BC Hydro

Peace River Water Use Plan

Peace River Baseline TDGP/Temperature

GMSWORKS-2

Year 9 Monitoring Program - Annual Report

January 2017 to December 2017

Diversified Environmental Services
Box 6263,
Fort St. John, B.C.
V1J 4H7

MAY 2018

PEACE RIVER WATER USE PLAN
IMPLEMENTATION PROGRAM

PEACE RIVER BASELINE TDGP/TEMPERATURE
GMSWORKS-2
YEAR 9 MONITORING PROGRAM - ANNUAL REPORT
January 2017 to December 2017

Prepared for:
BC HYDRO
6911 Southpoint Drive, 11th Floor
Burnaby, BC
V3N 4H8

Prepared by:
Diversified Environmental Services
Box 6263
Fort St. John, BC
V1J 4H7

May 2018

EXECUTIVE SUMMARY

Long-term monitoring of baseline water temperature and total dissolved gas pressure (TDGP) in the vicinity of the WAC Bennett and Peace Canyon dams is an essential component of the Peace Spill Protocol and the Peace River Flood Pulse Plan as set out by the Peace Water Use Plan Committee and the Peace Water Use Plan (WUP; BC Hydro 2010). Data collected through the monitoring of these parameters will be used to help assess and quantify the environmental effects of spills, as well as to provide information on the temperature regime of the Peace River under normal operating conditions and the influence of reservoir operations on downstream temperature. Long-term baseline temperature data will also be available for use in other projects and monitoring programs within and outside of the Peace WUP. This report summarizes data collection and maintenance activities conducted at 18 monitoring sites located between the WAC Bennett Dam forebay (Williston Reservoir) and a point approximately 6.5 km downstream of the confluence of the Pine and Peace rivers during Year 9 (Jan 01, 2017 to Dec 31, 2017).

In situ reference temperatures were recorded at the time of each field download event using a certified laboratory-grade mercury thermometer calibrated in increments of 0.1°C, for comparison to the corresponding hourly logger readings. Mean calibration errors for all temperature loggers were ≤ 0.3°C.

Results of Year 9 water temperature monitoring over the 132 km length of the study area indicate a moderating effect of hypolimnetic withdrawal from Williston Reservoir and seasonal effects associated with ambient air temperature. Minimum winter temperatures decrease and maximum summer temperatures increase with distance downstream from the facilities.

Some logistical problems were encountered in Year 9, primarily associated with ice flows in late March and early April 2017 and floating debris resulting from flood events in mid-May and early June, 2017. Short-term data gaps were observed at some stations located immediately downstream of the Halfway and Pine rivers due to loggers becoming temporarily stranded near the waterline by out-flowing ice and large woody debris. Data gaps were generally filled by functioning back-up loggers at these locations. An intermittent technical problem with the Hobo™ optical transfer shuttle resulted in a periodical failure to re-launch some loggers with the correct program parameters at the end of the download sequence. This caused the loss or corruption of several quarterly data files during Year 9.

No spill events occurred in Year 9 and no TDGP recorders were deployed.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Long-term monitoring of baseline water temperature and total dissolved gas pressure (TDGP) in the vicinity of the WAC Bennett and Peace Canyon dams has been identified as an essential component of the Peace Spill Protocol (PSP) and the Peace River Flood Pulse Plan as set out by the Peace Water Use Plan Committee and the Peace Water Use Plan (WUP; BC Hydro 2010). Data collected through the monitoring of these parameters will be used to help assess and quantify the environmental effects of spills, as well as to provide information on the temperature regime of the Peace River under normal operating conditions and the influence of reservoir operations on downstream temperature. Long-term baseline temperature data will also be available for use by other projects and monitoring programs within and outside the Peace WUP.

The objectives of this program are to collect data on spatial and temporal variations in water temperature between the WAC Bennett Dam forebay (Williston Reservoir) and a point 6.5 km downstream of the Pine River confluence for up to 10 years, and to maintain TDGP data loggers and related equipment for immediate deployment in the event of a spill at either the Gordon M. Shrum (GMS) or Peace Canyon (PCN) generating stations that is likely to meet the PSP criteria (2 days at 1,500cms or 500cms for 7+ days at PCN; 205cms for 2 days or more at GMS). This report summarizes data collection activities completed during Year 9 of the monitoring program.

2.0 METHODS

Temperature data presented in this summary were recorded between January 01, 2017 and December 31, 2017.

2.1 Temperature Monitoring

Upon commencement of the Peace River baseline temperature monitoring program in September 2008 (Year 1), 20 Tidbit v2 Model #UTBI-001 temperature sensor/logger units (0.2°C accuracy over 0°C to 50°C; 0.02°C resolution @ 25°C; Onset Corp., Bourne, MA) were deployed at 18 locations between the WAC Bennett Dam forebay and a site approximately 6.5 km downstream of the confluence of the Pine and Peace rivers (Fig. 1). During Years 2 and 3, revisions were made to monitoring site positioning and configuration to account for changes in bank conditions, to reduce the potential for logger stranding due to debris and flow level extremes, to increase redundancy in case of logger failure or loss, and to improve accessibility during high flow stage.

1
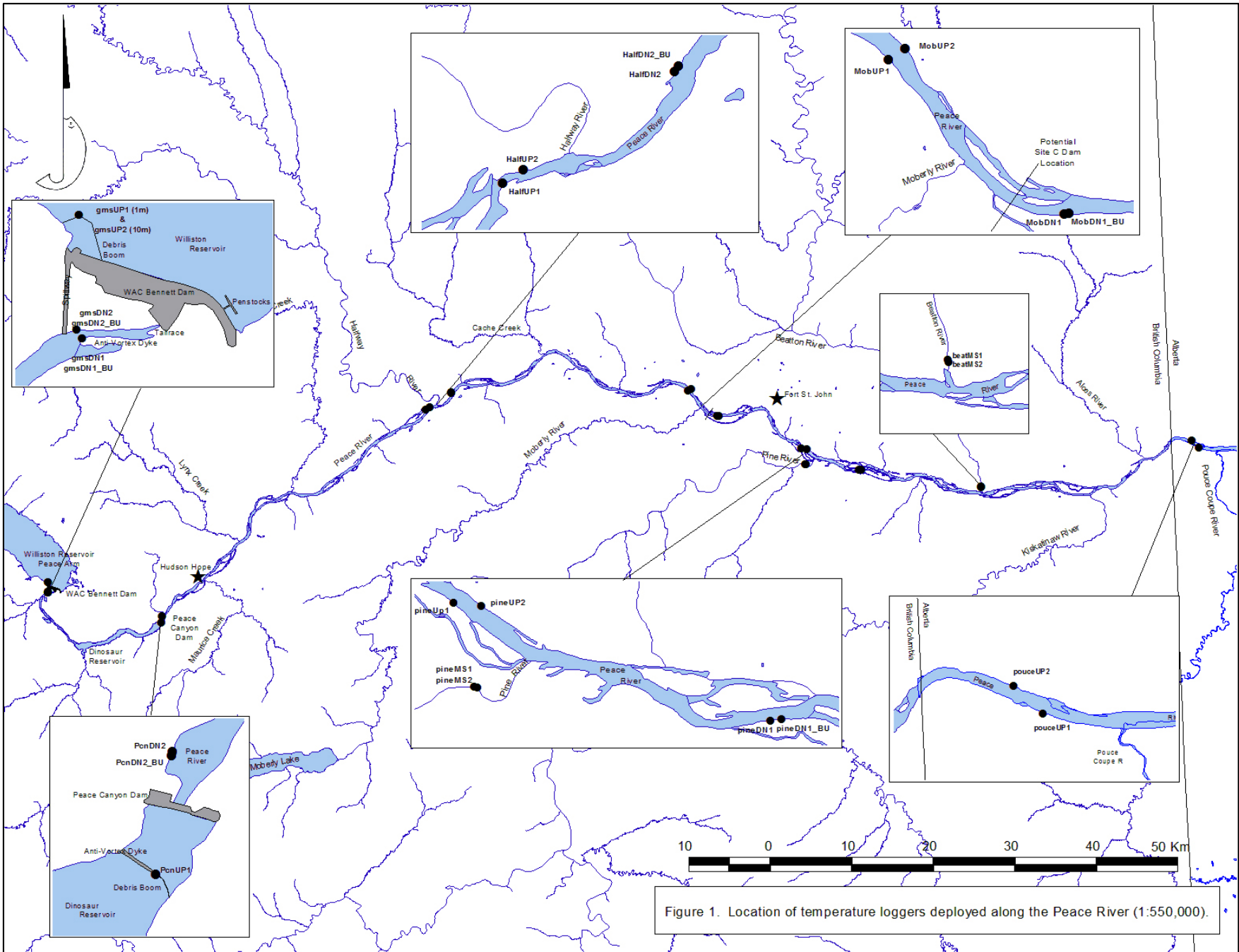
Figure 1. Location of temperature loggers deployed along the Peace River (1:550,000).

Monitoring stations are typically maintained in pairs at each general location in order to minimize the risk of data gaps in the event of logger stranding, failure, or loss. At Peace River locations upstream of major tributaries (Halfway, Moberly, and Pine rivers), monitoring stations are maintained on opposing banks of the river in order to provide redundancy and confirm temperature consistency across the channel. At Peace River locations downstream of major tributaries, paired station configuration was revised in 2011 (Year 3) from opposing banks to common banks in order to provide better redundancy in tributary outflow paths prone to stranding by passing ice and debris.

By late in Year 3, monitoring site configuration had been revised to include 21 data loggers at 18 monitoring sites. This configuration was maintained throughout Years 4 to 9. A summary of temperature monitoring station location information as of the end of Year 9 appears in Appendix I. A description of site configuration changes prior to Year 3 can be found in DES 2013.

In April 2016, six additional temperature loggers were added at 3 monitoring sites in the project area at the request of BC Hydro's Site C project (Fig. 1). These included 2 loggers on the left downstream bank of the lower Pine River mainstem (pineMS1 and pineMS2), 2 loggers on the left downstream bank of the lower Beatton River mainstem (beatMS1 and beatMS2), and 2 loggers on the left and right downstream banks of the Peace River, approximately 3 km upstream of the confluence with the Pouce Coupe River (pouceUP1 and pouceUP2). Although these additional sites are maintained and downloaded in conjunction with the Peace WUP monitoring program, results are reported in a separate summary report submitted to the Site C project. For information purposes, monitoring site details for the 6 additional loggers appear in Figure 1 and Appendices I, III and V.

Temperature loggers were programmed to record water temperature (°C) at 1 hour intervals throughout Year 9. Loggers continued to be housed in 38 mm x 100 mm steel nipples with threaded steel end caps, weighted with 5 kg steel anchors, and tethered to rooted trees or large bedrock fragments using 3.18 mm stainless steel cable.

Temperature data recorded and stored on each logger during 2017 were downloaded at approximately 3 month intervals by field transfer to a Model U-DTW-1 Hobo® waterproof shuttle (Onset Corp., Bourne, MA). Data from the shuttle were then downloaded to a desktop computer after each field session. Logger sites at the WAC Bennett Dam and Peace Canyon Dam forebay and tailrace locations were accessed by vehicle, while all Peace River mainstem sites were accessed by riverboat. Conditions and observations at the time of each download event were documented in the field on

hardcopy Download Information Forms and subsequently entered into digital format. *In situ* reference temperatures were recorded at the time of each field download event using a YSI® Professional Plus handheld multi-parameter instrument (Model No. E-528-ProPlus) or certified laboratory-grade mercury thermometer calibrated in increments of 0.1°C for comparison to the corresponding hourly logger readings (within 30 minutes of reference temperature).

Monitoring sites located within the downstream influence of the Halfway and Pine rivers have proven more susceptible to dislodgement by passing ice and debris and are inspected more frequently during the spring and summer, particularly after significant high water events (halfDN2, halfDN2BU, pineDN1, pineDN1BU). In addition to scheduled download events, temperature loggers at some Peace River mainstem locations were visually checked and re-positioned by DES staff during the course of activities unrelated to the temperature monitoring program.

Data files were exported as MS Office Excel and Access compatible text files using Onset® Hoboware Pro software (Ver. 2.3.0), amalgamated into single Excel worksheets for each data logger, and plotted relative to time. Readings representing air temperature during periods of logger stranding above the waterline have been removed from data displayed graphically in this summary report.

2.1.1 Year 9 Site Logistics

Few logistical problems were encountered during Year 9, partially due to refinements in station location and configuration made in Years 2 and 3. Occasional stranding of loggers above the waterline during Year 9 was largely associated with ice flows originating from the break-up of the Halfway, Moberly, Pine and Beatton rivers and the accumulation of debris on tether cables during tributary freshet and storm related flood events in mid-May and early June 2017. Loggers located downstream of the Halfway, Pine and Moberly river confluences were stranded in late April by debris originating from tributaries, which coincided with low discharge releases from BC Hydro facilities upstream.

An intermittent technical problem with the Hobo™ optical transfer shuttle resulted in the loss or corruption of several quarterly data files during Year 9. The shuttle periodically failed to re-launch some loggers with the correct program parameters at the end of the download sequence. Due to the intermittent nature of the glitch and the fact that the corrupted files were not be identified until the following download 3 months later, diagnosis of the problem was delayed. The unit was replaced in April 2018.

2.2 Total Dissolved Gas Pressure (TDGP)

Six Model TBO-DL6(F) TDGP monitors (Common Sensing Inc., Clark Fork, ID) were purchased by BC Hydro in Year 1, and stored at the office of Diversified Environmental Services (DES) in Fort St. John, BC. Appendix II contains an inventory of dissolved gas pressure meters and probes. Meters and probes were checked for functionality on a quarterly basis when not in use and battery charge was maintained. Initialization check routines were repeated and the condition of each probe oxygen sensor membrane was examined for evidence of ZnO precipitate build-up. In addition to routine quarterly maintenance records, calibration statements were obtained for meters that were returned to the manufacturer for repair or factory re-calibration. None of the TDGP monitors were deployed in 2017.

3.0 RESULTS AND DISCUSSION

Figures 2 to 12 are presented following Section 4.0.

3.1 Temperature Monitoring

Reference temperatures recorded during download events are presented in Appendix III along with corresponding logger temperatures and indicated error values. None of the loggers in use in 2017 exhibited a correctable zero error greater than 0.3°C.

Several loggers were replaced in Year 9, as they were approaching the end of their predicted lifespan of six years or were recording low voltage readings. Logger serial numbers listed in Appendix I correspond to the units in use at the time of the January 2018 data downloads.

A summary of temperature data collection results and related conditions and limitations are discussed in the following 6 sections, which correspond to the 6 major generating station and tributary features. Download Information Forms completed during each download are provided in Appendix IV.

3.1.1 WAC Bennett Dam Forebay and Tailrace

The WAC Bennett Dam forebay temperature monitoring station is located at the GMS spillway log boom and consists of a vertical cable suspended from the northernmost log boom steel buoy. Temperature is recorded with 2 loggers, the first located at 1 m depth (gmsUP1) and the second suspended at a depth of 10 m (gmsUP2). Both loggers recorded continuous water temperature data throughout Year 9 (Figure 2). Although seasonal thermal stratification of Williston Reservoir is evident, the relatively small temperature differential between the 2 loggers (mean=0.3°C) suggests

the primary thermocline lies deeper than 10 m. Maximum temperature differentials up to 6.3°C were recorded during a period of significant daytime surface warming during the first two weeks of August, when annual ambient temperatures peaked. Temperature profiles recorded further up the Peace Reach during unrelated work in August 2012 and October 2017 indicated a thermocline at approximately 26 m and 20 m depth, respectively (B. Culling, pers. obs.).

The GMS tailrace monitoring sites are located on opposite banks, approximately 700 m downstream of the outflow manifolds. Logger gmsDN1 records the temperature of water flowing from the south tailrace manifold, which originates from the shallowest penstock depth. Logger gmsDN2 samples water from the north tailrace manifold, which originates from a deeper withdrawal point. The tethered steel capsule at both stations contains a back-up logger in addition to the primary unit (gmsDN1BU and gmsDN2BU). All 4 loggers collected seamless data through Year 9.

As in previous years, water temperatures at gmsDN2 showed the lowest annual variation and are consistently cooler in the summer and warmer in the winter than gmsDN1 flow, which originates closer to the surface of Williston Reservoir. Temperatures recorded at gmsUP1 (forebay surface) exhibit greater annual variation than tailrace values (Fig. 3). Temperatures recorded at gmsDN1 and gmsDN2 exhibit a wide range of hourly and daily fluctuations during the summer period compared to gmsUP1, due to operational changes in water intake for power generation and maintenance activities.

3.1.2 Peace Canyon Dam Forebay and Tailrace

The data logger recording temperature at the Peace Canyon Dam forebay (pcnUP1) is attached to the anti-vortex dam log boom, located approximately 450 m upstream of the dam face. The pcnUP1 data file for the period between January 1 and January 4, 2017 was corrupted by a faulty launch by the Hobo optical shuttle in October 2016. Temperature data were recovered for the remainder of Year 9 (16:00 hrs on January 4 to December 31, 2017).

Both Peace Canyon Tailrace loggers (pcnDN2 and pcnDN2BU) recorded continuous data throughout Year 9. A comparison of PCN tailrace temperature (pcnDN2) and GMS tailrace temperature (mean of gmsDN1 and gmsDN2) indicates a relatively small temperature change through Dinosaur Reservoir during all seasons (Fig. 4). For example, no temperature difference was recorded in winter (December through February) and a mean differential of 0.6°C was recorded in summer (June through August). Figure 4 also illustrates slight thermal stratification of the Peace Canyon forebay associated with surface warming during peak ambient temperatures between the late June and early August 2017. For example,

6

PCN forebay temperatures at 1 m depth (pcnUP1) were as much as 8.4 °C warmer than water exiting the PCN powerhouse (pcnDN2) between June 30 and July 25, 2017.

3.1.3 Halfway River Confluence

Peace River water temperature was monitored at points approximately 1 km upstream and 2.5 km downstream of the Halfway River confluence. Halfway upstream stations were maintained on opposing banks throughout Year 9 (halfUP1 and halfUP2). Data sets from both upstream loggers for the period between January 1 and March 10, 2017 were corrupted by a faulty optical shuttle and could not be recovered. Logger halfUP1 recorded continuous data for the remainder of the year (March 10 to December 31, 2017), while logger halfUP2 became intermittently stranded during periods of low water between July and October after being pulled partially to shore by curious persons on July 27, 2017, 19 days after the July download session. No cross-channel differential was recorded between the opposing upstream stations.

Both Halfway downstream loggers (halfDN2 and halfDN2BU) were located on the left downstream bank within the influence of Halfway River inputs. Logger halfDN2 recorded continuous water temperature data throughout Year 9 (Fig. 5). Logger halfDN2BU was swung into shallow water by ice and debris from the Halfway River in early April and intermittently recorded air temperature during periods of low flow prior to the April 21 download.

As in previous years, Peace River temperature values recorded at stations upstream and downstream of the Halfway River confluence differed markedly. Temperatures collected downstream of the confluence exhibited a higher degree of daily and annual variability (Fig. 5). Halfway River inputs typically have a cooling effect during the winter (October through April) and a warming effect during the summer (May through September). Temperatures within the Halfway River mainstem upstream of its confluence with the Peace are not recorded as part of this project.

3.1.4 Moberly River Confluence

Peace River water temperature was monitored at points approximately 2.6 km upstream and 2.5 km downstream of the Moberly River confluence. Upstream stations were maintained on opposing banks throughout Year 9 (mobUP1 and mobUP2). Logger mobUP1 recorded continuous water temperature data throughout Year 9 despite being partially swung to shore by debris or ice prior to the April 27, 2017 download session. Logger mobUP2 was also partially swung to shore by ice or debris prior to the April 27, 2017 download session and recorded ambient air temperature

intermittently between March 28 and April 27, 2017. During a high water event prior to the July download session, logger mobUP2 became imbedded in sediment, which may have moderated water temperature fluctuations readings. A slight cross-channel differential of 0.1°C was recorded between July 14 and August 31, 2017.

The Moberly downstream logger and downstream back-up logger are both located on the south bank of the Peace River, within the influence of outfall from the Moberly River. Both loggers also lie immediately downstream of the footprint of the proposed Site C dam. Logger mobDN1BU recorded continuous water temperature data throughout Year 9. Logger mobDN1 was found partially swung to shore and exposed at extremely low water waters during the April 27, 2017 download session and appears to have intermittently recorded ambient air temperatures between March 28 and April 27, 2017.

As in previous years, Peace River water temperatures recorded within the influence of the Moberly River were cooler than the Moberly upstream stations from January through March and warmer than the upstream stations from May through July (Fig. 6). The influence of the Moberly River is significantly less than that of the Halfway River and appears to correspond to the difference in relative contributed volumes. Temperatures within the Moberly River upstream of its confluence with the Peace River are not recorded as part of this project.

3.1.5 Pine River Confluence

Peace River water temperature was monitored at points approximately 2.0 km upstream and 6.5 km downstream of the Pine River confluence. During Year 9, upstream stations were maintained on opposing banks (pineUP1 and pineUP2) and both downstream loggers (pineDN1 and pineDN1BU) were located on the south river bank, within the influence of inputs from the Pine River. Logger pineUP1 recorded continuous hourly data throughout Year 9. Logger pineUP2 collected continuous hourly data from January 1 to October 19, however, data from October 19 to December 31, 2017 was corrupted by a faulty optical shuttle and could not be recovered. A slight cross-channel differential of 0.2°C was recorded between July 1 and August 31, 2017.

Both Pine downstream loggers (pineDN1 and pineDN1BU) exhibited periodic data gaps as a result of dislodgement by ice flows from the Pine River in early April 2017 and debris flow from the Pine River during storm events in May and June 2017. Logger pineDN1 was partially swung to shore by debris prior to each download session. As a result, air temperatures were recorded

frequently in April and sporadically in November and early December 2017. Logger pineDN1BU became exposed briefly in mid-April due to extremely low water conditions and was swung to shore and stranded in mid-June 2017 due to debris accumulations on the anchor cable. Pine downstream temperature data in Figure 7 are presented as a composite of both pineDN1 and pineDN1BU (pineDN_COMP).

Temperature values recorded within the downstream influence of the Pine River were typically cooler than the Pine River upstream stations from late September through December and slightly warmer from July through mid-September (Fig. 7). A temperature monitoring station was established and maintained in the lower Pine River mainstem during Year 9 at the request of the BC Hydro Site C project. Results are discussed in a separate Site C project summary report.

Figure 8 presents comparative seasonal temperature changes over the 132 km length of the study area between the WAC Bennett Dam tailrace (gmsDN2) and the Pine River confluence (pineUP1) during 2017 and Figure 9 compares daily mean ambient air temperature at the Fort St. John airport with daily mean Peace River water temperature at the Pine river confluence (pineUP1). Data appearing in these figures include Halfway and Pine confluence stations not directly influenced by their respective tributary inputs. The graphs illustrate the moderating effect of hypolimnetic withdrawal from Williston Reservoir on downstream temperatures in the Peace River and the seasonal impact of ambient air temperature on downstream water temperatures, i.e., winter temperatures decrease and summer temperatures increase with distance downstream. Brief periods of homogeneity occurred in early April and mid-October, with gradients inverting on either side of these dates to form the typical annual pattern.

Figures 10 and 11 represent temporal comparisons of daily mean water temperature during Year 9 (2017) against the average of 2009 to 2016 daily mean temperatures for WAC Bennett Dam tailrace (gmsDN2) and Pine River confluence (pineUP1) sites, respectively. Water temperatures recorded in the WAC Bennett Dam tailrace (north manifold) show some deviation from the 2009-2016 average. Variability in tailrace temperature is largely due to operational factors at the GMS generating station and may include variations in reservoir elevation and changes in volume contribution from hypolimnetic and epilimnetic withdrawal at various generating outputs. An analysis of these influences is beyond the scope of this summary report. Downstream Peace River water temperatures recorded immediately above the Pine River confluence (pineUP1) during Year 9 generally track the 2009-2016 average, with occasional variation due to weather events including above and below

normal periods in ambient temperature and increased tributary contributions during precipitation events.

4.0 RECOMMENDATIONS

The 6.35 mm galvanized cable used during the initial years of the program was proven to have low resistance to corrosion. With the exception of several locations where segments of galvanized cable remain well above the waterline, all the tethers have been replaced with stainless steel cable. The remaining galvanized cable sections will be monitored for corrosion during Year 10.

Monitoring sites halfDN2BU and pineDN1 have proven the most susceptible to dislodgement by ice and debris flow originating from the Halfway and Pine Rivers. Cable tethers on these 2 loggers will be replaced with galvanized chain tethers during Year 10 in an effort to minimize data gaps resulting from stranding.

The battery life of the Tidbit v2 Model #UTBI-001 temperature sensors is estimated at approximately 5-6 years. Scheduled replacement of units should continue in 2018 as per the table presented in Appendix V.

In 2015, aluminum information tags reading "DATA RECORDER, PLEASE DO NOT DISTURB" were attached to the tether cables of loggers potentially accessible to the public and previously subject to tampering by curious persons. These tags will be monitored and maintained though Year 10.
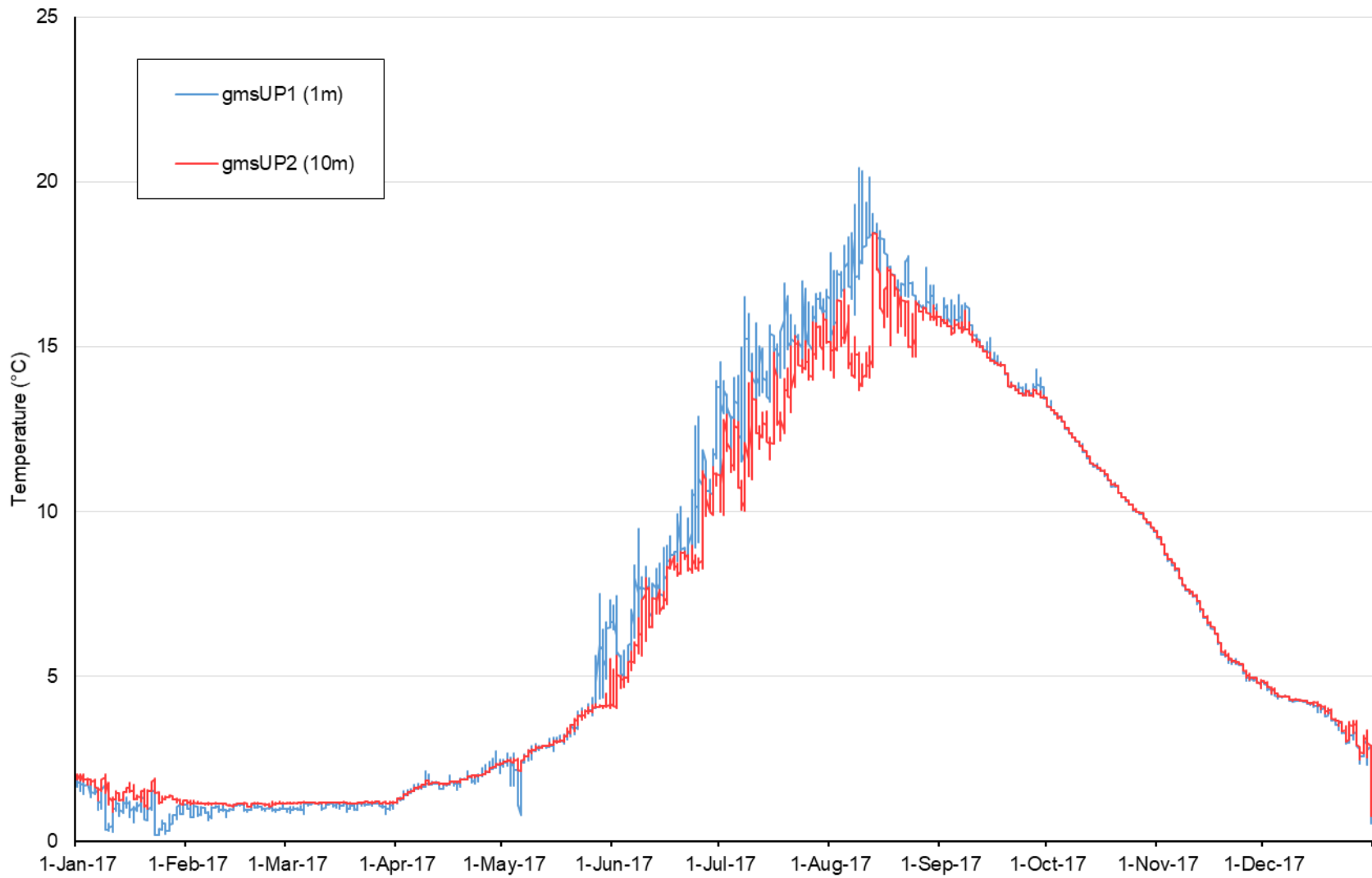
Figure 2. Comparison of hourly water temperature at WAC Bennett Dam forebay station from 1 m depth (gmsUP1) and 10 m depth (gmsUP2) during Year 9, January 01, 2017 – December 31, 2017.
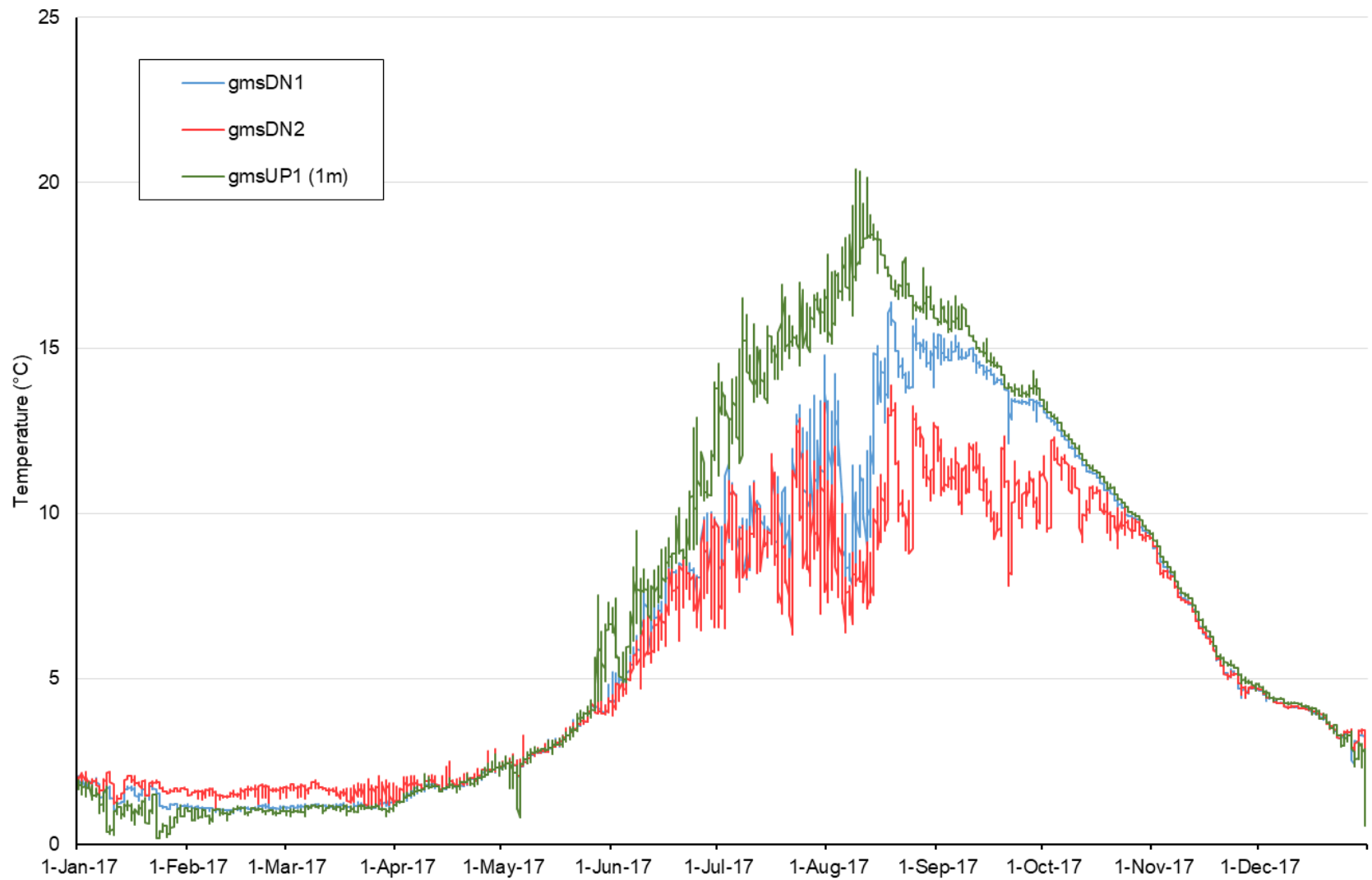
Figure 3. Comparison of hourly water temperature at WAC Bennett Dam forebay surface (gmsUP1), and WAC Bennett Dam tailrace (gmsDN1 and gmsDN2) during Year 9, January 01, 2017 – December 31, 2017.
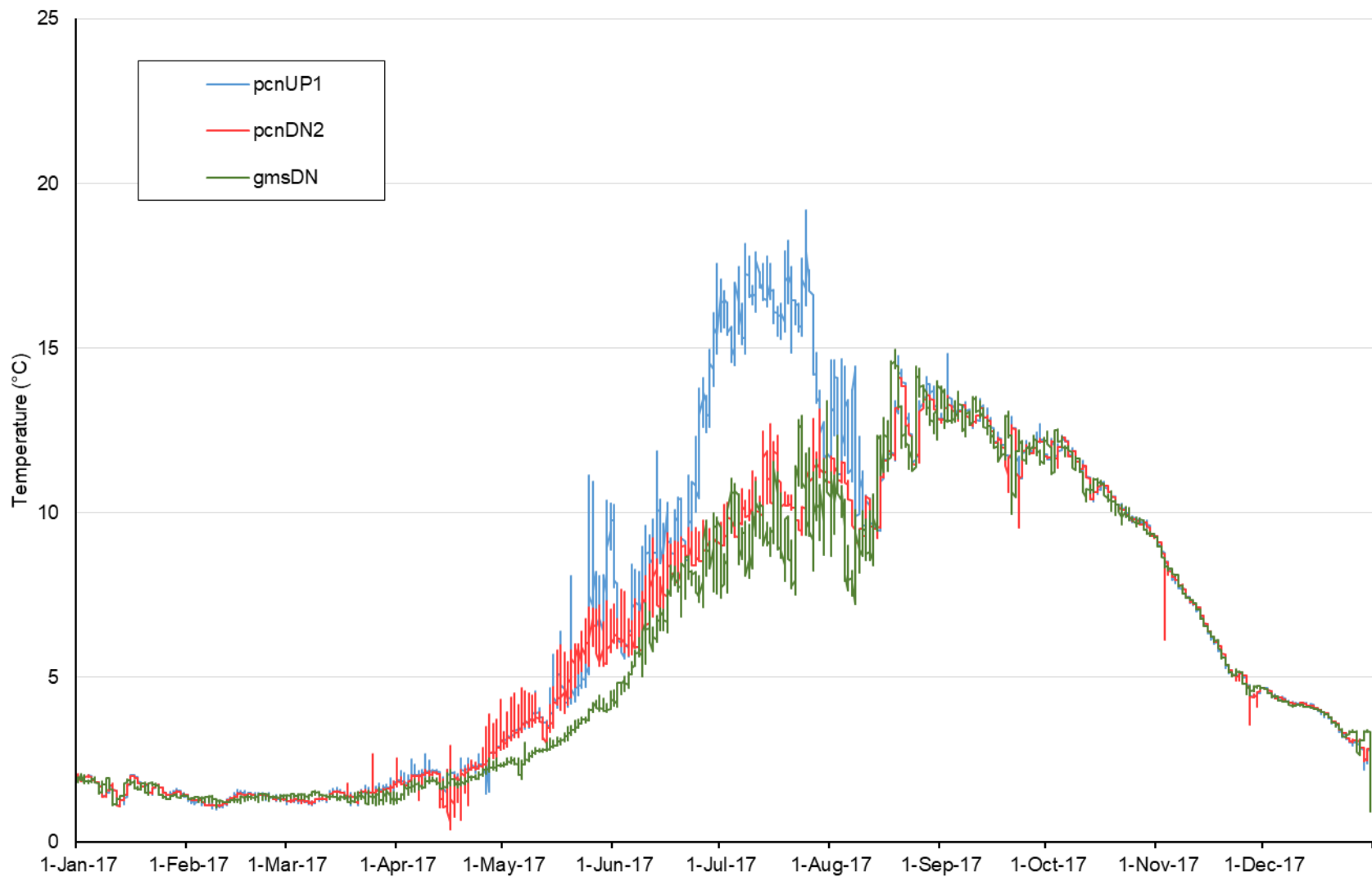
Figure 4. Comparison of hourly water temperature at Peace Canyon forebay surface (pcnUP1), Peace Canyon tailrace (pcnDN2), and WAC Bennett Dam tailrace (gmsDN) during Year 9, January 01, 2017 – December 31, 2017.
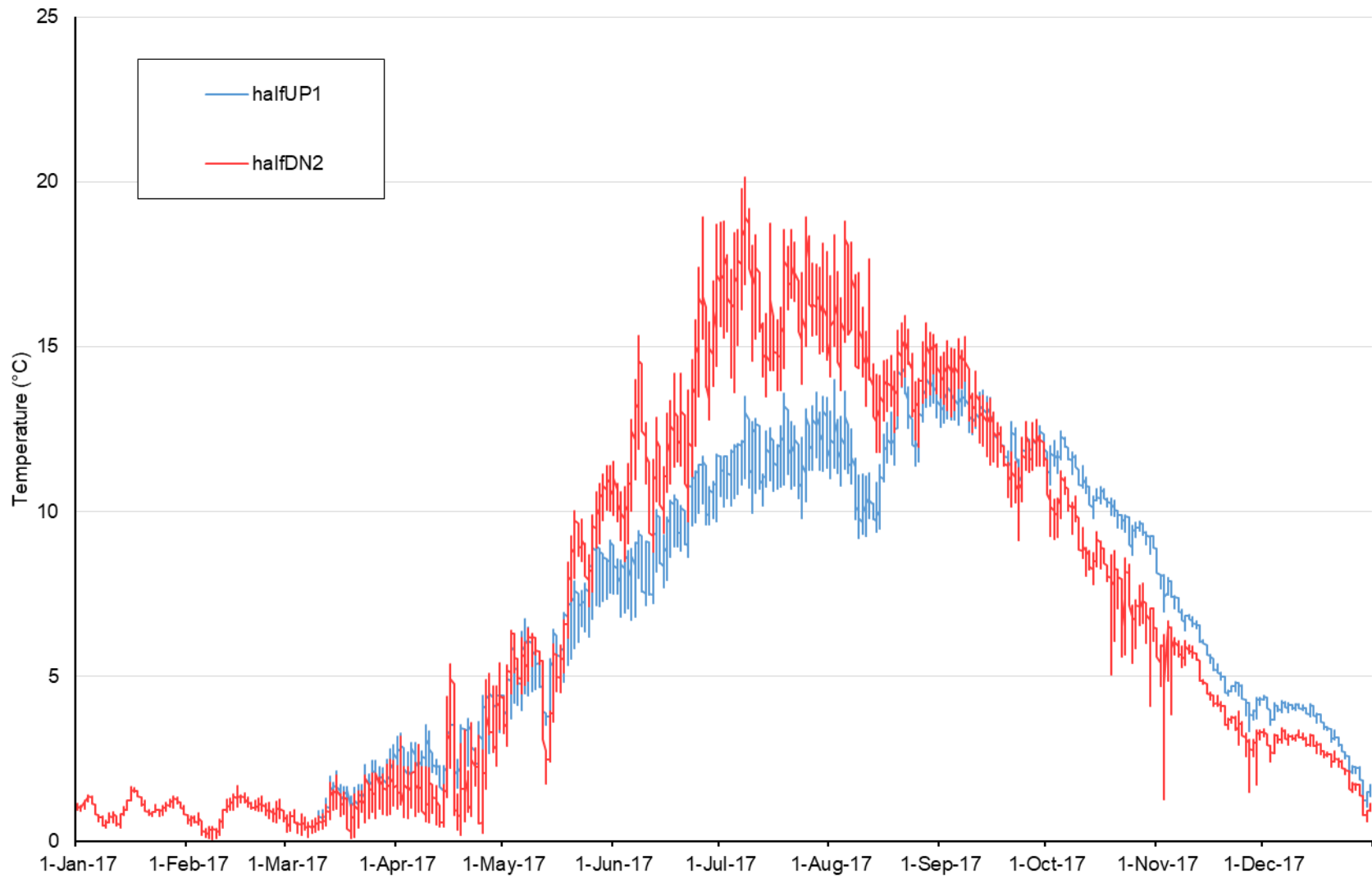
Figure 5. Comparison of Peace River hourly water temperature upstream of Halfway River confluence (halfUP1) and downstream of Halfway River confluence (halfDN2) during Year 9, January 01, 2017 – December 31, 2017.
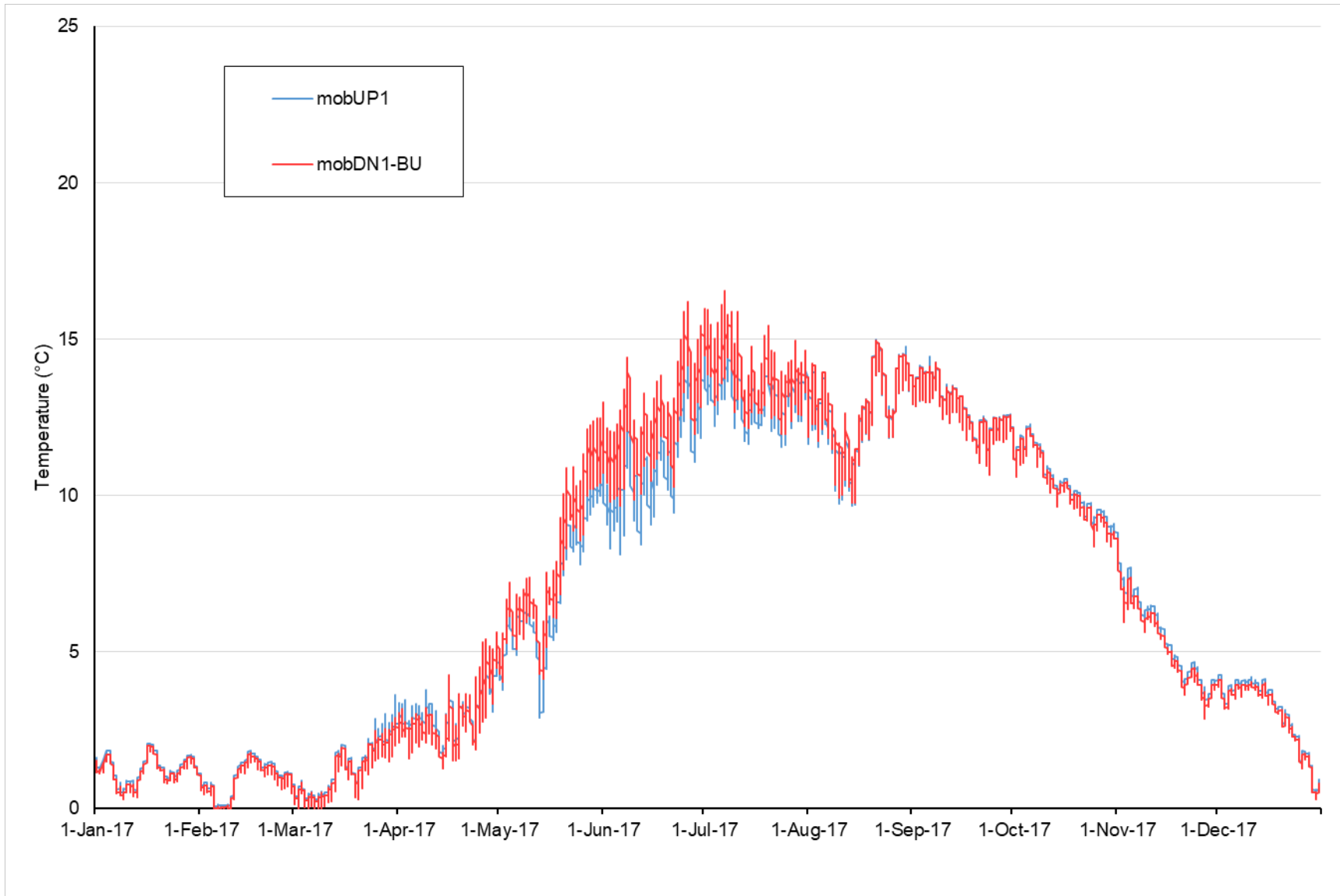
Figure 6.   Comparison of Peace River hourly water temperature upstream of Moberly River confluence (mobUP1) and downstream of Moberly River confluence (mobDN1) during Year 9, January 01, 2017 – December 31, 2017.

15
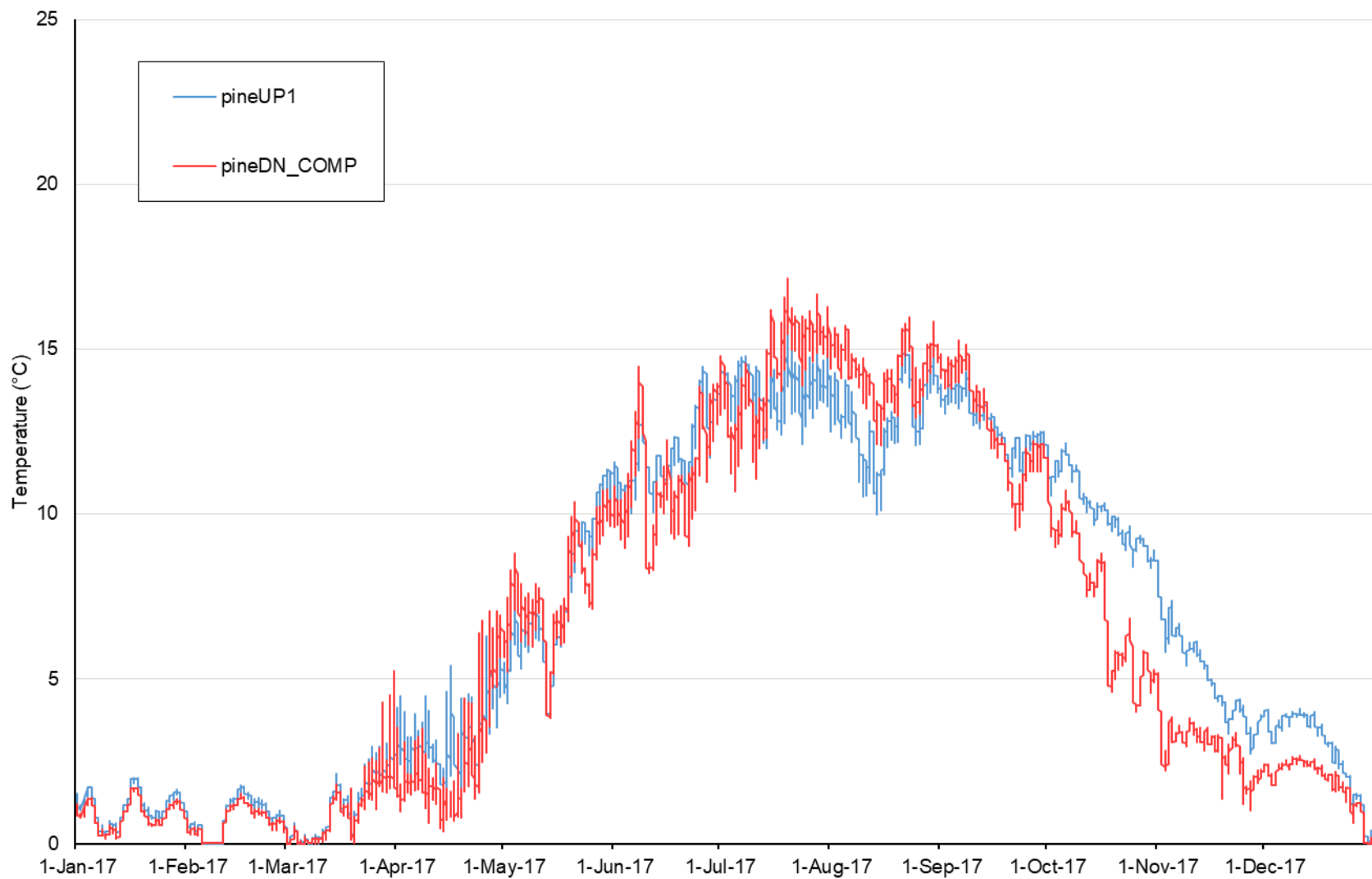
Figure 7. Comparison of Peace River hourly water temperature upstream of Pine River confluence (pineUP1) and downstream of Pine River confluence (pineDN_COMP) during Year 9, January 01, 2017 – December 31, 2017.
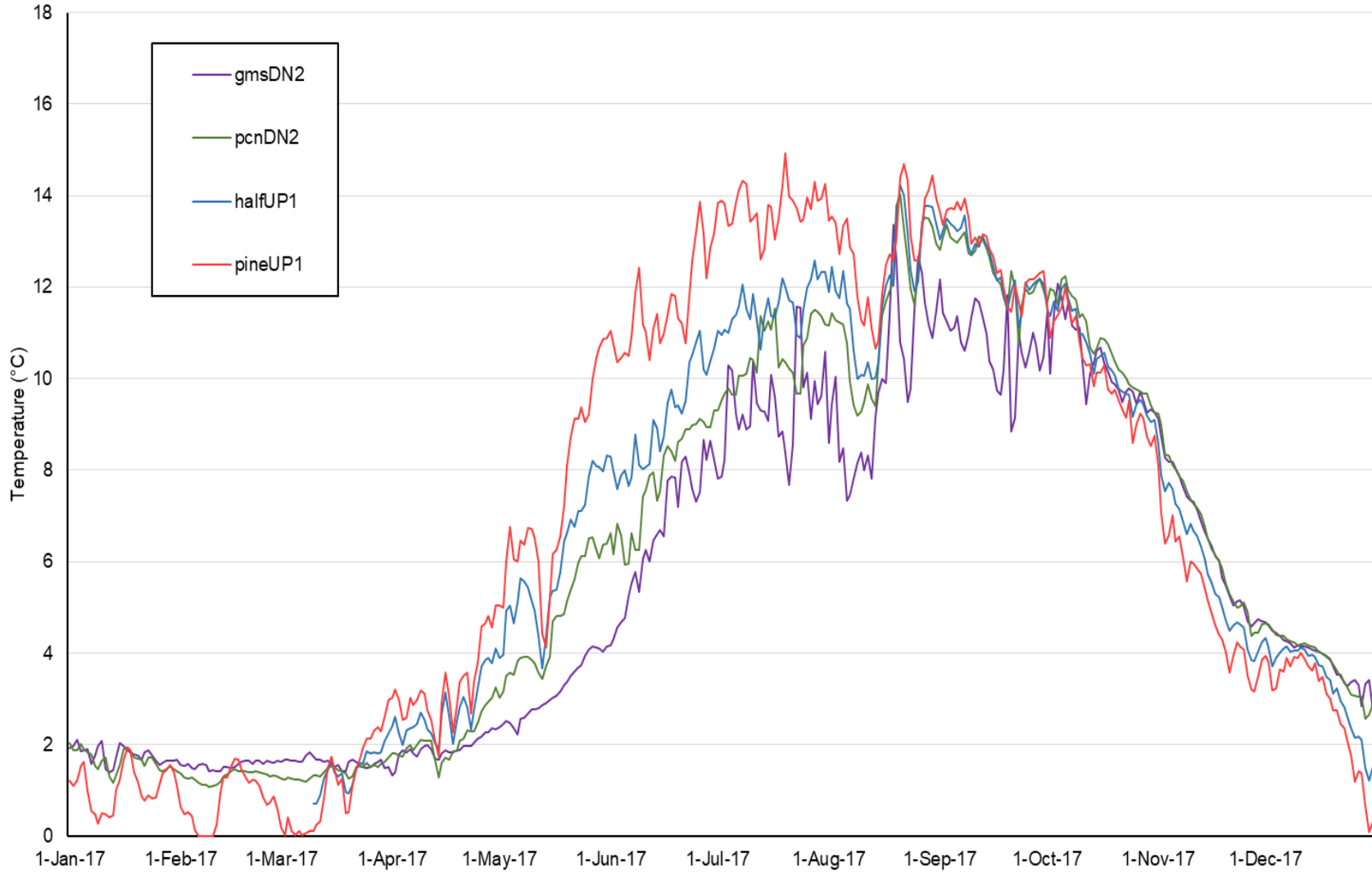
Figure 8. Daily mean Peace River water temperature gradient from WAC Bennett Dam tailrace (gmsDN2), downstream to Pine River confluence (pineUP1), during Year 9, January 01, 2017 – December 31, 2017.
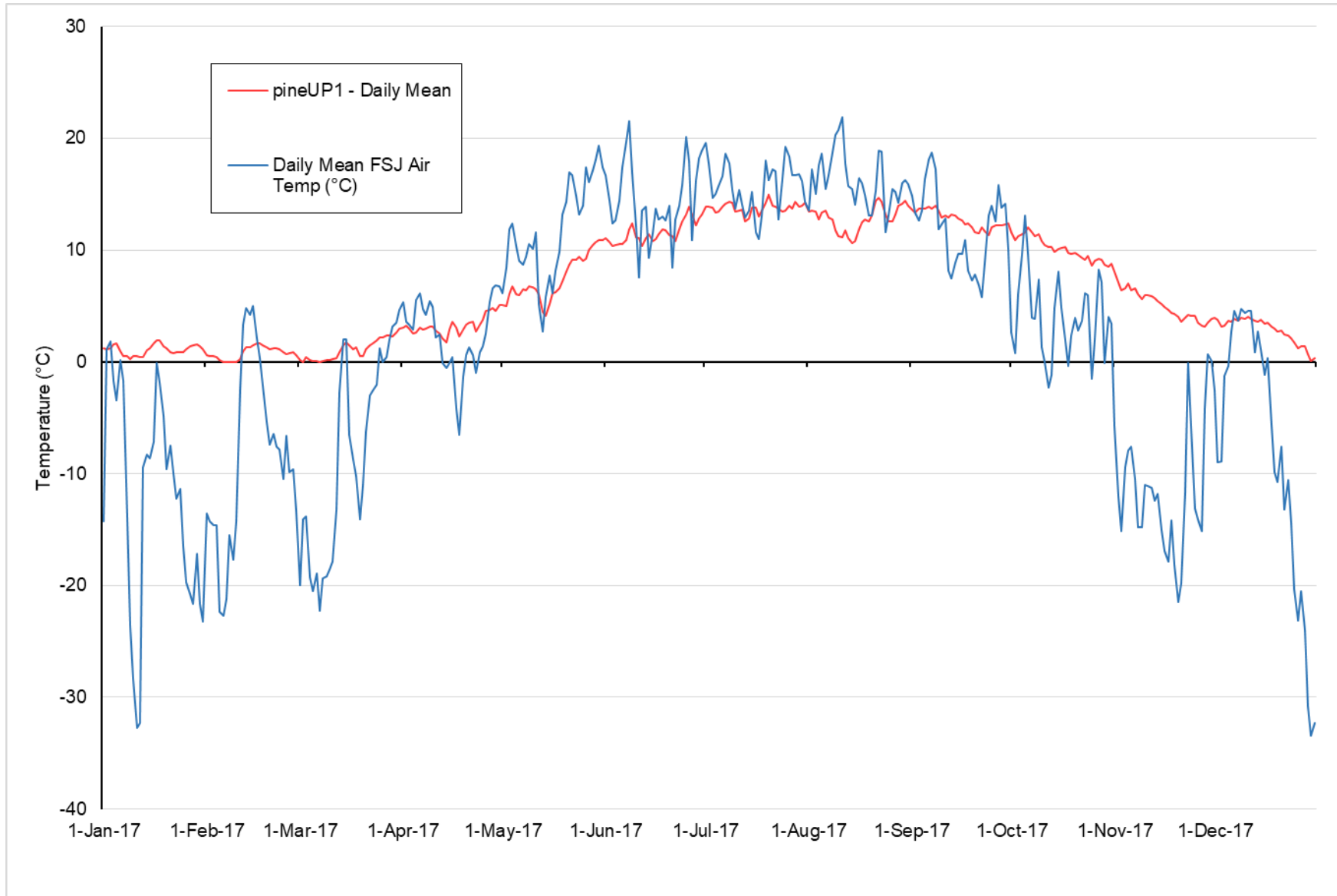
Figure 9. Comparison of Peace River daily mean water temperature upstream of the Pine River confluence (pineUP1) with daily mean ambient air temperature at the Fort St. John airport during Year 9, January 01, 2017 to December 31, 2017.
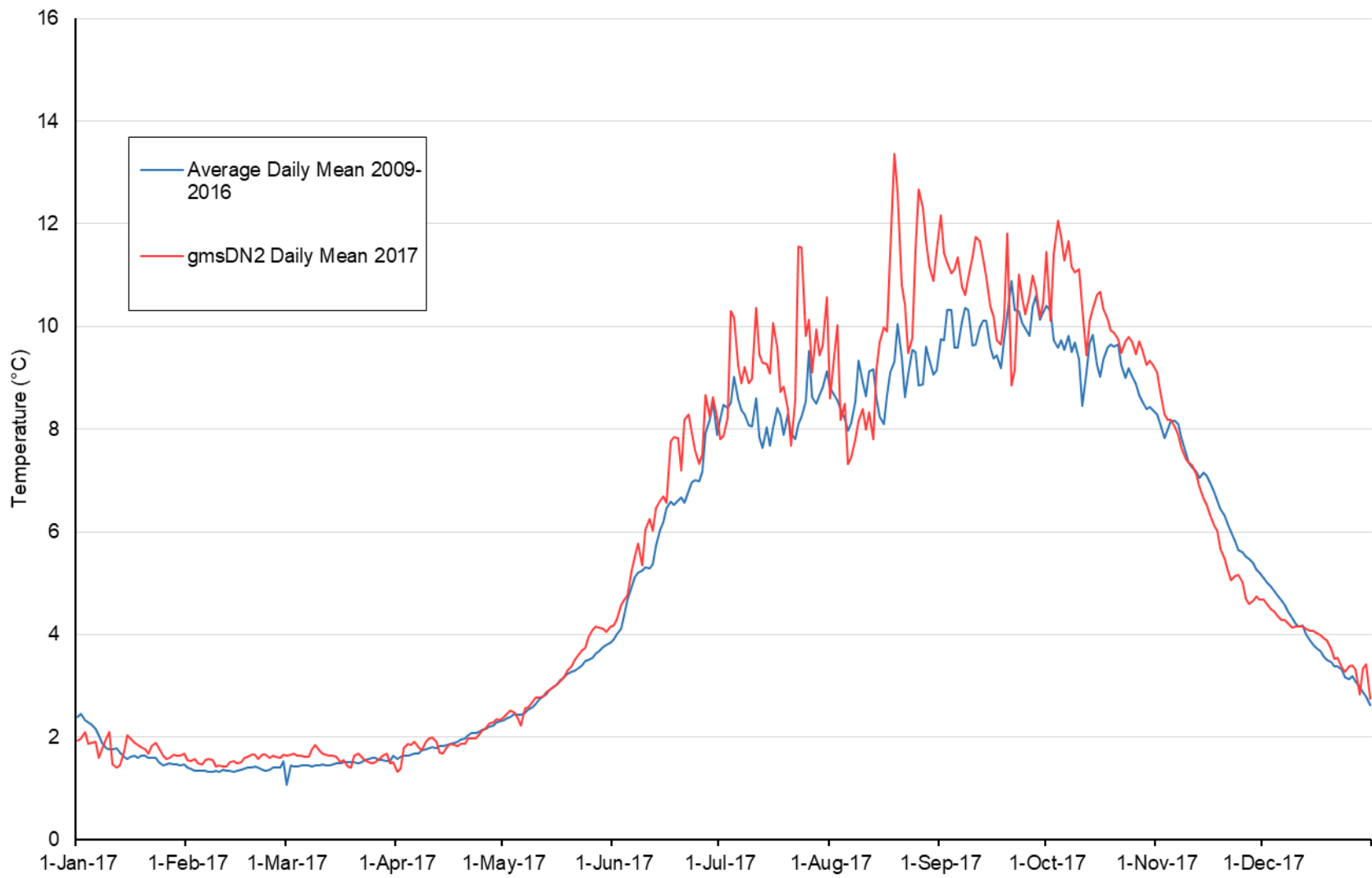
Figure 10. Comparison of Year 9 daily mean water temperature at WAC Bennett Dam tailrace north manifold (gmsDN2) with average of 2009 to 2016 daily mean water temperature at gmsDN2.
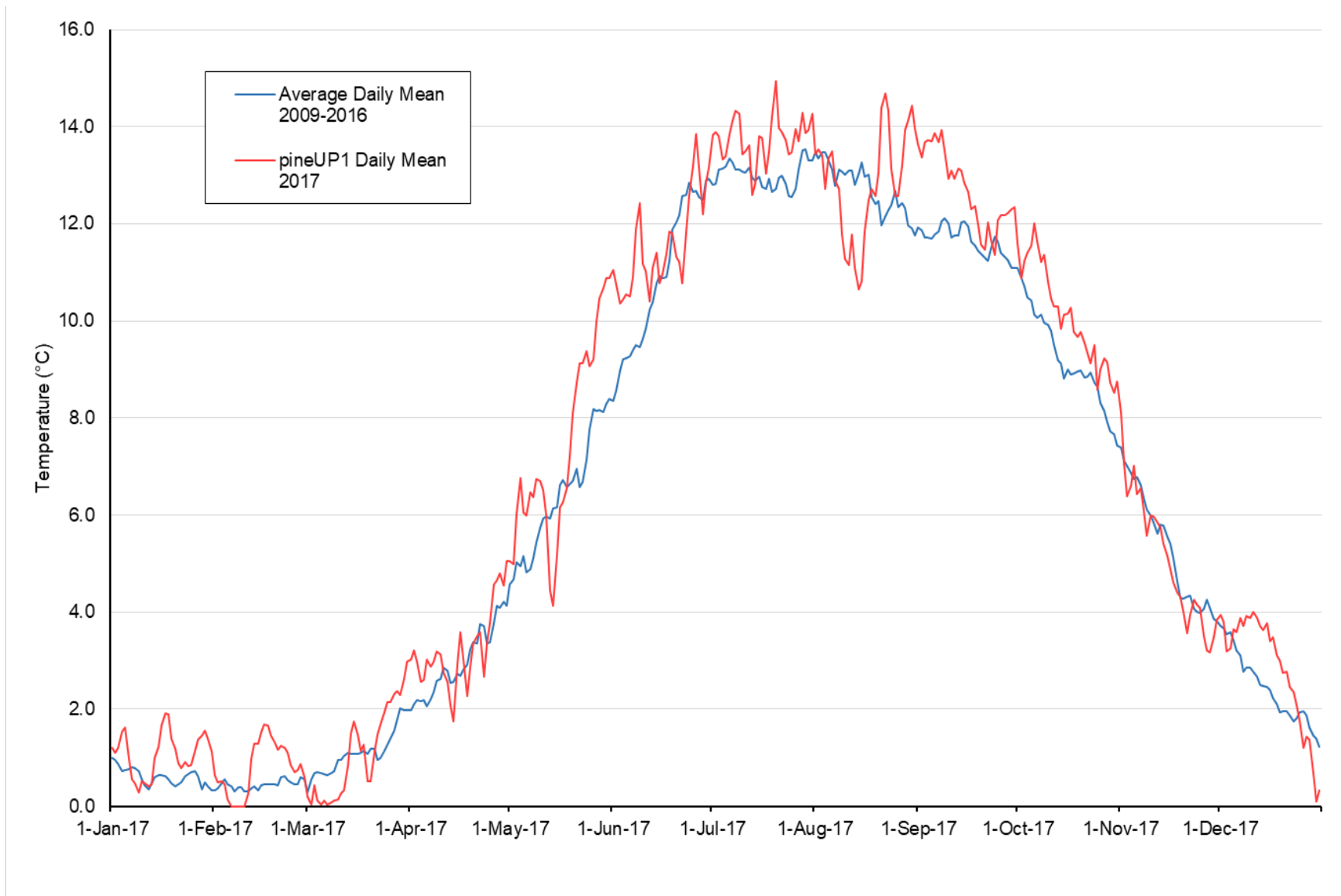
Figure 11. Comparison of Year 9 daily mean water temperature upstream of the Pine River confluence (pineUP1) with average of 2009 to 2016 daily mean water temperature at pineUP1.

REFERENCES

BC Hydro. 2010. Peace River Water Use Plan; monitoring program terms of reference – Peace River Baseline TGP/Temp. BC Hydro, Vancouver, BC. 7pp.

DES (Diversified Environmental Services). 2013. Peace River Water Use Plan Peace River Baseline TDGP/Temperature GMSWorks-2 - Year 4 Monitoring Program - Interim Report January 2012 to December 2012. Prepare for BC Hydro, Vancouver, BC. 24pp + appendices.

.

Appendix I. Temperature monitoring station location information for Year 9, January 01, 2017 to December 31, 2017.

Site ID	Serial #	Location	UTM (Zone 10) East	North	Comment
gmsUP1	10676155	WAC Bennett Forebay	548841	6209022	steel buoy; 1 m depth
gmsUP2	10676160	WAC Bennett Forebay	548841	6209022	steel buoy; 10 m depth
gmsDN1	10635063	GMS Tailrace	548881	6207761	southbank; deflection wier riprap
gmsDN1BU	2038613	GMS Tailrace	548881	6207761	southbank; deflection wier riprap
gmsDN2	10669739	GMS Tailrace	548828	6207836	north bank; riprap below Tunnel portal #3
gmsDN2BU	2038614	GMS Tailrace	548828	6207836	north bank; riprap below Tunnel portal #3
pcnUP1	10635067	Peace Canyon Forebay	562710	6204068	anti-vortex log boom; 1 m depth
pcnDN2	10156317	Peace Canyon Tailrace	562803	6204854	north bank; rock slab
pcnDN2BU	10635061	Peace Canyon Tailrace	562803	6204854	north bank; rock slab
HalfUP1	20097151	Halfway Confluence - upstream	595165	6230094	south bank; spruce tree
HalfUP2	20030829	Halfway Confluence - upstream	595569	6230541	north bank; spruce tree
HalfDN2	10669748	Halfway Confluence - downstream	598198	6232169	north bank; balsam poplar
HalfDN2BU	10156314	Halfway Confluence - downstream	598179	6232144	north bank; balsam poplar
MobUP1	10887852	Moberly Confluence - upstream	627158	6232349	south bank; alder
MobUP2	10669754	Moberly Confluence - upstream	627501	6232563	north bank; spruce tree
MobDN1	10676146	Moberly Confluence - downstream	630583	6229281	south bank; alder
MobDN1BU	10676147	Moberly Confluence - downstream	630402	6229303	south bank; alder
PineUP1	10669747	Pine Confluence - upstream	641034	6225375	south bank; alder
PineUP2	9767573	Pine Confluence - upstream	641653	6225304	north bank; balsam poplar
PineDN1	10156319	Pine Confluence - downstream	648101	6222802	south bank; alder
PineDN1BU	10893055	Pine Confluence - downstream	648362	6222823	south bank; alder
PineMS1	10893069	Pine Mainstem - upstream of Peace	641762	6223599	north bank; steel piling
PineMS2	10887856	Pine Mainstem - upstream of Peace	641677	6223590	north bank; balsam poplar
BeatMS1	10930722	Beatton Mainstem - upstream of Peace	663101	6220759	east bank; spruce
BeatMS2	20030828	Beatton Mainstem - upstream of Peace	663121	6221232	east bank; birch
PouceUP1	10893059	Pouce Coupe confluence - upstream	*316873	6225211	south bank; birch; *UTM Zone 11
PouceUP2	10893068	Pouce Coupe confluence - upstream	*316146	6226036	south bank; spruce; *UTM Zone 11

Appendix II. Inventory of dissolved gas pressure meters and probes.

Meter Number	Serial Number	Probe Number	Cable Length (ft)
1	231	1	50
2	228	2	100
3	230	3	100
4	227	4	100
5	226	5	100
6	229	6	100

Appendix III. Reference temperature values and corresponding logger fix values recorded during download events in Year 9, January 01, 2017 to December 31, 2017.

Logger ID	Date	Fix Temp	Ref Temp	Error
gmsUP1	13-Jul-17	14.2	14.5	-0.3
(SN 10676155)	20-Oct-17	10.8	10.6	0.2
gmsUP2	21-Apr-17	-	-	
(SN 10666180)	13-Jul-17	12.8	12.8	0.0
	20-Oct-17	10.8	10.6	0.2
gmsDN1	21-Apr-17	1.9	1.9	0.0
(SN 10635063)	13-Jul-17	10.0	10.2	-0.2
	20-Oct-17	10.6	10.6	0.0
	10-Jan-18	1.8	1.7	0.1
gmsDN1_BU	21-Apr-17	2.0	1.9	0.1
(SN 2038613)	13-Jul-17	10.1	10.2	-0.1
	20-Oct-17	10.8	10.6	0.2
	10-Jan-18	1.9	1.7	0.2
gmsDN2	21-Apr-17	1.9	2.2	-0.3
(SN 10669739)	13-Jul-17	9.8	10.0	-0.2
	20-Oct-17	9.9	9.8	0.1
	10-Jan-18	1.8	1.7	0.1
gmsDN2_BU	21-Apr-17	2.0	2.2	-0.2
(SN 2038614)	13-Jul-17	9.9	10.0	-0.1
	20-Oct-17	10.0	9.8	0.2
	10-Jan-18	1.9	1.7	0.2
pcnUP1	21-Apr-17	2.2	2.2	0.0
(SN 10635067)	13-Jul-17	16.5	16.2	0.3
	20-Oct-17	10.4	10.2	0.2
	10-Jan-18	1.4	1.1	0.3
pcnDN2	21-Apr-17	2.1	2.1	0.0
(SN 10156317)	13-Jul-17	10.5	10.4	0.1
	20-Oct-17	10.4	10.4	0.0
	10-Jan-18	1.2	1.3	-0.1
pcnDN2_BU	21-Apr-17	2.1	2.1	0.0
(SN 10635061)	20-Oct-17	10.4	10.4	0.0
	10-Jan-18	1.5	1.3	0.2
halfUP1	21-Apr-17	3.0	3.1	-0.1
(SN 9767573)	8-Jul-17	13.4	13.5	-0.1
	27-Oct-17	9.5	9.4	0.1
halfUP1	3-Jan-18	0.9	0.9	0.0
(SN 20097151)				

Appendix III. Reference temperature values and corresponding logger fix values recorded during download events in Year 9, January 01, 2017 to December 31, 2017, cont.

Logger ID	Date	Logger Temp	Reference Temp	Error
halfUP2	21-Apr-17	2.8	2.9	-0.1
(SN 10156319)	8-Jul-17	13.5	13.5	0.0
	27-Oct-17	9.5	9.4	0.1
halfUP2	3-Jan-18	1.2	0.9	0.3
(SN 20030829)				
halfDN2	21-Apr-17	2.1	2.5	-0.4
(SN 10669748)	8-Jul-17	20.1	20.5	-0.4
	27-Oct-17	6.8	6.7	0.1
	3-Jan-18	0.9	0.7	0.2
halfDN2_BU	8-Jul-17	19.9	20.5	-0.6
(SN 10156314)	27-Oct-17	6.8	6.7	0.1
	3-Jan-18	1.0	0.7	0.3
mobUP1	27-Apr-17	4.0	4.1	-0.1
(SN 10887852)	14-Jul-17	11.9	11.8	0.1
	19-Oct-17	9.7	9.5	0.2
	4-Jan-18	0.8	0.5	0.3
mobUP2	27-Apr-17	4.1	3.8	0.3
(SN 10669754)	14-Jul-17	12.0	11.9	0.1
	19-Oct-17	9.6	9.3	0.3
	4-Jan-18	0.8	0.5	0.3
mobDN1	14-Jul-17	12.3	12.3	0.0
(SN 10676146)	19-Oct-17	9.6	9.6	0.0
	4-Jan-18	0.9	0.6	0.3
mobDN1_BU	27-Apr-17	4	3.9	0.1
(SN 10676147)	14-Jul-17	12.4	12.3	0.1
	19-Oct-17	9.6	9.6	0.0
	4-Jan-18	0.8	0.6	0.2
pineUP1	27-Apr-17	5.0	4.7	0.3
(SN10669747)	14-Jul-17	12.1	12.6	-0.5
	19-Oct-17	9.5	9.1	0.4
	4-Jan-18	0.8	0.5	0.3
pineUP2	27-Apr-17	3.8	3.9	-0.1
(SN10635062)	14-Jul-17	12.3	12.0	0.3

Appendix III. Reference temperature values and corresponding logger fix values recorded during download events in Year 9, January 01, 2017 to December 31, 2017, cont.

Logger ID	Date	Logger Temp	Reference Temp	Error
pineDN1	28-Apr-17	5.4	5.3	0.1
(SN 2226322)	14-Jul-17	13.9	13.8	0.1
	16-Oct-17	8.2	8.2	0.0
	4-Jan-18	0.6	0.3	0.3
pineDN1_BU	14-Jul-17	13.7	13.8	-0.1
(SN 10893055)	16-Oct-17	8.3	8.2	0.1
	4-Jan-18	0.6	0.3	0.3
pineMS1	02-Jun-17	9.6	9.5	0.1
(SN 10893069)	14-Jul-17	15.4	15.4	0.0
	19-Oct-17	3.8	3.8	0.0
pineMS2	14-Jul-17	15.5	15.4	0.0
(SN 10887856)	19-Oct-17	3.8	3.8	0.0
beatMS1	2-Jun-17	17.0	16.8	0.2
(SN 10930722)	16-Oct-17	5.2	5.0	0.2
beatMS2	2-Jun-17	17.0	16.8	0.2
(SN 20030828)	16-Oct-17	5.1	5.0	0.1
pouceUP1	27-Apr-17	5.6	5.5	0.1
(SN 10893059)	15-Jul-17	15.0	15.1	-0.1
	19-Oct-17	7.6	7.4	0.2
	17-Jan-18	0.3	0.1	0.2
pouceUP2	27-Apr-17	5.5	5.6	-0.1
(SN 10893068)	15-Jul-17	14.8	14.9	-0.1
	17-Jan-18	0.3	0.2	0.1

Appendix IV. Year 9 download information forms, January 01, 2017 to December 31, 2017.

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM							
SITE ID	gmsUP1	**LOCATION**		GMS Forebay	**BANK**		
LOGGER TYPE	Tidbit	**LOGGER SERIAL #**		10676155	**UTM**	548841	6209022
DOWNLOAD DATE	21	Apr	2017	**DOWNLOAD TIME**	n/a	**CREW**	BC TE
TEST RECORDER TYPE	YSI	**WATER TEMP**		**AIR TEMP**	2	**ICE CONDITIONS**	none
LOGGER CONDITIONS							
WATER DEPTH		cm	**DISLODGED**	no	**REASON**		
BURIED	no	**FUNCTIONAL**	wet	**IF DRY, HEIGHT ABOVE WATER**	cm	**TETHER TYPE**	steel buoy
COMMENTS							
Not downloaded due to unsafe ice conditions							
RPL#19							

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM							
SITE ID	gmsUP2	**LOCATION**		GMS Forebay	**BANK**		
LOGGER TYPE	Tidbit	**LOGGER SERIAL #**		10676160	**UTM**	548841	6209022
DOWNLOAD DATE	21	Apr	2017	**DOWNLOAD TIME**	n/a	**CREW**	BC TE
TEST RECORDER TYPE	YSI	**WATER TEMP**		**AIR TEMP**	2	**ICE CONDITIONS**	none
LOGGER CONDITIONS							
WATER DEPTH			**DISLODGED**	no	**REASON**		
BURIED	no	**FUNCTIONAL**	wet	**IF DRY, HEIGHT ABOVE WATER**	cm	**TETHER TYPE**	steel buoy
COMMENTS							
Not downloaded due to unsafe ice conditions							
RPL#20							

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM							
SITE ID	gmsDN2	**LOCATION**		GMS Tailrace RDB	**BANK**		north
LOGGER TYPE	Tidbit	**LOGGER SERIAL #**		10669739	**UTM**	548828	6207836
DOWNLOAD DATE	27	Apr	2017	**DOWNLOAD TIME**	11:28	**CREW**	BC TE
TEST RECORDER TYPE	YSI	**WATER TEMP**	2.2	**AIR TEMP**	2	**ICE CONDITIONS**	none
LOGGER CONDITIONS							
WATER DEPTH	150	cm	**DISLODGED**	no	**REASON**		
BURIED	no	**FUNCTIONAL**	wet	**IF DRY, HEIGHT ABOVE WATER**	cm	**TETHER TYPE**	rock
COMMENTS							
Back-up logger gmsDN2-BU 2038614 in same capsule 11:29							
both downloads OK							
cable ok (stainless steel cable section attached to galvanized cable around rock)							
Primary Logger-Rpl #11, SN 10669739 @ 11:28							

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM							
SITE ID	gmsDN1	**LOCATION**		GMS Tailrace LDB	**BANK**	south	
LOGGER TYPE	Tidbit	**LOGGER SERIAL #**		10635063	**UTM**	548881	6207761
DOWNLOAD DATE	21	Apr	2017	**DOWNLOAD TIME**	11:43	**CREW**	BC TE
TEST RECORDER TYPE	YSI	**WATER TEMP**	1.9	**AIR TEMP**	2	**ICE CONDITIONS**	none
LOGGER CONDITIONS							
WATER DEPTH	200	cm	**DISLODGED**	no	**REASON**		
BURIED	no	**FUNCTIONAL**	wet	**IF DRY, HEIGHT ABOVE WATER**	cm	**TETHER TYPE**	rock
COMMENTS							
Back-up logger gmsDN1-BU 2038613 in same capsule 11:44							
both downloads OK							
cable ok (stainless steel cable section attached to galvanized cable around rock)							
Primary logger = gmsDN1-RPL#17, SN10635063 @ 11:43							

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	pcnUP1	LOCATION		PCN Forebay		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635067		UTM	562710	6204068
DOWNLOAD DATE	21 Apr 2017	DOWNLOAD TIME		10:04		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	2.2	AIR TEMP	3.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	log boom

COMMENTS

dow nload OK
all stainless steel cable ok
Rpl #10

SITE ID	pcnDN2	LOCATION		PCN Tailrace		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10156317		UTM	562803	6204854
DOWNLOAD DATE	21 Apr 2017	DOWNLOAD TIME		9:39		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	2.1	AIR TEMP	3.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	rock

COMMENTS

dow nload OK
all stainless steel cable ok
RPL# 2

SITE ID	pcnDN2_BU	LOCATION		PCN Tailrace		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635061		UTM	562803	6204854
DOWNLOAD DATE	21 Apr 2017	DOWNLOAD TIME		9:44		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	2.1	AIR TEMP	3.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	rock

COMMENTS

dow nload OK
all stainless steel cable ok
Anchored to same rock as pcnDN2
Rpl #9

SITE ID		LOCATION				BANK		
LOGGER TYPE		LOGGER SERIAL #				UTM		
DOWNLOAD DATE		DOWNLOAD TIME				CREW		
TEST RECORDER TYPE		WATER TEMP		AIR TEMP		ICE CONDITIONS		

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED		REASON			
BURIED			FUNCTIONAL		IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	

COMMENTS

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	halfUP2	LOCATION	u/s of Halfway River	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #	10156319	UTM	595569	6230541
DOWNLOAD DATE	21 Apr 2017	DOWNLOAD TIME	14:00	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP 2.9	AIR TEMP 5	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	spruce

COMMENTS

RPL# 11
download OK
stainless cable OK, buried by sloughing bank material

SITE ID	halfUP1	LOCATION	u/s of Halfway River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #	9767573	UTM	595165	6230094
DOWNLOAD DATE	21 Apr 2017	DOWNLOAD TIME	14:12	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP 3.1	AIR TEMP 5	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	200	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	spruce tree

COMMENTS

labelled as "halfUP1"
download OK
cable OK

SITE ID	halfDN2	LOCATION	d/s of Halfway River	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #	10669748	UTM	598198	6232169
DOWNLOAD DATE	21 Apr 2017	DOWNLOAD TIME	13:37	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP 2.5	AIR TEMP 5	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	balsam pop

COMMENTS

water very low
download OK
stainless steel cable OK
Rpl #15

SITE ID	halfDN2_BU	LOCATION	d/s of Halfway River	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #	10156314	UTM	598179	6263144
DOWNLOAD DATE	21 Apr 2017	DOWNLOAD TIME	13:34	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP 2.5	AIR TEMP 5	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED	yes	REASON	ice	debris
BURIED	no		FUNCTIONAL	dry	IF DRY, HEIGHT ABOVE WATER	80 cm TETHER TYPE	balsam pop

COMMENTS

water very low
download OK
stainless steel cable OK
swung to shore by debris; high and dry at current low water level.

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	mobUP2	LOCATION		u/s of Moberly River		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669754		UTM	627501	6232563
DOWNLOAD DATE	27 Apr 2017	DOWNLOAD TIME		10:22		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	3.8	AIR TEMP	5.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	300	cm	DISLODGED	yes	REASON	ice		
BURIED	no		FUNCTIONAL	dry	IF DRY, HEIGHT ABOVE WATER	10 cm	TETHER TYPE	spruce

COMMENTS

dow nload Ok
stainless steel cable OK
Rpl #16, SN 10669754
w ater extremely low
logger partially sw ung to shore; exposed due to extremely low w ater

---

SITE ID	mobUP1	LOCATION		u/s of Moberly River		BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10887852		UTM	627158	6232349
DOWNLOAD DATE	27 Apr 2017	DOWNLOAD TIME		10:46		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	4.1	AIR TEMP	5.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	30	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	w et	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	alder

COMMENTS

w ater extremely low
RPL#21-10887852
partially sw ung to shore but still w etted
dow nload ok

SITE ID	mobDN1_BU	LOCATION		d/s of Moberly River		BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676147		UTM	630402	6229275
DOWNLOAD DATE	27 Apr 2017	DOWNLOAD TIME		11:12		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	3.9	AIR TEMP	5.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	30	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	w et	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	alder

COMMENTS

dow nload OK
w ater extremely low
RPL#18

SITE ID	mobDN1	LOCATION		d/s of Moberly River		BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669746		UTM	630583	6229281
DOWNLOAD DATE	27 Apr 2017	DOWNLOAD TIME		11:08		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	3.9	AIR TEMP	5.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED	no	REASON	ice	debris	
BURIED	no		FUNCTIONAL	dry	IF DRY, HEIGHT ABOVE WATER	30 cm	TETHER TYPE	spruce

COMMENTS

w ater extremely low causing exposure
dow nload OK
Rpl # 17

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	pineUP2	LOCATION		u/s of Pine River		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635062		UTM	641653	6225304
DOWNLOAD DATE	27 Apr 2017	DOWNLOAD TIME		11:47		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	3.9	AIR TEMP	8.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	balsam pop

COMMENTS

dow nload OK
Stainless steel cable OK
RPL#6
w ater very low but logger is plenty deep, should not have been exposed

---

SITE ID	pineUP1	LOCATION		u/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669747		UTM	641034	6225372
DOWNLOAD DATE	27 Apr 2017	DOWNLOAD TIME		11:41		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	4.7	AIR TEMP	8.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	30	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	alder

COMMENTS

dow nload OK
Rpl # 14
Stainless steel cable OK
w ater very low at time of dow nload

SITE ID	pineDN1_BU	LOCATION		d/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		9762095		UTM	648362	6222823
DOWNLOAD DATE	27 Apr 2017	DOWNLOAD TIME		12:46		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	5.1	AIR TEMP	8.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	20	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	alder

COMMENTS

dow nload OK
w ater very low today
Stainless steel cable OK
RPL# 25

SITE ID	pineDN1	LOCATION		d/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		2226322		UTM	648101	6222802
DOWNLOAD DATE	28 Apr 2017	DOWNLOAD TIME		11:11		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	5.3	AIR TEMP	8.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED	yes	REASON	ice	debris	
BURIED	no		FUNCTIONAL	dry	IF DRY, HEIGHT ABOVE WATER	60	cm TETHER TYPE	alder

COMMENTS

dow nload OK
sw ung to shore and stranded/exposed
Stainless steel cable OK

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	gmsUP1	LOCATION		GMS Forebay		BANK		
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676155		UTM	548841	6209022
DOWNLOAD DATE	13 Jul 2017	DOWNLOAD TIME		11:51		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	14.5	AIR TEMP	12	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	steel buoy

COMMENTS

Download OK
Stainless steel cable OK
RPL#19

SITE ID	gmsUP2	LOCATION		GMS Forebay		BANK		
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676180		UTM	548841	6209022
DOWNLOAD DATE	13 July 2017	DOWNLOAD TIME		11:48		CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	12.8	AIR TEMP	12	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	1000	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	steel buoy

COMMENTS

Download OK
Stainless steel cable OK
RPL#20

SITE ID	gmsDN2	LOCATION		GMS Tailrace RDB		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669739		UTM	548828	6207836
DOWNLOAD DATE	13 Jul 2017	DOWNLOAD TIME		10:55		CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	10	AIR TEMP	12	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	rock

COMMENTS

Back-up logger gmsDN2-BU 2038614 in same capsule 10:56
both downloads OK
cable ok (stainless steel cable section attached to galvanized cable around rock)
Primary Logger-Rpl #11, SN 10669739
water very low at tailrace

SITE ID	gmsDN1	LOCATION		GMS Tailrace LDB		BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635063		UTM	548881	6207761
DOWNLOAD DATE	13 Jul 2017	DOWNLOAD TIME		11:10		CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	10.2	AIR TEMP	12	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	rock

COMMENTS

Back-up logger gmsDN1-BU 2038614 in same capsule 11:11
both downloads OK
cable ok (stainless steel cable section attached to galvanized cable around rock)
Primary Logger gmsDN1-RPL#7
water very low at tailrace

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	pcnUP1	LOCATION		PCN Forebay	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635067	UTM	562684	6204075
DOWNLOAD DATE	13 Jul 2017	DOWNLOAD TIME		10:01	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	16.2	AIR TEMP	12.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	log boom

COMMENTS

download OK
all stainless steel cable ok
RPL #10

SITE ID	pcnDN2	LOCATION		PCN Tailrace	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10156317	UTM	562803	6204854
DOWNLOAD DATE	13 Jul 2017	DOWNLOAD TIME		9:43	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	10.4	AIR TEMP	12.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	40	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	rock

COMMENTS

download OK
all stainless steel cable ok
RPL# 2
water very low at tailrace

SITE ID	pcnDN2_BU	LOCATION		PCN Tailrace	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635061	UTM	562803	6204854
DOWNLOAD DATE	13 Jul 2017	DOWNLOAD TIME		9:44	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	10.4	AIR TEMP	12.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	50	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	rock

COMMENTS

download OK
all stainless steel cable ok
Anchored to same rock as pcnDN2
Rpl #9
water very low at tailrace

SITE ID		LOCATION			BANK		
LOGGER TYPE		LOGGER SERIAL #			UTM		
DOWNLOAD DATE		DOWNLOAD TIME			CREW		
TEST RECORDER TYPE		WATER TEMP		AIR TEMP		ICE CONDITIONS	

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED		REASON			
BURIED			FUNCTIONAL		IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	

COMMENTS

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	halfUP2	LOCATION		u/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10156319		UTM	595569	6230541
DOWNLOAD DATE	8	Jul	2017	DOWNLOAD TIME	17:55	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	13.5	AIR TEMP	24	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	80	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	spruce

COMMENTS

download OK
cable OK
RPL#1

SITE ID	halfUP1	LOCATION		u/s of Halfway River		BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		9767573		UTM	595165	6230094
DOWNLOAD DATE	8	Jul	2017	DOWNLOAD TIME	18:05	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	17.4	AIR TEMP	15	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	180	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	spruce tree

COMMENTS

logger label "halfUP1R"
download OK
cable OK

SITE ID	halfDN2	LOCATION		d/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669748		UTM	598198	6232169
DOWNLOAD DATE	8	Jul	2017	DOWNLOAD TIME	17:40	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	20.5	AIR TEMP	24	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	balsam pop

COMMENTS

download ok
stainless steel cable OK
Rpl #15

SITE ID	halfDN2_BU	LOCATION		d/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10156314		UTM	598179	6263144
DOWNLOAD DATE	8	July	2017	DOWNLOAD TIME	17:37	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	20.5	AIR TEMP	24	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	balsam pop

COMMENTS

logger labell "halfDN2_BU"
stainless steel cable OK
download OK

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	mobUP2	LOCATION		u/s of Moberly River	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669754	UTM	627501	6232563
DOWNLOAD DATE	14 Jul 2017	DOWNLOAD TIME		10:25	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	11.9	AIR TEMP 16.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	80	cm	DISLODGED	no	REASON		
BURIED		yes	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	spruce

COMMENTS

RPL#16

download OK

buried in sediment

SITE ID	mobUP1	LOCATION		u/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10887852	UTM	627158	6232349
DOWNLOAD DATE	14 Jul 2017	DOWNLOAD TIME		10:39	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	11.8	AIR TEMP 16.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	70	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	alder

COMMENTS

RPL# 21

stainless cable ok

download ok

SITE ID	mobDN1_BU	LOCATION		d/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676147	UTM	630875	6229275
DOWNLOAD DATE	14 Jul 2017	DOWNLOAD TIME		10:03	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	12.3	AIR TEMP 18.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	30	cm	DISLODGED	yes	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	alder

COMMENTS

download OK

RPL#18

SITE ID	mobDN1	LOCATION		d/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676146	UTM	630776	6229287
DOWNLOAD DATE	14 Jul 2017	DOWNLOAD TIME		10:10	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	12.3	AIR TEMP 16.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	50	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	alder

COMMENTS

download OK

Rpl # 17

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	pineUP2	LOCATION		u/s of Pine River		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10635062	UTM	641653	6225304
DOWNLOAD DATE	14	Jul	2017	DOWNLOAD TIME	11:19	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	12.0	AIR TEMP	16.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED		yes	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	balsam pop

COMMENTS

download OK
Stainless steel cable OK
RPL#6
buried in sediment

SITE ID	pineUP1	LOCATION		u/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10669747	UTM	641034	6225372
DOWNLOAD DATE	14	Jul	2017	DOWNLOAD TIME	11:09	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	12.6	AIR TEMP	16.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	50	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	alder

COMMENTS

download OK
Rpl # 14
Stainless steel cable OK

SITE ID	pineDN1_BU	LOCATION		d/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10893055	UTM	648362	6222823
DOWNLOAD DATE	14	Jul	2017	DOWNLOAD TIME	12:27	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	13.8	AIR TEMP	16.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	dry	IF DRY, HEIGHT ABOVE WATER	100	cm TETHER TYPE	alder

COMMENTS

RPL# 25
download OK
new stainless steel cable
swung to shore but no debris, cottonwood on top of cable

SITE ID	pineDN1	LOCATION		d/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		2226322	UTM	648101	6222802
DOWNLOAD DATE	14	Jul	2017	DOWNLOAD TIME	12:06	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	13.8	AIR TEMP	16.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED	yes	REASON	debris		
BURIED	no		FUNCTIONAL	dry	IF DRY, HEIGHT ABOVE WATER	150	cm TETHER TYPE	alder

COMMENTS

download OK
swung to shore by debris and exposed
Stainless steel cable OK

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	gmsUP1	LOCATION		GMS Forebay	BANK		
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676155	UTM	548841	6209022
DOWNLOAD DATE	20 Oct 2017	DOWNLOAD TIME		11:37	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	10.6	AIR TEMP	5	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	steel buoy

COMMENTS

Download OK
Stainless steel cable OK
RPL#19

SITE ID	gmsUP2	LOCATION		GMS Forebay	BANK		
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676180	UTM	548841	6209022
DOWNLOAD DATE	20 Oct 2017	DOWNLOAD TIME		11:40	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	10.6	AIR TEMP	5	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	1000	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	steel buoy

COMMENTS

Download OK
Stainless steel cable OK
RPL#20

SITE ID	gmsDN2	LOCATION		GMS Tailrace RDB	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669739	UTM	548828	6207836
DOWNLOAD DATE	20 Oct 2017	DOWNLOAD TIME		12:12	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	9.8	AIR TEMP	10	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	rock

COMMENTS

Back-up logger gmsDN2-BU 2038614 in same capsule 12:13
both downloads OK
cable ok (stainless steel cable section attached to galvanized cable around rock)
Primary Logger-Rpl #11, SN 10669739
water very low at tailrace

SITE ID	gmsDN1	LOCATION		GMS Tailrace LDB	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635063	UTM	548881	6207761
DOWNLOAD DATE	20 Oct 2017	DOWNLOAD TIME		12:28	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	10.6	AIR TEMP	10	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON		
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm TETHER TYPE	rock

COMMENTS

Back-up logger gmsDN1-BU 2038613 in same capsule 12:29
both downloads OK
cable ok (stainless steel cable section attached to galvanized cable around rock)
Primary Logger gmsDN1-RPL#7
water very low at tailrace

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	pcnUP1	LOCATION		PCN Forebay		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #	10635067		UTM	562684	6204075
DOWNLOAD DATE	20	Oct	2017	DOWNLOAD TIME	10:24	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	10.2	AIR TEMP	1.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	log boom

COMMENTS

dow nload OK
all stainless steel cable OK
Rpl #10

SITE ID	pcnDN2	LOCATION		PCN Tailrace		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #	10156317		UTM	562803	6204854
DOWNLOAD DATE	20	Oct	2017	DOWNLOAD TIME	10:04	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	10.4	AIR TEMP	1.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	200	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	rock

COMMENTS

dow nload OK
all stainless steel cable ok
RPL# 2

SITE ID	pcnDN2_BU	LOCATION		PCN Tailrace		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #	10635061		UTM	562803	6204854
DOWNLOAD DATE	20	Oct	2017	DOWNLOAD TIME	10:04	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	10.4	AIR TEMP	1.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	200	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	rock

COMMENTS

dow nload OK
all stainless steel cable OK
Anchored to same rock as pcnDN2
RPL #9

SITE ID		LOCATION				BANK		
LOGGER TYPE			LOGGER SERIAL #			UTM		
DOWNLOAD DATE				DOWNLOAD TIME		CREW		
TEST RECORDER TYPE		WATER TEMP		AIR TEMP		ICE CONDITIONS		

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED		REASON			
BURIED			FUNCTIONAL		IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	

COMMENTS

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	halfUP2	LOCATION		u/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10156319	UTM	595569	6230541
DOWNLOAD DATE	27	Oct	2017	DOWNLOAD TIME	11:51	CREW	BC TE	
TEST RECORDER TYPE	merc		WATER TEMP	9.4	AIR TEMP	8	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	20	cm	DISLODGED		yes	REASON	tampered			
BURIED	no		FUNCTIONAL	wet		IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	spruce

COMMENTS

pulled partially to shore by unknown persons; likey exposed at lower water levels
download OK
cable OK
loggger RPL#1 replaced with RPL# 33 SN20030829

SITE ID	halfUP1	LOCATION		u/s of Halfway River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		9767573	UTM	595165	6230094
DOWNLOAD DATE	27	Oct	2017	DOWNLOAD TIME	12:03	CREW	BC TE	
TEST RECORDER TYPE	merc		WATER TEMP	9.4	AIR TEMP	8	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	200	cm	DISLODGED	no		REASON				
BURIED	no		FUNCTIONAL	wet		IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	spruce tree

COMMENTS

logger label "halfUP1R"
download OK
cable OK
logger halfUP1R replaced with RPL #34, SN 20097151

SITE ID	halfDN2	LOCATION		d/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10669748	UTM	598198	6232169
DOWNLOAD DATE	27	Oct	2017	DOWNLOAD TIME	12:27	CREW	BC TE	
TEST RECORDER TYPE	merc		WATER TEMP	6.7	AIR TEMP	8	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	200	cm	DISLODGED	no		REASON				
BURIED	no		FUNCTIONAL	wet		IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	balsam pop

COMMENTS

download OK
stainless steel cable OK
 Rpl #15

SITE ID	halfDN2_BU	LOCATION		d/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10156314	UTM	598179	6263144
DOWNLOAD DATE	27	Oct	2017	DOWNLOAD TIME	12:23	CREW	BC TE	
TEST RECORDER TYPE	merc		WATER TEMP	6.7	AIR TEMP	8	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	40	cm	DISLODGED		yes	REASON		debris		
BURIED	no		FUNCTIONAL	wet		IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	balsam pop

COMMENTS

logger label "halfDN2_BU"
stainless steel cable OK
download OK
swung to shore by debris but still wet at high flows

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	mobUP2	LOCATION		u/s of Moberly River	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669754	UTM	627501	6232563
DOWNLOAD DATE	19	Oct	2017	DOWNLOAD TIME	12:38	CREW	BC TE
TEST RECORDER TYPE	YSI	WATER TEMP	9.3	AIR TEMP	5.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED		yes	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	spruce

COMMENTS

RPL#16

download OK

covered with sediment

SITE ID	mobUP1	LOCATION		u/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10887852	UTM	627158	6232349
DOWNLOAD DATE	19	Oct	2017	DOWNLOAD TIME	12:45	CREW	BC TE
TEST RECORDER TYPE	YSI	WATER TEMP	9.5	AIR TEMP	5.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	170	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	alder

COMMENTS

RPL# 21

stainless cable OK

download OK

SITE ID	mobDN1_BU	LOCATION		d/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676147	UTM	630875	6229275
DOWNLOAD DATE	19	Oct	2017	DOWNLOAD TIME	12:14	CREW	BC TE
TEST RECORDER TYPE	YSI	WATER TEMP	9.6	AIR TEMP	5.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	alder

COMMENTS

download OK

RPL#18

SITE ID	mobDN1	LOCATION		d/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676146	UTM	630776	6229287
DOWNLOAD DATE	19	Oct	2017	DOWNLOAD TIME	12:21	CREW	BC TE
TEST RECORDER TYPE	YSI	WATER TEMP	9.6	AIR TEMP	5.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm TETHER TYPE	alder

COMMENTS

download OK

Rpl # 17

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	pineUP2	LOCATION		u/s of Pine River		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10635062	UTM	641653	6225304
DOWNLOAD DATE	19	Oct	2017	DOWNLOAD TIME	13:28	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	9.6	AIR TEMP	5.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	balsam pop

COMMENTS

download OK
Stainless steel cable OK
RPL#6

SITE ID	pineUP1	LOCATION		u/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10669747	UTM	641034	6225372
DOWNLOAD DATE	19	Oct	2017	DOWNLOAD TIME	13:20	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	9.1	AIR TEMP	16.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	alder

COMMENTS

download OK
Rpl # 14
Stainless steel cable OK

SITE ID	pineDN1_BU	LOCATION		d/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10893055	UTM	648362	6222823
DOWNLOAD DATE	16	Oct	2017	DOWNLOAD TIME	14:01	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	8.2	AIR TEMP	8.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	80	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	alder

COMMENTS

RPL# 25
download OK
installed new stainless steel cable

SITE ID	pineDN1	LOCATION		d/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		2226322	UTM	648101	6222802
DOWNLOAD DATE	16	Oct	2017	DOWNLOAD TIME	14:11	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	8.2	AIR TEMP	8.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	40	cm	DISLODGED	yes	REASON		debris	
BURIED	no	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	alder

COMMENTS

download OK
swung to shore but still wetted under higher flows
Stainless steel cable OK

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	gmsUP1	LOCATION	GMS Forebay	BANK		
LOGGER TYPE	Tidbit	LOGGER SERIAL #	10676155	UTM	548841	6209022
DOWNLOAD DATE	10 Jan 2018	DOWNLOAD TIME	n/a	CREW	BC TE	
TEST RECORDER TYPE		WATER TEMP	AIR TEMP	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED		REASON			
BURIED			FUNCTIONAL		IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	steel buoy

COMMENTS

Not downloaded; ice unsafe to access buoy.
Next download attempt, April 2018.

SITE ID	gmsUP2	LOCATION	GMS Forebay	BANK		
LOGGER TYPE	Tidbit	LOGGER SERIAL #	10676180	UTM	548841	6209022
DOWNLOAD DATE	10 Jan 2018	DOWNLOAD TIME	n/a	CREW	BC TE	
TEST RECORDER TYPE		WATER TEMP	AIR TEMP	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	1000	cm	DISLODGED		REASON			
BURIED			FUNCTIONAL		IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	steel buoy

COMMENTS

Not downloaded; ice unsafe to access buoy.
Next download attempt, April 2018.

SITE ID	gmsDN2	LOCATION	GMS Tailrace RDB	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #	10669739	UTM	548828	6207836
DOWNLOAD DATE	10 Jan 2018	DOWNLOAD TIME	12:57	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	1.7	AIR TEMP	-26	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	rock

COMMENTS

Back-up logger gmsDN2-BU 2038614 in same capsule 12:58
both downloads OK
cable OK (stainless steel cable section attached to galvanized cable around rock)
Primary Logger-Rpl #11, SN 10669739

SITE ID	gmsDN1	LOCATION	GMS Tailrace LDB	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #	10635063	UTM	548881	6207761
DOWNLOAD DATE	10 Jan 2018	DOWNLOAD TIME	13:22	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	1.7	AIR TEMP	-26	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	120	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	rock

COMMENTS

Back-up logger gmsDN1-BU 2038613 in same capsule 13:24
both downloads OK
cable OK (stainless steel cable section attached to galvanized cable around rock)
Primary Logger gmsDN1-RPL#7

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	pcnUP1	LOCATION		PCN Forebay	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635067	UTM	562684	6204075
DOWNLOAD DATE	10 Jan 2018	DOWNLOAD TIME		10:59	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	1.1	AIR TEMP -26.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	log boom

COMMENTS

dow nload OK

all stainless steel cable OK

RPL #10

SITE ID	pcnDN2	LOCATION		PCN Tailrace	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10156317	UTM	562803	6204854
DOWNLOAD DATE	10 Jan 2018	DOWNLOAD TIME		11:28	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	1.3	AIR TEMP -26.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	90	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	rock

COMMENTS

dow nload OK

all stainless steel cable ok

RPL# 2

SITE ID	pcnDN2_BU	LOCATION		PCN Tailrace	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10635061	UTM	562803	6204854
DOWNLOAD DATE	10 Jan 2018	DOWNLOAD TIME		11:31	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	1.3	AIR TEMP -26.0	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	90	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	rock

COMMENTS

dow nload OK

all stainless steel cable OK

Anchored to same rock as pcnDN2

Rpl #9

SITE ID		LOCATION			BANK		
LOGGER TYPE		LOGGER SERIAL #			UTM		
DOWNLOAD DATE		DOWNLOAD TIME			CREW		
TEST RECORDER TYPE		WATER TEMP		AIR TEMP	ICE CONDITIONS		

LOGGER CONDITIONS

WATER DEPTH		cm	DISLODGED		REASON			
BURIED			FUNCTIONAL		IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	

COMMENTS

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	halfUP2	LOCATION		u/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		20030829		UTM	595569	6230541
DOWNLOAD DATE	3 Jan 2018	DOWNLOAD TIME		14:13		CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.9	AIR TEMP	2	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	spruce

COMMENTS

download OK
cable OK
RPL# 33

SITE ID	halfUP1	LOCATION		u/s of Halfway River		BANK		south
LOGGER TYPE	Tidbit	LOGGER SERIAL #		20097151		UTM	595165	6230094
DOWNLOAD DATE	3 Jan 2018	DOWNLOAD TIME		14:22		CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.9	AIR TEMP	2	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	200	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	spruce tree

COMMENTS

download OK
cable OK
RPL #34

SITE ID	halfDN2	LOCATION		d/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669748		UTM	598198	6232169
DOWNLOAD DATE	3 Jan 2018	DOWNLOAD TIME		14:41		CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.7	AIR TEMP	2	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	balsam pop

COMMENTS

download OK
stainless steel cable OK
Rpl #15

SITE ID	halfDN2_BU	LOCATION		d/s of Halfway River		BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10156314		UTM	598179	6263144
DOWNLOAD DATE	3 Jan 2018	DOWNLOAD TIME		14:38		CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.7	AIR TEMP	2	ICE CONDITIONS	none	

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no		FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	balsam pop

COMMENTS

logger label "halfDN2_BU"
stainless steel cable OK
download OK

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	mobUP2	LOCATION		u/s of Moberly River	BANK		north
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10669754	UTM	627501	6232563
DOWNLOAD DATE	4 Jan 2018	DOWNLOAD TIME		11:19	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.5	AIR TEMP	-5.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	200	cm	DISLODGED	no	REASON			
BURIED	yes	FUNCTIONAL	wet		IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	spruce

COMMENTS

RPL#16
download OK

SITE ID	mobUP1	LOCATION		u/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10887852	UTM	627158	6232349
DOWNLOAD DATE	4 Jan 2018	DOWNLOAD TIME		11:27	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.5	AIR TEMP	-5.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	180	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet		IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	alder

COMMENTS

RPL# 21
stainless cable OK
download OK

SITE ID	mobDN1_BU	LOCATION		d/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676147	UTM	630875	6229275
DOWNLOAD DATE	4 Jan 2018	DOWNLOAD TIME		11:46	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.6	AIR TEMP	-5.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet		IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	alder

COMMENTS

download OK
RPL#18

SITE ID	mobDN1	LOCATION		d/s of Moberly River	BANK	south	
LOGGER TYPE	Tidbit	LOGGER SERIAL #		10676146	UTM	630776	6229287
DOWNLOAD DATE	4 Jan 2018	DOWNLOAD TIME		11:38	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.6	AIR TEMP	-5.0	ICE CONDITIONS	none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet		IF DRY, HEIGHT ABOVE WATER	cm	TETHER TYPE	alder

COMMENTS

download OK
Rpl # 17

BC HYDRO PEACE RIVER TEMPERATURE MONITORING - DOWNLOAD INFORMATION FORM

SITE ID	pineUP2	LOCATION		u/s of Pine River		BANK		north
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10635062	UTM	641653	6225304
DOWNLOAD DATE	4	Jan	2018	DOWNLOAD TIME	12:17	CREW	BC TE	
TEST RECORDER TYPE	YSI	WATER TEMP	0.5	AIR TEMP	-5.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	200	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	balsam pop

COMMENTS

dow nload failed
logger "RPL#6" replaced with logger "halfUP1R" (SN 9767573).
Stainless steel cable OK

SITE ID	pineUP1	LOCATION		u/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10669747	UTM	641034	6225372
DOWNLOAD DATE	4	Jan	2018	DOWNLOAD TIME	12:08	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.5	AIR TEMP	-5.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	150	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	alder

COMMENTS

dow nload OK
Stainless steel cable OK
RPL# 14

SITE ID	pineDN1_BU	LOCATION		d/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		10893055	UTM	648362	6222823
DOWNLOAD DATE	4	Jan	2018	DOWNLOAD TIME	12:41	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.3	AIR TEMP	-5.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	100	cm	DISLODGED	no	REASON			
BURIED	no	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	alder

COMMENTS

RPL# 25
dow nload OK
installed new stainless steel cable

SITE ID	pineDN1	LOCATION		d/s of Pine River		BANK	south	
LOGGER TYPE	Tidbit		LOGGER SERIAL #		2226322	UTM	648101	6222802
DOWNLOAD DATE	4	Jan	2018	DOWNLOAD TIME	12:32	CREW	BC TE	
TEST RECORDER TYPE	merc	WATER TEMP	0.3	AIR TEMP	-5.0	ICE CONDITIONS		none

LOGGER CONDITIONS

WATER DEPTH	5	cm	DISLODGED	yes	REASON	ice	debris	
BURIED	no	FUNCTIONAL	wet	IF DRY, HEIGHT ABOVE WATER		cm	TETHER TYPE	alder

COMMENTS

dow nload OK
sw ung to shore by debris and ice but still wetted
Stainless steel cable OK

logger "pineDN_1" (SN 2226322) replaced Jan 8 with RPL# 1 (SN 10156319) due to drifted time stamp.

Appendix V. Summary of temperature logger deployment dates and anticipated replacement dates.

Site ID	Serial #	Location	Date Deployed	Replace Date
gmsUP1	10676155	WAC Bennett Forebay	Jan 2016	2022
gmsUP2	10676180	WAC Bennett Forebay	Jan 2016	2022
gmsDN1	10635063	GMS Tailrace	Jan 2015	2021
gmsDN1BU	2038613	GMS Tailrace	Nov 2009	2015
gmsDN2	10669739	GMS Tailrace	Apr 2015	2021
gmsDN2BU	2038614	GMS Tailrace	Nov 2009	2015
pcnUP1	10635067	Peace Canyon Forebay	Apr 2015	2021
pcnDN2	10156317	Peace Canyon Tailrace	July 2014	2020
pcnDN2BU	10635061	Peace Canyon Tailrace	Apr 2015	2021
HalfUP1	20097151	Halfway Confluence - upstream	Oct 2017	2023
HalfUP2	20030829	Halfway Confluence - upstream	Oct 2017	2023
HalfDN2	10669748	Halfway Confluence - downstream	Apr 2015	2021
HalfDN2BU	10156314	Halfway Confluence - downstream	Jul 2013	2018
MobUP1	10887852	Moberly Confluence - upstream	Oct 2015	2021
MobUP2	10669754	Moberly Confluence - upstream	July 2016	2022
MobDN1	10676146	Moberly Confluence - downstream	Jan 2016	2021
MobDN1BU	10676147	Moberly Confluence - downstream	Jan 2016	2021
PineUP1	10669747	Pine Confluence - upstream	Apr 2015	2021
PineUP2	9767573	Pine Confluence - upstream	May 2011	2017
PineDN1	10156319	Pine Confluence - downstream	May 2014	2022
PineDN1BU	10893055	Pine Confluence - downstream	Jan 2017	2023
PineMS1	10893069	Pine Mainstem - upstream of Peace	Jul 2016	2022
PineMS2	10887856	Pine Mainstem - upstream of Peace	Apr 2016	2022
BeatMS1	10930722	Beatton Mainstem - upstream of Peace	Oct 2016	2022
BeatMS2	10930793	Beatton Mainstem - upstream of Peace	Nov 2016	2022
PouceUP1	10893059	Pouce Coupe confluence - upstream	Apr 2016	2022
PouceUP2	10893068	Pouce Coupe confluence - upstream	Apr 2016	2022