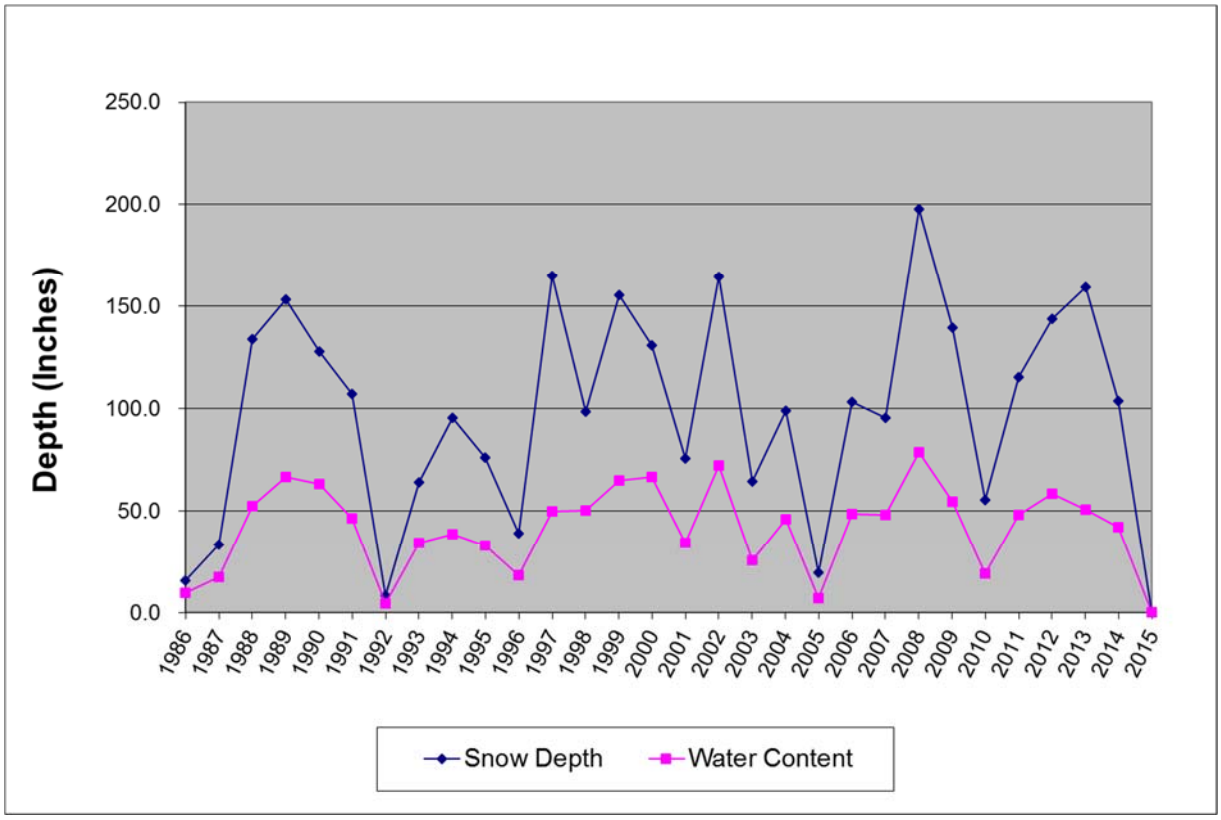


Figure 2-1. Historic snow surveys, Stickney Ridge (elevation 3,600 feet), Sultan Watershed, 1986-2015.

2.1.3. Reservoir Inflow

Three tributaries feed into Spada Lake Reservoir; the South Fork Sultan River, Williamson Creek, and the mainstem Sultan River, including Elk Creek. Historically, the U.S. Geological Survey (USGS) has operated gages at several locations within the basin. Currently, the South Fork Sultan River is the only tributary that is actively gaged. At this location, the USGS operates Station No. 12137290, South Fork Sultan River near Sultan, WA, which provides real time information for Project operations. Hydrologic modeling indicates that the South Fork Sultan River, on average, accounts for between 14 and 22% of total inflow into the reservoir, depending on conditions. The 2015 hydrograph for this station is presented in Figure 2-2. Instantaneous flow values ranged from 4.9 to 5,210 cfs. Mean daily flow during 2015 averaged 119 cfs and ranged between a low of 5.2 cfs and a high flow of 3,159 cfs. The average mean annual flow, based on the USGS Water Year, for this station is 131 cfs (Period of Record 1992-2015).

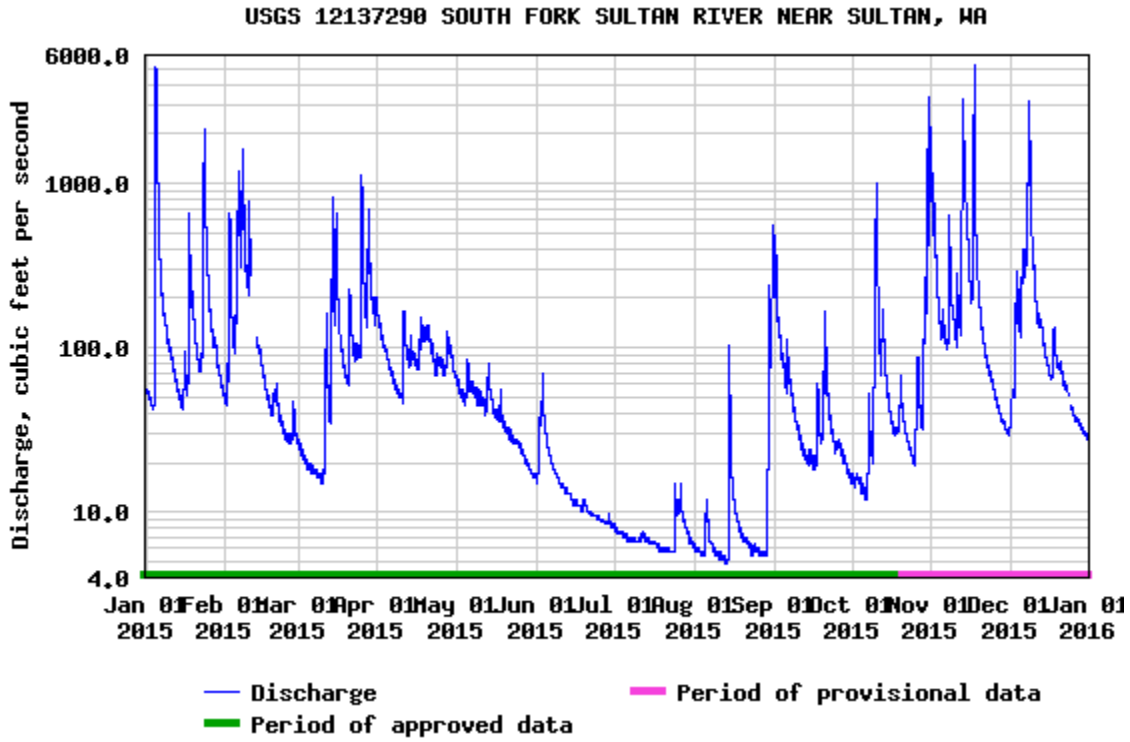


Figure 2-2. Hydrograph for the South Fork Sultan River, USGS Station No. 12137290, 2015 calendar year.

2.2. Reservoir Operations

2.2.1 Project Outflow

In the absence of reservoir spill, the vast majority of Project outflow occurs through the power tunnel, as indexed by daily plant generation. In 2015, the Project experienced two spill events. The first occurred in November (11/17/15 – 11/20/15) and the second in December (12/09/15 – 12/10/15). Daily plant generation during 2015 closely mimicked Project inflows (Figure 2-3). A total of 375,100 megawatt hours were produced during 2015 equating to 91% of the historic annual average of 410,771 megawatts.

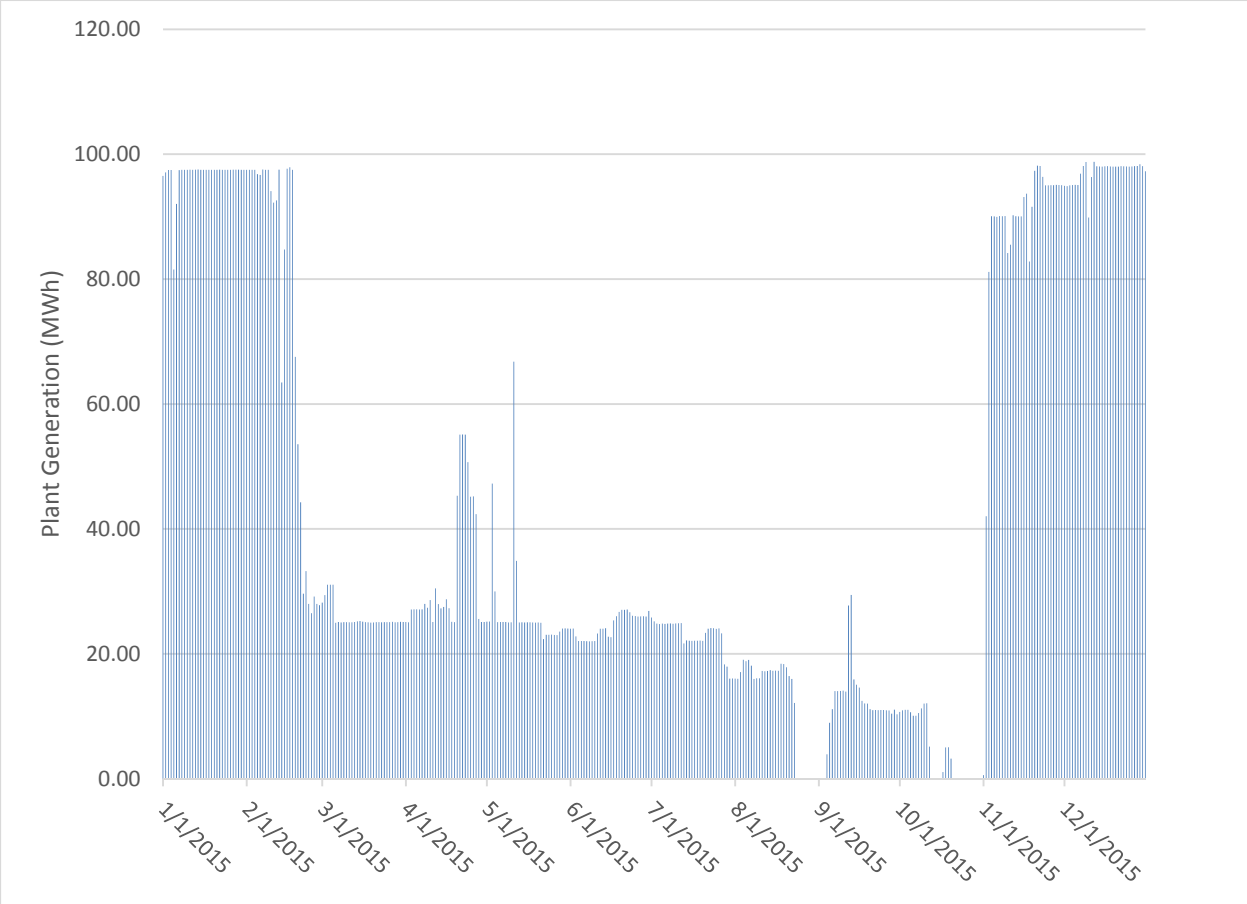


Figure 2-3. Daily plant generation, Jackson Hydroelectric Project, 2015.

2.2.2. Reservoir Elevation

Water surface elevation in Spada Lake Reservoir is partitioned into five states, which define how the Project is to be operated through the year. States 1 and 2 require full generation to withdraw 1,300 cfs for flood control. State 3 is a discretionary zone, which allows the District to operate in a range defined by the maximum of states 1, and 2 or minimum defined by State 4. State 4 requires minimum generation to maintain the instream flows for fish and habitat protection and water supply for the City of Everett. A fifth state (State 5) lies below reservoir elevation 1,380 feet msl. The Project does not operate in this state. During 2015, Spada Lake Reservoir was drafted and filled in accordance with the rule curves established for the Project (Figure 2-4).

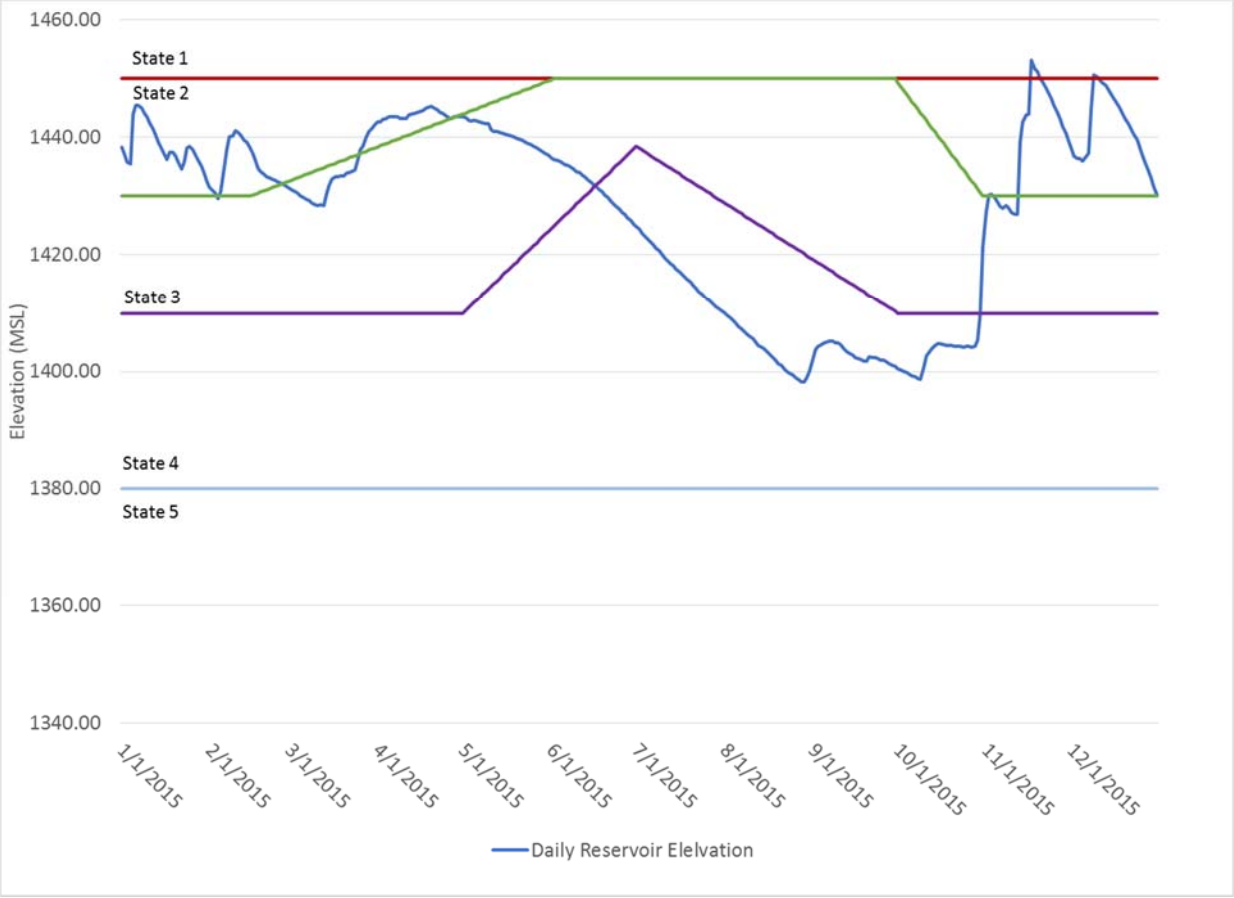


Figure 2-4. Daily water surface elevation, Spada Lake Reservoir, 2015.

2.3. Water Quality

Monthly sampling of water quality in Spada Lake Reservoir occurred on the following dates during 2015: April 16, May 12, June 11, July 15, August 11, September 17, October 15, and November 19. Sampling included profile measurements of conventional parameters including temperature, pH, dissolved oxygen, conductivity, and turbidity. Sampling was conducted cooperatively with the City of Everett during 2015, and included measurements of nutrients, phytoplankton, and zooplankton.

By summary, Spada Lake Reservoir was cold and thoroughly oxygenated during April and May. Temperature stratification was first evident during the May sampling session. Zooplankton, in particular *Holopedium*, had reached their summer maximum in June. The highest phytoplankton biovolume of the year was recorded in July. By July, the warmest water temperature was documented and the thermocline was set near 23 feet in depth. The effects of the thermocline on dissolved oxygen were apparent as dissolved oxygen levels below saturation persisted near the bottom of the reservoir during late summer / early fall. During the course of the year, most biological activity took place in the epi- and metalimnion. Additional information is provided below, by parameter.

2.3.1. Temperature

Spada Lake Reservoir temperatures ranged from 5.2 to 21.9°C depending on month and depth (Appendix A). Temperature stratification was first evident during the May sampling session. The middle of July had the warmest water temperatures. The thermocline was strongest in July and August. June and September also had a high resistance to mixing. The strongest point in the thermocline dropped from 23 to 26 feet over the course of the summer. The thermocline was still present in October; however, at the completion of the sampling season in November, the lake was isothermal.

2.3.2. pH

The highest measured pH was 7.4 in June. The lowest pH of 6.2 was measured in October at a depth of 125 feet, likely due to increased bacterial degradation of organic matter.

2.3.3. Dissolved Oxygen

Dissolved oxygen ranged from a low of 7.3 mg/L in October to a high of 11.4 mg/L in April. By saturation values, the maximum of 103% in June was likely due to primary production, and the minimum of 61% of saturation at depth in October was likely due to limited photosynthetic oxygen production and bacterial degradation of organic matter.

2.3.4. Turbidity

In April, May, June, July, and August, the surface was less turbid than at depth. Turbidities at the surface and at depth decreased through August. In September, there was a slight increase at depth. In November, turbidity increased throughout the water column as a result of peak inflows in the week preceding sampling. Through most of the season, the cut-off points between higher and lower turbidities can be traced back to the thermal structure of the reservoir.

2.3.5. Secchi Transparency

As shown in Table 2-2, Secchi transparency ranged from a high of 14 feet in May to low of 0.8 feet in November.

Table 2-2. Secchi transparency, Spada Lake Reservoir, 2015.

Date	Result (feet)
4/16/2015	13
5/12/2015	14
6/11/2015	13
7/15/2015	11
8/11/2015	11
9/17/2015	8
10/15/2015	7
11/19/2015	0.8

2.3.6. Nutrients

Total phosphorus concentrations were between 2.6 and 6.5 µg/L for most the summer, both at the surface and at depth. An increase in total phosphorous concentration was noted during November sampling. Total nitrogen was also relatively constant between 69.8 to 145.1 µg/L for most of the summer with an increase noted in October. Nitrate showed variation over time and depth, with values ranging between 0.0 and 136.1 µg/L. Silica concentrations were similar throughout the water column, ranging from 1,600 to 2,519 µg/L.

2.3.7. Phytoplankton

The greatest total volume (um^3/mL) of phytoplankton occurred in the July sample. After July, phytoplankton declined in number and increased in size and species diversity. *Cyanophyta* was the predominant taxon by total volume for the entire summer, 10-fold greater than *Chrysophyta* - second most by total volume. Small phytoplankton (unicellular chrysophytes, nanoplanktonic chlorophytes, and colonial-nonmotile cyanophytes) made up the bulk of the total volume of phytoplankton for most of the year. In situ chlorophyll and dissolved oxygen readings indicate that primary productivity took place predominantly between the surface and a depth of 30 feet.

2.3.8. Zooplankton

Holopedium were the dominant zooplankter in all samples except April, June, and August when *Epischura* (April and August) and *Conochilus* (June) were most common. In terms of peak density, *Holopedium* (4.26/L) and *Conochilus* (67.49/L) were highest in June. The largest diversity in zooplankton species occurred in the April sample. The total number of zooplankton/L was less than three on all sample dates but June (72.06/L).

3. RIVER MONITORING

3.1. Background

Maintaining suitable water temperatures in the Sultan River is an important aspect of the Project operation. Water temperature influences fish behavior, especially anadromous fish during the freshwater phase of their life cycle. The Sultan River produces Chinook, coho, chum and pink salmon, and steelhead trout plus resident fish species.

The Project's water storage and conveyance system is a complex of conduits moving water between two reservoirs with discharge into the Sultan River occurring at three facilities – Culmback Dam, Diversion Dam, and Powerhouse (Figure 3-1). At Culmback Dam, a 10-inch cone valve is used to variably release an annual water budget of 20,362 acre feet into Reach 3 of the Sultan River, immediately downstream of the dam. Further downstream, the additional water necessary to meet instream flow requirements (at the Diversion Dam) is routed through the Francis turbine units at the powerhouse, then the Lake Chaplain pipeline to a former City Water diversion tunnel connected to another water line discharging into the river at the Diversion Dam. Except for infrequent spill at Culmback Dam, these releases, plus tributary flows to the river, provide the instream flow for fish species throughout eleven river miles upstream from the powerhouse. Pelton turbines, which discharge directly to the river at RM 4.5, provide additional water when needed to meet minimum instream flow requirements below the powerhouse.

Water temperatures in Reach 3, immediately downstream of Culmback Dam, are seasonally influenced to a variable extent by releases through an auxiliary line down the face of Culmback Dam. The releases are described in detail in the annual reporting for the Water Temperature Conditioning Plan for Reach 3 (District 2010). Downstream, water temperatures at the Diversion Dam are influenced by the amount and depth of release at Culmback Dam (whether through the intake structure, cone or Howell-Bunger valves, or by spill), by tributary flows, and by meteorological conditions. Moveable panels at the Spada Lake Reservoir intake structure control the level and, hence, the temperature at which water is withdrawn from the reservoir to the powerhouse intake when conditions allow. When isothermal conditions exist in the reservoir, no change in water temperature can be achieved through moving the panels on the intake structure. The degree of temperature control possible by panel manipulation varies seasonally with the degree of temperature stratification in the reservoir. Panel position settings during 2015 are presented in Table 3-1.

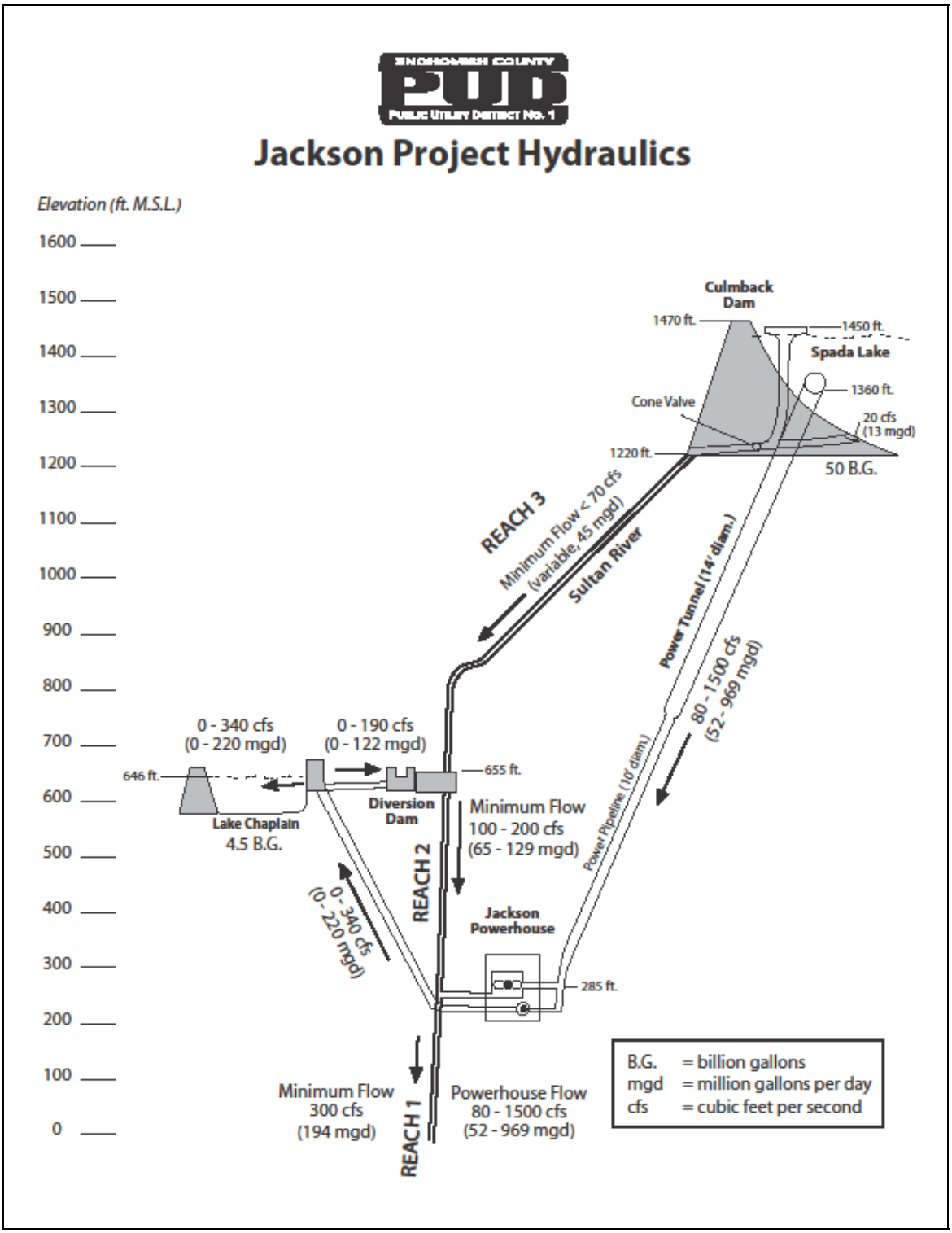


Figure 3-1. Schematic of water conveyance system associated with the Jackson Hydroelectric Project.

Table 3-1. Settings for selective temperature withdrawal panels, Spada Lake Reservoir, 2015.

Dates	Panel Setting	Upper Opening (elevation in feet msl)	Lower Opening (elevation in feet msl)
Beginning of year to 3/24/15	E	1,382.5 to 1,360	None
3/24/15 to 4/1/15	C	1,450 to 1,442.5	1,420 to 1,395
4/1/15 to 5/27/15	C	1,425 to 1,395	None
5/27/15 to 6/24/15	D	1,402.5 to 1,382.5	None
6/24/15 to 8/12/15	D-E	1,402.5 to 1,395	1,367.5 to 1,360
8/12/15 to 12/9/15	E	1,377.5 to 1,360	None
12/9/15 to end of year	E	1,387.5 to 1,360	None

3.2. Continuous Temperature Monitoring

The District continuously monitored water temperature at 13 locations within the Project area during 2015 (Figure 3-2). These locations, in order from upstream to downstream, include:

- South Fork Sultan River, upstream of Culmback Dam, near RM 18.2;
- Sultan River, within the bypass reach immediately downstream of Culmback Dam, at RM 15.8;
- Sultan River, within the bypass reach, near RM 14.3;
- Sultan River, within the bypass reach, near RM 12.8;
- Sultan River, within the bypass reach, near RM 11.3;
- Big Four Creek, tributary to Sultan River, near RM 11.3;
- Sultan River, within the bypass reach immediately upstream of the Diversion Dam, near RM 9.8;
- Sultan River, immediately downstream of the Diversion Dam, near RM 9.6;
- Sultan River, upstream of the Powerhouse, near RM 4.9;
- Sultan River, downstream of the Powerhouse, near RM 4.4,
- Sultan River, near the confluence with the Skykomish River, at RM 0.2;
- Skykomish River, upstream of the confluence with the Sultan River, at RM 14.1; and
- Skykomish River, downstream of the confluence with the Sultan River, at RM 13.2.

Water temperature monitoring at Sultan River RM 14.3, 12.8 and 11.3, are part of the Water Temperature Conditioning Plan monitoring sites for Reach 3; the remaining 10 stations are those required for monitoring under the WQMP.

In general, water temperatures in the Sultan Basin during 2015 were warmer than observed in the past. These warmer temperatures occurred earlier in the year than is typical. This regional pattern was evident throughout the Snohomish Basin and western Washington (Washington State Department of Ecology, 2016). During summer, high water temperatures were exacerbated by persistently low and record low flow conditions. Figures depicting water temperatures during 2015 are presented in Appendix B. A tabulation of all mean daily temperature data for 2015 is presented in Appendix C. The seven-day average of the daily maximum temperature (7-DAD Max) is presented in Appendix D. Data gaps are attributed to malfunctioning equipment or equipment lost due to vandalism.

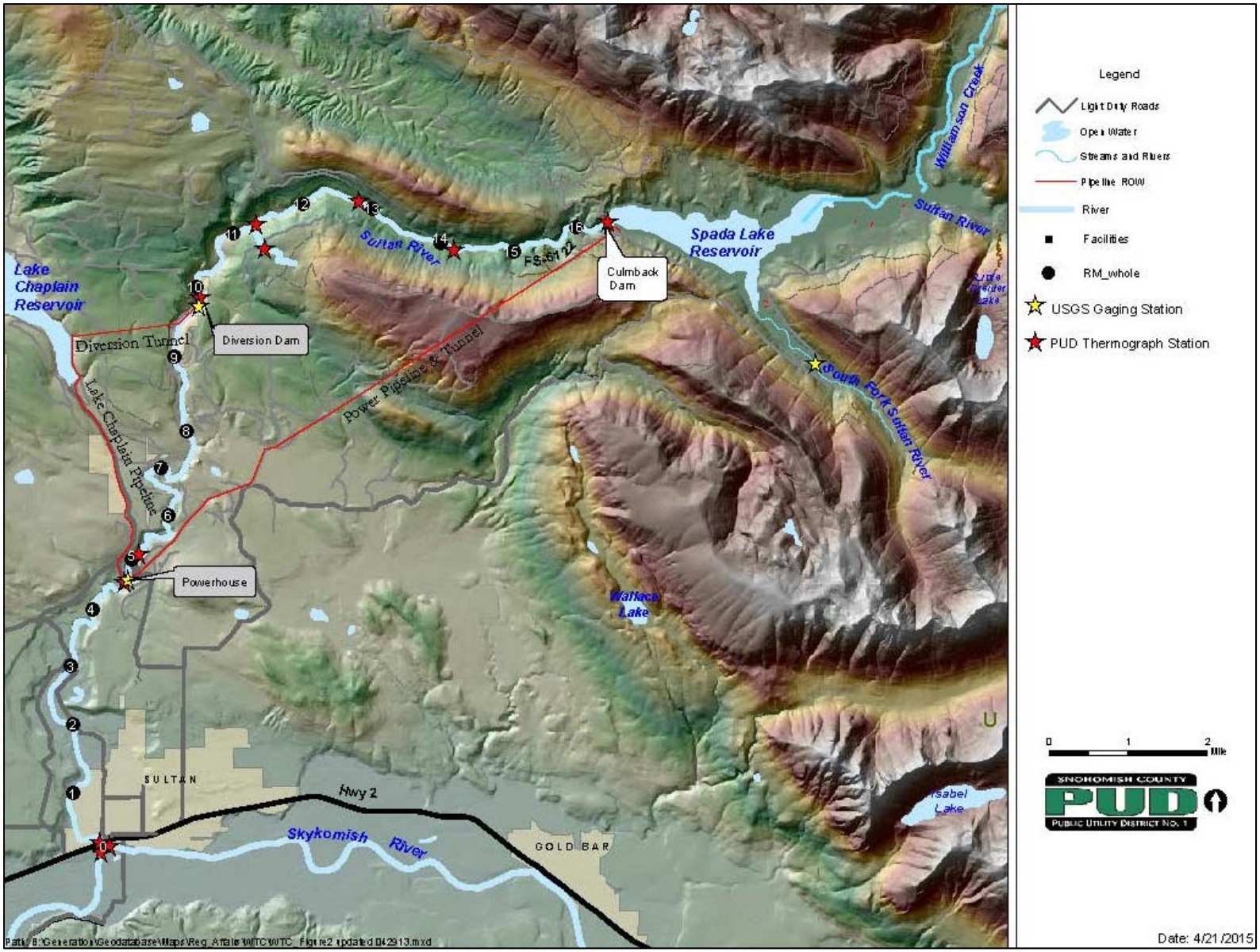


Figure 3-2. Locations of water temperature monitoring, Jackson Hydroelectric Project.

3.3. Synoptic Measurements of Water Quality

Synoptic measurements of water quality were collected during late spring, summer, and early fall 2015 at the South Fork Sultan River (tributary to Spada Lake Reservoir) and at two locations in the Sultan River downstream of Culmback Dam (Table 3-2).

Table 3-2. Synoptic monthly measurements of water quality, Sultan River, 2015.

Location	Date	Temp ºC	pH Units	TurbSC NTU	LDO mg/l
South Fork Sultan River (SF)					
	5/21/2015	12.7	7.2	2.1	10.0
	6/23/2015	13.8	7.0	0.2	10.1
	7/22/2015	14.4	6.9	0.2	9.8
	8/25/2015	14.3	7.0	0.1	10.2
	9/17/2015	10.0	6.8	0.0	10.6
	10/15/2015	8.8	7.1	0.2	11.4
Sultan River upstream of Diversion Dam (RM 9.8)					
	5/21/2015	15.8	7.5	2.6	9.7
	6/23/2015	14.7	7.2	1.5	10.3
	7/22/2015	12.0	7.2	2.1	11.0
	8/25/2015	11.0	7.1	3.4	11.4
	9/17/2015	12.3	6.9	3.2	9.8
	10/15/2015	7.7	7.2	3.3	12.1
Sultan River downstream of Powerhouse (RM 4.4)					
	5/21/2015	13.0	7.3	3.8	10.4
	6/23/2015	11.8	6.8	0.6	11.0
	7/22/2015	14.5	7.0	1.6	10.3
	8/25/2015	15.8	7.2	3.2	10.4
	9/17/2015	13.5	7.3	0.3	10.4
	10/15/2015	8.2	7.3	2.9	12.2

4. DATA QUALITY AND COMPLIANCE

Monitoring of water quality during 2015 adhered to the protocols and procedures outlined in the WQMP. All surveys locations and parameters of measurement were consistent with those outlined in the WQMP. All data were reviewed and accepted to accurately represent conditions at the time of sampling. During summer 2015, temperatures exceeded the state water temperature criteria at the monitoring site on the South Fork of the Sultan River (RM 18.2). Additionally, state temperature criteria were exceeded at six sites on the Sultan River, downstream of the

reservoir. These sites included RM 14.3, RM 12.8, RM 11.3, RM 9.8, RM 4.9, and RM 0.2. The Skykomish River was also subjected to record low flows during 2015. As a result, both stations on the Skykomish River also exceeded the state water temperature criteria. Project operations were conducted in accordance with License conditions throughout the sampling period.

5. REFERENCES

District. 2010. Water Temperature Conditioning Plan for Reach 3. Henry M. Jackson Hydroelectric Project (FERC No. 2157). 2010.

Washington State Department of Ecology. 2016. 2015 Drought Response: Summary Report. Publication no. 16-11-001. March 2016.

APPENDIX A

Monthly Reservoir Water Quality Sampling

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
4/16/2015	0	1.6	1442.9	8.5	20	7.0	11.4	0.2	1.3
4/16/2015	1	3.3	1441.2	8.5	20	7.1	11.4	0.3	1.4
4/16/2015	2	6.6	1437.9	8.3	20	7.1	11.4	0.3	1.3
4/16/2015	3	9.8	1434.7	8.0	20	7.1	11.4	0.2	1.4
4/16/2015	4	13.1	1431.4	7.7	20	7.1	11.4	0.2	1.4
4/16/2015	5	16.4	1428.1	7.6	20	7.1	11.4	0.4	1.4
4/16/2015	6	19.7	1424.8	7.6	20	7.1	11.4	0.3	1.4
4/16/2015	7	23.0	1421.4	7.6	20	7.1	11.4	0.4	1.6
4/16/2015	8	26.2	1418.3	7.5	20	7.1	11.4	0.6	1.5
4/16/2015	9	29.5	1415.0	7.4	20	7.0	11.4	0.4	1.6
4/16/2015	10	32.8	1411.6	7.4	20	7.0	11.4	0.3	1.5
4/16/2015	11	36.1	1408.4	7.0	21	7.0	11.3	0.3	1.6
4/16/2015	12	39.4	1405.0	6.9	21	7.0	11.3	0.2	3.0
4/16/2015	13	42.7	1401.8	6.7	20	6.9	11.3	0.2	2.0
4/16/2015	14	45.9	1398.6	6.5	20	6.9	11.2	0.2	2.0
4/16/2015	15	49.3	1395.2	6.4	20	6.9	11.2	0.1	2.1
4/16/2015	17	55.8	1388.7	6.3	20	6.9	11.2	0.3	2.2
4/16/2015	19	62.3	1382.2	6.1	20	6.8	11.2	0.1	2.2
4/16/2015	21	68.9	1375.6	5.9	20	6.8	11.1	0.3	2.3
4/16/2015	23	75.5	1369.0	5.8	20	6.8	11.0	0.1	2.5
4/16/2015	25	82.0	1362.5	5.7	20	6.8	11.0	0.3	2.5
4/16/2015	27	88.6	1355.9	5.7	20	6.8	11.0	0.2	2.7
4/16/2015	29	95.2	1349.3	5.6	20	6.7	10.9	0.2	2.5
4/16/2015	31	101.7	1342.8	5.4	20	6.7	10.9	0.2	2.6
4/16/2015	34	111.7	1332.8	5.4	20	6.7	10.9	0.2	2.6
4/16/2015	37	121.4	1323.1	5.3	20	6.7	10.9	0.3	2.9
4/16/2015	40	131.2	1313.2	5.2	20	6.7	10.8	0.2	3.8
4/16/2015	43	141.1	1303.4	5.2	20	6.7	10.8	0.2	4.1
4/16/2015	46	150.9	1293.6	5.2	20	6.7	10.7	0.4	4.2
4/16/2015	49	160.8	1283.6	5.2	20	6.7	10.6	0.2	4.9
4/16/2015	54	177.2	1267.3	5.2	20	6.7	10.5	0.3	5.8
4/16/2015	57	185.5	1259.0	5.2	20	6.7	10.4	0.3	5.5

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
5/12/2015	0	1.6	1439.4	12.8	22	7.3	10.6	0.3	1.0
5/12/2015	1	3.2	1437.8	12.7	22	7.3	10.6	0.3	1.0
5/12/2015	2	6.6	1434.4	12.3	22	7.3	10.6	0.3	0.9
5/12/2015	3	9.8	1431.3	12.1	22	7.3	10.7	0.6	0.9
5/12/2015	4	13.0	1428.1	12.0	22	7.3	10.7	0.5	0.9
5/12/2015	5	16.4	1424.7	12.0	22	7.3	10.7	0.6	1.0
5/12/2015	6	19.7	1421.3	11.8	22	7.3	10.7	0.4	1.0
5/12/2015	7	23.0	1418.0	11.6	23	7.3	10.7	0.5	1.0
5/12/2015	8	26.2	1414.8	9.7	22	7.2	10.9	0.5	0.9
5/12/2015	9	29.6	1411.5	8.8	22	7.1	10.9	0.3	0.9
5/12/2015	10	32.9	1408.2	8.2	22	7.1	10.9	0.2	0.9
5/12/2015	11	36.2	1404.9	7.4	21	7.0	11.0	0.2	1.0
5/12/2015	12	39.4	1401.7	7.2	21	7.0	11.0	0.2	1.2
5/12/2015	13	42.7	1398.3	7.0	21	7.0	10.9	0.2	1.2
5/12/2015	14	45.9	1395.2	6.8	21	6.9	10.9	0.1	1.2
5/12/2015	15	49.3	1391.8	6.6	21	6.9	11.0	0.1	1.3
5/12/2015	17	55.8	1385.2	6.3	21	6.9	10.9	0.1	1.4
5/12/2015	19	62.3	1378.7	6.2	21	6.9	10.9	0.1	1.7
5/12/2015	21	68.9	1372.2	6.1	21	6.8	10.8	0.0	1.9
5/12/2015	23	75.5	1365.5	6.0	21	6.8	10.8	0.0	1.7
5/12/2015	25	82.0	1359.0	5.9	21	6.8	10.8	0.1	2.0
5/12/2015	27	88.6	1352.4	5.9	21	6.8	10.7	0.1	2.2
5/12/2015	29	95.1	1345.9	5.8	21	6.8	10.7	0.2	2.3
5/12/2015	31	101.6	1339.4	5.7	21	6.7	10.6	0.1	2.5
5/12/2015	34	111.6	1329.5	5.7	21	6.7	10.6	0.1	2.8
5/12/2015	37	121.3	1319.7	5.6	20	6.7	10.6	0.0	2.8
5/12/2015	40	131.3	1309.8	5.5	20	6.7	10.5	0.1	3.3
5/12/2015	43	141.1	1300.0	5.4	20	6.7	10.5	0.2	3.5
5/12/2015	46	150.9	1290.1	5.4	20	6.7	10.5	0.2	4.1
5/12/2015	49	160.8	1280.2	5.4	20	6.7	10.4	0.2	5.0
5/12/2015	54	177.2	1263.9	5.4	21	6.7	10.2	0.3	6.7

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
6/11/2015	0	1.6	1430.4	19.7	24	7.4	9.2	0.1	1.2
6/11/2015	1	3.3	1428.7	19.7	24	7.4	9.2	0.2	1.2
6/11/2015	2	6.6	1425.4	19.4	24	7.4	9.3	0.1	1.2
6/11/2015	3	9.8	1422.2	19.3	24	7.4	9.3	0.2	1.3
6/11/2015	4	13.1	1418.9	19	24	7.4	9.3	0.2	1.1
6/11/2015	5	16.3	1415.7	19	24	7.4	9.3	0.1	1
6/11/2015	6	19.7	1412.3	17	25	7.4	10	0.3	0.8
6/11/2015	7	23.0	1409.0	13.4	24	7.4	10.7	0.3	0.7
6/11/2015	8	26.2	1405.8	11.1	23	7.3	10.9	0.5	0.9
6/11/2015	9	29.4	1402.6	9.1	22	7.1	10.8	0.7	0.9
6/11/2015	10	32.8	1399.2	8	22	7.0	10.8	0.6	0.9
6/11/2015	11	36.2	1395.8	7.4	22	6.9	10.7	0.3	1.1
6/11/2015	12	39.4	1392.6	7	22	6.8	10.7	0.3	1.2
6/11/2015	13	42.9	1389.1	6.8	21	6.8	10.7	0.3	1.3
6/11/2015	14	46.0	1386.0	6.6	21	6.8	10.6	0.2	1.6
6/11/2015	15	49.2	1382.8	6.5	21	6.8	10.7	0.2	1.6
6/11/2015	17	55.8	1376.2	6.4	21	6.8	10.7	0.1	1.7
6/11/2015	19	62.4	1369.6	6.2	21	6.7	10.7	0.2	1.8
6/11/2015	21	69.1	1362.9	6.1	21	6.7	10.7	0.2	2
6/11/2015	23	75.5	1356.5	6	21	6.7	10.6	0.1	2
6/11/2015	25	81.9	1350.1	6	21	6.7	10.7	0.3	2.1
6/11/2015	27	88.8	1343.3	5.9	21	6.7	10.7	0.2	2.2
6/11/2015	29	95.1	1336.9	5.9	21	6.7	10.6	0.1	2.2
6/11/2015	31	101.7	1330.3	5.8	21	6.7	10.6	0.1	2.2
6/11/2015	34	111.6	1320.4	5.7	21	6.7	10.6	0.2	2.3
6/11/2015	37	121.5	1310.6	5.6	21	6.7	10.5	0.2	2.9
6/11/2015	40	131.5	1300.5	5.6	21	6.7	10.3	0.3	3.7
6/11/2015	43	141.2	1290.9	5.5	21	6.6	10.2	0.3	3.7
6/11/2015	46	151.0	1281.0	5.5	21	6.6	10.1	0.1	4.3
6/11/2015	49	160.8	1271.2	5.4	21	6.6	10	0.2	4.7

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
7/15/2015	0	1.6	1416.1	21.9	28	7.3	8.4	0.1	1.7
7/15/2015	1	3.3	1414.3	21.9	28	7.3	8.4	0.2	1.6
7/15/2015	2	6.6	1411.1	21.8	28	7.4	8.4	0.1	1.6
7/15/2015	3	9.8	1407.9	21.8	28	7.3	8.4	0.2	1.6
7/15/2015	4	13.1	1404.6	21.7	28	7.3	8.4	0.3	1.7
7/15/2015	5	16.4	1401.3	21.7	28	7.3	8.3	0.3	1.6
7/15/2015	6	19.7	1398.0	21.6	28	7.3	8.3	0.4	1.8
7/15/2015	7	23.0	1394.7	20.4	27	7.2	8.7	0.5	1.7
7/15/2015	8	26.2	1391.5	15.9	25	7.1	9.2	0.4	1.9
7/15/2015	9	29.5	1388.1	11.4	24	7.0	9.4	0.4	1.4
7/15/2015	10	32.8	1384.9	9.3	23	7.0	9.5	0.2	1.2
7/15/2015	11	36.1	1381.5	7.8	23	6.8	9.6	0.3	1.4
7/15/2015	12	39.5	1378.2	7.2	22	6.7	9.4	0.1	1.8
7/15/2015	13	42.7	1375.0	6.9	22	6.7	9.6	0.3	1.8
7/15/2015	14	45.8	1371.9	6.7	22	6.7	9.7	0.2	2.0
7/15/2015	15	49.2	1368.5	6.6	22	6.6	9.7	0.3	1.9
7/15/2015	17	55.9	1361.8	6.4	22	6.7	9.8	0.3	1.9
7/15/2015	19	62.3	1355.4	6.3	22	6.6	9.8	0.1	2.1
7/15/2015	21	68.9	1348.8	6.2	22	6.6	9.9	0.3	2.1
7/15/2015	23	75.8	1341.9	6.1	22	6.6	10.0	0.6	2.0
7/15/2015	25	81.9	1335.7	6.1	22	6.6	10.0	0.2	2.1
7/15/2015	27	88.4	1329.3	6.0	21	6.6	10.1	0.2	2.3
7/15/2015	29	95.0	1322.7	5.9	21	6.6	10.1	0.2	2.1
7/15/2015	31	101.8	1315.9	5.9	21	6.6	10.1	0.3	2.3
7/15/2015	34	111.4	1306.2	5.8	21	6.6	9.9	0.3	2.8
7/15/2015	37	121.5	1296.2	5.7	21	6.6	9.8	0.3	2.9
7/15/2015	40	131.2	1286.5	5.7	22	6.6	9.7	0.2	3.1
7/15/2015	43	141.2	1276.5	5.6	22	6.5	9.4	0.2	3.4
7/15/2015	46	150.9	1266.8	5.6	22	6.5	9.2	0.3	3.9
7/15/2015	47	154.6	1263.1	5.6	22	6.5	8.9	0.3	4.5
7/15/2015	49	160.9	1256.8	5.6	22	6.4	8.4	0.2	4.9

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
8/11/2015	0	1.6	1404.0	21.5	29	7.0	8.5	0.0	1.2
8/11/2015	1	3.3	1402.3	21.4	29	7.2	8.5	0.0	1.3
8/11/2015	2	6.6	1399.0	21.2	29	7.2	8.5	0.2	1.4
8/11/2015	3	9.8	1395.7	21.2	29	7.2	8.4	0.1	1.4
8/11/2015	4	13.1	1392.5	21.2	29	7.2	8.4	0.3	1.5
8/11/2015	5	16.4	1389.2	21.2	30	7.2	8.4	0.1	1.5
8/11/2015	6	19.7	1385.9	21.1	30	7.2	8.4	0.2	1.5
8/11/2015	7	23.0	1382.5	21.0	30	7.2	8.4	0.2	1.6
8/11/2015	8	26.3	1379.3	17.0	27	7.0	8.2	0.4	1.4
8/11/2015	9	29.5	1376.1	12.0	24	6.9	8.3	0.2	1.6
8/11/2015	10	32.8	1372.8	8.8	23	6.8	8.4	0.2	1.2
8/11/2015	11	36.1	1369.5	7.4	22	6.7	8.9	0.2	0.8
8/11/2015	12	39.4	1366.2	7.2	22	6.6	9.1	0.1	0.9
8/11/2015	13	42.7	1362.9	6.8	22	6.6	9.2	0.0	1.3
8/11/2015	14	45.9	1359.7	6.6	22	6.6	9.4	0.1	1.6
8/11/2015	15	49.2	1356.3	6.5	22	6.5	9.4	0.1	1.8
8/11/2015	17	55.7	1349.8	6.4	22	6.5	9.4	0.2	1.9
8/11/2015	19	62.3	1343.2	6.2	22	6.5	9.6	0.0	1.8
8/11/2015	21	68.8	1336.8	6.2	22	6.5	9.7	0.0	1.9
8/11/2015	23	75.5	1330.1	6.1	22	6.5	9.8	0.0	2.0
8/11/2015	25	81.9	1323.6	6.1	22	6.5	9.8	0.1	2.3
8/11/2015	27	88.6	1317.0	6.0	21	6.5	9.8	-0.1	2.4
8/11/2015	29	95.2	1310.3	5.9	22	6.5	9.6	-0.1	2.4
8/11/2015	31	101.7	1303.9	5.9	22	6.4	9.5	0.2	2.4
8/11/2015	34	111.5	1294.0	5.8	22	6.4	9.3	0.0	2.8
8/11/2015	37	121.4	1284.2	5.8	22	6.4	9.0	0.1	3.0
8/11/2015	40	131.2	1274.4	5.8	22	6.4	8.9	0.0	3.5

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
9/17/2015	0	1.6	1400.6	16.6	31	7.1	9.4	0.6	2.0
9/17/2015	1	3.4	1398.9	16.4	31	7.2	9.4	0.6	2.2
9/17/2015	2	6.6	1395.6	16.4	31	7.2	9.4	0.8	2.2
9/17/2015	3	9.8	1392.4	16.3	31	7.2	9.3	0.7	2.1
9/17/2015	4	13.1	1389.1	16.3	31	7.2	9.3	0.7	2.1
9/17/2015	5	16.4	1385.8	16.3	31	7.2	9.3	0.6	2.2
9/17/2015	6	19.7	1382.5	16.3	31	7.2	9.3	0.7	2.4
9/17/2015	7	23.1	1379.1	16.3	31	7.2	9.3	0.5	2.6
9/17/2015	8	26.2	1376.0	15.9	32	7.1	9.0	0.3	2.5
9/17/2015	9	29.5	1372.7	14.1	28	7.0	8.6	0.1	2.6
9/17/2015	10	32.8	1369.4	13.8	28	6.9	8.4	0.2	2.9
9/17/2015	11	36.1	1366.1	12.3	27	6.8	8.0	0.1	2.9
9/17/2015	12	39.4	1362.8	9.7	24	6.6	7.6	0.2	2.3
9/17/2015	13	42.7	1359.6	7.6	23	6.6	7.9	0.1	1.5
9/17/2015	14	45.9	1356.3	7.1	23	6.6	8.1	0.2	1.4
9/17/2015	15	49.3	1352.9	6.8	22	6.5	8.3	0.1	1.3
9/17/2015	17	55.7	1346.5	6.6	22	6.5	8.4	0.0	1.4
9/17/2015	19	62.3	1339.9	6.5	22	6.5	8.7	0.2	1.4
9/17/2015	21	68.7	1333.5	6.4	22	6.5	8.9	0.1	1.7
9/17/2015	23	75.6	1326.7	6.3	22	6.5	8.9	0.2	1.9
9/17/2015	25	82.0	1320.2	6.2	22	6.5	9.0	0.0	2.0
9/17/2015	27	88.5	1313.7	6.2	22	6.5	9.0	0.1	2.4
9/17/2015	29	95.1	1307.1	6.1	22	6.4	9.0	0.2	2.5
9/17/2015	31	101.7	1300.5	6.0	22	6.4	9.0	0.1	2.6
9/17/2015	34	111.7	1290.5	6.0	22	6.4	8.8	0.1	2.8
9/17/2015	37	121.3	1280.9	5.9	23	6.3	8.4	0.1	3.4
9/17/2015	39	128.1	1274.2	5.9	23	6.3	7.9	0.0	3.9

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
10/15/2015	0	1.6	1403.1	13.4	32	7.1	9.3	0.1	3.0
10/15/2015	1	3.3	1401.4	13.4	32	7.0	9.3	0.4	3.0
10/15/2015	2	6.6	1398.1	13.4	32	7.0	9.2	0.2	3.0
10/15/2015	3	9.8	1394.9	13.3	32	7.0	9.2	0.2	3.0
10/15/2015	4	13.1	1391.6	13.3	32	7.0	9.2	0.3	3.0
10/15/2015	5	16.4	1388.3	13.3	32	6.9	9.2	0.2	3.0
10/15/2015	6	19.7	1385.0	13.3	32	6.9	9.2	0.4	3.1
10/15/2015	7	23.0	1381.7	13.3	32	6.9	9.2	0.2	3.1
10/15/2015	8	26.2	1378.5	13.3	32	6.9	9.2	0.3	3.1
10/15/2015	9	29.5	1375.2	13.3	32	6.9	9.1	0.1	3.1
10/15/2015	10	32.9	1371.8	13.3	32	6.9	9.1	0.3	3.2
10/15/2015	11	36.2	1368.5	12.6	29	6.8	8.9	0.4	8.2
10/15/2015	12	39.4	1365.3	11.8	29	6.6	8.4	0.3	6.0
10/15/2015	13	42.6	1362.1	11.5	28	6.6	8.1	0.1	7.6
10/15/2015	14	45.9	1358.8	11.1	27	6.6	8.0	0.3	9.1
10/15/2015	15	49.3	1355.4	10.6	27	6.5	7.8	0.1	7.6
10/15/2015	17	55.9	1348.8	8.8	25	6.4	7.3	0.2	4.1
10/15/2015	19	62.3	1342.3	7.3	24	6.4	7.4	0.0	3.0
10/15/2015	21	68.9	1335.8	6.9	23	6.3	7.6	0.0	2.5
10/15/2015	23	75.6	1329.1	6.7	23	6.3	7.8	0.1	1.6
10/15/2015	25	82.1	1322.6	6.5	23	6.3	8.0	0.2	1.3
10/15/2015	27	88.5	1316.2	6.4	23	6.3	8.4	0.1	1.4
10/15/2015	29	95.2	1309.5	6.3	23	6.3	8.5	0.0	1.5
10/15/2015	31	101.8	1302.9	6.2	23	6.3	8.5	0.2	1.9
10/15/2015	34	111.6	1293.0	6.1	23	6.3	8.2	0.1	2.2
10/15/2015	37	121.4	1283.3	6.0	24	6.2	7.8	0.2	3.1
10/15/2015	38	125.4	1279.3	6.0	24	6.2	7.6	0.1	3.1
10/15/2015	40	131.2	1273.5	6.0	23	6.2	7.7	0.5	12.3

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
11/19/2015	0	1.4	1449.9	7.9	22	6.6	10.7	0.5	36.0
11/19/2015	1	3.3	1448.0	7.9	22	6.6	10.6	0.5	35.3
11/19/2015	2	6.6	1444.7	7.9	22	6.6	10.6	0.5	33.7
11/19/2015	3	9.6	1441.7	7.9	22	6.6	10.6	0.5	33.6
11/19/2015	4	13.2	1438.1	7.9	22	6.6	10.6	0.6	34.4
11/19/2015	5	16.4	1434.9	7.9	22	6.6	10.6	0.5	34.8
11/19/2015	6	19.6	1431.7	7.9	22	6.6	10.6	0.5	37.1
11/19/2015	7	23.0	1428.3	7.9	22	6.6	10.6	0.6	33.9
11/19/2015	8	26.2	1425.1	7.9	22	6.6	10.5	0.4	32.3
11/19/2015	9	29.5	1421.8	7.9	22	6.6	10.5	0.5	37.5
11/19/2015	10	33.4	1417.9	7.9	22	6.6	10.5	0.5	34.8
11/19/2015	11	36.2	1415.1	7.9	22	6.6	10.5	0.5	34.6
11/19/2015	12	38.4	1412.9	7.9	22	6.6	10.5	0.5	33.6
11/19/2015	13	42.9	1408.4	7.9	22	6.6	10.5	0.4	31.0
11/19/2015	14	46.0	1405.3	7.9	22	6.6	10.5	0.5	38.7
11/19/2015	15	49.3	1402.0	7.9	22	6.6	10.5	0.6	36.9
11/19/2015	17	55.8	1395.5	7.9	22	6.6	10.4	0.6	38.7
11/19/2015	19	62.2	1389.1	7.8	22	6.6	10.4	0.5	37.6
11/19/2015	21	68.8	1382.5	7.6	21	6.6	10.4	0.8	55.2
11/19/2015	23	75.6	1375.7	7.5	21	6.5	10.0	0.8	71.9
11/19/2015	25	81.9	1369.4	7.5	20	6.5	10.0	1.0	92.2
11/19/2015	27	88.6	1362.7	7.5	20	6.5	10.2	1.2	100.5
11/19/2015	29	95.2	1356.1	7.5	20	6.6	10.4	1.1	122.5
11/19/2015	31	101.7	1349.6	7.5	20	6.5	10.5	1.3	129.5
11/19/2015	34	111.5	1339.8	7.4	19	6.5	10.6	1.7	157.1
11/19/2015	37	121.5	1329.8	7.4	19	6.5	10.7	1.6	165.2
11/19/2015	40	131.4	1319.9	7.3	18	6.6	10.8	1.9	185.4
11/19/2015	43	141.1	1310.2	7.2	18	6.6	10.8	2.0	188.0
11/19/2015	46	150.9	1300.4	7.1	18	6.6	10.9	2.0	195.1
11/19/2015	49	160.6	1290.7	7.1	18	6.6	10.9	2.0	202.2
11/19/2015	54	177.2	1274.1	7.1	18	6.6	10.9	2.1	186.4
11/19/2015	59	193.7	1257.6	7.0	18	6.6	10.8	2.1	211.2

APPENDIX B

Continuous Water Temperature Monitoring – Figures

Figure B-1. Mean Daily Water Temperature in the South Fork Sultan River, upstream of Culmback Dam (RM 18.2), and in the mainstem Sultan River immediately downstream of Culmback Dam (RM 15.8) during 2015

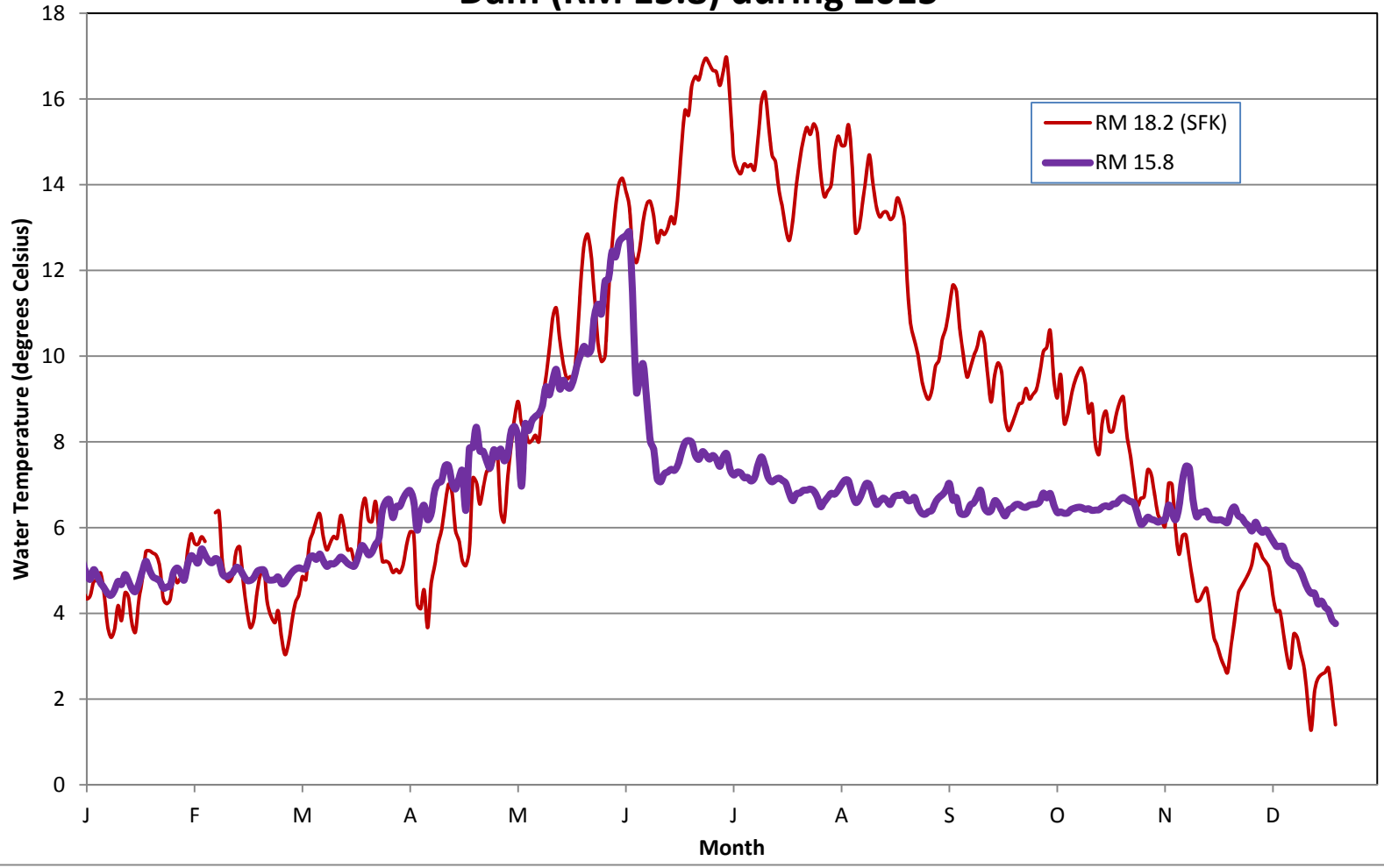


Figure B-2. Longitudinal Depiction of Mean Daily Water Temperature in the Bypass Reach (Reach 3) of the Sultan River during 2015

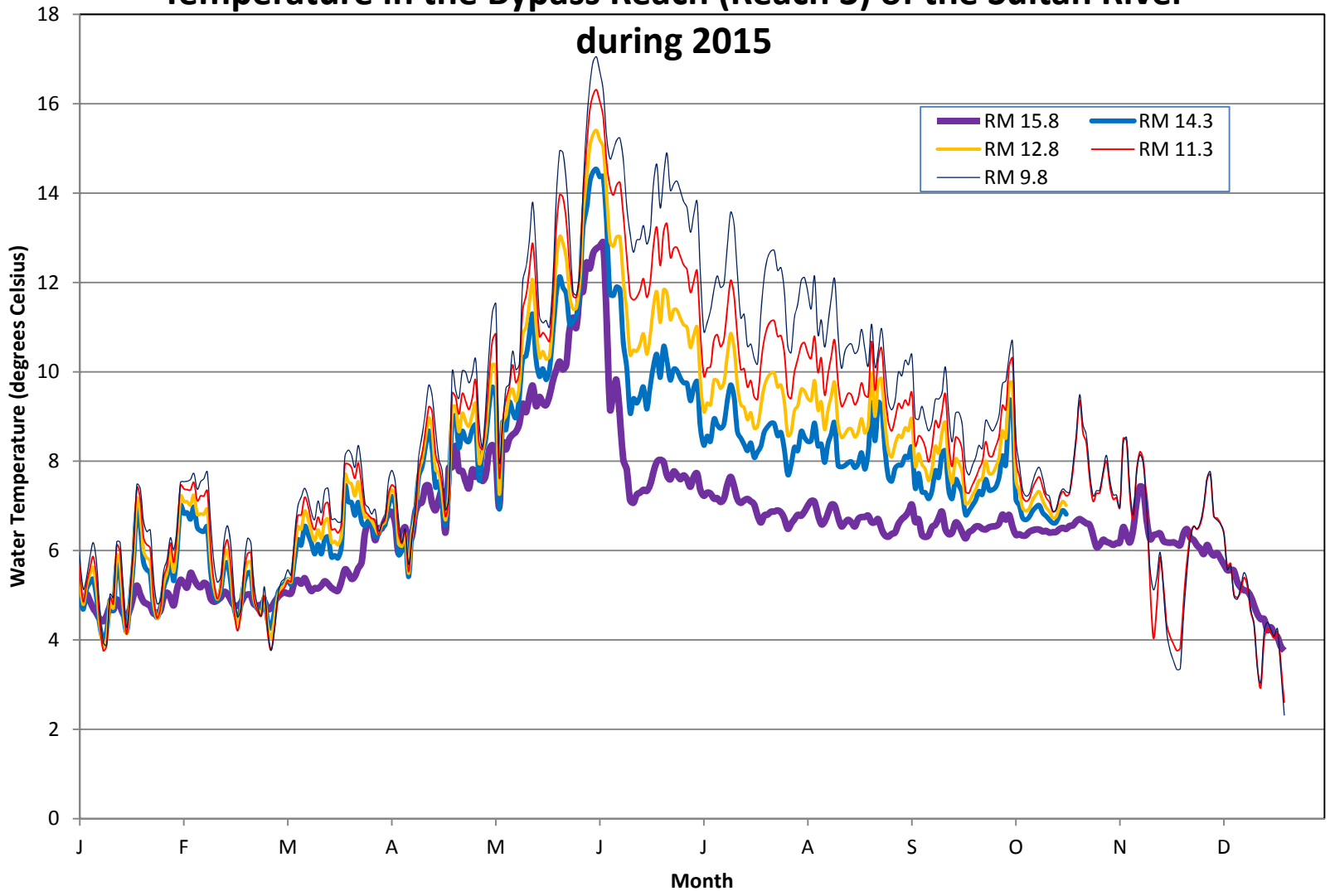


Figure B-3. Longitudinal Depiction of Mean Daily Water Temperature, Sultan River downstream of Culmback Dam, 2015

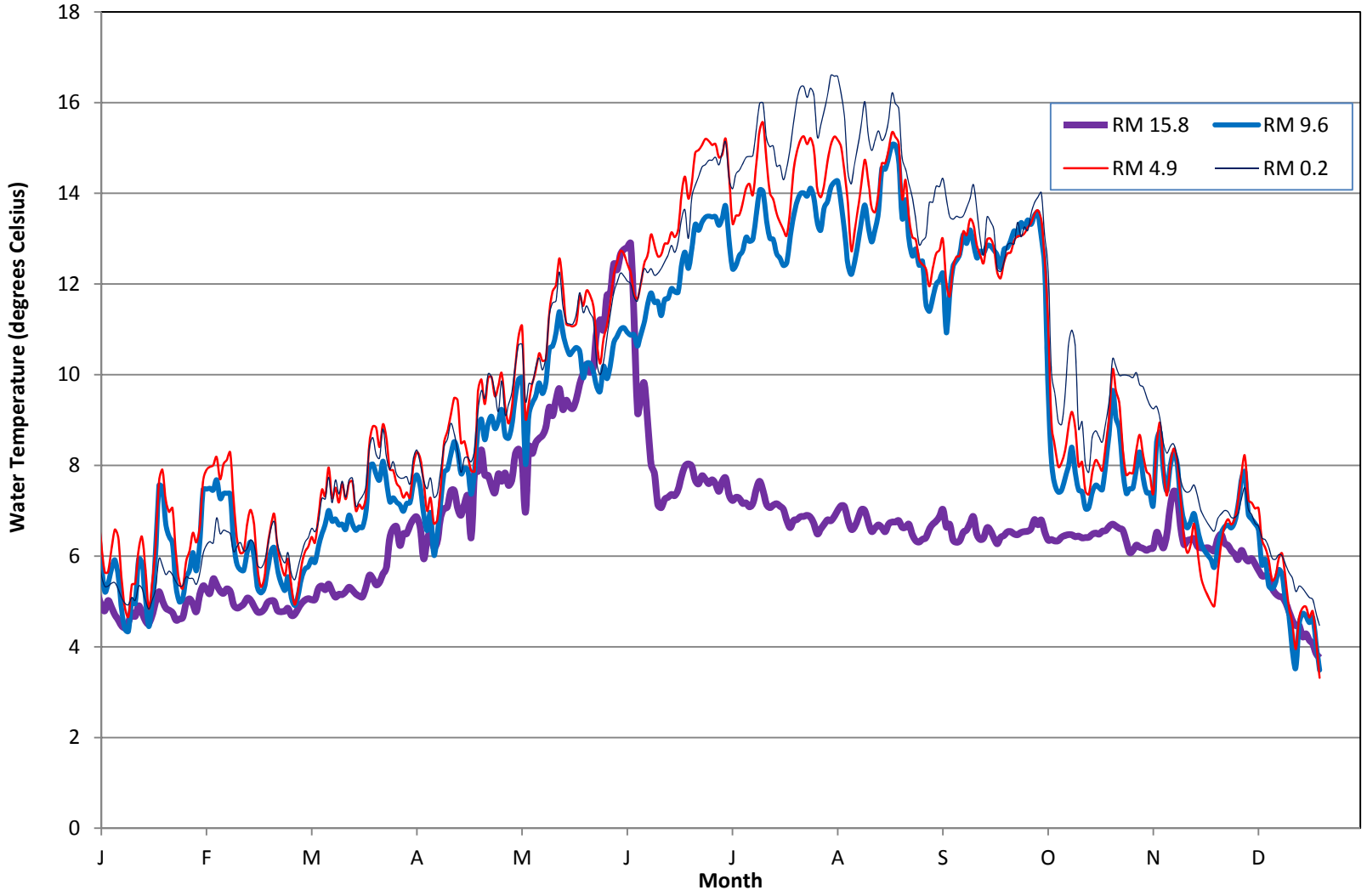
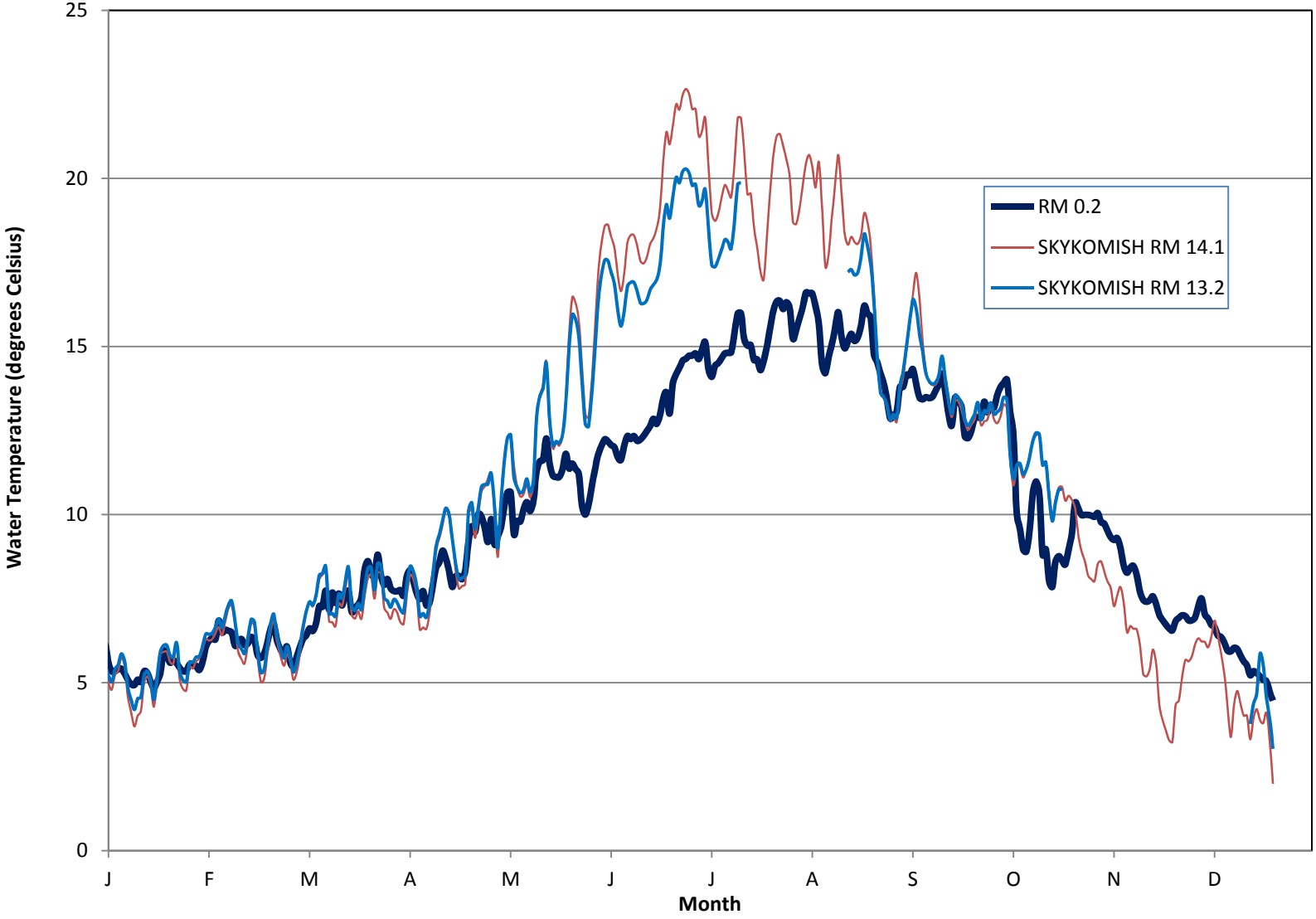


Figure B-4. Mean Daily Water Temperature near confluence of Sultan and Skykomish rivers, 2015



APPENDIX C

Continuous Daily Water Temperature Data in Tabular Format

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
1/1	2.8	5.0	4.2	4.1	3.9	4.0	4.5	4.5	5.2	5.3	4.0	3.9	4.4
1/2	2.9	5.0	4.4	4.3	4.1	4.2	4.6	4.6	5.3	5.4	4.1	3.9	4.4
1/3	3.2	5.1	4.6	4.6	4.5	4.6	5.0	4.9	5.6	5.6	4.4	4.0	4.5
1/4	3.6	5.1	4.9	4.9	4.9	5.0	5.3	5.4	5.7	5.7	4.9	4.4	4.8
1/5	3.9	5.1	5.1	5.2	5.2	5.4	5.6	5.8	5.7	5.7	5.3	4.7	5.1
1/6	4.2	5.1	5.3	5.4	5.4	5.7	5.7	6.0	5.8	5.8	5.6	4.9	5.2
1/7	4.5	5.1	5.4	5.6	5.7	5.9	5.9	6.3	5.8	5.8	6.0	5.1	5.4
1/8	4.8	5.1	5.6	5.8	5.9	6.2	6.1	6.5	5.8	5.8	6.3	5.3	5.5
1/9	4.9	5.0	5.5	5.7	5.8	6.1	6.0	6.5	5.6	5.7	6.3	5.5	5.6
1/10	4.7	4.9	5.3	5.4	5.6	5.9	5.8	6.4	5.3	5.5	6.1	5.4	5.6
1/11	4.6	4.8	5.1	5.2	5.3	5.6	5.5	6.2	5.2	5.4	5.9	5.3	5.5
1/12	4.5	4.8	5.0	5.1	5.2	5.5	5.4	6.0	5.1	5.3	5.8	5.2	5.4
1/13	4.4	4.7	5.0	5.1	5.2	5.4	5.4	6.0	5.1	5.3	5.7	5.0	5.3
1/14	4.3	4.7	4.9	5.0	5.1	5.3	5.3	5.9	5.1	5.2	5.7	4.9	5.2
1/15	4.3	4.8	5.0	5.1	5.2	5.3	5.3	5.8	5.1	5.2	5.7	4.7	5.1
1/16	4.2	4.8	5.0	5.1	5.2	5.3	5.3	5.8	5.1	5.2	5.6	4.7	5.0
1/17	4.2	4.8	5.1	5.2	5.3	5.4	5.4	5.8	5.0	5.2	5.7	4.7	5.0
1/18	4.3	4.8	5.2	5.2	5.4	5.5	5.4	5.8	5.0	5.2	5.7	4.8	5.0
1/19	4.4	4.8	5.2	5.3	5.5	5.7	5.5	6.0	5.0	5.2	5.8	5.0	5.2
1/20	4.5	4.9	5.4	5.6	5.8	5.9	5.7	6.2	5.1	5.3	6.0	5.2	5.4
1/21	4.7	4.9	5.7	5.9	6.1	6.2	6.1	6.5	5.3	5.4	6.2	5.4	5.6
1/22	4.8	5.0	5.8	6.0	6.2	6.4	6.3	6.7	5.4	5.5	6.4	5.6	5.7
1/23	5.0	5.0	5.9	6.1	6.3	6.5	6.5	6.9	5.5	5.5	6.6	5.6	5.8
1/24	5.2	5.0	6.0	6.2	6.4	6.6	6.6	7.0	5.6	5.6	6.8	5.7	5.9
1/25	5.4	5.1	6.2	6.4	6.7	6.9	6.9	7.3	5.7	5.7	7.1	6.0	6.1
1/26	5.4	5.0	6.2	6.4	6.7	6.9	6.9	7.4	5.7	5.8	7.2	6.0	6.2
1/27	5.3	5.0	5.9	6.1	6.3	6.6	6.6	7.3	5.7	5.8	7.1	5.9	6.1
1/28	5.2	4.9	5.6	5.8	6.0	6.3	6.3	6.9	5.5	5.7	6.9	5.8	5.9
1/29	5.1	4.9	5.4	5.5	5.7	6.0	6.0	6.6	5.5	5.7	6.7	5.7	5.8
1/30	5.0	4.9	5.3	5.5	5.6	5.9	5.8	6.4	5.4	5.6	6.5	5.7	5.8
1/31	4.9	5.0	5.4	5.5	5.6	5.9	5.8	6.4	5.4	5.6	6.4	5.7	5.8

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
2/1	4.9	5.0	5.2	5.3	5.4	5.6	5.5	5.9	5.4	5.5	6.3	5.5	5.6
2/2	4.7	5.1	5.4	5.5	5.7	5.8	5.7	6.1	5.3	5.5	6.2	5.4	5.6
2/3	4.8	4.9	5.8	6.0	6.2	6.3	6.1	6.5	5.3	5.5	6.4	5.6	5.8
2/4	4.8	4.8	5.3	5.5	5.7	6.0	5.7	6.3	5.2	5.4	6.2	5.7	5.8
2/5	5.5	5.1	6.0	6.2	6.4	6.5	6.3	6.6	5.5	5.6	6.9	6.0	6.1
2/6	5.9	5.3	7.0	7.2	7.5	7.5	7.5	7.7	6.1	6.1	7.5	6.3	6.4
2/7	5.6	5.3	6.8	7.1	7.4	7.5	7.5	7.9	6.2	6.2	7.4	6.3	6.4
2/8	5.6	5.2	6.8	7.1	7.4	7.6	7.5	8.0	6.3	6.3	7.4	6.3	6.5
2/9	5.8	5.5	6.7	7.0	7.4	7.6	7.5	8.0	6.2	6.3	7.5	6.5	6.7
2/10	5.7	5.4	7.0	7.2	7.5	7.7	7.7	8.2	7.0	6.8	7.5	6.7	6.9
2/11		5.2	6.5	6.8	7.1	7.4	7.3	7.7	6.4	6.5	7.4	6.4	6.6
2/12		5.2	6.4	6.8	7.2	7.5	7.4	8.0	6.4	6.6	7.6	6.8	7.0
2/13	6.4	5.3	6.4	6.8	7.2	7.6	7.4	8.1	6.3	6.5	8.0	7.2	7.3
2/14	6.4	5.2	6.5	6.9	7.3	7.8	7.4	8.3	6.6	6.5	7.9	7.3	7.4
2/15	5.2	4.9	5.5	5.8	6.1	6.6	6.3	7.2	6.0	6.1	6.8	6.8	6.8
2/16	4.8	4.9	5.1	5.2	5.3	5.7	5.8	6.4	6.1	6.2	6.3	5.9	6.2
2/17	4.7	4.9	4.9	4.9	4.9	5.3	5.7	6.1	6.1	6.3	6.3	5.7	6.0
2/18	4.9	4.9	5.1	5.2	5.2	5.4	5.7	6.1	5.9	6.1	6.3	5.6	5.9
2/19	5.5	5.1	5.6	5.8	6.0	6.2	6.1	6.7	6.0	6.2	6.8	6.2	6.3
2/20	5.5	5.0	5.7	6.0	6.2	6.6	6.3	7.0	6.3	6.4	6.8	6.8	6.9
2/21	4.7	4.9	5.3	5.5	5.7	6.1	6.0	6.7	6.1	6.3	6.1	6.7	6.8
2/22	4.1	4.8	4.7	4.7	4.7	5.0	5.3	5.8	5.7	5.8	5.5	5.7	5.9
2/23	3.7	4.8	4.4	4.3	4.2	4.5	5.2	5.3	5.7	5.7	5.0	5.0	5.3
2/24	3.8	4.8	4.8	4.7	4.6	4.7	5.3	5.5	5.7	5.9	5.1	5.1	5.4
2/25	4.5	5.0	5.3	5.4	5.5	5.7	5.7	6.2	6.0	6.2	5.7	5.8	6.1
2/26	4.9	5.0	5.5	5.7	5.9	6.3	6.1	6.7	6.3	6.6	6.0	6.5	6.8
2/27	5.0	5.0	5.5	5.7	5.9	6.2	6.2	6.9	6.5	6.8	6.1	6.8	7.0
2/28	4.2	4.8	4.8	4.9	4.9	5.2	5.7	6.2	6.1	6.2	5.5	6.2	6.4

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
3/1	3.8	4.8	4.6	4.6	4.5	4.5	5.2	5.6	5.7	5.9	5.0	5.5	5.7
3/2	4.1	4.8	4.9	5.0	5.0	5.2	5.5	5.9	5.8	6.1	5.1	5.9	6.1
3/3	3.4	4.7	4.4	4.3	4.1	4.3	5.1	5.3	5.5	5.6	4.3	5.6	5.8
3/4	3.0	4.7	4.3	4.0	3.8	3.8	4.9	4.9	5.4	5.5	3.8	5.1	5.3
3/5	3.3	4.8	4.6	4.4	4.2	4.2	5.1	5.3	5.6	5.8	4.1	5.3	5.6
3/6	3.8	5.0	5.0	5.0	4.9	5.0	5.5	5.8	5.8	6.1	4.7	5.8	6.1
3/7	4.2	5.0	5.2	5.1	5.1	5.3	5.7	6.1	6.0	6.3	5.2	6.5	6.7
3/8	4.4	5.1	5.3	5.2	5.2	5.4	5.8	6.2	6.1	6.4	5.4	7.1	7.1
3/9	4.9	5.0	5.3	5.4	5.3	5.6	5.9	6.4	6.3	6.6	5.7	7.4	7.4
3/10	4.8	5.0	5.3	5.3	5.3	5.5	5.9	6.3	6.2	6.5	5.6	7.3	7.3
3/11	5.6	5.3	5.8	6.0	6.2	6.3	6.2	6.9	6.5	6.8	6.4	7.6	7.6
3/12	5.9	5.3	6.2	6.5	6.8	7.0	6.5	7.5	6.7	7.3	7.0	8.1	8.2
3/13	6.2	5.3	6.1	6.5	6.8	7.2	6.7	7.3	7.0	7.3	7.3	8.2	8.3
3/14	6.3	5.4	6.5	6.9	7.2	7.4	7.0	8.0	7.4	7.7	7.9	8.3	8.5
3/15	5.8	5.2	6.4	6.7	7.0	7.2	6.8	7.3	7.1	7.2	7.5	6.8	7.1
3/16	5.5	5.1	6.2	6.4	6.6	6.9	6.8	7.5	7.2	7.7	6.8	6.8	7.1
3/17	5.6	5.2	5.9	6.2	6.5	6.7	6.7	7.2	7.0	7.4	7.0	6.7	7.0
3/18	5.8	5.2	6.1	6.5	6.7	7.1	6.7	7.6	7.2	7.7	7.0	7.4	7.6
3/19	5.8	5.2	5.9	6.3	6.6	6.8	6.6	7.3	7.0	7.3	7.1	7.3	7.5
3/20	6.3	5.3	6.3	6.7	7.0	7.4	6.9	7.6	7.3	7.7	7.6	7.8	8.0
3/21	6.0	5.3	6.3	6.7	7.1	7.4	6.7	7.6	7.2	7.7	7.6	8.2	8.4
3/22	5.5	5.2	5.9	6.2	6.5	6.7	6.6	7.0	6.9	7.1	6.9	7.0	7.3
3/23	5.5	5.1	5.9	6.2	6.5	6.7	6.6	7.1	7.0	7.2	6.7	6.9	7.1
3/24	5.2	5.1	5.8	6.1	6.4	6.6	6.6	7.0	6.9	7.3	6.5	7.1	7.4
3/25	5.4	5.3	6.1	6.4	6.6	6.7	7.0	7.3	7.4	7.5	6.9	6.9	7.2
3/26	6.4	5.6	7.4	7.7	7.9	8.1	8.0	8.5	8.1	8.4	7.9	7.6	7.8
3/27	6.7	5.5	7.1	7.5	7.9	8.2	8.0	8.9	8.3	8.6	8.2	8.1	8.4
3/28	6.2	5.4	7.1	7.5	7.9	8.1	7.8	8.8	8.0	8.2	7.9	8.2	8.4
3/29	6.1	5.4	6.8	7.2	7.6	7.9	7.7	8.4	8.1	8.2	7.8	7.5	7.8
3/30	6.6	5.6	7.1	7.5	8.0	8.4	8.1	8.9	8.5	8.8	8.2	8.3	8.5
3/31	5.9	5.7	6.6	7.1	7.5	7.8	7.7	8.6	8.0	8.2	7.6	8.2	8.5

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
4/1	5.2	6.4	6.6	6.7	6.9	7.1	7.2	7.9	7.7	7.9	6.7	7.2	7.5
4/2	5.2	6.6	6.7	6.7	6.8	7.0	7.3	7.9	7.8	8.1	6.6	7.1	7.4
4/3	5.2	6.6	6.6	6.7	6.7	6.8	7.2	7.6	7.6	7.8	6.5	6.9	7.2
4/4	5.0	6.2	6.3	6.5	6.7	6.9	7.1	7.5	7.4	7.7	6.2	7.2	7.5
4/5	5.0	6.5	6.4	6.4	6.4	6.4	7.0	7.3	7.5	7.7	6.0	7.1	7.4
4/6	5.0	6.5	6.5	6.6	6.6	6.6	7.2	7.4	7.5	7.7	6.2	6.8	7.2
4/7	5.1	6.7	6.6	6.7	6.7	6.8	7.2	7.3	7.4	7.6	6.2	6.7	7.1
4/8	5.6	6.8	7.0	7.1	7.3	7.6	7.6	8.0	7.8	8.2	6.5	7.6	7.9
4/9	5.9	6.9	7.2	7.4	7.5	7.8	7.8	8.3	8.1	8.3	6.6	8.2	8.5
4/10	5.9	6.6	7.0	7.2	7.4	7.5	7.5	8.2	7.8	8.0	6.8	8.1	8.3
4/11	4.2	5.9	5.9	6.2	6.4	6.7	6.9	7.6	7.4	7.7	6.2	7.6	7.9
4/12	4.1	6.4	6.0	6.1	6.2	6.2	6.6	7.0	7.2	7.5	6.0	6.6	7.0
4/13	4.5	6.5	6.3	6.4	6.4	6.5	7.0	7.3	7.5	7.7	6.1	6.6	7.1
4/14	3.7	6.2	5.4	5.5	5.5	5.7	6.0	6.7	6.9	7.3	5.3	6.6	6.9
4/15	4.7	6.3	6.4	6.4	6.3	6.3	6.5	6.8	7.0	7.4	5.8	7.1	7.3
4/16	5.1	6.9	6.9	6.8	6.8	7.0	7.2	7.5	7.5	7.9	5.9	8.0	8.2
4/17	5.6	7.0	7.6	7.7	7.8	8.1	7.8	8.5	8.1	8.4	6.8	8.9	9.1
4/18	5.9	7.1	7.9	8.0	8.2	8.6	7.9	8.8	8.2	8.6	6.9	9.3	9.4
4/19	6.5	7.4	8.3	8.5	8.7	9.1	8.2	9.1	8.5	8.9	7.4	9.7	9.8
4/20	7.0	7.4	8.7	9.0	9.2	9.7	8.5	9.5	8.5	8.7	7.9	10.2	10.2
4/21	6.8	7.1	8.3	8.7	9.1	9.5	8.3	9.4	7.9	8.3	8.0	10.1	10.0
4/22	5.9	6.9	7.4	7.8	8.2	8.7	7.8	8.5	7.5	7.8	7.0	9.3	9.3
4/23	5.7	7.1	7.5	7.7	7.9	8.0	7.9	8.5	7.9	8.2	6.7	8.4	8.6
4/24	5.2	7.3	7.0	7.3	7.5	7.8	7.9	8.2	8.0	8.2	6.4	7.8	8.1
4/25	5.1	6.4	6.6	6.7	6.8	6.9	7.4	7.9	7.8	8.1	6.2	7.9	8.1
4/26	5.5	7.8	7.5	7.3	7.1	7.2	7.9	7.9	8.1	8.3	6.0	7.9	8.2
4/27	7.2	7.9	8.9	9.2	9.5	10.0	8.8	9.6	8.7	9.2	7.4	10.0	10.1
4/28	7.1	8.3	9.0	9.2	9.4	9.6	9.0	9.9	9.5	9.7	8.4	10.2	10.4
4/29	6.5	7.8	8.3	8.7	9.1	9.4	8.6	9.4	9.0	9.5	7.7	9.3	9.6
4/30	6.9	7.8	8.7	9.1	9.5	10.0	8.9	9.9	9.3	10.0	7.8	10.0	10.2

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
5/1	7.3	7.5	8.5	8.9	9.3	10.0	9.1	9.9	9.3	9.9	7.9	10.7	10.8
5/2	7.3	7.4	8.4	8.8	9.2	9.8	8.8	9.5	9.0	9.6	7.5	10.8	10.9
5/3	7.5	7.8	8.7	9.0	9.4	10.0	9.0	9.8	8.9	9.2	7.4	11.1	10.9
5/4	7.8	7.7	8.8	9.3	9.8	10.3	9.2	10.0	9.4	9.9	7.7	11.2	11.2
5/5	6.4	7.8	7.6	8.0	8.4	8.9	8.7	9.3	9.1	9.1	7.5	10.2	10.3
5/6	6.1	7.6	8.2	8.2	8.3	8.3	8.6	8.9	8.8	9.3	6.9	8.7	9.0
5/7	7.1	7.7	8.5	8.7	8.9	9.2	8.9	9.3	9.1	9.6	7.1	10.2	10.3
5/8	7.9	8.3	9.2	9.6	9.9	10.4	9.5	10.2	9.7	10.2	7.7	11.5	11.6
5/9	8.6	8.4	9.7	10.2	10.7	11.3	9.9	10.9	10.1	10.7	8.5	12.3	12.3
5/10	8.9	8.1	9.5	10.1	10.8	11.5	9.9	11.1	10.2	10.7	9.2	12.4	12.4
5/11	8.4	7.0	6.9	7.3	7.7	8.0	8.0	9.0	9.1	9.4	9.1	11.5	11.1
5/12	8.3	8.4	8.9	8.8	8.9	8.7	9.1	9.4	9.4	9.8	9.0	10.8	10.8
5/13	8.0	8.3	8.7	9.0	9.4	9.6	9.4	9.8	9.5	9.8	8.8	10.5	10.6
5/14	8.0	8.5	9.3	9.5	9.7	9.7	9.5	10.1	9.7	10.2	8.5	10.6	10.7
5/15	8.2	8.6	9.1	9.6	10.2	10.5	9.8	10.5	10.0	10.4	8.9	10.9	11.1
5/16	8.0	8.7	9.0	9.3	9.8	10.0	9.6	10.3	9.9	10.1	9.0	10.5	10.7
5/17	8.9	8.8	9.4	9.7	10.0	10.2	9.8	10.3	9.9	10.4	9.0	10.9	11.0
5/18	9.5	9.3	10.3	10.8	11.4	12.0	10.6	11.4	10.6	11.3	9.5	13.0	12.9
5/19	10.2	9.1	10.4	11.0	11.7	12.3	10.6	11.8	10.8	11.6	10.1	13.5	13.5
5/20	10.9	9.5	10.8	11.5	12.3	12.9	10.9	12.0	11.0	11.6	10.4	13.9	13.8
5/21	11.1	9.7	11.3	12.1	12.9	13.8	11.4	12.6	11.6	12.3	10.8	14.6	14.5
5/22	10.4	9.2	10.3	11.1	11.9	12.6	10.9	12.0	11.4	11.5	10.9	12.7	12.8
5/23	9.8	9.4	9.9	10.3	10.8	11.2	10.6	11.1	10.9	11.2	10.4	12.0	12.1
5/24	9.5	9.3	10.1	10.5	10.9	11.1	10.4	11.1	10.8	11.1	10.2	12.1	12.2
5/25	9.5	9.3	9.8	10.3	10.8	11.1	10.5	11.1	10.8	11.1	10.1	12.1	12.1
5/26	9.5	9.5	10.0	10.3	10.7	11.0	10.6	11.1	10.9	11.4	10.0	12.3	12.4
5/27	10.4	9.8	10.9	11.2	11.6	12.0	10.5	11.7	11.1	11.8	10.4	13.4	13.3
5/28	11.7	10.0	11.7	12.4	13.2	13.9	9.9	11.5	10.6	11.4	10.9	15.3	14.9
5/29	12.6	10.2	12.1	13.0	14.0	14.9	10.2	11.9	10.9	11.5	11.5	16.5	15.9
5/30	12.8	10.1	11.9	12.9	13.9	14.9	10.3	11.8	10.8	11.4	11.5	16.3	15.8
5/31	12.4	10.2	11.7	12.5	13.4	14.3	10.1	11.5	10.6	11.2	11.3	15.8	15.3

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
6/1	11.4	11.0	11.1	11.7	12.4	13.1	9.7	10.7	10.1	10.3	11.2	14.4	13.9
6/2	10.3	11.2	11.1	11.4	11.7	11.8	9.6	10.2	9.8	10.0	10.9	13.0	12.7
6/3	9.9	11.0	11.2	11.4	11.7	11.7	10.2	10.8	10.1	10.3	10.4	12.9	12.6
6/4	10.0	11.7	11.8	12.0	12.2	12.2	9.9	11.1	10.4	10.8	10.3	14.0	13.6
6/5	11.5	11.8	13.2	13.5	13.9	14.1	10.2	11.6	10.7	11.3	10.9	15.5	14.9
6/6	12.6	12.4	13.6	14.3	15.0	15.5	10.7	12.2	11.2	11.8	11.5	17.2	16.4
6/7	13.4	12.3	14.2	15.0	15.8	16.4	10.8	12.5	11.4	12.0	12.2	18.1	17.1
6/8	14.0	12.7	14.5	15.3	16.2	16.9	11.0	12.7	11.6	12.2	12.6	18.6	17.6
6/9	14.1	12.8	14.5	15.4	16.3	17.0	11.0	12.7	11.6	12.2	12.7	18.6	17.6
6/10	13.8	12.8	14.4	15.2	16.0	16.7	10.9	12.4	11.5	12.1	12.3	18.3	17.2
6/11	13.5	12.9	14.4	15.0	15.7	16.3	10.9	12.3	11.4	12.0	11.9	17.9	16.9
6/12	12.4	11.2	13.3	14.0	14.7	15.3	10.9	11.8	11.1	11.7	11.3	17.2	16.1
6/13	12.2	9.2	11.7	12.9	14.2	14.8	10.6	11.7	11.1	11.6	10.8	16.6	15.6
6/14	12.5	9.5	11.7	12.8	14.0	15.0	10.9	12.0	11.4	12.0	10.8	17.2	16.1
6/15	13.2	9.8	11.9	13.0	14.2	15.2	11.2	12.5	11.7	12.3	11.3	18.1	16.8
6/16	13.6	9.0	11.8	13.0	14.2	15.2	11.6	12.6	11.3	12.3	11.4	18.3	16.9
6/17	13.6	8.0	10.6	12.0	13.5	14.7	11.8	13.1	11.1	12.3	11.2	18.3	16.9
6/18	13.3	7.8	10.1	11.4	12.6	13.7	11.6	12.9	11.0	12.2	11.4	18.0	16.6
6/19	12.7	7.1	9.1	10.4	11.7	13.1	11.6	12.6	11.1	12.2	11.4	17.5	16.3
6/20	12.9	7.1	9.4	10.5	11.6	12.7	11.3	12.6	11.1	12.3	11.0	17.5	16.3
6/21	12.8	7.3	9.3	10.5	11.7	12.9	11.7	12.9	11.4	12.5	11.0	17.7	16.4
6/22	13.0	7.3	9.5	10.6	11.8	13.0	11.7	12.9	11.4	12.6	11.1	18.0	16.7
6/23	13.3	7.4	9.7	10.9	12.1	13.3	11.9	13.1	11.7	12.8	11.1	18.2	16.8
6/24	13.1	7.3	9.2	10.4	11.7	12.9	11.8	13.0	11.7	12.7	11.4	18.5	17.0
6/25	13.8	7.5	9.7	10.8	12.0	13.1	11.8	13.2	11.5	13.0	11.7	19.1	17.4
6/26	14.9	7.8	10.1	11.5	12.8	14.2	12.4	14.0	11.9	13.4	12.3	20.4	18.5
6/27	15.7	8.0	10.4	11.8	13.2	14.6	12.7	14.4	12.2	13.6	12.9	21.4	19.2
6/28	15.6	8.0	9.9	11.1	12.4	13.7	12.3	13.9	12.1	13.0	13.4	21.0	18.8
6/29	16.3	8.0	10.6	11.8	13.1	14.4	12.8	14.2	12.3	13.9	13.7	21.6	19.4
6/30	16.5	7.7	10.2	11.8	13.3	14.9	13.3	14.9	12.9	14.2	13.8	22.2	20.0

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
7/1	16.5	7.6	9.8	11.2	12.6	14.1	13.2	15.0	12.9	14.4	13.6	22.0	19.9
7/2	16.8	7.8	10.1	11.4	12.8	14.2	13.4	15.1	13.1	14.6	13.9	22.5	20.2
7/3	17.0	7.7	10.0	11.4	12.8	14.3	13.5	15.2	13.3	14.6	14.0	22.7	20.3
7/4	16.8	7.6	9.9	11.2	12.6	14.1	13.5	15.2	13.6	14.7	13.9	22.5	20.2
7/5	16.7	7.7	9.8	11.1	12.4	13.8	13.5	15.1	13.6	14.7	13.8	22.1	19.8
7/6	16.6	7.6	9.7	11.0	12.3	13.7	13.5	15.1	13.7	14.8	13.8	22.1	19.8
7/7	16.3	7.4	9.4	10.5	11.8	13.1	13.3	14.8	13.6	14.6	13.4	21.3	19.2
7/8	16.6	7.7	9.6	10.8	12.0	13.5	13.5	14.9	13.8	14.9	13.3	21.4	19.3
7/9	17.0	7.7	9.8	11.0	12.3	13.8	13.7	15.2	13.9	15.1	13.5	21.8	19.7
7/10	15.9	7.3	8.7	9.7	10.8	12.1	13.0	14.4	13.6	14.3	13.3	20.3	18.5
7/11	14.6	7.2	8.4	9.1	9.9	10.9	12.3	13.3	13.3	14.1	12.9	19.0	17.4
7/12	14.4	7.3	8.6	9.3	10.1	11.1	12.4	13.5	13.5	14.4	12.8	18.7	17.4
7/13	14.3	7.3	8.4	9.3	10.1	11.4	12.6	13.5	13.4	14.5	12.7	18.9	17.6
7/14	14.5	7.2	8.9	9.8	10.7	11.8	12.7	13.8	13.6	14.6	12.3	19.4	17.9
7/15	14.4	7.2	8.8	9.8	10.8	12.1	13.0	14.1	13.8	14.8	12.2	19.8	18.2
7/16	14.5	7.1	8.7	9.6	10.6	11.9	12.9	14.2	13.8	14.8	12.1	19.6	18.1
7/17	14.4	7.2	8.8	9.8	10.7	12.0	13.0	14.0	13.8	14.8	11.9	19.4	17.9
7/18	15.1	7.5	9.4	10.4	11.4	12.8	13.5	14.6	14.2	15.4	12.1	20.5	18.7
7/19	16.0	7.6	9.7	10.9	12.0	13.6	14.1	15.4	14.7	16.0	12.7	21.8	19.8
7/20	16.2	7.4	9.4	10.6	11.7	13.3	14.0	15.6	14.7	16.0	13.0	21.8	19.9
7/21	15.4	7.1	8.7	9.7	10.8	12.2	13.4	14.7	14.4	15.2	12.7	20.8	
7/22	14.7	7.1	8.5	9.3	10.1	11.2	13.0	14.0	14.2	15.0	12.2	19.5	
7/23	14.5	7.1	8.4	9.2	10.1	11.3	13.0	13.9	14.2	15.0	12.0	19.6	
7/24	13.9	7.2	8.2	8.9	9.7	10.6	12.7	13.6	14.2	14.6	11.9	18.6	
7/25	13.5	7.1	8.4	9.1	9.8	10.6	12.6	13.4	14.0	14.6	12.0	17.9	
7/26	13.0	7.0	8.1	8.7	9.4	10.3	12.4	13.2	14.0	14.3	11.9	17.2	
7/27	12.7	6.8	8.2	8.8	9.4	10.2	12.5	13.1	13.9	14.6	11.8	17.0	
7/28	13.2	6.6	8.3	9.2	10.2	11.3	13.0	13.6	13.9	15.0	11.8	18.3	
7/29	14.0	6.8	8.7	9.7	10.7	12.1	13.5	14.5	14.5	15.6	12.1	19.6	
7/30	14.6	6.8	8.8	9.9	11.0	12.6	13.8	14.9	14.9	16.1	12.4	20.7	
7/31	15.0	6.9	8.9	10.0	11.1	12.7	14.0	15.2	15.1	16.3	12.6	21.3	

	Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
8/1	15.3	6.9	8.8	10.0	11.1	12.7	14.0	15.3	15.2	16.4	12.7	21.3	
8/2	15.2	6.9	8.6	9.7	10.8	12.3	13.9	15.1	15.1	16.1	12.9	21.0	
8/3	15.4	6.9	8.6	9.7	10.8	12.3	14.1	15.2	15.2	16.3	12.8	20.6	
8/4	15.2	6.7	8.3	9.3	10.4	11.8	13.9	15.0	15.1	16.2	12.6	20.1	
8/5	14.3	6.5	7.7	8.6	9.5	10.6	13.3	14.1	14.6	15.2	12.1	18.7	
8/6	13.7	6.6	7.9	8.6	9.4	10.4	13.2	13.9	14.5	15.5	11.9	18.6	
8/7	13.9	6.7	8.3	9.1	10.0	11.2	13.7	14.2	14.7	15.8	11.8	19.1	
8/8	14.0	6.8	8.2	9.2	10.3	11.5	13.8	14.7	15.0	16.2	12.0	19.8	
8/9	14.7	6.8	8.7	9.6	10.6	12.0	14.1	15.1	15.3	16.6	12.2	20.4	
8/10	15.1	6.9	8.5	9.6	10.6	12.1	14.2	15.2	15.4	16.6	12.4	20.7	
8/11	14.9	7.0	8.4	9.4	10.4	11.8	14.3	15.2	15.5	16.6	12.6	20.3	
8/12	14.9	7.1	8.5	9.4	10.3	11.4	13.8	15.0	15.0	16.2	12.9	19.7	
8/13	15.4	7.1	8.9	9.8	10.8	12.1	13.2	14.5	14.3	15.7	13.0	20.5	
8/14	14.5	6.8	8.3	9.1	10.0	10.8	12.4	13.8	13.9	14.5	13.1	19.1	
8/15	12.9	6.6	8.4	9.3	10.3	11.2	12.2	12.7	13.2	14.2	13.2	17.4	
8/16	13.0	6.6	8.0	8.7	9.5	10.6	12.5	13.2	13.5	14.7	12.7	17.7	
8/17	13.6	6.8	8.4	9.1	9.9	11.1	12.9	13.7	13.9	15.1	12.6	18.8	
8/18	14.2	7.0	8.6	9.5	10.4	11.7	13.4	14.2	14.4	15.5	12.8	19.8	
8/19	14.7	7.0	8.8	9.8	10.7	12.1	13.7	14.7	14.8	16.0	13.1	20.7	
8/20	14.0	6.7	7.9	8.8	9.8	10.8	13.3	14.3	14.5	15.3	13.0	19.6	
8/21	13.5	6.5	7.9	8.5	9.2	10.1	12.9	13.7	14.2	14.9	12.5	18.3	
8/22	13.2	6.6	7.9	8.6	9.3	10.4	13.2	13.6	14.2	15.2	12.3	18.0	17.2
8/23	13.4	6.7	8.0	8.7	9.5	10.6	13.6	14.0	14.6	15.4	12.5	18.3	17.3
8/24	13.4	6.6	8.0	8.7	9.5	10.6	14.5	14.7	14.7	15.2	12.3	18.1	17.1
8/25	13.2	6.5	7.9	8.5	9.3	10.4	14.5	14.7	14.7	15.3	11.7	18.1	17.2
8/26	13.3	6.7	7.9	8.7	9.4	10.5	14.8	15.0	15.0	15.6	11.7	18.3	17.6
8/27	13.7	6.8	8.2	9.0	9.8	11.0	15.1	15.3	15.4	16.2	12.1	19.0	18.3
8/28	13.5	6.8	7.8	8.6	9.5	10.5	15.1	15.2	15.3	16.0	12.3	18.7	18.0
8/29	13.1	6.8	8.2	8.8	9.4	10.1	14.7	15.1	15.2	15.9	12.6	18.0	17.5
8/30	11.6	6.6	9.3	10.0	10.7	11.1	13.4	13.9	13.9	14.8	12.8	16.6	16.3
8/31	10.7	6.6	8.5	9.0	9.6	10.1	13.9	14.3	14.3	14.5	12.5	14.7	14.7

DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
9/1	10.4	6.7	9.3	9.8	10.3	10.5	13.0	13.5	13.5	14.2	12.5	13.6	13.6
9/2	10.0	6.5	9.2	9.8	10.5	11.0	12.6	13.0	13.1	13.9	12.1	13.5	13.5
9/3	9.5	6.3	8.3	8.9	9.5	10.1	12.8	13.0	13.0	13.4	11.4	13.2	13.2
9/4	9.1	6.3	7.6	8.2	8.9	9.3	12.4	12.5	12.6	12.9	10.8	12.8	12.8
9/5	9.0	6.4	7.6	8.1	8.7	9.1	12.5	12.4	12.5	13.0	10.5	12.9	13.0
9/6	9.2	6.4	7.8	8.4	9.0	9.4	11.6	12.3	12.7	13.1	10.9	12.8	12.9
9/7	9.8	6.6	7.9	8.6	9.3	10.0	11.4	11.9	12.7	13.8	11.4	13.7	13.8
9/8	9.9	6.7	7.9	8.5	9.2	9.9	11.7	12.3	13.0	13.8	11.6	14.1	14.2
9/9	10.4	6.8	8.1	8.7	9.4	10.3	12.0	12.7	13.2	14.2	11.9	14.9	15.0
9/10	10.7	6.9	8.1	8.7	9.3	10.2	12.1	12.7	13.3	14.1	12.0	15.7	15.7
9/11	11.1	7.0	8.3	8.9	9.5	10.4	12.2	13.0	13.4	14.3	12.6	16.5	16.4
9/12	11.7	6.6	7.4	7.9	8.4	9.0	10.9	12.0	12.9	13.9	13.0	17.2	16.1
9/13	11.5	6.7	7.7	8.2	8.6	8.9	11.8	11.7	13.1	13.5	12.9	16.5	15.4
9/14	10.6	6.4	7.3	7.9	8.5	9.2	12.4	12.4	12.9	13.4	12.0	15.2	14.9
9/15	10.0	6.3	7.3	7.8	8.3	8.9	12.5	12.6	13.1	13.5	11.3	14.3	14.2
9/16	9.5	6.3	7.2	7.6	8.0	8.7	12.7	12.6	13.1	13.5	10.7	14.0	14.0
9/17	9.7	6.5	7.3	7.8	8.3	8.9	13.1	13.2	13.2	13.5	10.8	13.9	13.9
9/18	10.0	6.6	7.8	8.3	8.9	9.4	12.9	13.1	13.2	13.7	11.1	13.9	13.9
9/19	10.2	6.7	7.6	8.2	8.8	9.4	13.2	13.4	13.5	13.9	11.4	14.1	14.1
9/20	10.6	6.9	8.2	8.6	9.1	9.5	12.9	13.3	13.4	14.2	11.9	14.6	14.7
9/21	10.4	6.5	8.2	8.9	9.5	10.1	12.6	12.9	12.9	13.6	11.6	13.9	14.0
9/22	9.6	6.4	7.3	7.9	8.4	9.1	12.7	12.6	12.7	13.0	10.6	13.3	13.4
9/23	8.9	6.4	7.2	7.5	7.9	8.4	12.7	12.5	12.5	12.7	10.0	12.9	13.0
9/24	9.5	6.6	7.6	8.0	8.5	9.1	12.8	13.0	13.0	13.5	10.6	13.4	13.5
9/25	9.8	6.6	7.5	8.0	8.5	9.1	12.8	13.0	13.0	13.4	11.1	13.4	13.5
9/26	9.7	6.4	7.3	7.8	8.2	8.8	12.7	12.8	12.8	13.2	10.8	13.1	13.3
9/27	8.6	6.3	6.8	7.1	7.3	7.9	12.6	12.3	12.3	12.3	9.8	12.8	12.8
9/28	8.3	6.4	6.9	7.1	7.3	7.7	12.4	12.1	12.2	12.3	9.4	12.5	12.6
9/29	8.4	6.5	7.0	7.2	7.5	7.9	12.8	12.5	12.5	12.5	9.5	12.7	12.8
9/30	8.6	6.5	7.1	7.4	7.6	8.1	12.8	12.7	12.7	12.9	9.8	12.8	13.0

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
10/1	8.9	6.5	7.3	7.6	7.8	8.4	13.0	12.7	12.7	12.9	9.9	13.2	13.3
10/2	8.9	6.5	7.3	7.6	8.0	8.3	13.2	13.0	13.0	12.9	10.0	12.7	12.8
10/3	9.2	6.5	7.6	8.0	8.4	8.9	13.1	13.1	13.1	13.4	10.1	12.8	13.1
10/4	9.0	6.5	7.4	7.7	8.1	8.8	13.4	13.1	13.1	13.0	10.1	12.8	13.0
10/5	9.1	6.5	7.4	7.7	8.1	8.7	13.2	13.1	13.2	13.3	10.3	13.2	13.3
10/6	9.2	6.5	7.4	7.9	8.3	8.8	13.4	13.2	13.3	13.2	10.5	12.8	13.0
10/7	9.6	6.6	7.6	8.1	8.6	9.0	13.3	13.4	13.4	13.6	10.7	12.7	13.1
10/8	10.1	6.8	8.1	8.7	9.3	9.7	13.5	13.5	13.6	13.8	11.3	12.9	13.2
10/9	10.2	6.7	7.9	8.5	9.2	9.8	13.6	13.6	13.7	13.9	11.5	13.3	13.5
10/10	10.6	6.8	9.4	9.7	10.1	10.4	13.0	13.4	13.5	14.0	11.9	13.2	13.4
10/11	9.5	6.5	9.2	9.8	10.3	10.7	12.3	12.5	12.6	13.1	11.3	11.6	11.8
10/12	9.0	6.4	7.2	7.6	8.0	8.5	9.7	11.2	11.2	12.4	11.1	10.9	11.1
10/13	9.6	6.4	7.0	7.3	7.7	8.0	8.1	8.9	9.0	10.0	11.3	11.4	11.5
10/14	8.4	6.3	6.7	7.0	7.2	7.4	7.6	8.4	8.5	9.6	10.2	11.4	11.5
10/15	8.6	6.3	6.7	6.9	7.1	7.2	7.4	8.0	8.0	9.0	10.2	11.1	11.2
10/16	9.1	6.4	6.8	6.9	7.2	7.3	7.5	8.1	8.1	8.9	10.7	11.4	11.4
10/17	9.4	6.5	6.9	7.1	7.4	7.5	7.7	8.3	9.1	9.5	11.1	11.7	11.7
10/18	9.6	6.5	7.0	7.3	7.6	7.8	8.0	8.8	10.0	10.7	11.3	12.2	12.2
10/19	9.7	6.5	7.0	7.3	7.6	7.9	8.4	9.2	10.2	11.0	11.4	12.4	12.4
10/20	9.4	6.4	6.8	7.1	7.4	7.6	7.8	8.8	9.4	10.6	11.1	12.4	12.4
10/21	8.7	6.4	6.8	7.0	7.2	7.3	7.5	8.0	8.0	8.8	10.5	11.5	11.5
10/22	8.9	6.4	6.7	6.9	7.1	7.2	7.4	8.1	8.1	9.0	10.4	11.6	11.6
10/23	7.9	6.4	6.6	6.7	6.9	6.9	7.0	7.4	7.5	8.0	9.4	10.7	10.5
10/24	7.7	6.4	6.6	6.8	6.9	6.9	7.1	7.4	7.4	7.9	9.1	10.0	9.8
10/25	8.5	6.5	6.8	7.0	7.2	7.2	7.4	7.8	7.9	8.6	9.7	10.5	10.4
10/26	8.7	6.5	6.9	7.1	7.3	7.4	7.6	8.1	8.2	8.8	10.0	10.8	10.7
10/27	8.3	6.5	6.8	7.0	7.2	7.3	7.5	8.0	8.1	8.6	9.8	10.8	10.7
10/28	8.3	6.5			7.3	7.3	7.5	7.9	7.9	8.5	10.0	10.4	
10/29	8.6	6.6			7.8	7.9	8.1	8.5	8.5	9.0	10.4	10.6	
10/30	8.9	6.7			8.5	8.6	8.7	9.1	9.1	9.4	10.5	10.4	
10/31	9.0	6.7			9.4	9.5	9.7	10.1	10.1	10.3	10.7	10.2	

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
11/1	8.2	6.7			8.6	8.8	9.0	9.6	9.7	10.2	10.1	9.4	
11/2	7.7	6.6			8.4	8.6	8.8	9.4	9.7	10.0	9.7	8.9	
11/3	7.1	6.6			7.6	7.8	7.9	8.4	9.7	10.0	8.9	8.6	
11/4	6.5	6.3			7.1	7.2	7.4	7.8	9.7	10.0	8.4	8.2	
11/5	6.7	6.1			7.3	7.3	7.5	7.8	9.7	10.0	8.4	8.1	
11/6	6.7	6.1			7.3	7.4	7.5	7.8	9.6	9.9	8.5	8.0	
11/7	7.3	6.2			7.7	7.8	7.9	8.3	9.7	10.0	9.1	8.5	
11/8	7.3	6.2			8.0	8.1	8.3	8.7	9.5	9.8	8.9	8.6	
11/9	6.8	6.2			7.5	7.6	7.7	8.2	9.4	9.7	8.5	8.3	
11/10	6.3	6.1			7.2	7.3	7.4	7.9	9.2	9.5	8.0	8.0	
11/11	6.2	6.2			7.2	7.2	7.4	7.8	9.0	9.3	7.9	7.8	
11/12	6.0	6.2			7.0	7.0	7.1	7.4	9.0	9.2	7.7	7.3	
11/13	7.0	6.5			8.5	8.4	8.5	8.5	9.0	9.3	8.8	7.6	
11/14	7.0	6.3			8.5	8.5	8.7	8.9	8.9	9.0	8.7	7.8	
11/15	6.0	6.2			7.2	7.4	7.9	7.9	8.2	8.5	7.8	7.4	
11/16	5.4	6.5			6.7	6.8	7.4	7.3	8.1	8.3	7.3	6.5	
11/17	5.8	7.1			7.8	7.8	8.0	8.0	8.2	8.4	8.1	6.7	
11/18	5.8	7.4			8.2	8.1	8.3	8.4	8.4	8.5	7.5	6.6	
11/19	5.3	7.4			8.0	7.9	8.1	8.1	8.1	8.2	7.0	6.6	
11/20	4.7	6.7			7.0	6.9	7.2	7.3	7.6	7.7	6.2	6.1	
11/21	4.3	6.3			5.2	5.6	6.8	6.4	7.5	7.5	5.6	5.3	
11/22	4.3	6.3			4.0	5.1	6.6	6.1	7.4	7.4	5.5	5.2	
11/23	4.5	6.4			4.8	5.4	6.8	6.2	7.5	7.5	5.6	5.4	
11/24	4.6	6.4			5.8	6.0	6.9	6.7	7.5	7.6	5.7	6.0	
11/25	4.1	6.2			5.2	5.1	6.6	6.1	7.2	7.3	4.8	5.6	
11/26	3.5	6.2			4.3	4.2	6.3	5.6	7.0	7.0	4.2	4.3	
11/27	3.2	6.2			4.1	3.8	6.1	5.3	6.8	6.9	4.1	3.9	
11/28	3.0	6.2			3.9	3.5	6.0	5.1	6.7	6.7	3.8	3.6	
11/29	2.8	6.1			3.8	3.3	5.9	5.0	6.6	6.6	3.5	3.3	
11/30	2.6	6.1			3.8	3.4	5.8	4.9	6.5	6.6	3.3	3.2	

		Sultan River										Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 14.3	RM 12.8	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Big Four Creek	RM 14.1	RM 13.2
12/1	3.3	6.4			4.9	4.5	6.2	5.6	6.7	6.8	4.3	4.3	
12/2	3.8	6.5			5.8	5.5	6.5	6.3	6.8	6.9	5.0	4.5	
12/3	4.4	6.3			6.4	6.3	6.6	6.7	6.8	7.0	6.0	5.2	
12/4	4.6	6.2			6.5	6.5	6.7	6.8	6.8	7.0	6.5	5.7	
12/5	4.8	6.1			6.5	6.5	6.6	6.7	6.7	6.9	6.4	5.6	
12/6	4.9	6.0			6.6	6.6	6.8	6.8	6.7	6.9	6.7	5.8	
12/7	5.2	5.9			7.0	7.0	7.1	7.2	6.8	6.9	7.0	6.1	
12/8	5.6	6.1			7.6	7.6	7.7	7.8	7.3	7.3	7.7	6.3	
12/9	5.5	6.0			7.7	7.8	7.9	8.2	7.5	7.5	7.6	6.2	
12/10	5.3	5.9			6.8	6.8	6.9	7.2	7.0	7.0	7.1	6.2	
12/11	5.2	5.9			6.7	6.7	6.8	7.2	6.9	6.9	6.9	6.1	
12/12	5.0	5.8			6.6	6.6	6.7	7.0	6.6	6.7	6.5	6.4	
12/13	4.4	5.7			6.4	6.4	6.6	7.1	6.5	6.7	6.3	6.8	
12/14	4.0	5.6			5.7	5.6	5.8	6.4	6.2	6.4	5.9	6.4	
12/15	4.1	5.6			5.7	5.7	5.9	6.2	6.2	6.4	5.6	5.9	
12/16	3.6	5.5			5.0	5.0	5.4	5.9	6.1	6.2	5.4	5.3	
12/17	3.0	5.3			4.9	4.9	5.3	5.5	5.8	6.0	5.0	4.3	
12/18	2.7	5.2			5.1	5.2	5.4	5.6	5.8	5.9	5.5	3.4	
12/19	3.5	5.1			5.4	5.5	5.7	6.0	5.9	6.0	5.5	4.3	
12/20	3.4	5.1			5.2	5.3	5.6	6.1	5.9	6.0	5.4	4.8	
12/21	3.1	5.0			4.6	4.7	5.0	5.5	5.7	5.8	5.1	4.4	
12/22	2.7	4.8			4.3	4.3	4.7	4.9	5.4	5.6	4.6	4.0	
12/23	2.0	4.6			3.4	3.4	3.9	4.5	5.3	5.5	3.7	4.0	
12/24	1.3	4.5			2.9	3.1	3.5	4.0	5.0	5.2	3.2	3.3	3.8
12/25	2.2	4.5			4.0	4.2	4.5	4.7	5.2	5.3	3.8	3.9	4.4
12/26	2.5	4.2			4.3	4.4	4.7	4.9	5.2	5.3	3.8	4.2	4.7
12/27	2.6	4.3			4.2	4.2	4.7	4.9	5.1	5.2	3.5	3.9	5.9
12/28	2.6	4.1			4.0	4.1	4.5	4.6	5.0	5.1	3.5	3.8	5.5
12/29	2.7	4.1			4.2	4.2	4.6	4.8	4.9	5.0	3.6	4.1	4.6
12/30	2.1	3.8			3.4	3.3	4.1	4.1	4.7	4.7	2.9	3.3	3.9
12/31	1.4	3.8			2.6	2.3	3.5	3.3	4.5	4.5	2.1	2.0	3.0

APPENDIX D

Seven-Day Average of the Daily Maximum (7-DAD Max) Water Temperature in Tabular Format

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
1/1	2.8	5.0	4.2	4.1	3.9	4.0	4.5	4.5	5.2	5.3	4.0	3.9	4.4
1/2	2.9	5.0	4.4	4.3	4.1	4.2	4.6	4.6	5.3	5.4	4.1	3.9	4.4
1/3	3.2	5.1	4.6	4.6	4.5	4.6	5.0	4.9	5.6	5.6	4.4	4.0	4.5
1/4	3.6	5.1	4.9	4.9	4.9	5.0	5.3	5.4	5.7	5.7	4.9	4.4	4.8
1/5	3.9	5.1	5.1	5.2	5.2	5.4	5.6	5.8	5.7	5.7	5.3	4.7	5.1
1/6	4.2	5.1	5.3	5.4	5.4	5.7	5.7	6.0	5.8	5.8	5.6	4.9	5.2
1/7	4.5	5.1	5.4	5.6	5.7	5.9	5.9	6.3	5.8	5.8	6.0	5.1	5.4
1/8	4.8	5.1	5.6	5.8	5.9	6.2	6.1	6.5	5.8	5.8	6.3	5.3	5.5
1/9	4.9	5.0	5.5	5.7	5.8	6.1	6.0	6.5	5.6	5.7	6.3	5.5	5.6
1/10	4.7	4.9	5.3	5.4	5.6	5.9	5.8	6.4	5.3	5.5	6.1	5.4	5.6
1/11	4.6	4.8	5.1	5.2	5.3	5.6	5.5	6.2	5.2	5.4	5.9	5.3	5.5
1/12	4.5	4.8	5.0	5.1	5.2	5.5	5.4	6.0	5.1	5.3	5.8	5.2	5.4
1/13	4.4	4.7	5.0	5.1	5.2	5.4	5.4	6.0	5.1	5.3	5.7	5.0	5.3
1/14	4.3	4.7	4.9	5.0	5.1	5.3	5.3	5.9	5.1	5.2	5.7	4.9	5.2
1/15	4.3	4.8	5.0	5.1	5.2	5.3	5.3	5.8	5.1	5.2	5.7	4.7	5.1
1/16	4.2	4.8	5.0	5.1	5.2	5.3	5.3	5.8	5.1	5.2	5.6	4.7	5.0
1/17	4.2	4.8	5.1	5.2	5.3	5.4	5.4	5.8	5.0	5.2	5.7	4.7	5.0
1/18	4.3	4.8	5.2	5.2	5.4	5.5	5.4	5.8	5.0	5.2	5.7	4.8	5.0
1/19	4.4	4.8	5.2	5.3	5.5	5.7	5.5	6.0	5.0	5.2	5.8	5.0	5.2
1/20	4.5	4.9	5.4	5.6	5.8	5.9	5.7	6.2	5.1	5.3	6.0	5.2	5.4
1/21	4.7	4.9	5.7	5.9	6.1	6.2	6.1	6.5	5.3	5.4	6.2	5.4	5.6
1/22	4.8	5.0	5.8	6.0	6.2	6.4	6.3	6.7	5.4	5.5	6.4	5.6	5.7
1/23	5.0	5.0	5.9	6.1	6.3	6.5	6.5	6.9	5.5	5.5	6.6	5.6	5.8
1/24	5.2	5.0	6.0	6.2	6.4	6.6	6.6	7.0	5.6	5.6	6.8	5.7	5.9
1/25	5.4	5.1	6.2	6.4	6.7	6.9	6.9	7.3	5.7	5.7	7.1	6.0	6.1
1/26	5.4	5.0	6.2	6.4	6.7	6.9	6.9	7.4	5.7	5.8	7.2	6.0	6.2
1/27	5.3	5.0	5.9	6.1	6.3	6.6	6.6	7.3	5.7	5.8	7.1	5.9	6.1
1/28	5.2	4.9	5.6	5.8	6.0	6.3	6.3	6.9	5.5	5.7	6.9	5.8	5.9
1/29	5.1	4.9	5.4	5.5	5.7	6.0	6.0	6.6	5.5	5.7	6.7	5.7	5.8
1/30	5.0	4.9	5.3	5.5	5.6	5.9	5.8	6.4	5.4	5.6	6.5	5.7	5.8
1/31	4.9	5.0	5.4	5.5	5.6	5.9	5.8	6.4	5.4	5.6	6.4	5.7	5.8

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
2/1	4.9	5.0	5.3	5.4	5.6	5.8	5.7	6.3	5.4	5.6	6.3	5.6	5.7
2/2	5.1	5.1	5.6	5.7	5.8	6.0	5.9	6.4	5.4	5.6	6.5	5.7	5.8
2/3	5.3	5.2	6.0	6.1	6.3	6.4	6.3	6.7	5.6	5.7	6.7	5.8	6.0
2/4	5.5	5.2	6.2	6.4	6.6	6.7	6.6	7.0	5.8	5.8	6.9	6.0	6.1
2/5	5.6	5.3	6.5	6.7	6.9	7.0	6.9	7.3	5.9	5.9	7.1	6.2	6.3
2/6	5.7	5.3	6.6	6.9	7.1	7.3	7.1	7.6	6.1	6.1	7.2	6.3	6.4
2/7	5.8	5.4	6.8	7.0	7.3	7.5	7.4	7.8	6.4	6.3	7.4	6.4	6.6
2/8		5.4	7.0	7.2	7.5	7.7	7.6	8.0	6.6	6.5	7.6	6.5	6.7
2/9		5.4	7.0	7.3	7.6	7.7	7.7	8.1	6.7	6.6	7.6	6.7	6.9
2/10		5.4	6.9	7.2	7.5	7.8	7.7	8.2	6.7	6.7	7.7	6.8	7.0
2/11		5.4	6.9	7.2	7.6	7.8	7.7	8.3	6.8	6.7	7.8	7.0	7.2
2/12		5.4	6.8	7.1	7.5	7.8	7.6	8.3	6.8	6.7	7.8	7.1	7.3
2/13		5.3	6.6	6.8	7.2	7.5	7.4	8.1	6.7	6.7	7.6	7.1	7.3
2/14		5.2	6.2	6.5	6.8	7.2	7.1	7.8	6.5	6.7	7.5	7.0	7.2
2/15		5.2	6.0	6.3	6.5	6.9	6.9	7.6	6.4	6.6	7.3	6.9	7.1
2/16	5.8	5.1	5.9	6.1	6.4	6.8	6.7	7.4	6.3	6.6	7.2	6.8	7.0
2/17	5.6	5.1	5.8	6.0	6.2	6.6	6.5	7.2	6.3	6.6	7.0	6.8	6.9
2/18	5.4	5.1	5.6	5.8	6.0	6.4	6.3	7.0	6.3	6.6	6.8	6.7	6.8
2/19	5.2	5.0	5.5	5.6	5.8	6.1	6.2	6.8	6.2	6.6	6.6	6.6	6.7
2/20	5.0	5.0	5.4	5.5	5.6	6.0	6.1	6.6	6.1	6.6	6.4	6.5	6.7
2/21	4.9	5.0	5.4	5.5	5.6	5.9	6.0	6.5	6.1	6.6	6.2	6.4	6.6
2/22	4.9	5.0	5.5	5.5	5.6	6.0	6.0	6.5	6.1	6.7	6.1	6.5	6.7
2/23	4.8	5.0	5.5	5.5	5.6	6.0	6.1	6.5	6.2	6.8	6.0	6.6	6.8
2/24	4.7	5.0	5.4	5.5	5.6	6.0	6.1	6.5	6.2	6.9	5.9	6.6	6.8
2/25	4.7	5.0	5.4	5.4	5.5	5.9	6.0	6.5	6.2	6.9	5.8	6.6	6.8
2/26	4.6	5.0	5.4	5.5	5.5	5.8	6.0	6.4	6.2	6.9	5.8	6.5	6.8
2/27	4.7	5.0	5.5	5.6	5.6	6.0	6.0	6.5	6.2	7.0	5.8	6.6	6.9
2/28	4.6	5.0	5.4	5.5	5.6	5.9	6.0	6.5	6.2	6.9	5.7	6.7	7.0

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
3/1	4.4	5.0	5.3	5.3	5.3	5.7	6.0	6.3	6.1	6.9	5.4	6.7	7.0
3/2	4.2	4.9	5.2	5.2	5.1	5.4	5.8	6.2	6.0	6.8	5.2	6.6	6.8
3/3	4.1	5.0	5.3	5.1	5.0	5.4	5.8	6.0	5.9	6.8	5.0	6.6	6.8
3/4	4.1	5.0	5.3	5.1	5.0	5.5	5.8	6.0	5.9	6.9	4.9	6.7	6.9
3/5	4.2	5.1	5.4	5.2	5.1	5.6	5.9	6.1	6.0	7.1	5.0	7.1	7.2
3/6	4.4	5.1	5.5	5.3	5.2	5.7	6.0	6.2	6.1	7.3	5.1	7.4	7.5
3/7	4.7	5.2	5.7	5.5	5.3	5.9	6.1	6.3	6.2	7.4	5.3	7.6	7.7
3/8	5.1	5.2	5.9	5.7	5.7	6.2	6.3	6.6	6.4	7.5	5.7	7.9	7.9
3/9	5.4	5.3	6.0	6.0	6.0	6.6	6.4	6.9	6.5	7.7	6.0	8.2	8.3
3/10	5.8	5.3	6.2	6.2	6.3	6.9	6.6	7.1	6.8	7.9	6.4	8.5	8.6
3/11	6.1	5.4	6.3	6.4	6.5	7.0	6.8	7.4	7.0	8.0	6.8	8.6	8.7
3/12	6.2	5.4	6.4	6.6	6.7	7.2	6.9	7.5	7.1	7.9	7.1	8.4	8.5
3/13	6.3	5.4	6.5	6.7	7.0	7.3	7.0	7.7	7.3	8.0	7.3	8.2	8.4
3/14	6.4	5.4	6.6	6.9	7.1	7.5	7.2	7.8	7.4	8.1	7.4	8.1	8.3
3/15	6.4	5.3	6.7	7.0	7.2	7.6	7.2	7.9	7.5	8.3	7.5	8.1	8.4
3/16	6.4	5.3	6.7	6.9	7.2	7.6	7.2	7.8	7.5	8.2	7.5	7.9	8.2
3/17	6.3	5.3	6.6	6.9	7.2	7.5	7.2	7.9	7.5	8.1	7.6	7.8	8.1
3/18	6.3	5.3	6.6	6.9	7.2	7.6	7.1	7.8	7.5	8.2	7.5	7.9	8.1
3/19	6.3	5.3	6.5	6.8	7.1	7.5	7.0	7.8	7.4	8.2	7.4	7.9	8.2
3/20	6.3	5.3	6.4	6.7	7.0	7.4	7.0	7.7	7.3	8.1	7.4	7.9	8.2
3/21	6.2	5.3	6.4	6.7	7.0	7.4	7.0	7.6	7.3	8.1	7.3	8.0	8.2
3/22	6.1	5.4	6.4	6.7	7.1	7.4	7.0	7.6	7.3	8.0	7.3	7.8	8.1
3/23	6.2	5.4	6.7	7.0	7.3	7.6	7.3	7.8	7.5	8.3	7.5	8.0	8.2
3/24	6.3	5.5	6.9	7.2	7.5	7.8	7.5	8.0	7.7	8.5	7.6	8.1	8.4
3/25	6.4	5.5	7.0	7.3	7.6	7.9	7.7	8.2	7.8	8.5	7.7	8.0	8.3
3/26	6.5	5.5	7.2	7.5	7.8	8.1	7.9	8.4	8.0	8.7	7.8	8.1	8.3
3/27	6.7	5.6	7.4	7.7	8.1	8.4	8.1	8.7	8.2	9.0	8.0	8.3	8.6
3/28	6.9	5.8	7.5	7.9	8.2	8.5	8.3	9.0	8.4	9.0	8.3	8.5	8.8
3/29	6.8	5.9	7.6	7.9	8.3	8.6	8.3	9.2	8.5	9.1	8.2	8.5	8.8
3/30	6.6	6.1	7.4	7.8	8.1	8.4	8.1	9.0	8.4	9.1	8.0	8.4	8.7
3/31	6.4	6.2	7.3	7.6	7.9	8.1	8.0	8.8	8.3	8.9	7.7	8.2	8.5

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
4/1	6.2	6.4	7.2	7.5	7.8	8.1	7.9	8.6	8.2	9.0	7.4	8.1	8.5
4/2	6.2	6.6	7.3	7.5	7.7	7.9	7.8	8.5	8.2	9.0	7.2	8.1	8.5
4/3	5.9	6.8	7.2	7.3	7.5	7.6	7.7	8.3	8.0	8.8	6.9	7.9	8.3
4/4	5.8	6.8	7.2	7.3	7.4	7.5	7.6	8.1	7.9	8.8	6.7	7.7	8.1
4/5	6.0	6.9	7.3	7.4	7.5	7.7	7.7	8.2	7.9	8.9	6.7	7.9	8.3
4/6	6.1	7.0	7.3	7.5	7.6	7.9	7.8	8.2	8.0	8.9	6.7	8.1	8.5
4/7	6.2	7.0	7.4	7.6	7.7	8.1	7.8	8.3	8.0	9.0	6.7	8.3	8.7
4/8	6.2	6.9	7.4	7.6	7.7	8.0	7.8	8.3	8.0	9.0	6.8	8.3	8.6
4/9	6.1	6.8	7.3	7.5	7.7	8.0	7.8	8.3	8.0	8.8	6.7	8.1	8.5
4/10	6.0	6.8	7.3	7.5	7.6	8.0	7.8	8.2	8.0	8.8	6.7	8.1	8.5
4/11	5.7	6.7	7.1	7.2	7.4	7.7	7.6	8.1	7.9	8.7	6.6	8.1	8.4
4/12	5.6	6.6	7.1	7.2	7.3	7.5	7.5	7.9	7.8	8.7	6.5	8.0	8.4
4/13	5.6	6.7	7.2	7.2	7.2	7.4	7.5	7.9	7.7	8.6	6.5	8.1	8.4
4/14	5.7	6.8	7.4	7.4	7.5	7.7	7.6	8.0	7.8	8.9	6.5	8.3	8.6
4/15	5.9	7.0	7.8	7.8	7.8	8.1	7.8	8.2	7.9	9.1	6.6	8.7	9.0
4/16	6.4	7.2	8.3	8.3	8.3	8.6	8.1	8.5	8.1	9.5	6.9	9.2	9.5
4/17	6.8	7.4	8.7	8.8	8.9	9.3	8.4	9.0	8.3	9.7	7.1	9.9	10.1
4/18	7.4	7.6	9.2	9.3	9.5	9.9	8.8	9.4	8.5	9.9	7.5	10.4	10.5
4/19	7.4	7.8	9.3	9.5	9.7	10.2	8.9	9.6	8.6	9.9	7.7	10.6	10.7
4/20	7.4	7.9	9.2	9.4	9.7	10.2	8.9	9.6	8.7	9.8	7.7	10.5	10.6
4/21	7.2	7.9	9.0	9.2	9.5	10.0	8.8	9.5	8.7	9.6	7.6	10.2	10.3
4/22	6.9	7.9	8.7	8.9	9.1	9.6	8.7	9.3	8.6	9.3	7.4	9.9	10.1
4/23	6.7	7.9	8.6	8.7	8.9	9.3	8.6	9.2	8.5	9.1	7.3	9.7	9.8
4/24	6.8	8.2	8.6	8.7	8.9	9.5	8.7	9.3	8.5	9.3	7.2	9.8	9.9
4/25	6.7	8.6	8.7	8.7	8.9	9.4	8.8	9.3	8.8	9.4	7.3	9.8	9.9
4/26	6.8	8.6	8.9	8.9	9.0	9.5	8.9	9.5	9.0	9.7	7.4	9.8	10.0
4/27	7.1	8.6	9.1	9.2	9.4	10.0	9.1	9.8	9.2	10.1	7.5	10.1	10.4
4/28	7.5	8.7	9.4	9.5	9.8	10.4	9.3	10.2	9.4	10.5	7.7	10.7	10.9
4/29	8.0	8.8	9.8	10.0	10.4	11.0	9.6	10.5	9.6	11.0	7.9	11.2	11.4
4/30	8.4	8.8	10.0	10.3	10.8	11.4	9.9	10.7	9.8	11.2	8.1	11.7	11.8

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
5/1	8.4	8.6	9.9	10.3	10.7	11.3	9.9	10.7	9.9	11.4	8.0	11.7	11.9
5/2	8.4	8.3	9.7	10.2	10.7	11.3	9.8	10.7	9.8	11.3	8.0	11.7	11.9
5/3	8.4	8.4	9.7	10.2	10.7	11.3	9.8	10.6	9.7	11.2	7.9	11.7	11.8
5/4	8.6	8.3	9.8	10.2	10.6	11.2	9.9	10.5	9.7	11.2	7.8	11.8	11.9
5/5	8.7	8.5	10.1	10.5	10.8	11.3	10.0	10.6	9.8	11.4	7.8	12.0	12.1
5/6	8.9	8.6	10.3	10.7	11.1	11.6	10.2	10.8	9.9	11.6	8.0	12.2	12.3
5/7	9.0	8.6	10.3	10.7	11.2	11.7	10.3	11.0	10.1	11.8	8.2	12.3	12.5
5/8	9.0	8.7	10.2	10.6	11.1	11.6	10.2	11.0	10.1	11.5	8.4	12.3	12.4
5/9	9.2	8.8	10.4	10.7	11.1	11.5	10.2	11.0	10.1	11.6	8.6	12.3	12.4
5/10	9.4	8.8	10.4	10.8	11.2	11.5	10.3	11.1	10.2	11.6	8.8	12.5	12.6
5/11	9.4	9.0	10.5	10.8	11.1	11.5	10.3	11.2	10.2	11.5	9.0	12.4	12.5
5/12	9.2	9.0	10.2	10.5	10.9	11.2	10.2	11.1	10.2	11.3	9.1	12.1	12.2
5/13	8.9	9.1	9.9	10.1	10.5	10.8	10.0	11.0	10.1	11.0	9.1	11.7	11.8
5/14	8.9	9.3	9.8	10.0	10.4	10.5	9.9	10.8	10.0	10.7	9.1	11.4	11.5
5/15	9.2	9.4	10.2	10.4	10.8	11.0	10.2	11.1	10.2	11.3	9.2	11.8	11.9
5/16	9.6	9.5	10.5	10.7	11.2	11.6	10.4	11.5	10.4	11.7	9.4	12.3	12.5
5/17	10.2	9.8	11.0	11.3	11.8	12.3	10.7	11.9	10.7	12.1	9.7	12.9	13.1
5/18	10.8	10.0	11.3	11.8	12.5	13.1	11.0	12.4	11.1	12.6	10.0	13.6	13.7
5/19	11.1	10.2	11.5	12.1	12.8	13.5	11.2	12.7	11.4	12.7	10.3	13.9	14.0
5/20	11.4	10.2	11.5	12.2	13.0	13.7	11.3	12.8	11.5	12.8	10.5	14.1	14.2
5/21	11.3	10.2	11.6	12.3	13.1	13.8	11.4	12.8	11.6	12.9	10.6	14.3	14.4
5/22	11.2	10.2	11.3	12.0	12.7	13.3	11.3	12.6	11.6	12.6	10.7	13.9	14.0
5/23	10.9	10.2	11.2	11.8	12.5	13.0	11.3	12.4	11.6	12.4	10.6	13.7	13.8
5/24	10.9	10.2	11.2	11.7	12.4	12.9	11.2	12.4	11.6	12.5	10.6	13.7	13.8
5/25	11.3	10.2	11.2	11.8	12.5	13.0	11.0	12.2	11.4	12.4	10.7	14.0	13.9
5/26	12.0	10.3	11.8	12.3	12.9	13.4	10.9	12.3	11.4	12.7	10.8	14.6	14.5
5/27	12.7	10.5	12.3	12.9	13.6	14.1	10.9	12.6	11.5	13.0	10.9	15.4	15.2
5/28	13.4	10.6	12.7	13.4	14.1	14.8	10.9	12.8	11.5	13.2	11.1	16.0	15.8
5/29	13.6	10.9	13.0	13.7	14.5	15.2	10.8	12.7	11.4	13.1	11.3	16.5	16.2
5/30	13.7	11.2	13.1	13.8	14.6	15.2	10.7	12.6	11.2	12.8	11.4	16.5	16.1
5/31	13.4	11.3	12.9	13.6	14.4	15.0	10.5	12.3	11.1	12.4	11.4	16.3	15.9

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
6/1	12.8	11.6	12.8	13.3	14.0	14.6	10.5	12.2	11.0	12.2	11.3	16.0	15.6
6/2	12.7	11.7	13.0	13.5	14.1	14.6	10.5	12.1	11.0	12.2	11.2	15.9	15.5
6/3	12.7	12.1	13.3	13.7	14.3	14.8	10.6	12.2	11.0	12.3	11.3	16.2	15.7
6/4	13.0	12.3	13.7	14.2	14.8	15.2	10.7	12.5	11.2	12.5	11.4	16.6	16.1
6/5	13.7	12.5	14.5	14.9	15.5	16.0	10.8	13.0	11.5	13.1	11.7	17.4	16.7
6/6	14.7	12.8	15.3	15.8	16.4	17.1	11.1	13.6	11.9	13.6	11.9	18.4	17.7
6/7	15.5	13.1	16.0	16.6	17.3	18.1	11.2	14.0	12.2	14.1	12.2	19.3	18.5
6/8	16.3	13.4	16.6	17.3	18.0	18.8	11.4	14.3	12.4	14.4	12.4	19.9	19.0
6/9	16.2	13.6	16.4	17.1	17.9	18.8	11.6	14.4	12.5	14.3	12.5	20.0	19.1
6/10	16.1	13.1	16.1	16.9	17.7	18.7	11.6	14.3	12.5	14.2	12.3	19.9	18.9
6/11	16.0	12.7	15.7	16.5	17.5	18.5	11.6	14.3	12.5	14.2	12.1	19.8	18.8
6/12	15.8	12.3	15.2	16.1	17.1	18.2	11.6	14.2	12.5	14.2	11.9	19.8	18.7
6/13	15.7	11.7	14.8	15.8	16.8	17.9	11.7	14.2	12.3	14.2	11.8	19.7	18.6
6/14	15.6	11.0	14.2	15.3	16.5	17.6	11.9	14.2	12.2	14.3	11.6	19.8	18.6
6/15	15.4	10.2	13.4	14.6	15.8	17.0	12.0	14.1	12.0	14.2	11.5	19.7	18.4
6/16	15.4	9.2	12.7	14.1	15.4	16.7	12.1	14.2	12.0	14.3	11.5	19.7	18.4
6/17	15.5	8.9	12.4	13.8	15.1	16.4	12.2	14.2	11.9	14.5	11.5	19.9	18.5
6/18	15.4	8.5	12.1	13.4	14.7	16.0	12.4	14.2	11.8	14.5	11.6	19.8	18.5
6/19	15.3	8.1	11.7	13.0	14.4	15.7	12.5	14.2	11.7	14.6	11.5	19.8	18.5
6/20	15.2	7.8	11.4	12.8	14.2	15.4	12.6	14.3	11.7	14.7	11.5	19.8	18.5
6/21	14.9	7.7	11.1	12.4	13.7	15.0	12.5	14.1	11.9	14.6	11.5	19.7	18.4
6/22	15.1	7.6	11.2	12.5	13.9	15.1	12.7	14.3	11.9	14.9	11.6	20.1	18.7
6/23	15.6	7.7	11.5	12.9	14.3	15.4	12.8	14.6	12.0	15.2	11.8	20.6	19.1
6/24	15.9	7.9	11.6	13.0	14.4	15.6	13.0	14.9	12.2	15.3	12.1	21.1	19.5
6/25	16.0	7.9	11.5	12.9	14.4	15.6	13.0	14.9	12.3	15.1	12.4	21.5	19.6
6/26	16.4	8.1	11.7	13.1	14.7	15.8	13.2	15.1	12.4	15.4	12.8	22.0	20.1
6/27	16.9	8.1	11.8	13.2	14.8	16.0	13.4	15.3	12.6	15.5	13.2	22.6	20.5
6/28	17.5	8.2	12.1	13.6	15.2	16.4	13.7	15.7	12.8	16.0	13.5	23.2	21.1
6/29	17.9	8.2	12.1	13.6	15.3	16.5	13.9	16.0	13.1	16.2	13.8	23.7	21.4
6/30	18.2	8.2	12.1	13.6	15.2	16.4	14.0	16.2	13.3	16.4	14.0	23.9	21.6

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
7/1	18.3	8.1	12.1	13.6	15.2	16.4	14.1	16.3	13.5	16.5	14.1	24.0	21.7
7/2	18.6	8.1	12.2	13.8	15.4	16.5	14.3	16.6	13.8	17.1	14.2	24.3	22.0
7/3	18.6	8.0	12.1	13.6	15.2	16.3	14.3	16.7	14.0	17.1	14.2	24.2	22.0
7/4	18.6	8.0	11.9	13.4	14.9	16.0	14.3	16.6	14.1	17.0	14.2	24.0	21.8
7/5	18.6	8.0	11.9	13.3	14.8	15.9	14.3	16.6	14.2	17.0	14.1	23.9	21.7
7/6	18.6	8.0	11.8	13.2	14.7	15.8	14.3	16.6	14.3	17.0	14.0	23.8	21.5
7/7	18.3	7.9	11.3	12.7	14.2	15.3	14.2	16.3	14.3	16.7	13.9	23.4	21.2
7/8	17.8	7.8	10.8	12.2	13.5	14.7	14.0	15.9	14.2	16.3	13.7	22.8	20.6
7/9	17.3	7.7	10.5	11.7	13.0	14.2	13.8	15.6	14.2	16.2	13.5	22.3	20.2
7/10	16.8	7.7	10.1	11.3	12.6	13.8	13.7	15.2	14.1	16.1	13.3	21.8	19.9
7/11	16.6	7.6	10.1	11.3	12.6	13.7	13.7	15.1	14.1	16.2	13.2	21.6	19.8
7/12	16.2	7.5	9.9	11.1	12.3	13.4	13.6	14.9	14.0	16.2	13.0	21.3	19.6
7/13	15.8	7.4	9.6	10.8	12.0	13.1	13.4	14.7	14.0	16.0	12.8	20.9	19.3
7/14	15.7	7.4	9.8	10.9	12.1	13.2	13.5	14.8	14.0	16.4	12.6	20.8	19.3
7/15	16.0	7.5	10.2	11.4	12.7	13.7	13.8	15.1	14.1	16.9	12.5	21.2	19.7
7/16	16.4	7.6	10.5	11.8	13.1	14.2	14.1	15.4	14.3	17.3	12.5	21.7	20.2
7/17	16.8	7.6	10.8	12.1	13.4	14.5	14.3	15.8	14.5	17.6	12.6	22.2	20.6
7/18	16.8	7.6	10.6	11.9	13.2	14.4	14.3	15.9	14.6	17.4	12.6	22.2	
7/19	16.8	7.6	10.6	11.7	13.0	14.2	14.3	15.8	14.7	17.4	12.6	22.2	
7/20	16.8	7.6	10.5	11.6	12.8	14.1	14.3	15.8	14.7	17.5	12.6	22.2	
7/21	16.5	7.5	10.2	11.3	12.4	13.7	14.1	15.5	14.8	17.2	12.6	21.9	
7/22	16.0	7.4	9.8	10.8	11.9	13.2	13.9	15.2	14.8	16.8	12.6	21.4	
7/23	15.3	7.3	9.4	10.3	11.3	12.5	13.6	14.7	14.7	16.3	12.4	20.5	
7/24	14.7	7.2	9.1	9.9	10.8	11.9	13.3	14.3	14.5	15.9	12.3	19.8	
7/25	14.5	7.2	9.3	10.0	10.9	12.0	13.4	14.3	14.5	16.2	12.2	19.7	
7/26	14.5	7.2	9.4	10.2	11.2	12.3	13.5	14.4	14.7	16.4	12.2	19.8	
7/27	14.7	7.2	9.6	10.5	11.5	12.5	13.7	14.7	14.8	16.6	12.3	20.0	
7/28	15.0	7.1	9.9	10.9	12.0	13.0	13.9	15.1	15.0	17.1	12.4	20.5	
7/29	15.5	7.1	10.2	11.3	12.4	13.5	14.2	15.5	15.2	17.6	12.5	21.1	
7/30	16.0	7.1	10.4	11.6	12.7	13.9	14.4	15.9	15.4	18.1	12.7	21.7	
7/31	16.4	7.1	10.6	11.8	13.0	14.3	14.7	16.2	15.6	18.4	12.8	22.2	

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
8/1	16.6	7.1	10.4	11.7	12.9	14.3	14.7	16.3	15.7	18.5	12.9	22.3	
8/2	16.4	7.0	10.1	11.2	12.5	13.8	14.6	16.1	15.7	18.2	12.9	22.0	
8/3	16.1	7.0	9.8	10.9	12.1	13.4	14.4	15.9	15.6	17.9	12.8	21.7	
8/4	15.9	7.0	9.7	10.8	11.9	13.2	14.4	15.8	15.5	17.9	12.7	21.4	
8/5	15.6	6.9	9.5	10.6	11.6	12.9	14.4	15.6	15.4	17.8	12.6	21.1	
8/6	15.6	6.9	9.6	10.6	11.7	12.9	14.5	15.6	15.5	17.9	12.5	21.1	
8/7	15.6	6.9	9.5	10.6	11.7	12.9	14.5	15.6	15.5	18.0	12.4	21.1	
8/8	15.5	7.0	9.6	10.6	11.7	12.9	14.5	15.6	15.6	18.0	12.4	21.2	
8/9	15.6	7.1	9.7	10.7	11.8	13.0	14.6	15.7	15.7	18.2	12.5	21.3	
8/10	16.0	7.2	9.9	11.0	12.2	13.3	14.7	15.9	15.7	18.3	12.6	21.6	
8/11	16.0	7.2	9.9	10.8	12.0	13.1	14.5	15.7	15.6	17.8	12.8	21.6	
8/12	15.8	7.1	9.8	10.8	11.8	13.0	14.3	15.4	15.3	17.3	13.0	21.2	
8/13	15.5	7.1	9.7	10.5	11.6	12.7	14.0	15.1	15.0	17.0	13.1	20.8	
8/14	15.3	7.1	9.7	10.5	11.5	12.6	13.9	14.9	14.8	16.9	13.2	20.6	
8/15	15.3	7.1	9.8	10.6	11.6	12.7	13.8	14.9	14.7	16.8	13.2	20.6	
8/16	15.4	7.1	10.0	10.8	11.8	13.0	13.9	14.9	14.6	17.0	13.2	20.9	
8/17	15.0	7.0	9.7	10.5	11.5	12.6	13.8	14.8	14.7	16.7	13.2	20.7	
8/18	14.8	7.0	9.6	10.4	11.3	12.4	13.8	14.8	14.7	16.9	13.1	20.4	
8/19	15.0	7.0	9.6	10.4	11.3	12.5	14.0	15.0	14.9	17.2	13.0	20.7	
8/20	15.0	7.0	9.6	10.4	11.3	12.5	14.3	15.1	15.0	17.2	13.0	20.6	
8/21	14.9	6.9	9.4	10.3	11.2	12.3	14.4	15.2	15.2	17.1	13.0	20.5	
8/22	14.8	6.9	9.3	10.1	11.0	12.1	14.6	15.3	15.3	17.0	12.8	20.2	
8/23	14.6	6.8	9.2	9.9	10.7	11.8	14.7	15.3	15.4	16.9	12.6	19.8	
8/24	14.6	6.8	9.3	10.0	10.8	12.0	14.9	15.5	15.6	17.2	12.5	19.7	
8/25	14.6	6.9	9.2	10.0	10.8	12.0	15.2	15.7	15.7	17.3	12.4	19.7	19.1
8/26	14.4	6.9	9.2	9.9	10.6	11.7	15.4	15.8	15.8	17.2	12.5	19.6	19.1
8/27	14.2	6.9	9.3	9.9	10.7	11.7	15.3	15.8	15.8	16.9	12.5	19.3	18.9
8/28	13.7	6.9	9.3	9.9	10.5	11.5	15.2	15.6	15.6	16.6	12.5	18.8	18.5
8/29	13.1	6.8	9.4	9.9	10.5	11.3	15.0	15.3	15.3	16.2	12.6	18.0	17.7
8/30	12.5	6.8	9.4	9.9	10.6	11.2	14.6	14.9	15.0	15.9	12.6	17.2	16.9
8/31	11.7	6.7	9.3	9.8	10.4	10.9	14.3	14.5	14.6	15.3	12.5	16.2	15.9

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
9/1	11.1	6.7	9.3	9.7	10.3	10.8	13.9	14.1	14.2	14.9	12.4	15.2	15.2
9/2	10.6	6.6	9.2	9.6	10.2	10.7	13.5	13.7	13.8	14.5	12.1	14.6	14.6
9/3	10.1	6.6	8.9	9.4	10.0	10.5	13.2	13.5	13.6	14.3	11.8	14.0	14.1
9/4	10.1	6.6	8.8	9.4	10.0	10.6	12.9	13.2	13.4	14.3	11.7	13.9	14.1
9/5	10.1	6.6	8.6	9.2	9.9	10.6	12.7	13.1	13.3	14.4	11.6	14.1	14.3
9/6	10.2	6.7	8.5	9.1	9.8	10.6	12.7	13.1	13.3	14.5	11.6	14.5	14.7
9/7	10.5	6.8	8.5	9.2	9.9	10.7	12.7	13.1	13.3	14.8	11.6	15.1	15.3
9/8	10.9	7.0	8.7	9.4	10.0	11.0	12.7	13.2	13.5	15.1	11.9	15.8	15.9
9/9	11.4	7.0	8.7	9.4	10.1	11.0	12.6	13.2	13.6	15.3	12.2	16.5	16.4
9/10	11.7	7.1	8.8	9.4	10.1	11.0	12.6	13.3	13.6	15.4	12.5	17.1	16.8
9/11	11.8	7.0	8.7	9.3	9.9	10.9	12.7	13.4	13.7	15.2	12.6	17.2	16.8
9/12	11.8	7.0	8.6	9.1	9.7	10.7	12.8	13.4	13.7	15.1	12.5	17.1	16.7
9/13	11.6	6.9	8.4	8.9	9.5	10.4	12.9	13.3	13.7	14.9	12.4	16.9	16.5
9/14	11.3	6.8	8.2	8.7	9.2	10.1	13.0	13.4	13.7	14.6	12.2	16.4	16.0
9/15	11.1	6.7	8.1	8.6	9.1	9.9	13.0	13.3	13.6	14.4	11.9	15.9	15.5
9/16	10.7	6.6	8.0	8.5	8.9	9.8	13.2	13.3	13.6	14.2	11.7	15.3	15.1
9/17	10.6	6.6	8.1	8.5	9.0	9.8	13.3	13.4	13.6	14.4	11.6	14.9	15.0
9/18	10.5	6.7	8.2	8.6	9.1	10.0	13.3	13.4	13.6	14.5	11.5	14.8	15.0
9/19	10.5	6.7	8.2	8.6	9.2	10.0	13.3	13.5	13.5	14.5	11.5	14.7	14.9
9/20	10.4	6.7	8.1	8.6	9.2	10.0	13.3	13.4	13.5	14.4	11.4	14.6	14.8
9/21	10.4	6.7	8.2	8.7	9.2	10.1	13.3	13.4	13.5	14.5	11.4	14.6	14.9
9/22	10.3	6.7	8.1	8.6	9.2	9.9	13.2	13.4	13.4	14.4	11.3	14.5	14.8
9/23	10.3	6.7	8.1	8.6	9.2	10.0	13.2	13.3	13.4	14.4	11.3	14.5	14.8
9/24	10.0	6.6	7.9	8.4	8.9	9.8	13.2	13.2	13.3	14.2	11.0	14.3	14.5
9/25	9.8	6.6	7.8	8.2	8.6	9.4	13.1	13.1	13.2	14.0	10.7	14.1	14.4
9/26	9.7	6.7	7.8	8.1	8.5	9.3	13.1	13.1	13.2	13.9	10.5	14.1	14.3
9/27	9.6	6.7	7.7	8.0	8.4	9.2	13.0	13.1	13.2	13.9	10.4	14.0	14.3
9/28	9.5	6.7	7.7	8.0	8.3	9.2	13.1	13.1	13.2	13.8	10.3	14.0	14.3
9/29	9.4	6.7	7.7	7.9	8.2	9.0	13.1	13.1	13.2	13.7	10.1	14.0	14.2
9/30	9.4	6.7	7.8	8.0	8.2	9.0	13.2	13.2	13.2	13.7	10.0	13.9	14.2

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
10/1	9.4	6.7	7.8	8.0	8.3	9.2	13.2	13.3	13.3	13.8	10.0	14.0	14.3
10/2	9.5	6.7	7.9	8.1	8.4	9.3	13.3	13.4	13.4	14.0	10.2	14.0	14.4
10/3	9.6	6.7	7.9	8.2	8.5	9.4	13.4	13.5	13.5	14.0	10.3	14.0	14.3
10/4	9.7	6.7	7.9	8.2	8.6	9.4	13.5	13.5	13.5	13.9	10.4	13.8	14.1
10/5	9.8	6.7	8.0	8.4	8.8	9.6	13.5	13.6	13.6	14.0	10.6	13.7	14.0
10/6	10.0	6.7	8.1	8.5	8.9	9.8	13.5	13.7	13.7	14.2	10.8	13.7	14.0
10/7	10.2	6.8	8.4	8.8	9.2	10.0	13.6	13.7	13.8	14.2	11.1	13.7	14.0
10/8	10.2	6.8	8.7	9.1	9.6	10.2	13.4	13.6	13.7	14.1	11.3	13.4	13.7
10/9	10.1	6.7	8.7	9.2	9.7	10.2	13.4	13.5	13.5	13.9	11.4	13.0	13.2
10/10	10.2	6.7	8.7	9.1	9.7	10.1	12.7	12.8	12.9	13.4	11.5	12.8	13.0
10/11	10.0	6.7	8.5	9.0	9.5	9.9	11.9	12.2	12.2	12.9	11.5	12.6	12.8
10/12	9.8	6.6	8.3	8.7	9.1	9.5	11.1	11.4	11.4	12.2	11.4	12.4	12.6
10/13	9.7	6.6	8.1	8.5	8.9	9.1	10.2	10.6	10.7	11.6	11.3	12.2	12.4
10/14	9.6	6.5	7.7	8.0	8.4	8.6	9.5	9.9	10.1	11.0	11.2	12.1	12.2
10/15	9.5	6.5	7.2	7.6	7.9	8.2	8.8	9.3	9.7	10.6	11.1	12.1	12.1
10/16	9.6	6.5	7.1	7.4	7.7	7.9	8.3	9.0	9.4	10.5	11.2	12.3	12.4
10/17	9.6	6.5	7.0	7.3	7.6	7.8	8.3	9.0	9.5	10.5	11.2	12.5	12.5
10/18	9.6	6.5	7.0	7.3	7.6	7.8	8.2	8.9	9.5	10.5	11.2	12.5	12.5
10/19	9.6	6.5	7.0	7.3	7.6	7.8	8.3	8.9	9.5	10.5	11.2	12.5	12.6
10/20	9.5	6.5	7.0	7.3	7.6	7.8	8.2	8.8	9.4	10.3	11.0	12.4	12.4
10/21	9.2	6.5	6.9	7.2	7.5	7.7	8.1	8.6	9.1	10.0	10.7	12.0	12.1
10/22	9.1	6.5	6.9	7.2	7.5	7.7	8.1	8.5	8.8	9.7	10.5	11.9	11.9
10/23	9.0	6.5	6.9	7.1	7.4	7.6	7.8	8.3	8.5	9.3	10.3	11.6	11.5
10/24	8.8	6.5	6.9	7.1	7.4	7.5	7.7	8.1	8.2	9.0	10.1	11.4	11.3
10/25	8.7	6.5			7.4	7.5	7.7	8.1	8.1	8.9	10.0	11.2	
10/26	8.7	6.6			7.5	7.6	7.8	8.2	8.2	8.9	10.0	10.9	
10/27	8.8	6.6			7.8	7.9	8.0	8.5	8.5	9.1	10.1	10.9	
10/28	9.0	6.6			8.2	8.3	8.5	8.9	8.9	9.4	10.3	10.9	
10/29	9.0	6.7			8.4	8.5	8.7	9.2	9.2	9.6	10.4	10.7	
10/30	8.8	6.7			8.6	8.7	8.9	9.3	9.4	9.8	10.4	10.4	
10/31	8.6	6.7			8.6	8.8	9.0	9.4	9.7	10.0	10.3	10.0	

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
11/1	8.4	6.7			8.6	8.8	9.0	9.4	9.9	10.2	10.1	9.7	
11/2	8.1	6.6			8.5	8.7	8.9	9.3	10.0	10.3	9.8	9.4	
11/3	7.8	6.6			8.3	8.5	8.7	9.1	10.0	10.3	9.5	9.0	
11/4	7.5	6.5			8.0	8.1	8.3	8.8	9.9	10.2	9.3	8.8	
11/5	7.3	6.4			7.9	8.0	8.2	8.6	9.8	10.1	9.1	8.6	
11/6	7.1	6.4			7.8	7.9	8.0	8.4	9.7	10.1	8.9	8.5	
11/7	7.1	6.3			7.7	7.8	7.9	8.3	9.6	10.0	8.8	8.4	
11/8	7.0	6.2			7.7	7.7	7.9	8.3	9.6	9.9	8.7	8.4	
11/9	6.9	6.3			7.6	7.7	7.8	8.2	9.5	9.8	8.6	8.3	
11/10	7.0	6.3			7.9	7.9	8.0	8.4	9.4	9.7	8.7	8.2	
11/11	6.9	6.4			8.0	8.0	8.2	8.5	9.3	9.6	8.6	8.1	
11/12	6.8	6.4			7.9	8.0	8.2	8.5	9.2	9.4	8.5	8.0	
11/13	6.6	6.4			7.8	7.9	8.1	8.3	9.0	9.2	8.4	7.8	
11/14	6.7	6.6			8.1	8.1	8.3	8.5	8.9	9.1	8.4	7.6	
11/15	6.6	6.8			8.2	8.2	8.4	8.5	8.8	8.9	8.4	7.5	
11/16	6.5	7.0			8.3	8.3	8.6	8.6	8.7	8.8	8.3	7.4	
11/17	6.2	7.0			8.1	8.1	8.3	8.4	8.5	8.6	7.9	7.1	
11/18	5.8	7.0			7.7	7.7	8.0	8.0	8.3	8.3	7.5	6.8	
11/19	5.4	7.0			7.2	7.3	7.8	7.7	8.1	8.1	7.1	6.5	
11/20	5.3	7.0			7.0	7.1	7.7	7.6	8.0	8.0	6.8	6.3	
11/21	5.0	6.9			6.7	6.8	7.4	7.3	7.8	7.9	6.4	6.1	
11/22	4.8	6.7			6.3	6.4	7.2	7.0	7.7	7.7	6.1	6.0	
11/23	4.5	6.5			5.8	5.9	7.0	6.7	7.5	7.6	5.7	5.7	
11/24	4.3	6.4			5.3	5.4	6.7	6.3	7.4	7.5	5.3	5.4	
11/25	4.1	6.3			5.0	5.0	6.6	6.1	7.3	7.4	5.0	5.2	
11/26	3.9	6.3			4.9	4.8	6.5	6.0	7.1	7.2	4.8	5.0	
11/27	3.6	6.3			4.7	4.5	6.4	5.8	7.0	7.1	4.4	4.7	
11/28	3.4	6.3			4.6	4.3	6.3	5.7	6.9	7.0	4.3	4.5	
11/29	3.4	6.3			4.6	4.3	6.3	5.6	6.8	7.0	4.3	4.3	
11/30	3.5	6.4			4.9	4.6	6.3	5.8	6.8	7.0	4.6	4.4	

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 12.8 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Big Four 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
12/1	3.7	6.4			5.2	5.0	6.4	6.0	6.8	7.0	4.9	4.7	
12/2	4.0	6.4			5.6	5.4	6.5	6.2	6.8	7.0	5.3	4.9	
12/3	4.3	6.4			6.0	5.9	6.6	6.5	6.8	7.0	5.7	5.2	
12/4	4.7	6.3			6.4	6.4	6.8	6.8	6.8	7.0	6.2	5.6	
12/5	5.0	6.3			6.9	6.8	7.1	7.1	7.0	7.1	6.7	5.9	
12/6	5.3	6.2			7.1	7.2	7.3	7.4	7.2	7.2	7.1	6.1	
12/7	5.4	6.2			7.2	7.3	7.4	7.5	7.2	7.2	7.2	6.2	
12/8	5.4	6.1			7.2	7.3	7.4	7.6	7.3	7.2	7.3	6.2	
12/9	5.5	6.1			7.3	7.3	7.4	7.7	7.2	7.2	7.3	6.4	
12/10	5.5	6.0			7.2	7.2	7.4	7.7	7.2	7.2	7.2	6.5	
12/11	5.3	6.0			7.1	7.1	7.2	7.6	7.1	7.1	7.1	6.6	
12/12	5.1	5.9			6.7	6.7	6.9	7.3	6.9	6.9	6.8	6.5	
12/13	4.7	5.8			6.3	6.3	6.5	7.0	6.6	6.7	6.4	6.4	
12/14	4.4	5.7			6.0	6.0	6.2	6.6	6.4	6.6	6.1	6.2	
12/15	4.1	5.6			5.8	5.8	6.0	6.4	6.3	6.4	5.9	5.8	
12/16	3.9	5.5			5.6	5.7	5.9	6.3	6.2	6.3	5.8	5.5	
12/17	3.7	5.4			5.5	5.5	5.8	6.1	6.1	6.2	5.6	5.2	
12/18	3.6	5.4			5.3	5.4	5.7	6.0	6.0	6.1	5.6	4.9	
12/19	3.4	5.3			5.2	5.2	5.5	5.8	5.9	6.0	5.4	4.7	
12/20	3.3	5.1			5.0	5.1	5.4	5.7	5.8	5.9	5.2	4.4	
12/21	3.0	5.0			4.8	4.9	5.2	5.5	5.6	5.8	5.0	4.3	
12/22	2.9	4.9			4.7	4.7	5.1	5.4	5.6	5.8	4.8	4.4	
12/23	2.7	4.8			4.5	4.6	4.9	5.2	5.5	5.7	4.5	4.3	
12/24	2.6	4.6			4.3	4.4	4.8	5.0	5.3	5.5	4.3	4.2	
12/25	2.5	4.5			4.2	4.3	4.7	4.9	5.2	5.4	4.0	4.1	
12/26	2.5	4.4			4.2	4.3	4.7	4.9	5.2	5.4	3.8	4.1	
12/27	2.4	4.3			4.1	4.3	4.6	4.8	5.1	5.3	3.7	4.1	5.2
12/28	2.5	4.2			4.1	4.2	4.6	4.7	5.0	5.1	3.5	3.9	5.1
12/29	2.4	4.1			3.8	3.8	4.4	4.5	4.9	5.0	3.3	3.6	4.8
12/30	2.2	4.0			3.5	3.5	4.2	4.2	4.8	4.9	3.0	3.3	4.6
12/31	2.1	3.9			3.3	3.2	4.0	4.0	4.6	4.7	2.8	3.0	4.1

APPENDIX E

Consultation Documentation Regarding Draft Report

Presler, Dawn

From: Presler, Dawn
Sent: Tuesday, April 26, 2016 2:45 PM
To: 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov); 'Bryden, Andy -FS'; 'Anne Savery'; 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov); 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV); 'Mick Matheson'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Rustay, Michael'; Kannadaguli, Monika (ECY) (MKAN461 @ecy.wa.gov)
Cc: Binkley, Keith
Subject: JHP (FERC No. 2157) - draft WQ Monitoring Annual Report for 30day review
Attachments: 20160426_DRAFT_2015 WQMP Annual Report for ARC 30day review.pdf

Dear ARC,
Attached for your review is the Draft 2015 Annual Report for the Water Quality Monitoring Plan. Please take the next 30 days to review and provide comments, if any, back to me with a cc: to Keith Binkley by May 26. Thanks.

Dawn Presler
Sr. Environmental Coordinator
(425) 783-1709

PUD No. 1 of Snohomish County
PO Box 1107
Everett, WA 98206-1107

Presler, Dawn

From: Julie Sklare <JSklare@everettwa.gov>
Sent: Thursday, May 26, 2016 1:56 PM
To: Presler, Dawn; Binkley, Keith
Cc: Jim Miller; Anna Thelen
Subject: WQ Annual report comments
Attachments: COE comments 20160426_DRAFT_2015 WQMP Annual Report for ARC 30day review.docx

Dawn and Keith,

Please find attached comments in tracked changes on pages 8 and 9.

If you have any questions about the comments, please direct them to Anna Thelen.

Thank you,

Julie

Julie Sklare | Senior Environmental Specialist | City of Everett | 425-257-7208 | jsklare@ci.everett.wa.us

2.3. Water Quality

Monthly sampling of water quality in Spada Lake Reservoir occurred on the following dates during 2015: April 16, May 12, June 11, July 15, August 11, September 17, October 15, and November 19. Sampling included profile measurements of conventional parameters including temperature, pH, dissolved oxygen, conductivity, and turbidity. Sampling was conducted cooperatively with the City of Everett during 2015, and included measurements of nutrients, phytoplankton, and zooplankton.

By summary, Spada Lake Reservoir was cold and thoroughly oxygenated during April and May. Temperature stratification was first evident during the May sampling session. Zooplankton, in particular *Holopedium*, had reached their summer maximum in June. The highest phytoplankton biovolume of the year was recorded in July. By July~~August~~, the warmest water temperature was documented and the thermocline was set near 23 feet in depth. The effects of the thermocline on dissolved oxygen were apparent as dissolved oxygen levels below saturation persisted near the bottom of the reservoir during late summer / early fall. During the course of the year, most biological activity took place in the epi- and metalimnion. Additional information is provided below, by parameter.

2.3.1. Temperature

Spada Lake Reservoir temperatures ranged from 5.2 to 21.9°C depending on month and depth (Appendix A). Temperature stratification was first evident during the May sampling session. The middle of July~~August~~ had the warmest water temperatures. The thermocline was strongest in July and August. June and September also had a high resistance to mixing. The strongest point in the thermocline dropped from 21~~16~~ to 23 feet over the course of the summer. The thermocline was still present in October; however, at the completion of the sampling season in November, the lake
was isothermal.

2.3.2. pH

The highest measured pH was 7.4 in June. The lowest pH of 6.2 was measured in October at a depth of 125 feet, likely due to increased bacterial degradation of organic matter.

2.3.3. Dissolved Oxygen

Dissolved oxygen ranged from a low of 7.3 mg/L in October to a high of 11.4 mg/L in April. By saturation values, the maximum of 103% in June was likely due to primary production, and the minimum of 61% of saturation at depth in October was likely due to limited photosynthetic oxygen production and bacterial degradation of organic matter.

2.3.4. Turbidity

In April, May, June, July, and August, the surface was less turbid than at depth. Turbidities at the surface and at depth decreased through August. In September, there was a slight increase at depth. In November, turbidity increased throughout the water column as a result of peak inflows in the week preceding sampling. Through most of the season, the cut-off points between higher and lower turbidities can be traced back to the thermal structure of the reservoir.

2.3.5. Secchi Transparency

As shown in Table 2-2, Secchi transparency ranged from a high of 14 feet in May to low of 0.8 feet in November.

Table 2-2. Secchi transparency, Spada Lake Reservoir, 2015.

Date	Result (feet)
4/16/2015	13
5/12/2015	14
6/11/2015	13
7/15/2015	11
8/11/2015	11
9/17/2015	8
10/15/2015	7
11/19/2015	0.8

2.3.6. Nutrients

Total phosphorus concentrations were between 2.6 and 6.5 µg/L for most the summer, both at the surface and at depth. An increase in total phosphorous concentration was noted during November sampling. Total nitrogen was also relatively constant between 69.8 to 145.1 µg/L for most of the summer with an increase noted in October~~November~~. Nitrate showed variation over time and depth, with values ranging between 0.0 and 136.1 µg/L. Silica concentrations were similar throughout the water column, ranging from 1,600 to 2,519 µg/L.

2.3.7. Phytoplankton

The largest number and biovolume of phytoplankton occurred in the July sample. After July, phytoplankton declined in number and increased in size and species diversity ~~concurrent with the rise in zooplankton~~. *Chrysophyta* was the predominant taxon by biovolume for the entire summer. Small phytoplankton (unicellular chrysophytes and nanoplanktonic chlorophytes) made up the bulk of the biovolume of phytoplankton for most of the year. In situ chlorophyll and dissolved oxygen readings indicate that primary productivity took place predominantly between the surface and a depth of 30 feet.

Commented [jes1]: Not in June – Aug.

2.3.8. Zooplankton

Holopedium were the dominant zooplankter in all samples except April, June, and August when *Epischura* (April and August) and *Conochilus* (June) were most common. In terms of peak density, *Holopedium* (4.26/L) and *Conochilus* (67.49/L) were highest in June. The largest diversity in zooplankton species occurred in the April sample. The total number of zooplankton/L was less than three on all sample dates but June (72.06/L).

APPENDIX F

Response to Comments Regarding Draft Report

No.	Comment	District's Response
City of Everett, email dated May 25, 2016		
1	Section 2.3. "By August, the warmest water temperature was documented and the thermocline was set near 23 feet in depth." – change August to July	Updated report.
2	Section 2.3.1. "Temperature stratification was first evident during the May sampling session. The middle of August had the warmest water temperatures." – change August to July	Updated report.
3	Section 2.3.1. "The strongest point in the thermocline dropped from 16 to 23 feet over the course of the summer." – change 16 feet to 21	Updated report. The relative thermal resistance to mixing (RTRM; Kortmann, Ecosystem Consulting Service, Inc.) quantitatively defines boundaries of reservoir strata based on depth, dissolved oxygen, and temperature. An RTRM >20 identifies boundaries for the upper and lower metalimnion. Within the metalimnion, the greatest RTRM value identifies the strongest point in the thermocline – that is, the portion of water column least susceptible to mixing. Furthermore, a RTRM value greater than 80 indicates a strongly stratified reservoir. June, July, and August had maximum RTRM values of 67, 103, and 96 at 23, 26, and 26 feet, respectively.
4	Section 2.3.6 "Total nitrogen was also relatively constant between 69.8 to 145.1 µg/L for most of the summer with an increase noted in November." – change November to October	Updated report.
5	Section 2.3.7 "After July, phytoplankton declined in number and increased in size and species diversity concurrent with the rise in zooplankton." – remove "concurrent with the rise in zooplankton"	Updated report.
6	Section 2.3.7 "Chrysophyta was the predominant taxon by biovolume for the entire summer." – not in June – Aug.	Updated report.