RioTinto

LNG CANADA DEVELOPMENT INC.

RT Terminal A Extension

Wharf Contract

Specification: Rio Tinto Terminal A Construction Water Quality Annual/Closure Report – 2021 (BJM JV)

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REVISION STATUS

REV	DATE	DESCRIPTION	ORIGINATED BY	REVIEWED BY	BAM-JJM-MANSON JOINT VENTURE APPROVED BY
A	07-DEC-2021	Issued for Review	N. Carbajal		A. Murphy

Executive Summary

This report describes the results of the 2021 Rio Tinto BJM Terminal A Construction Water Management Plan (TA-CWMP) monitoring program, designed to meet British Columbia Environmental Management Act Multi-media Permit P2-00001 requirements for the Rio Tinto Terminal A Wharf Extension Project (the Project). Terminal A dewatering effluent is discharged into the Rio Tinto D-Lagoon system. This is the final report for the Term A Const. Water Management Plan

Monitoring Program

Several effluent and marine water quality samples were taken, beginning on January 4, 2021 and continuing to November 1, 2021. The program was discontinued at the end of day on November 1, 2021. The monitoring program is summarized as follows:

- *In situ* water quality sampling was conducted in accordance with Part E of the 2013 British Columbia Field Sampling Manual: Ambient Freshwater and Effluent Sampling (BC Ministry of Environment 2013). Parameters were measured using a YSI ProDSS Multiparameter Meter (pH, temperature (oC), conductivity (µS), salinity (ppt.), dissolved oxygen (mg/L), and turbidity (NTU)), a YSI ProQuatro (pH, temperature (°C), conductivity (µS), salinity (ppt.), dissolved oxygen), and a Lamotte 2020we Portable Turbidity Meter (turbidity (NTU)). Meters are calibrated on site daily prior to use and results are recorded.
- *Ex situ* (laboratory) marine water quality samples were collected in accordance with Part E of the 2013 British Columbia Field Sampling Manual : Ambient Freshwater and Effluent Sampling (BC Ministry of Environment 2013). *Ex situ* marine samples were collected using a VanDorn sampling device. The samples were shipped to AGAT Laboratories in Burnaby, BC for analysis. *Ex situ* samples collected from within 50 m of marine piling and REF 1 were analyzed for total suspended solids (TSS).
- *In situ* and *ex situ* water quality parameters for construction water and marine water were compared against either P2 Permit Criteria or the BC Approved Water Quality Guidelines and CCME Water Quality Guidelines for the Protection of Aquatic Life, depending on whether stormwater runoff entered D-Lagoon or a receiving environment, respectively.
- P2 Permit Criteria for *in situ* water quality parameters are outlined in Table 2 (TSS, turbidity, pH, temperature) of the Terminal A - Construction Water Management Plan (TA-CWMP). P2 Permit Criteria for e*x situ* water quality parameters are outlined in Table 2 (TSS, dissolved aluminium, dissolved fluoride, cyanide-SAD, total PAH, benzo(a)pyrene, total and dissolved metals) of the TA-CWMP.
- P2 Permit Criteria do not apply to passive drainage entering D-Lagoon (i.e., D-Lagoon Inflow (SE & SW)). Instead, P2 Permit Criteria are only applied to water that is actively pumped into D-Lagoon (i.e., from a stationary holding tank).

Conclusions

All effluent streams and parameters sampled in 2021 met applicable permit management targets as outlined in the Permit P2-00001 and TA-CWMP. There were no project related exceedances. There are some exceedances listed in the results section but they're due to natural variation as opposed to construction impact. It should be noted that P2 Permit requirements were used as targets for the Construction Water Management Plan (CWMP) and do not reflect regulatory compliance limits. The compliance point still remains the B-Lagoon outfall at the Rio Tinto site.

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LIST OF ABBREVIATIONS

BC	British Columbia
CCME	Canadian Council of Ministers of Enviroment
CRA	commercial, recreational, or Aboriginal
TA-CWMP	BJM Terminal A Construction Water Management Plan
DO	dissolved oxygen
DOC	dissolved organic carbon
EMA	Environmental Management Act
ENV	Ministry of Environment and Climate Change Strategy
OLS	ordinary least squared
PAH	polycyclic aromatic hydrocarbon
RPD	relative percent difference
RT `	Rio Tinto
RTA	Rio Tinto Terminal A
TAR	technical assessment report
TOC	total organic carbon
TSS	total suspended solids

1. INTRODUCTION

This report describes the results of the 2021 BJM Terminal A Construction Water Management Plan (TA-CWMP, Document No.: R001-000-HE-5798-1006, Section 4.1.4) monitoring program, designed to meet British Columbia Environmental Management Act (EMA) Multi-media Permit P2-00001 requirements for the the Rio Tinto Terminal A Extension Project (the Project). The Rio Tinto Smelter and shipping terminals are located within the District of Kitimat, British Columbia (BC). The purpose of the Project is to extend the existing Rio Tinto Terminal A facility to consolidate shipping activities to one terminal.

In 2021, Rio Tinto (RT) BC Works continued the Terminal A Extension Project, which included wharf construction activities near the existing Terminal A facility.

1.1 Purpose and Scope

The purpose of the 2021 RT TA-CWMP monitoring programs is to meet Multi-media Permit P2-00001 monitoring and reporting requirements for land and marine based construction activities associated with the Terminal A Extension Project. The monitoring program began March 12, 2019, with baseline sampling. The monitoring program and reporting scope were as follows:

- Conduct water quality monitoring at the surface water drainage pipes where they enter D- Lagoon (D-Lagoon inflows SW);
- Conduct water quality monitoring at Raven Creek (WSC:910-668527)
- Conduct water quality monitoring within 50 m of marine pile driving (1 m above the seabed and 1 m below surface),
- Conduct water quality monitoring at Ref 1 (mouth of the Kitimat River; 1 m above seabed and 1 m below surface)
- Conduct water quality monitoring at 50 m from Temporary Mooring Piles (1 m below surface and 1 m above the seabed)

1.2 Background

The RT Terminal A upland area is approximately 230,000 m^2 and constructed to intercept surface runoff through a series of interception ditches and grading/sloping to direct surface flows through grated manholes and underground piping into a retention pond, namely D-Lagoon (Figure 1 and Appendix A). This storage facility acts to collect on site run-off water, to allow suspended sediments to settle out and to monitor for potential contamination sources on site, prior to discharge to the RT water handling system. The area surface and drainage method of the (present) RT yard and Helipad were not altered for the temporary use by BJM and the present RT stormwater management practices remain. In addition to the RT Terminal A upland area, BJM is constructing a wharf that will add an area of approximately 18,000 m^2 to the RTA site. A new drainage system on the wharf (the U-trench) has been permanently connected to the existing RT water handling system. The properties of additional discharges, originating from BJM's use of the area, were measured through testing the surface water entering RT D-Lagoon at the entry points shown in Appendix A and comparing the results to the baseline readings mentioned in the TA-CWMP Section 4.2.1. BJM's area, together with the completed wharf, totals

approximately 52,000 m^2 (15% of RTA total Area). The TA-CWMP also addresses perimeter surface water run-off that at present is and will remain being directed towards receiving environments (i.e. freshwater and marine environments).

D-Lagoon is a concrete and asphalt settling basin serviced by three filtration trenches plus associated storm water drains installed upstream of the stormwater sewer system. D-Lagoon settles suspended sediments in stormwater and effluents from the Rio Tinto Terminal A. D-Lagoon is connected with B-Lagoon, and through a pumping diversion system, all the effluents are transferred from D-Lagoon to B-Lagoon.

In 2019 during Revetment works, due to historical contamination from industrial activities, a portion of the soil to be excavated did not meet the industrial land standards required for upland disposal. Hazardous-waste level sediment (PAH concentrations exceeding BC Hazardous Waste Regulations (BC Reg. 63/88, O.C. 268/88) soil standards) was dewatered on-site and transported via trucks to a licensed landfill in Fort St. John. A retention cell (lined cell to receive material that exceeds Contaminated Sites Regulation Industrial Land Use soil standards) was constructed, by BJM JV, at Terminal A. As the excavated soil contained varying levels of contamination, contaminated soil dewatering effluent was allowed to undergo settling in the stationary holding tanks prior to batch discharge to D-Lagoon. Water quality monitoring associated with this structure is defined in the 2019 BJM Terminal A Construction Water Management Plan (TA-CWMP, Document No.: R001-000-HE-5798-1006).

Management of contaminated soil-related effluent is authorized under a 2016 amendment of the EMA multi-media permit P2-0001. The 2016 P2-00001 permit amendment was supported by a technical assessment report (TAR) (Golder 2015). These documents informed the development of management targets and permit limits, as identified in the TA-CWMP, along with monitoring and reporting requirements during revetment excavation. On March 21, 2019, a letter of temporary amendment to the P2-00001 permit was issued to approve the TA-CWMP and outline conditions for completing the replacement of the Terminal A revetment (3.1.2(a), 3.2.1, 8.2.1(a), 8.2.1.8, 8.6.1.1, and new clause 8.6.1.2

Activities in 2021 that triggered monitoring included the use of the laydown, marine piling and concrete works for the wharf deck. Initially, run-off water from the deck was directed to the stationary holding tanks where it was treated with carbon dioxide (CO_2) and tested prior to discharge to D-Lagoon. The stationary holding tanks were periodically cleaned to remove excess fines and to reduce turbidity. Following the tie-in of the U-trench and sump along the west side of the wharf to D-Lagoon, wharf surface water run-off passively drained to D-Lagoon. The U-trench sump was equipped with a CO_2 bubbler to treat run-off when required. The CO_2 bubbler system was decommissioned once the pH of the wharf run-off was measured to conform to P2-00001 Permit requirements without treatment.

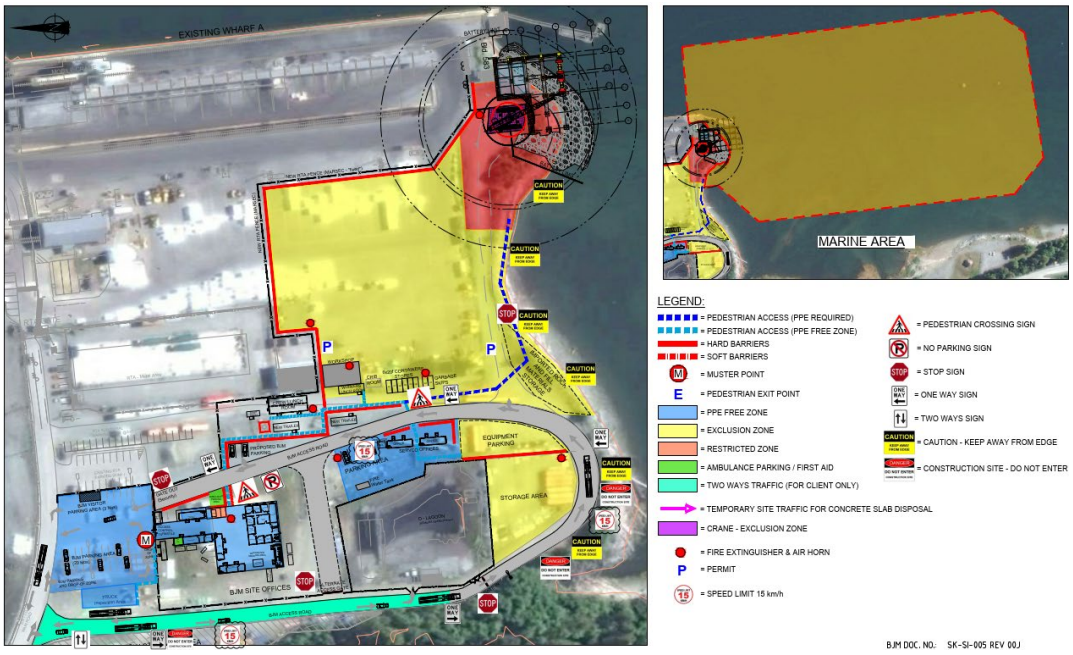

Figure 1. RT Terminal A Site Lay-out

1.3 Environmental Sensitivities and Effects

The sensitivities listed in TA-CWMP Section 2 are related to the potential effects from a change of surface water quality or marine water quality along with the controls and mitigations installed to direct surface water runoff, sediment mobilization and contact water from potentially contaminated materials away from Raven Creek and the marine environment.

1.3.1 Raven Creek

Based on BJM's knowledge of site conditions and land-based construction activities conducted during 2019, BJM does not believe construction activities have had, or currently have, any impact on Raven Creek water quality. The activities during 2021 along the west boundary of site are now limited to storage and stockpiles of a variety of materials, concrete containment cells, and a one-way access road. The one-way access road traffic is very limited due to the current scope of work. In the NW corner of site, there exists stockpiles consisting of used three-inch minus material, concrete and rebar and one large snow stockpile. The stockpile of three-inch minus material is typically compacted and the top graded inward to reduce sediment migration. The existing slopes in the NW corner direct surface runoff flows to stormwater ditches, that flow towards D-Lagoon. The snow stockpile was located in the furthest NW corner of site as designated for snow storage by Rio Tinto. Surface runoff from the snow stockpile is conveyed south and east (away from Raven Creek) through stormwater ditches into drainage manholes that discharge into D-Lagoon.

The road that runs north-south parallel to Raven Creek is graded such that surface runoff is directed east (away from Raven Creek) towards drainage manholes that discharge into D-Lagoon. Traffic along the road is primarily transport trucks and light-duty trucks with the occasional zoom boom or loader.

The concrete containment cells were located on the west side of the access road across from D-Lagoon. One cell was built to contain excess uncured concrete and the other cell was built to hold cured concrete. The uncured cell was built with double layer of polyethylene sheeting at its base to prevent the concrete contact water becoming surface runoff. The cell also had a roof installed at times to prevent accumulation of water in the cell. Concrete contact water has a very high pH (~12.0), and if these cells were to affect Raven Creek it would be expected to have observed abnormally high pH values at the monitoring location. The concrete cells were decommissioned in November 2021, with the cell contents transported to an appropriate facility for disposal.

The most substantial protective measure in place for Raven Creek is the natural berm that runs south-north between site and Raven Creek. This natural berm extends from the culvert at the south end of Raven Creek to the north property boundary and ranges in height from approximately 1 meter in the south to 8 metres in the northern portion. This berm acts as a solid barrier preventing any site runoff from entering Raven Creek. The natural berm is less significant (<0.5 metres) along the final 60-metre section of the creek downstream of a culvert, however, the adjacent site road is graded to direct runoff eastward (away from Raven Creek) and into manholes that discharge into to D-Lagoon. Just north of this culvert a 5 m length of silt fencing was installed to prevent a stockpile of gravel left over from a snow stockpile from entering Raven Creek. The silt fencing has prevented any runoff from the stockpile reaching Raven Creek. During heavy precipitation events in 2021, BJM did not observe surface runoff from the road flowing towards Raven Creek.

Water quality monitoring at Raven Creek is not explicitly required by the TA-CWMP and was initiated for the purposes of collecting data and evaluating any water quality alterations related to the pipe identified at the south end of Raven Creek. Rio Tinto confirmed that the pipe is not connected to their water management system and is expected to be a remnant of a historic infrastructure. Land-based construction activities were never suspected of impacting Raven Creek water quality, so it was classified as a background site. BJM ceased monitoring of Raven Creek on April 19th, 2020, up to that date it was monitored on a daily basis approximately one meter upstream of the "unknown pipe" for *in situ* parameters (temperature, turbidity, pH, specific conductance, salinity, and dissolved oxygen).

The monitoring of Raven Creek restarted on May 22, 2020, as per email communication from Rio Tinto to the BC Ministry of Environment, the communication states the following:

"Monitoring of the creek by BJM ended on April 19, 2020 when snow removal, vehicle passage and construction activities along the access road stopped. Going forward, BJM will continue to monitor Raven Creek through the life of the Terminal A project or until the source of the pH has been better characterized.

As part of the TA-CWMP we propose that monitoring of the Creek include trigger values for additional monitoring of pH within the stream. The proposed triggers are: <pH 5.5 and >pH 9.0 with a handheld instrument as discussed below. Sampling will begin again on 22 May 2020 as BJM need to organize the team and ensure monitoring equipment and materials and [sic] available.

The trigger response will include the following:

In the event the pH values are outside of the thresholds, grab samples will be collected for laboratory analysis and verification. In addition to the original sample, an upstream sample will be taken *in situ* as well as *ex situ* just above the Bish Creek forest service road. A map will be included in the report. *In situ* sampling results will be provided through continued weekly reports; the bi-weekly summary of the lab data will be provided in a tabulation form with appended lab certificates. Please note that BJM has been in contact with AGAT laboratories and the recommended hold time for water samples that will be analyzed for pH is 15 mins; this is challenging logistically and may create deviations between lab and field results."

In addition to the above, the *in situ* parameters specific conductance, salinity and dissolved oxygen were no longer required to be monitored.

The daily *in situ* monitoring of Raven Creek (Bish Creek FSR) and Raven Creek (Alcan Road and Site Access Road), was discontinued on June 22, 2020, but monitoring would occur at the Bish Creek FSR location if pH at the Raven Creek background site was found to be outside of the thresholds described above. The pH at the Raven Creek background site was found to be outside of the trigger values once in 2021 on January 18, 2021.

The Raven Creek monitoring location can be influenced by tides. In BJM's experience, tidal influence is only observed during the tides that are approximately > 6 metres. During these periods the location was not monitored due to the observed influence.

1.3.2 Marine Environment

Given the proximity of the marine piling activities and the potential for environmental effects to the marine receiving environment, a monitoring program specific to discrete sampling for marine water quality during marine piling works was followed. The monitoring program is outlined in Table 1. The monitoring program identifies the sampling location and the location of a baseline sampling location.

Table 1 identifies the compliance values for the marine piling activities, in accordance with BC Approved Water Quality Guidelines. For other physicochemical and chemical parameters, it is expected that marine water quality at the sampling locations will meet regulatory guidelines, in the following order:

1) Approved Water Quality Guidelines: Aquatic Life, Wildlife and Agriculture. BC ENV, 2018.

2) Working Water Quality Guidelines for British Columbia. BC MOE, 2017.

3) Canadian Water Quality Guidelines for the Protection of Aquatic Life. CCME, 1999.

For the short term (acute) guideline, an average value from the vertical profile was assessed against the guideline. Exceedance of 8 NTU above background for one measurement was considered an exceedance of trigger value. Exceedance of 8 NTU above background for a duration of 24 hours was considered an exceedance of compliance value. For the long term (chronic) guideline, a daily value was calculated using the mean from the vertical profile. The daily mean values were then averaged over 30 days and this average assessed against the guideline. If water quality was trending towards exceeding the long-term average, trigger-level exceedance corrective actions as listed in Table 6 of TA-CWMP

were considered. Exceedance of 2 NTU above background for a duration of 30 days was considered an exceedance of compliance value.

Table 1. Marine Water Quality Monitoring Program (discrete sampling) for Terminal A Marine Piling works

Activity	Sample Location	Site No.	Parameters				Sampling Frequency	Report Frequency	Submitted To
			Physical	Depth	Chemical	Depth			
Marine piling	Within 50 m of work activity	50 m from piling	pH, Turbidity	Bottom (1m above seabed) Surface (1m below water surface)	TSS	Bottom (1m above seabed) Surface (1m below water surface)	Physical: daily Chemical: As required to validate turbidity	Monthly	RT MOE Haisla
Marine piling	Mouth of Kitimat River	Ref 1	pH, Turbidity	Bottom (1m above seabed) Surface (1m below water surface)	TSS	Bottom (1m above seabed) Surface (1m below water surface)	Physical: weekly or as required to validate background conditions Chemical: As required to validate turbidity	Monthly	RT MOE Haisla

1.4 Environmental Regulatory Overview

Federal and provincial regulatory requirements for discharge of effluent from D-Lagoon are described below.

1.4.1 Fisheries Act

The federal Fisheries Act (R.S.C., 1985, c.F-14) contains two provisions with implications for effluent discharges to marine waters, section 35 (1) and section 36 (3).

Section 35 (1) of the Fisheries Act prohibits activities that results in the harmful alteration, disruption or destruction of fish habitat". Section 36 (3) of the Fisheries Act prohibits the deposition of deleterious substances into waters frequented by fish. The Fisheries Act defines a deleterious substance as "any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water."

1.4.2 Environmental Management Act

The EMA is administered by the BC Ministry of Environment and Climate Change Strategy (ENV), and governs waste discharge to aquatic, terrestrial, or atmospheric environments. Effluent discharges to the marine environment are managed under permits issued by the ENV through the EMA or the associated Waste Discharge Regulation codes of practice. Unless authorized, the EMA prohibits discharge of waste from prescribed industries, operations, or activities. Effluent discharge permits detail the terms under which the discharge may occur (e.g., discharge volumes, levels for parameters of concern, operation and maintenance requirements, emergency procedures, and monitoring and reporting requirements). Monitoring and reporting to ENV are the responsibility of the permit-holder; compliance with the conditions of the authorization, the EMA and the Waste Discharge Regulation are enforceable by ENV. Discharge into D-Lagoon effluent is authorized under BC EMA multi-media permit P2-00001 and must meet permit compliance requirements.

1.4.2.1 P2-0001 Permit Requirements

Effluent quality compliance limits for multi-media permit P2-00001 during the wharf extension at Terminal A are listed in Table 2.

Table 2 Effluent Compliance Limits and Management Targets During the Wharf Extension at Terminal A per TA-CWMP Section 4.2.1 and P2-00001 Section 3.2.2

Parameter	Sample Type		Criteria
	In Situ	Lab	
Total Suspended Solids (TSS)[1]		X	75.0 mg/L
Turbidity[2]	X		• Change from background of 8 NTU at any one time for a duration of 24 hours in all waters during clear flows or in clear waters. • Change from background of 2 NTU at any one time for a duration of 30 days in all water during clear flow or in clear waters. • Change of background of 5 NTU at any one time when background is 8-50 NTU during high flows or in turbid waters. • Change from background of 10% when background is >50 NTU at any time during high flows or in turbid waters.
pH[1]	X		6.0 – 8.5
Temperature[1]	X		30°C

1 From *Ambient Water Quality Guidelines (Criteria) for Turbidity, Suspended and Benthic Sediments* (BC MOE, 2001)

2 From *P2 Multimedia Permit (Amendments to Rio Tinto's existing permit: P2-00001), issued by BC Ministry of Environment and Climate Change Strategy (ENV).*

Parameter	Sample Type		Criteria
	In Situ	Lab	
Dissolved Aluminum[1,]		X	3.0 mg/L
Dissolved Fluoride[1,]		X	10.0 mg/L
Cyanide-SAD[1]		X	0.5 mg/L
Total PAH[1]		X	10 µg/L
Benzo(a)pyrene[1]		X	0.5 µg/L
Total and Dissolved Metals		X	Per Industrial Levels
Total and Dissolved Hardness		X	Per Industrial Levels
15 PAH Parameters		X	Per Industrial Levels

1 From *Ambient Water Quality Guidelines (Criteria) for Turbidity, Suspended and Benthic Sediments* (BC MOE, 2001)

2. RESULTS

2.1 Stormwater monitoring

In situ and *ex situ* water quality results are presented in Appendix C: Annual *in situ* Construction Water Quality Data for 2021 and Appendix D: Annual *Ex Situ* Constrution Water Quality Data for 2021. A summary of the results is presented in Table 3 of section 2.1.2.

2.1.1 Baseline

On March 12, 2019, *in situ* measurements were collected at the south-east inflow to D-Lagoon and the southwest inflow to D-Lagoon. *Ex situ* background samples were collected from southwest and southeast inflow to D-Lagoon as well on March 12, 2019. Chrysene and Benzo(a)pyrene were both exceeding the BC WQG on both sample locations. The baseline *ex situ* sample results are showed in Appendix E.

2.1.2 In situ Monitoring Results

In situ turbidity and pH measurements collected from D-Lagoon SW often exceeded P2 Permit Criteria and BC AWQG / CCME WQG. However, P2 permit criteria and BC AWQG / CCME WQG do not apply to these locations, as it is outside the project influence (see section 1.3.1). P2 Permit Criteria are project targets and apply at the B-Lagoon outfall. Sediment and erosion control mitigations such as sediment fences, wattles and checkdams are implemented and checked regularly. These exceedances are not an environmental concern as it enters a controlled settling system with water quality monitoring at the outfall.

In situ pH measurements collected from Raven Creek (background) were below P2 Permit Criteria and BC AWQG / CCME WQG however, P2 permit criteria and BC AWQG / CCME WQG do not apply at this location, as it is outside the project influence (see section 1.3.1).

In situ pH measurements collected from the stationary holding tanks and U-trench sump were below P2 Permit Criteria and BC AWQG / CCME WQG however, P2 permit criteria and BC AWQG / CCME WQG do not apply at this location.

All other *in situ* water quality measurements were within P2 Permit Criteria or the BC AWQG for the Protection of Aquatic Life, where they apply.

Table 3 A comparison of the BC AWQG and measured parameters in 2021, per location (Stormwater)

Parameter	Min. Measured	Max. Measured	Mean Measured	BC AWQG
SW Inflow to D Lagoon				
Temp (°C)	0.3	18.0	5.7	**N/A**
Turbidity (NTU)	12.29	1432.51	191.98	**N/A**
pH	5.61	8.64	7.19	**N/A**
Raven Creek (Bish Creek FSR Upstream)				
Temp (°C)	3.0	3.0	3.0	**N/A**
Turbidity (NTU)	11.88	11.88	11.88	**N/A**
pH	5.97	5.97	5.97	**N/A**
Raven Creek (Background)				
Temp (°C)	0.0	19.4	7.8	**N/A**
Turbidity (NTU)	0.00	37.04	2.03	**N/A**
pH	5.19	8.70	6.77	**N/A**
Stationary Holding Tanks #1 and #2				
Temp (°C)	0.6	15.7	4.9	**N/A**
Turbidity (NTU)	3.79	116.69	21.11	**N/A**
pH	6.11	8.49	7.61	**N/A**
Stationary Holding Tank to U-trench Sump				
Temp (°C)	4.1	9.1	6.7	**N/A**
Turbidity (NTU)	9.77	67.28	32.30	**N/A**
pH	6.56	7.26	6.90	**N/A**

In situ water quality measurements were collected 438 times at five locations: SW Inflow to D Lagoon, Raven Creek (Bish Creek FSR Upstream), Raven Creek (background), Stationary Holding Tanks, and Stationary Holding Tanks to U-trench Sump.

2.1.3 Ex situ Monitoring Results

Two *ex situ* construction water quality samples were collected during 2021 after the *in situ* trigger values were exceeded in Raven Creek (background) on January 18th, 2021. The *ex situ* pH values were within the P2 Permit Criteria but outside the BC CSR WQG (see Table 4 for *Ex situ* results). BC AWQG / CCME WQG do not apply at this location, as it is outside the project influence (see section 1.3.1).

Table 4. A comparison of the BC AWQG and *Ex situ* measured parameters in 2021, per location (Stormwater)

Parameter	Min. Measured	Max. Measured	Mean Measured	BC AWQG
Raven Creek (Background)				
pH	6.40	6.40	6.40	**N/A**
Raven Creek (Bish Creek FSR Upstream)				
pH	6.36	6.36	6.36	**N/A**

2.1.4 Sample Station Locations And Frequency

A map of sample sites is provided in Appendix B: Sample Station Locations for 2021. A summary of planned frequency and actual sampling events for the reporting period is presented in Appendix F: Planned Sampling Frequency and Actual Sampling Events for 2021.

2.2 Marine water monitoring

In situ water quality results are presented in Appendix G: Annual *In Situ* Marine Water Quality Data for 2021. A summary of the results is presented in section 2.2.2.

Ex situ water quality results are presented in Appendix H: Annual *Ex Situ* Marine Water Quality Data for 2021. A summary of the results is presented in section 2.2.4.

2.2.1 Baseline

On March 4, 2019, *in situ* measurements were collected below the Rio Tinto dolphin, at the salt water distribution pipes and at the shoreline of the revetment. *Ex situ* baseline water quality samples were collected from Hospital Beach eel grass area on March 14, 2019. Water quality analysis results were compared against the BC AWQG and the CCME WQG for the Protection of Aquatic Life. Guideline exceedances were as follows :

- Total boron (3.2 mg/L) exceeded the BC AWQG for the protection of aquatic life (1.2 mg/L).

- Total copper (0.0036 mg/L) exceeded the BC AWQG for the protection of aquatic life (0.003 mg/L).

The baseline *ex situ* samples results are presented in Appendix E.

2.2.2 In situ Water Quality Results

In situ water quality measurements and/or observations were collected 110 times at two locations and at two depths per location during 2021.

BJM collected *in situ* water quality samples at the compliance locations for the marine piling scope, according to the approved TA-CWMP. A comparison of the BC AWQG and measured parameters are, per location, recorded in Table 5.

Table 5 A comparison of the BC AWQG and measured parameters (*In situ*) in 2021, per location (Marine Water)

Parameter	Min. Measured	Max. Measured	Mean Measured	BC AWQG
Within 50 m of work activity (1 m above seabed)				
Temp (°C)	5.2	10.5	7.8	**30**
Turbidity (NTU)	0.20	17.17	3.32	**8 (above background)**
pH	6.96	8.50	7.73	**7.0 – 8.7**
Within 50 m of work activity (1 m below surface)				
Temp (°C)	4.3	11.1	8.1	**30**
Turbidity (NTU)	0.16	29.91	3.62	**8 (above background)**
pH	7.27	8.99	7.94	**7.0 – 8.7**
Mouth of Kitimat River (1 m above seabed)				
Temp (°C)	6.5	9.5	7.7	**30**
Turbidity (NTU)	0.10	10.84	2.73	**8 (above background)**
pH	7.35	8.61	7.77	**7.0 – 8.7**
Mouth of Kitimat River (1 m below surface)				
Temp (°C)	4.8	9.7	7.0	**30**
Turbidity (NTU)	0.21	24.03	6.54	**8 (above background)**
pH	7.27	8.98	7.92	**7.0 – 8.7**

In situ water quality results are presented in Appendix G: Annual *In situ* Marine Water Quality Data for 2021.

2.2.3 In Situ Exceedances of BC AWQG, CCME WQG, and BC CSR WQG

Table 6 presents a summary of elevated *in situ* parameters and evaluation of exceedances relative to the BC AWQG, collected during 2021. Compliance monitoring locations that are subject to meeting BC AWQG include the 'within 50 m of marine pile driving' for marine piling activities. All other water quality monitoring locations are monitored but are not required to meet BC AWQG.

Appendix I presents an assessment of water quality against the long-term guideline. The values shown are the averaged daily turbidity readings each month for days when data was collected. Note that while daily measurements were taken at the compliance locations during active construction, measurements were only taken weekly at the background location (REF1). There is comparatively less data for turbidity at REF1 which can over-emphasize data outliers.

Table 6. *In situ* parameter comparison to BC AWQG and resulting exceedance evaluation during 2021

Location	Date	Elevated Parameter	Parameter Value	Exceedance? (Y/N)	Rationale
Within 50m of Marine Piling (1 m below surface)	April 22, 2021	Turbidity	29.91	Y	Elevated turbidity levels could be attributed to spring melt runoff. Visual observations that day explain the water quality as turbid. *In situ* monitoring was not conducted on April 23 as no pile driving occurred. The corresponding TSS result was 7 mg/L which is within BCWQG.
Within 50m of Marine Piling (1 m above seabed)	April 25, 2021	Turbidity	15.94	N	*In situ* water quality monitoring was conducted on April 26, and turbidity values had lowered to less than 8 NTU (2.96 NTU). Turbidity levels dropped to acceptable limits as per BCWQG within 24 hours.
Within 50m of Marine Piling (1 m below surface)	April 29, 2021	Turbidity	11.42	Y	Elevated turbidity levels could be attributed to spring melt runoff. Visual observations that day explain the water quality as turbid. *In situ* monitoring was not conducted on April 30 as no pile driving occurred. Ref 1 Mouth of the Kitimat River is only monitoring and sampled once per week.
Ref 1 Mouth of the Kitimat River (1 m above seabed)	April 27, 2021	Turbidity	10.84	N	Since this is a background location it is not considered an exceedance. Turbidity levels on April 27 at within 50 m of Marine Piling (1 m above seabed) was 3.98 NTU.
Ref 1 Mouth of the Kitimat River (1 m	April 27, 2021	Turbidity	24.03	N	Since this is a background location it is not considered an exceedance. Turbidity levels

below surface)					on April 27 at within 50 m of Marine Piling (1 m below surface) was 1.42 NTU.
REF 1 Mouth of Kitimat River (1 m below surface)	4-May-2021	Turbidity	9.23	N	Since this is a background location it is not considered an exceedance. The corresponding TSS value is 13 mg/L which is below BC AWQG.
REF 1 Mouth of Kitimat River (1 m below surface)	4-May-2021	pH	8.98	N	Since this is a background location it is not considered an exceedance.
50 m within Marine Piling (1 m below surface)	4-May-2021	pH	8.99	N	This can be attributed to natural variation. Corresponding pH level from REF 1 Mouth of Kitimat River (1 m below surface) was also above 8.7 (8.98).
Within 50 m of marine pile driving (1 m above seabed)	5-May-2021	Turbidity	17.17	Y	Elevated turbidity levels could be attributed to natural variation. *In situ* monitoring was not conducted on May 6 as no piling occurred.
50 m within Marine Piling (1 m below surface)	5-May-2021	pH	8.84	Y	Elevated pH could be attributed to natural variation. The pH collected the day prior at REF 1 Mouth of Kitimat River (1 m below surface) was 8.99.
REF 1 Mouth of Kitimat River (1 m below surface)	25-May-2021	Turbidity	8.22	N	Since this is a background location it is not considered an exceedance. Turbidity levels were collected within 50 m of marine pile driving (1 m below surface), turbidity was 4.29 NTU which is below the BC AWQG within 24 hours.
50 m within Marine Piling (1 m below surface)	25-May-2021	pH	8.79	N	*In situ* water quality monitoring was conducted on May 26, the pH was between 7.00 and 8.70 (8.02). The pH levels were within acceptable levels as per BC AWQG within 24 hours.

2.2.4 Ex situ Water Quality Results

59 *ex situ* water samples (excluding field blanks) were collected from from two water quality monitoring locations at two depths per location in 2021.

BJM has collected *ex situ* water quality samples at the compliance locations for the marine piling scope, according to the approved TA-CWMP. A comparison of the BC AWQG and measured parameters are, per location, recorded in Table 7.

Table 7 A comparison of the BC AWQG and measured parameters (*ex situ*) in 2021, per location (Marine Water)

Parameter	Min. Measured	Max. Measured	Mean Measured	BC AWQG
Within 50 m of work activity (1 m above seabed)				
TSS	<2	16	7	**25 (above background)**
Within 50 m of work activity (1 m below surface)				
TSS	<2	18	8	**25 (above background)**
Mouth of Kitimat River (1 m above seabed)				
TSS	<2	35	10	**25 (above background)**
Mouth of Kitimat River (1 m below surface)				
TSS	<2	14	10	**25 (above background)**

Appendix J presents an assessment of water quality against the long-term guideline. The values shown are the average weekly *ex situ* turbidity lab results of each month. A few notes about the assessment:

- Field blanks have been excluded from the average calculation
- Field replicate samples have been included in the average calculation
- If a measurement was < 2 mg/L (lab detection limit), 2 mg/L was used in the average calculation.
- In most cases, there are only 3 – 5 samples used for computing averages. The long-term guideline recommends 30 samples, so averages of lab data should be used cautiously.

The assessment of water quality against the long-term guideline, presented in Appendix J, shows that the project was in compliance for chronic turbidity considerations.

2.2.5 Ex situ Exceedances of BC AWQG, CCME WQG, and BC CSR WQG

Table 8 presents a summary of exceedances of BC AWQG, CCME WQG, and BC CSR WQG for *ex situ* water quality monitoring results of contaminants of potential concern at marine water quality monitoring locations.

Table 8. ***Ex situ contaminants of potential concern elevated above BC AWQG, CCME WQG, and BC CSR WQG during 2021***

Date	Location	Elevated Parameter	Parameter Value	Exceedance? (Y/N)	Rationale
February 15, 2021	Ref 1 (1 m above seabed)	TSS	35 mg/L	N	Ref 1 (1 m above seabed) is not a compliance location therefore it is not considered an exceedance.
May 18, 2021	REF 1 (1 m above seabed)	TSS	28 mg/L	N	REF 1 (1 m above seabed) is not a compliance location therefore it is not considered an exceedance.

3. CONCLUSIONS

The purpose of the 2021 TA-CWMP monitoring programs was to meet Multi-media Permit P2-00001 monitoring and reporting requirements for effluent discharge to D-Lagoon and harbour marine water quality during construction activities for the Terminal A Wharf Extension Project. Compliance monitoring facilitates protection of the receiving environment.

The monitoring program began March 12, 2019, with the *in situ* and *ex situ* baseline sampling at the locations shown in Appendix B. From March 12, 2019 – November 1, 2021, all monitoring programs associated with the TA-CWMP have been initiated and completed. With the exception of stormwater runoff that went into the inflow of the D-Lagoon stormwater systems and a few minor exceedances in the marine environment, all effluent streams met permit limits and management targets for monitored parameters.

3.1 D-Lagoon Receiving Environment

Based on the samples collected from the stationary holding tanks, most parameters met management targets prior to discharge. A total of 7034 m^3 has been discharged to D-Lagoon as of June 13, 2021, when the tanks were demobilized.

From January 4 to present, stormwater from Terminal A has passively drained into D-Lagoon during rain events. Daily water quality monitoring of discharge locations to D-Lagoon was implemented until October 1, 2021, when the frequency was reduced to weekly monitoring, as minimal impacts to water quality were expected with the remaining construction activities planned for the project duration. Water quality monitoring of discharge to D-Lagoon was discontinued at the end of day on November 1, 2021, as no impacts to water quality are expected with the remaining construction activities planned for the Project duration. Daily Turbidity measurements were generally above the management target of 8.0 NTU and pH was within target limits because the CO2 bubbler. However, P2 permit criteria and BC AWQG / CCME WQG do not apply to these locations.

3.2 Raven Creek

There is no reason to conclude there have been any negative impacts to the instream quality or the habitat in and around Raven Creek based on the results and findings from daily *in situ* water quality monitoring. It would be unlikely that any of

the species found during the Terminal A Extension project assessment in the lower reaches of Raven Creek would have been affected.

During 2021, pH at Raven Creek fluctuated significantly ranging between 5.19 and 8.70 pH. Values have been detected below the lower range of the BC WQG (6.5 pH) 93 times in 2021. A YSI Pro DSS water quality meter was used during the year and was calibrated daily prior to use. Calibration records are documented. The fluctuation in pH values could be partially attributed to different stabilization time periods allowed during monitoring, but are more likely attributed to natural factors such as weather, seasonal variations in runoff volumes and groundwater influx. Approximately 5 metres upstream of the Raven Creek monitoring location is the confluence of an ephemeral creek running east-west that only flows during heavy precipitation events. The ephemeral creek flow is sourced from runoff along the west bank of Raven Creek (adjacent to Alcan Road). If low pH values were suspected to be related to construction activities, BJM would expect to see a correlation with increased turbidity, which has not been observed.

3.3 Marine Environment

There is no reason to conclude that any marine activities, including pile driving in 2021, negatively impacted the adjacent intertidal area based on the results and findings from daily *in situ* and weekly *ex situ* water quality monitoring.

From January 4 – May 25, 2021, marine water quality monitoring occurred at several locations. Elevated turbidity readings were observed in the work zone and were occasionally observed over the trigger values. However, it is likely that the implemented controls were adequate, as measured exceedances were infrequent and often corresponded with environmental observations and/or measurements at reference sites.

The inevitable stormwater runoff over the existing slopes and designed permanent slope did not appear to result in sediment mobilization and changes to marine water quality. It would be unlikely that any project works had any direct impact to the nearby shoreline.

4. REFERENCES

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5. END OF ANNUAL REPORT

Appendices:
A: Site Lay-out Terminal A 2021
B: Sample Station Locations for 2021
C: Annual *In Situ* Construction Water Quality Data for 2021
D: Annual *Ex Situ* Constrution Water Quality Data for 2021
E: *Ex Situ* Sample Results Of Baseline Samples For Construction Water Quality Monitoring
F: Planned Monitoring Frequencies And Actual Monitoring Events in 2021 For Construction Water Quality Monitoring
G: Annual *In Situ* Marine Water Quality Data for 2021
H: Annual *Ex Situ* Marine Water Quality Data for 2021
I: Assessment Of *In situ* Water Quality Against The Long-term Guideline
J: Assessment Of *Ex Situ* Water Quality Against The Long-term Guideline

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3. Rio Tinto
4. BC Ministry of Environment
5. File

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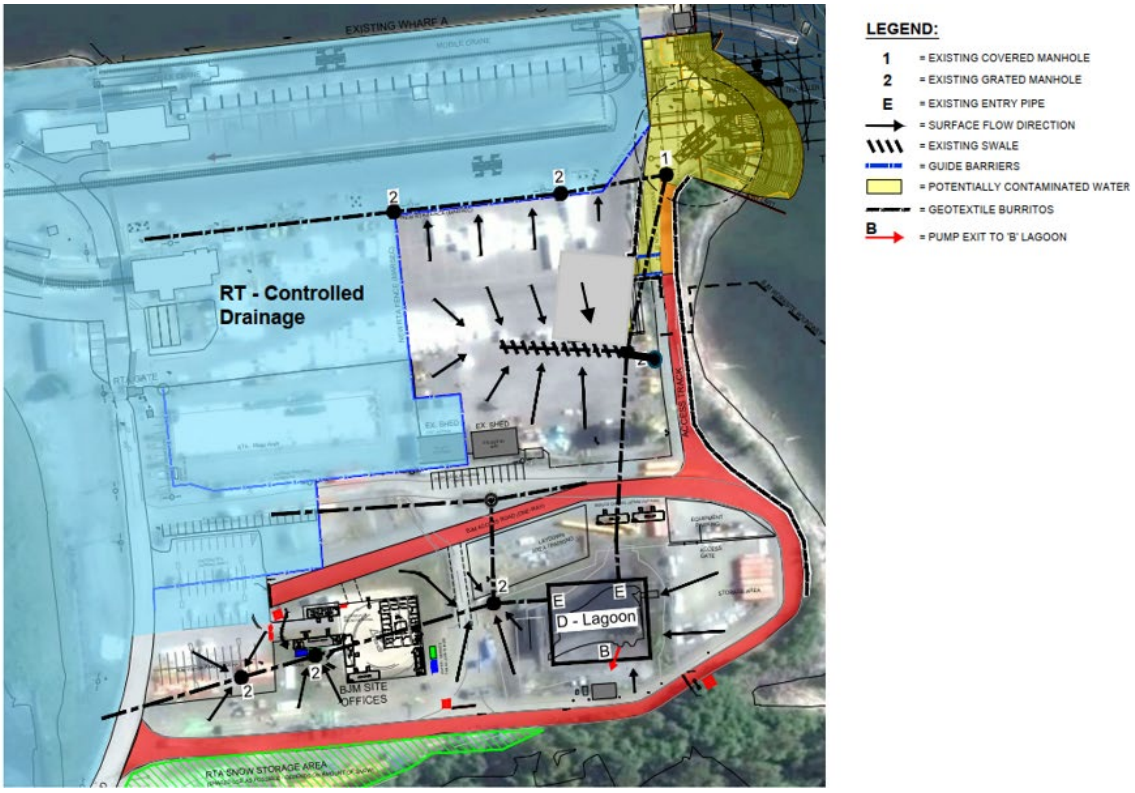
(*Position*)

22/12/2021

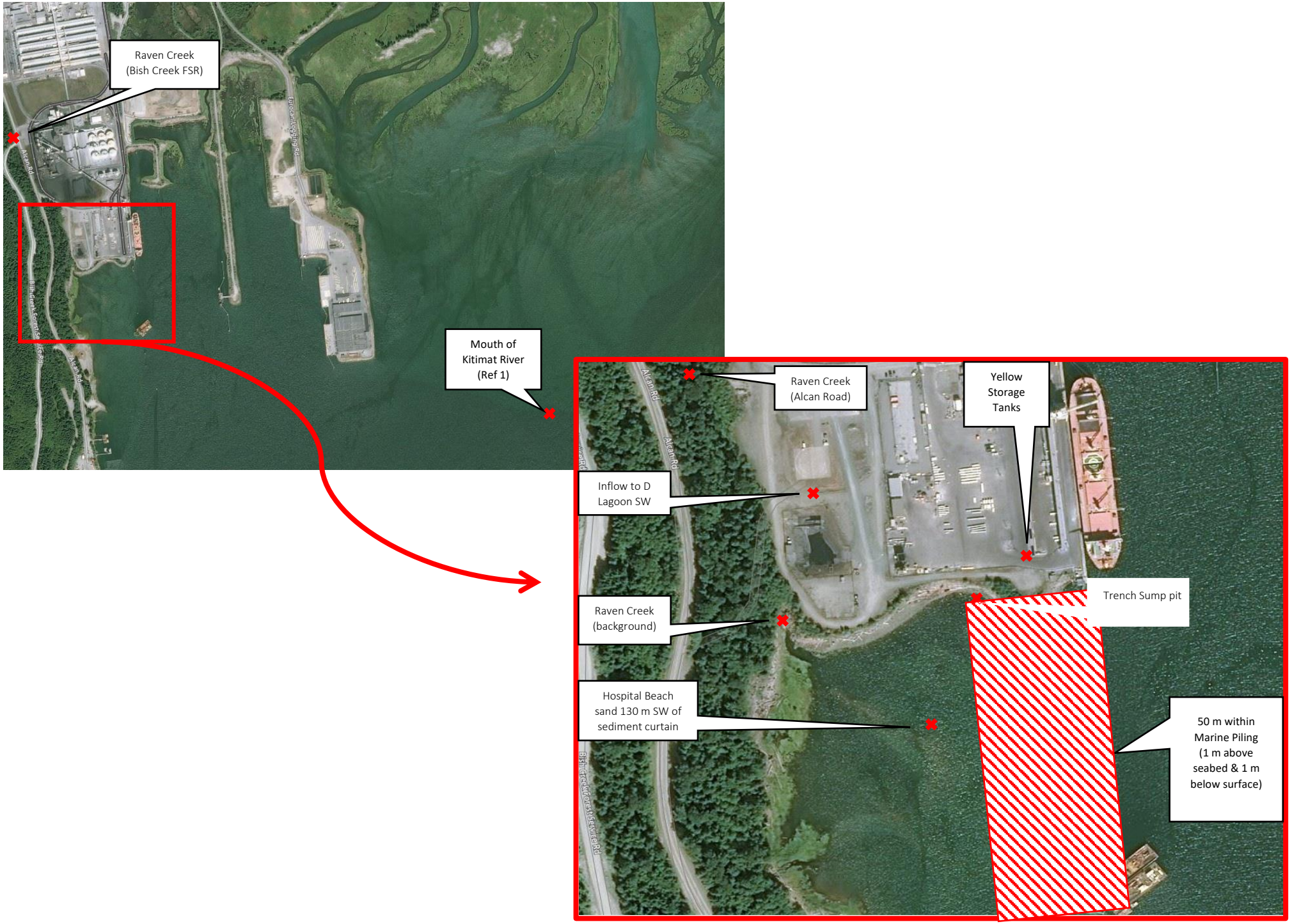
(*Signature*) *Date*

6. APPENDICES

Appendix A: Site Lay-out Terminal A 2021



Appendix B: Sample Station Locations for 2021


Raven Creek
(Bish Creek FSR)
Mouth of
Kitimat River
(Ref 1)
Raven Creek
(Alcan Road)
Yellow
Storage
Tanks
Inflow to D
Lagoon SW
Raven Creek
(background)
Trench Sump pit
Hospital Beach
sand 130 m SW of
sediment curtain
50 m within
Marine Piling
(1 m above
seabed & 1 m
below surface)

Appendix C: Annual In Situ Construction Water Quality Data for 2021

Construction Water Quality Monitoring Data

Project #: 6078
Project name: Rio Tinto Terminal A Extension Project
Task name: Construction Water Quality Monitoring
Client: Rio Tinto

Year: *2021*
Reporting Period: *January 2021 to November 2021*
Personnel Supervisor: *Brandi Malo*
Document No.: *N/A*

Location	Monitoring Station	Time	Depth (m)	Temp (oC)	Turbidity (NTU)	pH	Conductivity (µS)	Salinity (ppt)	DO (mg/L)	Comments
	1-Jan-21	-	-	-	-	-	-	-	-	Not monitored. Site shut down for holidays.
	2-Jan-21	-	-	-	-	-	-	-	-	Not monitored. Site shut down for holidays.
	3-Jan-21	-	-	-	-	-	-	-	-	Not monitored. Site shut down for holidays.
	4-Jan-21	14:21	0.05	1.9	130.51	5.87	-	-	13.17	Brown, cloudy water flowing over and around checkdam.
	5-Jan-21	-	-	-	-	-	-	-	-	Snow covered.
	6-Jan-21	-	-	-	-	-	-	-	-	Snow covered.
	7-Jan-21	13:20	0.05	0.8	481.90	6.87	-	-	14.12	Brown, cloudy water flowing over checkdam.
	8-Jan-21	17:00	0.05	0.8	257.89	8.08	-	-	14.42	Brown, cloudy water flowing over checkdam.
	9-Jan-21	16:08	0.05	0.9	191.81	5.95	-	-	15.14	Brown, cloudy water flowing over checkdam.
	10-Jan-21	15:42	0.05	0.9	118.43	6.68	-	-	15.22	Brown, cloudy water flowing over checkdam.
	11-Jan-21	16:19	0.05	1.5	148.92	8.22	-	-	14.88	Brown, cloudy water flowing over checkdam.
	12-Jan-21	14:49	0.05	1.8	47.74	6.60	-	-	14.57	Brown, cloudy water flowing over checkdam.
	13-Jan-21	14:32	0.05	1.2	208.93	6.12	-	-	14.50	Brown, cloudy water flowing over checkdam.
	14-Jan-21	-	-	-	-	-	-	-	-	Unable to test due to time constraint
	15-Jan-21	16:07	0.05	4.0	81.74	8.12	-	-	13.35	Brown, cloudy water flowing over checkdam.
	16-Jan-21	10:04	0.05	2.4	12.29	7.09	-	-	13.75	Brown, cloudy water flowing over checkdam.
	17-Jan-21	9:33	0.05	2.8	27.34	6.85	-	-	13.70	Brown, cloudy water flowing over checkdam.
	18-Jan-21	9:11	0.05	3.1	212.33	6.89	-	-	13.55	Brown, cloudy water flowing over checkdam.
	19-Jan-21	12:41	0.05	4.1	31.69	7.67	-	-	13.38	Brown, cloudy water flowing over checkdam.
	20-Jan-21	-	-	-	-	-	-	-	-	Brown, cloudy water pooling behind checkdam.
	21-Jan-21	-	-	-	-	-	-	-	-	Frozen
	22-Jan-21	-	-	-	-	-	-	-	-	Frozen
	23-Jan-21	-	-	-	-	-	-	-	-	Frozen
	24-Jan-21	-	-	-	-	-	-	-	-	Frozen
	25-Jan-21	-	-	-	-	-	-	-	-	Frozen
	26-Jan-21	-	-	-	-	-	-	-	-	Frozen
	27-Jan-21	-	-	-	-	-	-	-	-	Frozen
	28-Jan-21	-	-	-	-	-	-	-	-	Frozen
	29-Jan-21	-	-	-	-	-	-	-	-	Frozen
	30-Jan-21	-	-	-	-	-	-	-	-	Frozen
	31-Jan-21	-	-	-	-	-	-	-	-	Frozen
	1-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	2-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	3-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	4-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	5-Feb-21	-	-	-	-	-	-	-	-	No flow.
	6-Feb-21	-	-	-	-	-	-	-	-	No flow.
	7-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	8-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	9-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	10-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	11-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	12-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	13-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	14-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	15-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	16-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	17-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	18-Feb-21	-	-	-	-	-	-	-	-	Frozen.
	19-Feb-21	-	-	-	-	-	-	-	-	Pooling behind check dam.
	20-Feb-21	12:14	0.10	0.4	102.68	8.34	-	-	14.39	Pooling and flowing over check dam.
	21-Feb-21	15:42	0.10	1.8	75.51	6.85	-	-	13.69	Pooling and flowing over check dam.
	22-Feb-21	13:18	0.10	3.0	134.86	6.78	-	-	13.78	Pooling and flowing over check dam.
	23-Feb-21	-	-	-	-	-	-	-	-	Drying out behind the check dam
	24-Feb-21	-	-	-	-	-	-	-	-	Drying out behind the check dam
	25-Feb-21	12:38	0.10	0.3	471.64	8.64	-	-	14.07	Pooling and flowing over check dam.
	26-Feb-21	-	-	-	-	-	-	-	-	Drying out behind the check dam
	27-Feb-21	-	-	-	-	-	-	-	-	Pooling behind check dam.
	28-Feb-21	11:28	0.10	4.0	50.64	6.50	-	-	13.59	Pooling and flowing over check dam.
	1-Mar-21	11:40	0.10	1.8	1432.51	6.61	-	-	13.54	Pooling and flowing over check dam.
	2-Mar-21	16:52	0.10	3.1	81.59	7.09	-	-	13.64	Pooling and flowing over check dam.
	3-Mar-21	-	-	-	-	-	-	-	-	Snow covered.
	4-Mar-21	-	-	-	-	-	-	-	-	Not sampled due to time constraints.
	5-Mar-21	-	-	-	-	-	-	-	-	No flow.
	6-Mar-21	14:42	0.10	3.8	125.14	6.78	-	-	12.98	Pooling and flowing over check dam.
	7-Mar-21	-	-	-	-	-	-	-	-	No flow.
	8-Mar-21	-	-	-	-	-	-	-	-	No flow.
	9-Mar-21	-	-	-	-	-	-	-	-	Dry.
	10-Mar-21	-	-	-	-	-	-	-	-	Dry.
	11-Mar-21	-	-	-	-	-	-	-	-	Dry.
	12-Mar-21	15:21	0.10	0.7	Overrange	7.93	-	-	-	Pooling and flowing over check dam.
	13-Mar-21	14:43	0.10	2.5	58.00	5.61	-	-	14.45	Pooling and flowing over check dam.
	14-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	15-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	16-Mar-21	-	-	-	-	-	-	-	-	Pooling behind check dam.
	17-Mar-21	-	-	-	-	-	-	-	-	Pooling behind check dam.
	18-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	19-Mar-21	-	-	-	-	-	-	-	-	Pooling behind check dam.
	20-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	21-Mar-21	12:15	0.10	1.7	92.36	6.54	-	-	14.03	Pooling and flowing over check dam.
	22-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	23-Mar-21	-	-	-	-	-	-	-	-	Pooling behind check dam.
	24-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	25-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	26-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	27-Mar-21	10:26	0.10	4.2	103.59	8.16	-	-	13.15	Brown, cloudy water running over checkdam.
	28-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	29-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	30-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	31-Mar-21	-	-	-	-	-	-	-	-	Pooled behind check dam. Drying out.
	1-Apr-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	2-Apr-21	13:10	0.1	3.7	172.72	6.98	-	-	13.61	Brown, cloudy water running over checkdam.
	3-Apr-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	4-Apr-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	5-Apr-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	6-Apr-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	7-Apr-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	8-Apr-21	-	-	-	-	-	-	-	-	Drying out behind check dam.
	9-Apr-21	15:16	0.1	1.2	63.10	7.65	-	-	12.99	Brown, cloudy water running over checkdam.
	10-Apr-21	-	-	-	-	-	-	-	-	Drying out behind check dam. Frozen.
	11-Apr-21	-	-	-	-	-	-	-	-	Drying out behind check dam.
	12-Apr-21	-	-	-	-	-	-	-	-	Drying out behind check dam.
	13-Apr-21	-	-	-	-	-	-	-	-	Drying out behind check dam.
	14-Apr-21	-	-	-	-	-	-	-	-	Drying out behind check dam.
	15-Apr-21	-	-	-	-	-	-	-	-	Dry
	16-Apr-21	-	-	-	-	-	-	-	-	Dry
	17-Apr-21	-	-	-	-	-	-	-	-	Dry
	18-Apr-21	-	-	-	-	-	-	-	-	Dry
	19-Apr-21	-	-	-	-	-	-	-	-	Dry
	20-Apr-21	-	-	-	-	-	-	-	-	Dry
	21-Apr-21	-	-	-	-	-	-	-	-	Dry
	22-Apr-21	-	-	-	-	-	-	-	-	Dry
	23-Apr-21	-	-	-	-	-	-	-	-	Dry
	24-Apr-21	-	-	-	-	-	-	-	-	Dry

	25-Apr-21	-	-	-	-	-	-	-	-	Dry.
	26-Apr-21	-	-	-	-	-	-	-	-	Dry.
	27-Apr-21	-	-	-	-	-	-	-	-	Brown, cloudy water pooling behind checkdam.
	28-Apr-21	-	-	-	-	-	-	-	-	Brown, cloudy water pooling behind checkdam.
	29-Apr-21	13:03	0.1	10.2	119.10	7.46	-	-	11.26	Brown, cloudy water flowing around checkdam.
	30-Apr-21	13:13	0.1	11.2	427.23	6.83	-	-	11.35	Brown, cloudy water pooling behind checkdam.
	1-May-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	2-May-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	3-May-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	4-May-21	-	-	-	-	-	-	-	-	Dry.
	5-May-21	-	-	-	-	-	-	-	-	Dry.
	6-May-21	-	-	-	-	-	-	-	-	Dry.
	7-May-21	-	-	-	-	-	-	-	-	Dry.
	8-May-21	-	-	-	-	-	-	-	-	Dry.
	9-May-21	-	-	-	-	-	-	-	-	Dry.
	10-May-21	-	-	-	-	-	-	-	-	Dry.
	11-May-21	-	-	-	-	-	-	-	-	Dry.
	12-May-21	-	-	-	-	-	-	-	-	Dry.
	13-May-21	-	-	-	-	-	-	-	-	Dry.
	14-May-21	-	-	-	-	-	-	-	-	Dry.
	15-May-21	-	-	-	-	-	-	-	-	Dry.
	16-May-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	17-May-21	-	-	-	-	-	-	-	-	Dry.
	18-May-21	14:47	0.5	9.7	247.06	8.00	-	-	11.57	Water flowing around checkdam.
	19-May-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	20-May-21	-	-	-	-	-	-	-	-	Dry.
	21-May-21	-	-	-	-	-	-	-	-	Dry.
	22-May-21	-	-	-	-	-	-	-	-	Dry.
	23-May-21	-	-	-	-	-	-	-	-	Dry.
	24-May-21	-	-	-	-	-	-	-	-	Dry.
	25-May-21	-	-	-	-	-	-	-	-	Dry.
	26-May-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	27-May-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	28-May-21	-	-	-	-	-	-	-	-	Dry.
	29-May-21	-	-	-	-	-	-	-	-	Dry.
	30-May-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	31-May-21	12:45	0.1	12.9	223.90	7.98	-	-	10.23	Turbid water. Flowing around checkdam.
	1-Jun-21	-	-	-	-	-	-	-	-	Insufficient water available for sampling.
D-Lagoon Inflow	2-Jun-21	-	-	-	-	-	-	-	-	Insufficient water available for sampling.
	3-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	4-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	5-Jun-21	11:53	0.1	13.3	45.04	6.31	85.4	0.04	10.73	Turbid water. Flowing around checkdam.
	6-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	7-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	8-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	9-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	10-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	11-Jun-21	-	-	-	-	-	-	-	-	Dry.
	12-Jun-21	-	-	-	-	-	-	-	-	Dry.
	13-Jun-21	-	-	-	-	-	-	-	-	Dry.
	14-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	15-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	16-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	17-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	18-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	19-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	20-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	21-Jun-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	22-Jun-21	-	-	-	-	-	-	-	-	Dry.
	23-Jun-21	-	-	-	-	-	-	-	-	Dry.
	24-Jun-21	-	-	-	-	-	-	-	-	Dry.
	25-Jun-21	-	-	-	-	-	-	-	-	Dry.
	26-Jun-21	-	-	-	-	-	-	-	-	Dry.
	27-Jun-21	-	-	-	-	-	-	-	-	Dry.
	28-Jun-21	-	-	-	-	-	-	-	-	Dry.
	29-Jun-21	-	-	-	-	-	-	-	-	Dry.
	30-Jun-21	-	-	-	-	-	-	-	-	Dry.
	1-Jul-21	-	-	-	-	-	-	-	-	Dry.
	2-Jul-21	-	-	-	-	-	-	-	-	Dry.
	3-Jul-21	-	-	-	-	-	-	-	-	Dry.
	4-Jul-21	-	-	-	-	-	-	-	-	Dry.
	5-Jul-21	-	-	-	-	-	-	-	-	Dry.
	6-Jul-21	-	-	-	-	-	-	-	-	Dry.
	7-Jul-21	-	-	-	-	-	-	-	-	Dry.
	8-Jul-21	-	-	-	-	-	-	-	-	Dry.
	9-Jul-21	-	-	-	-	-	-	-	-	Dry.
	10-Jul-21	-	-	-	-	-	-	-	-	Dry.
	11-Jul-21	-	-	-	-	-	-	-	-	Dry.
	12-Jul-21	-	-	-	-	-	-	-	-	Dry.
	13-Jul-21	-	-	-	-	-	-	-	-	Dry.
	14-Jul-21	-	-	-	-	-	-	-	-	Dry.
	15-Jul-21	-	-	-	-	-	-	-	-	Dry.
	16-Jul-21	-	-	-	-	-	-	-	-	Dry.
	17-Jul-21	-	-	-	-	-	-	-	-	Dry.
	18-Jul-21	-	-	-	-	-	-	-	-	Dry.
	19-Jul-21	-	-	-	-	-	-	-	-	Dry.
	20-Jul-21	-	-	-	-	-	-	-	-	Dry.
	21-Jul-21	-	-	-	-	-	-	-	-	Dry.
	22-Jul-21	-	-	-	-	-	-	-	-	Dry.
	23-Jul-21	-	-	-	-	-	-	-	-	Wet behind check dam.
	24-Jul-21	-	-	-	-	-	-	-	-	Water ponding behind check dam.
	25-Jul-21	-	-	-	-	-	-	-	-	Water ponding behind check dam.
	26-Jul-21	-	-	-	-	-	-	-	-	Water ponding behind check dam.
	27-Jul-21	-	-	-	-	-	-	-	-	Water ponding behind check dam.
	28-Jul-21	-	-	-	-	-	-	-	-	Water ponding behind check dam.
	29-Jul-21	-	-	-	-	-	-	-	-	Water ponding behind check dam.
	30-Jul-21	-	-	-	-	-	-	-	-	Dry.
	31-Jul-21	-	-	-	-	-	-	-	-	Dry.
	1-Aug-21	-	-	-	-	-	-	-	-	Dry.
	2-Aug-21	-	-	-	-	-	-	-	-	Dry.
	3-Aug-21	-	-	-	-	-	-	-	-	Dry.
	4-Aug-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	5-Aug-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	6-Aug-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	7-Aug-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	8-Aug-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	9-Aug-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	10-Aug-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	11-Aug-21	-	-	-	-	-	-	-	-	Dry.
	12-Aug-21	-	-	-	-	-	-	-	-	Dry.
	13-Aug-21	-	-	-	-	-	-	-	-	Dry.
	14-Aug-21	-	-	-	-	-	-	-	-	Dry.
	15-Aug-21	-	-	-	-	-	-	-	-	Pooling behind checkdam.
	16-Aug-21	-	-	-	-	-	-	-	-	Dry.
	17-Aug-21	-	-	-	-	-	-	-	-	Dry.
	18-Aug-21	-	-	-	-	-	-	-	-	Dry.
	19-Aug-21	-	-	-	-	-	-	-	-	Dry.
	20-Aug-21	-	-	-	-	-	-	-	-	Dry.
	21-Aug-21	-	-	-	-	-	-	-	-	Dry.
	22-Aug-21	-	-	-	-	-	-	-	-	Dry.
	23-Aug-21	-	-	-	-	-	-	-	-	Dry.
	24-Aug-21	-	-	-	-	-	-	-	-	Dry.
	25-Aug-21	-	-	-	-	-	-	-	-	Dry.
	26-Aug-21	-	-	-	-	-	-	-	-	Water ponding behind checkdam.
	27-Aug-21	-	-	-	-	-	-	-	-	Dry.
	28-Aug-21	-	-	-	-	-	-	-	-	Water ponding behind checkdam.

	29-Aug-21	-	-	-	-	-	-	-	-	Dry.
	30-Aug-21	-	-	-	-	-	-	-	-	Dry
	31-Aug-21	-	-	-	-	-	-	-	-	No EM on site to monitor WQ.
	1-Sep-21	-	-	-	-	-	-	-	-	No EM on site to monitor WQ.
	2-Sep-21	-	-	-	-	-	-	-	-	Dry.
	3-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	4-Sep-21	13:25	0.1	18.0	179.44	6.90	89.3	0.04	9.61	Water pooling behond checkdam and running around the North side of it into the drain.
	5-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	6-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	7-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	8-Sep-21	-	-	-	-	-	-	-	-	No EM on site to monitor WQ.
	9-Sep-21	-	-	-	-	-	-	-	-	Dry.
	10-Sep-21	-	-	-	-	-	-	-	-	Dry.
	11-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	12-Sep-21	-	-	-	-	-	-	-	-	Dry
	13-Sep-21	-	-	-	-	-	-	-	-	Dry.
	14-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	15-Sep-21	-	-	-	-	-	-	-	-	Dry.
	16-Sep-21	-	-	-	-	-	-	-	-	Dry.
	17-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	18-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	19-Sep-21	14:12	0.1	15.6	175.27	7.42	68	0.03	9.62	Turbid water running around the North side of checkdam into the drain.
	20-Sep-21	11:51	0.1	11.9	146.22	7.71	73.2	0.03	10.78	Turbid water running over checkdam into the drain.
	21-Sep-21	13:32	0.1	13.2	138.08	7.76	53.4	0.02	10.30	Turbid water running over checkdam and around the North side of checkdam into the drain.
	22-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam. Material composing checkdam has eroded due to strong flow from previous rain event.
	23-Sep-21	13:47	0.1	11.6	217.19	7.55	94.8	0.04	11.09	Turbid water running over checkdam into the drain.
	24-Sep-21	10:52	0.1	11.5	43.33	6.97	47.2	0.02	11.01	Turbid water running over checkdam into the drain.
	25-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	26-Sep-21	11:06	0.1	12.8	126.08	7.71	66.8	0.03	10.51	Turbid water running over checkdam and around the North side of checkdam into the drain.
	27-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	28-Sep-21	-	-	-	-	-	-	-	-	Water pooling behind checkdam.
	29-Sep-21	13:17	0.1	13.4	545.52	7.31	73.4	0.03	10.13	Turbid water running over checkdam into the drain.
	30-Sep-21	9:25	0.1	10.1	129.85	7.39	54.8	0.02	11.18	Turbid water running over checkdam and around the North side of checkdam into the drain.
	1-Oct-21	-	-	-	-	-	-	-	-	No EM to monitor WQ.
	2-Oct-21	-	-	-	-	-	-	-	-	No EM to monitor WQ.
	3-Oct-21	-	-	-	-	-	-	-	-	No EM to monitor WQ.
	4-Oct-21	-	-	-	-	-	-	-	-	Water pooling behind check dam.
	5-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	6-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	7-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	8-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	9-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	10-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	11-Oct-21	-	-	-	-	-	-	-	-	Water pooling behind check dam.
	12-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	13-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	14-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	15-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	16-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	17-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	18-Oct-21	-	-	-	-	-	-	-	-	Water pooling behind check dam.
	19-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	20-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	21-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	22-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	23-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	24-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	25-Oct-21	-	-	-	-	-	-	-	-	Water pooling behind check dam.
	26-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	27-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	28-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	29-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	30-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	31-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	1-Nov-21	-	-	-	-	-	-	-	-	Water pooling behind check dam.
	2-Nov-21	-	-	-	-	-	-	-	-	Discontinued on November 2, 2021.
Inflow into D Lagoon (SE)	-	-	-	-	-	-	-	-	-	Discontinued on September 12, 2019. Monitoring location was removed due to RT excavation in the immediate vicinity.
	1-Jan-21	-	-	-	-	-	-	-	-	Not monitored. Site shut down for the holidays.
	2-Jan-21	-	-	-	-	-	-	-	-	Not monitored. Site shut down for the holidays.
	3-Jan-21	-	-	-	-	-	-	-	-	Not monitored. Site shut down for the holidays.
	4-Jan-21	14:17	0.10	5.3	1.82	6.20	-	-	-	Moderate flow, clear.
	5-Jan-21	15:30	0.10	1.3	0.58	5.85	-	-	-	Moderate flow, clear.
	6-Jan-21	14:38	0.10	2.2	7.56	7.10	-	-	-	High flow, slightly turbid.
	7-Jan-21	13:17	0.10	2.5	1.09	7.18	-	-	-	Low flow, clear.
	8-Jan-21	15:43	0.10	2.6	12.01	7.64	-	-	-	High flow, slightly turbid.
	9-Jan-21	16:05	0.10	2.6	0.50	6.00	-	-	-	Low flow, slightly turbid.
	10-Jan-21	15:38	0.10	2.4	1.49	6.57	-	-	-	Moderate flow, clear.
	11-Jan-21	16:15	0.10	2.7	11.27	7.66	-	-	-	High flow, slightly turbid.
	12-Jan-21	14:45	0.10	2.6	28.74	6.50	-	-	-	High flow, slightly turbid.
	13-Jan-21	14:28	0.10	2.7	0.94	6.76	-	-	-	Moderate flow, clear.
	14-Jan-21	-	-	-	-	-	-	-	-	Unable to test due to time constraint
	15-Jan-21	16:11	0.10	2.9	1.54	5.96	-	-	-	High flow, slightly turbid.
	16-Jan-21	9:59	0.10	2.8	2.59	5.91	-	-	-	High flow, slightly turbid.
	17-Jan-21	9:28	0.10	3.3	1.83	5.51	-	-	-	High flow, slightly turbid.
	18-Jan-21	8:59	0.10	2.9	1.37	5.19	-	-	-	High flow, slightly turbid.
	19-Jan-21	12:36	0.10	3.0	4.92	5.99	-	-	-	High flow, slightly turbid.
	20-Jan-21	11:15	0.10	2.6	0.22	5.66	-	-	-	High flow, clear.
	21-Jan-21	15:24	0.10	3.2	2.75	-	-	-	-	Moderate flow, clear. Issues with using oakton for sampling.
	22-Jan-21	15:20	0.10	1.3	0.48	6.74	-	-	-	Moderate flow, clear. Issues with using YSI DO probe.
	23-Jan-21	15:52	0.10	1.0	0.68	7.50	-	-	-	Moderate flow. YSI ProQuatro and LaMotte
	24-Jan-21	12:49	0.10	0.9	0.62	6.50	-	-	-	Low flow. YSI ProQuatro and LaMotte
	25-Jan-21	12:13	0.10	1.1	0.36	6.60	-	-	-	Low flow. YSI ProQuatro and LaMotte
	26-Jan-21	17:00	0.10	0.6	1.21	7.58	-	-	-	Low flow. YSI ProQuatro and LaMotte
	27-Jan-21	-	-	-	-	-	-	-	-	Not measured due to time constraints.
	28-Jan-21	16:20	0.10	0.0	0.24	7.12	-	-	-	Low flow. Measured with rental YSI ProDSS.
	29-Jan-21	13:17	0.10	0.1	0.32	7.80	-	-	-	Low flow. Measured with rental YSI ProDSS.
	30-Jan-21	14:16	0.10	0.2	0.16	8.70	-	-	-	Low flow. Measured with rental YSI ProDSS.
	31-Jan-21	12:56	0.1	0.5	0.29	7.1	-	-	-	Low flow. Measured with rental YSI ProDSS.
	1-Feb-21	12:21	0.1	0.8	0.17	6.55	-	-	-	Low flow, clear.
	2-Feb-21	14:03	0.1	1.1	0.25	7.34	-	-	-	Low flow, clear.
	3-Feb-21	14:16	0.1	0.7	2.33	6.37	-	-	-	Low flow, clear.
	4-Feb-21	16:00	0.1	1.0	0.02	7.76	-	-	-	Low flow, clear.
	5-Feb-21	11:20	0.1	1.3	1.49	6.07	-	-	-	Moderate flow, clear.
	6-Feb-21	10:56	0.1	1.4	0.11	7.59	-	-	-	Low flow, clear.
	7-Feb-21	15:15	0.1	0.8	1.73	6.40	-	-	-	Low flow, clear.
	8-Feb-21	11:16	0.1	0.2	0.31	7.46	-	-	-	Low flow, clear.
	9-Feb-21	15:43	0.1	0.0	8.85	7.09	-	-	-	Low flow, clear.
	10-Feb-21	-	-	-	-	-	-	-	-	Frozen. Unsafe access.
	11-Feb-21	-	-	-	-	-	-	-	-	Frozen. Unsafe access.
	12-Feb-21	-	-	-	-	-	-	-	-	Frozen. Unsafe access.
	13-Feb-21	-	-	-	-	-	-	-	-	Frozen. Unsafe access.
	14-Feb-21	-	-	-	-	-	-	-	-	Frozen. Unsafe access.
	15-Feb-21	-	-	-	-	-	-	-	-	Frozen. Unsafe access.
	16-Feb-21	-	-	-	-	-	-	-	-	Frozen. Unsafe access.
	17-Feb-21	12:51	0.10	0.5	0.45	7.53	-	-	-	Low flow, partially frozen.
	18-Feb-21	16:08	0.10	0.1	0.04	7.84	-	-	-	Low flow, snow covered.
	19-Feb-21	14:21	0.10	0.1	6.76	7.02	-	-	-	Moderate flow, melting snow.
	20-Feb-21	11:32	0.10	0.0	6.14	6.52	-	-	-	Low flow, partially frozen.
	21-Feb-21	15:36	0.10	0.7	4.55	5.94	-	-	-	High flow, side channel flowing into Raven Creek
	22-Feb-21	13:11	0.10	1.3	4.38	5.78	-	-	-	High flow, side channel flowing into Raven Creek
	23-Feb-21	12:49	0.10	1.5	1.77	5.77	-	-	-	Moderate flow, side channel flowing into Raven Creek
	24-Feb-21	13:38	0.10	1.3	1.10	5.71	-	-	-	Moderate flow, side channel flowing into Raven Creek
	25-Feb-21	12:46	0.10	1.1	7.35	6.29	-	-	-	High flow, side channel flowing into Raven Creek

	26-Feb-21	14:14	0.10	1.7	1.15	5.89	-	-	-	High flow, clear
	27-Feb-21	15:17	0.10	1.7	3.50	6.23	-	-	-	High flow, clear
	28-Feb-21	11:21	0.10	1.8	1.12	5.87	-	-	-	High flow, side channel flowing into Raven Creek
	1-Mar-21	11:37	0.10	1.6	1.50	6.90	-	-	-	High flow, side channel flowing into Raven Creek
	2-Mar-21	12:51	0.10	1.2	5.67	6.49	-	-	-	High flow, side channel flowing into Raven Creek
	3-Mar-21	11:15	0.10	0.6	1.85	6.55	-	-	-	High flow, side channel flowing into Raven Creek
	4-Mar-21	14:00	0.10	1.3	4.07	6.63	-	-	-	High flow, side channel flowing into Raven Creek
	5-Mar-21	12:22	0.10	1.5	12.13	6.73	-	-	-	High flow, side channel flowing into Raven Creek
	6-Mar-21	14:35	0.10	2.2	0.05	6.49	-	-	-	Moderate flow. Clear.
	7-Mar-21	13:09	0.10	2.0	0.72	6.65	-	-	-	Moderate flow. Clear.
	8-Mar-21	13:54	0.10	2.5	0.62	6.36	-	-	-	Moderate flow. Clear.
	9-Mar-21	13:52	0.10	2.3	0.65	6.49	-	-	-	Moderate flow. Clear.
	10-Mar-21	16:17	0.10	2.1	1.00	6.33	-	-	-	Moderate flow. Clear.
	11-Mar-21	15:34	0.10	2.2	0.03	5.76	-	-	-	Moderate flow. Clear.
	12-Mar-21	15:13	0.10	1.3	9.65	6.61	-	-	-	High flow. Turbid.
	13-Mar-21	-	-	-	-	-	-	-	-	Flow too high to sample safely
	14-Mar-21	16:21	0.10	2.8	1.08	6.16	-	-	-	High flow. Clear.
	15-Mar-21	10:51	0.10	2.5	0.83	6.16	-	-	-	Moderate flow. Clear.
	16-Mar-21	11:42	0.10	5.4	0.12	6.19	-	-	-	Moderate flow. Clear.
	17-Mar-21	14:09	0.10	2.3	2.14	6.57	-	-	-	Moderate flow. Clear.
	18-Mar-21	14:09	0.10	2.5	0.73	6.20	-	-	-	Moderate flow. Clear.
	19-Mar-21	14:17	0.10	2.8	0.94	6.02	-	-	-	Moderate flow. Clear.
	20-Mar-21	12:27	0.10	2.2	0.02	6.05	-	-	-	Moderate flow. Clear.
	21-Mar-21	12:11	0.10	1.7	4.58	6.21	-	-	-	Moderate to high flow. Slightly turbid.
	22-Mar-21	13:37	0.10	3.3	1.17	6.20	-	-	-	Moderate flow. Clear.
	23-Mar-21	12:19	0.10	2.7	1.29	6.60	-	-	-	Moderate flow. Clear.
	24-Mar-21	12:46	0.10	2.6	1.55	5.92	-	-	-	Moderate to high flow.
	25-Mar-21	14:21	0.10	3.2	0.95	5.85	-	-	-	Moderate flow.
	26-Mar-21	-	-	-	-	-	-	-	-	The EM was unable to sample this location on this date.
	27-Mar-21	10:23	0.10	2.8	5.57	6.53	-	-	-	High flow. Slightly turbid.
	28-Mar-21	10:31	0.10	2.4	1.05	5.77	-	-	-	Moderate flow. Clear.
	29-Mar-21	12:47	0.10	2.4	0.34	6.70	-	-	-	Moderate flow. Clear.
	30-Mar-21	-	-	-	-	-	-	-	-	YSI handheld sent back to be replaced with repaired unit today.
	1-Apr-21	14:41	0.1	2.3	4.92	5.66	-	-	-	High flow. Slightly turbid.
	2-Apr-21	13:08	0.1	2.4	0.70	6.85	-	-	-	Moderate flow. Clear.
	3-Apr-21	14:01	0.1	2.5	0.99	5.93	-	-	-	Moderate flow. Clear.
	4-Apr-21	11:50	0.1	3.0	2.68	6.13	-	-	-	Moderate flow. Clear.
	5-Apr-21	13:35	0.1	2.8	0.20	5.77	-	-	-	Moderate flow. Clear.
	6-Apr-21	13:46	0.1	3.0	0.25	6.60	-	-	-	Moderate flow. Clear.
	7-Apr-21	12:26	0.1	3.2	0.19	6.49	-	-	-	Moderate flow. Clear.
	8-Apr-21	14:42	0.1	3.3	0.16	5.52	-	-	-	Moderate flow. Clear.
	9-Apr-21	15:22	0.1	2.5	2.49	5.85	-	-	-	High flow. Clear.
	10-Apr-21	9:34	0.1	1.9	1.50	5.56	-	-	-	Moderate flow. Clear.
	11-Apr-21	10:10	0.1	2.4	0.17	5.55	-	-	-	Moderate flow. Clear.
	12-Apr-21	10:29	0.1	2.3	0.07	5.51	-	-	-	Moderate flow. Clear.
	13-Apr-21	14:27	0.1	5.2	0.15	5.53	-	-	-	Moderate flow. Clear.
	14-Apr-21	14:25	0.1	5.6	0.42	5.82	-	-	-	Moderate flow. Clear.
	15-Apr-21	12:51	0.1	4.9	1.28	5.80	-	-	-	Moderate flow. Clear.
	16-Apr-21	11:42	0.1	4.1	0.12	6.02	-	-	-	Moderate flow. Clear.
	17-Apr-21	11:52	0.1	4.3	0.15	6.85	-	-	-	Moderate flow. Clear.
	18-Apr-21	12:07	0.1	5.1	1.01	6.18	-	-	-	Moderate flow. Clear.
	19-Apr-21	13:39	0.1	5.9	1.06	6.08	-	-	-	Moderate flow. Clear.
	20-Apr-21	13:06	0.1	5.5	0.16	5.63	-	-	-	Moderate flow. Clear.
	21-Apr-21	12:54	0.1	6.0	0.08	5.61	-	-	-	Moderate flow. Clear.
	22-Apr-21	12:28	0.1	5.1	0.14	6.10	-	-	-	Moderate flow. Clear.
	23-Apr-21	12:55	0.1	5.4	0.13	6.12	-	-	-	Moderate flow. Clear.
	24-Apr-21	13:16	0.1	6.0	0.25	6.29	-	-	-	Moderate flow. Clear.
	25-Apr-21	10:52	0.1	4.4	0.01	7.55	-	-	-	Moderate flow. Clear.
	26-Apr-21	15:13	0.1	6.5	4.56	6.90	-	-	-	Moderate flow. Slightly turbid.
	27-Apr-21	15:03	0.1	5.3	4.21	7.70	-	-	-	Moderate flow. Slightly turbid.
	28-Apr-21	13:50	0.1	5.2	6.87	6.77	-	-	-	High flow. Slightly turbid.
	29-Apr-21	10:35	0.1	4.7	0.83	6.56	-	-	-	High flow. Clear.
	30-Apr-21	13:10	0.1	5.1	0.84	5.65	-	-	-	High flow. Clear.
	1-May-21	12:00	0.1	5.0	2.16	6.01	-	-	-	Moderate flow. Clear.
	2-May-21	13:00	0.1	5.1	0.81	6.17	-	-	-	Moderate flow. Clear.
	3-May-21	11:00	0.1	5.4	1.91	6.30	-	-	-	Moderate flow. Clear.
	4-May-21	10:23	0.1	5.6	0.64	6.04	-	-	-	Moderate flow. Clear.
	5-May-21	8:05	0.1	4.8	0.34	6.86	-	-	-	Moderate flow. Clear.
	6-May-21	7:53	0.1	5.5	2.38	7.27	-	-	-	Moderate flow. Clear.
	7-May-21	13:17	0.1	6.3	0.17	7.75	-	-	-	Moderate flow. Clear.
	8-May-21	12:27	0.1	6.1	0.50	7.34	-	-	-	Moderate flow. Clear.
	9-May-21	9:41	0.1	6.1	0.85	6.17	-	-	-	Moderate flow. Clear.
	10-May-21	14:28	0.1	7.8	0.10	6.75	-	-	-	Moderate flow. Clear.
	11-May-21	11:26	0.1	6.9	1.36	7.03	-	-	-	Moderate flow. Clear.
	12-May-21	12:34	0.1	8.5	2.12	6.86	-	-	-	Moderate flow. Clear.
	13-May-21	9:47	0.1	6.8	0.77	6.73	-	-	-	Moderate flow. Clear.
	14-May-21	10:43	0.1	7.2	1.30	7.09	-	-	-	Moderate flow. Clear.
	15-May-21	15:16	0.1	8.0	2.02	7.49	-	-	-	Moderate flow. Clear.
	16-May-21	7:15	0.1	6.7	0.30	7.97	-	-	-	Moderate flow. Clear.
	17-May-21	9:00	0.1	6.4	0.46	7.47	-	-	-	Moderate flow. Clear.
	18-May-21	13:25	0.1	6.5	3.98	6.97	-	-	-	Moderate flow. Clear.
	19-May-21	12:08	0.1	6.5	0.18	7.33	-	-	-	Moderate flow. Clear.
	20-May-21	10:05	0.1	6.1	0.32	7.88	-	-	-	Moderate flow. Clear.
	21-May-21	10:29	0.1	6.2	0.31	7.79	-	-	-	Moderate flow. Clear.
	22-May-21	13:47	0.1	8.2	0.32	7.24	-	-	-	Moderate flow. Clear.
	23-May-21	12:54	0.1	8.6	0.31	7.73	-	-	-	Moderate flow. Clear.
	24-May-21	13:40	0.1	8.6	0.28	7.51	-	-	-	Moderate flow. Clear.
	25-May-21	13:01	0.1	10.8	10.75	8.13	-	-	-	Moderate flow. Clear.
	26-May-21	-	-	-	-	-	-	-	-	Not monitored.
	27-May-21	10:23	0.1	7.0	2.00	8.29	-	-	-	Moderate flow. Clear.
	28-May-21	10:48	0.1	7.8	2.01	7.17	-	-	-	Moderate flow. Clear.
	29-May-21	14:14	0.1	8.8	2.04	8.36	-	-	-	Moderate flow. Clear.
	30-May-21	14:04	0.1	8.3	1.35	7.45	-	-	-	Moderate flow. Clear.
	31-May-21	12:30	0.1	8.1	0.11	7.23	-	-	-	Moderate flow. Clear.
	1-Jun-21	10:05	0.1	8.1	2.24	6.47	-	-	-	Moderate flow. Clear.
Raven Creek (Background)	**2-Jun-21**	9:25	0.1	8.0	1.96	6.70	-	-	-	High flow. Clear.
	3-Jun-21	11:00	0.1	8.7	0.12	6.11	-	-	-	Moderate flow. Clear.
	4-Jun-21	11:28	0.1	8.3	0.05	6.26	-	-	-	Moderate flow. Clear.
	5-Jun-21	11:47	0.1	8.4	0.10	6.51	-	-	-	Moderate flow. Clear.
	6-Jun-21	13:44	0.1	8.3	0.14	7.50	-	-	-	Moderate flow. Clear.
	7-Jun-21	12:55	0.1	8.8	0.28	7.58	-	-	-	Moderate flow. Clear.
	8-Jun-21	12:36	0.1	8.6	0.17	7.46	-	-	-	Moderate flow. Clear.
	9-Jun-21	11:58	0.1	8.6	0.20	7.72	-	-	-	Moderate flow. Clear.
	10-Jun-21	12:34	0.1	9.4	0.35	7.66	-	-	-	Moderate flow. Clear.
	11-Jun-21	12:59	0.1	9.6	0.25	7.70	-	-	-	Moderate flow. Clear.
	12-Jun-21	12:00	0.1	9.8	0.00	7.51	-	-	-	Moderate flow. Clear.
	13-Jun-21	10:51	0.1	9.4	0.05	7.92	-	-	-	Moderate flow. Clear.
	14-Jun-21	11:29	0.1	9.8	0.97	7.38	-	-	-	Moderate flow. Clear.
	15-Jun-21	12:33	0.1	9.5	0.39	7.30	-	-	-	Moderate flow. Clear.
	16-Jun-21	11:14	0.1	9.7	0.65	7.72	-	-	-	Moderate flow. Clear.
	17-Jun-21	13:08	0.1	9.8	0.29	8.61	-	-	-	Moderate flow. Clear.
	18-Jun-21	13:44	0.1	9.7	0.38	7.54	-	-	-	Moderate flow. Clear.
	19-Jun-21	14:02	0.1	10.8	0.23	7.96	-	-	-	Moderate flow. Clear.
	20-Jun-21	12:15	0.1	10.9	0.19	7.57	-	-	-	Moderate flow. Clear.
	21-Jun-21	14:00	0.1	11.1	0.34	7.34	-	-	-	Moderate flow. Clear.
	22-Jun-21	12:24	0.1	14.1	0.98	7.43	-	-	-	Moderate flow. Clear.
	23-Jun-21	16:15	0.1	13.7	0.55	7.32	-	-	-	Moderate flow. Clear.
	24-Jun-21	9:54	0.1	12.2	23.14	8.28	-	-	-	Low flow.
	25-Jun-21	12:21	0.1	16.9	4.01	7.60	-	-	-	Low flow.
	26-Jun-21	12:11	0.1	15.8	0.27	8.09	-	-	-	Low flow.
	27-Jun-21	13:00	0.1	16.1	1.98	7.44	-	-	-	Low flow.
	28-Jun-21	8:19	0.1	15.7	0.69	7.72	-	-	-	Low flow.
	29-Jun-21	-	-	-	-	-	-	-	-	Not sampled due to high bear activity in the area today.
	30-Jun-21	13:47	0.1	14.9	0.84	7.50	-	-	-	Very low flow.
	1-Jul-21	11:18	0.1	15.2	1.51	7.17	-	-	-	Very low flow. Clear.
	2-Jul-21	13:45	0.1	15.8	0.40	7.62	-	-	-	Very low flow. Clear.

	3-Jul-21	12:30	0.1	16.2	1.00	7.29	-	-	-	Very low flow. Clear.
	4-Jul-21	11:43	0.1	17.3	1.98	6.82	-	-	-	Very low flow. Clear.
	5-Jul-21	13:32	0.1	16.8	0.98	6.56	-	-	-	Very low flow. Clear.
	6-Jul-21	10:00	0.1	17.1	1.11	6.59	-	-	-	Very low flow. Clear.
	7-Jul-21	11:26	0.1	17.0	0.64	6.85	-	-	-	Very low flow. Clear.
	8-Jul-21	11:18	0.1	16.2	0.79	7.29	-	-	-	Very low flow. Clear.
	9-Jul-21	11:42	0.1	17.3	1.33	7.53	-	-	-	Very low flow. Clear.
	10-Jul-21	11:22	0.1	15.9	0.66	7.25	-	-	-	Extreamly low flow. Clear.
	11-Jul-21	12:15	0.1	19.4	0.77	7.22	-	-	-	Extreamly low flow. Clear.
	12-Jul-21	12:03	0.1	16.8	0.92	6.92	-	-	-	Extreamly low flow. Clear.
	13-Jul-21	12:43	0.1	16.9	2.26	6.36	-	-	-	Extreamly low flow. Clear.
	14-Jul-21	12:13	0.1	15.7	3.10	6.30	-	-	-	Extreamly low. Isolated pools. Clear.
	15-Jul-21	11:34	0.1	14.6	5.14	6.24	-	-	-	Isolated pool. No flow. Clear.
	16-Jul-21	12:04	-	-	-	-	-	-	-	No flow, no isolated pools. Dry.
	17-Jul-21	12:32	0.1	14.5	1.60	7.63	-	-	-	Very low flow. Clear. Has not wetted stream bed to intertidal zone.
	18-Jul-21	12:02	0.1	14.8	0.43	7.65	-	-	-	Very low flow. Clear. Has not wetted stream bed to intertidal zone.
	19-Jul-21	12:30	0.1	14.7	0.75	6.65	-	-	-	No flow. Isolated pool. Clear.
	20-Jul-21	13:00	0.1	15.3	2.23	6.69	-	-	-	No flow. Isolated pool. Clear.
	21-Jul-21	11:13	-	-	-	-	-	-	-	No flow, no isolated pools. Dry.
	22-Jul-21	13:18	0.1	13.7	0.85	7.42	-	-	-	Very low flow. Clear. Has not wetted stream bed to intertidal zone.
	23-Jul-21	11:54	0.1	13.5	1.60	7.54	-	-	-	Very low flow. Clear.
	24-Jul-21	12:02	0.1	15	0.59	7.64	-	-	-	Very low flow. Clear.
	25-Jul-21	12:03	0.1	14.4	0.83	7.76	-	-	-	Extreamly low flow. Clear. Conductivity wouldn't calibrate.
	26-Jul-21	12:40	0.1	13.9	1.75	7.25	-	-	-	Very low flow. Clear. Conductivity wouldn't calibrate.
	27-Jul-21	15:34	0.1	14.1	0.72	6.60	-	-	-	Very low flow. Clear. DO wouldn't calibrate.
	28-Jul-21	12:24	0.1	14.3	0.13	7.03	-	-	-	Very low Flow. Clear.
	29-Jul-21	12:55	0.1	15.6	0.17	7.06	52.6	0.02	9.86	Low flow. Water appears clear.
	30-Jul-21	11:13	0.1	15.8	0.06	6.43	112.7	0.05	9.6	Low flow. Water appears clear.
	31-Jul-21	12:29	0.1	17.1	0.03	6.08	69.0	0.03	8.86	Low flow with isolated pools. Water appears clear and juvenile CO were observed in some of the pools.
	1-Aug-21	-	-	-	-	-	-	-	-	Dry.
	2-Aug-21	-	-	-	-	-	-	-	-	Dry.
	3-Aug-21	-	-	-	-	-	-	-	-	Dry.
	4-Aug-21	13:12	0.1	15.2	1.73	7.29	56.1	0.03	9.76	Low flow, likely resulting from recent rains.
	5-Aug-21	13:52	0.1	15.1	0.50	7.06	56	0.03	9.87	Moderate flow. Water appears clear.
	6-Aug-21	10:13	0.1	13.8	3.71	7.11	56.7	0.03	10.04	Moderate flow. Water appears clear.
	7-Aug-21	11:56	0.1	14.7	0.14	7.38	66.5	0.03	10.13	Low flow. Clear.
	8-Aug-21	12:17	0.1	16.0	0.30	7.22	66.5	0.03	9.90	Low flow. Clear.
	9-Aug-21	14:13	0.1	16.2	0.42	7.46	65.2	0.03	9.71	Low flow. Clear.
	10-Aug-21	12:04	0.1	15.0	0.61	7.56	72.6	0.03	9.80	Low flow. Clear.
	11-Aug-21	13:02	0.1	17.3	0.61	7.62	88	0.04	9.75	Extreamly low flow. Clear.
	12-Aug-21	12:38	0.1	16.1	0.95	6.86	109.8	0.05	4.77	Isolated pool. Clear.
	13-Aug-21	12:56	0.1	17.2	1.22	6.57	159.4	0.08	3.10	Isolated pool. Clear.
	14-Aug-21	12:11	0.1	17.3	3.75	6.89	163.4	0.08	3.13	Small isolated pool. Clear.
	15-Aug-21	12:00	0.1	15.4	7.95	7.60	72.8	0.03	9.65	Low flow. Cloudy.
	16-Aug-21	12:11	0.1	14.3	0.88	7.22	60.1	0.03	10.15	Low flow. Clear.
	17-Aug-21	11:40	0.1	14.6	0.73	7.29	69.3	0.03	10.23	Low flow. Clear.
	18-Aug-21	12:00	0.1	14.2	0.40	7.21	93.3	0.03	8.53	Isolated pool. Clear.
	19-Aug-21	13:04	0.1	15.5	1.05	7.17	148.2	0.07	7.29	Isolated pool. Clear.
	20-Aug-21	12:00	-	-	-	-	-	-	-	Dry.
	21-Aug-21	12:00	-	-	-	-	-	-	-	Dry.
	22-Aug-21	12:04	-	-	-	-	-	-	-	Dry.
	23-Aug-21	11:38	-	-	-	-	-	-	-	Dry.
	24-Aug-21	13:41	-	-	-	-	-	-	-	Dry.
	25-Aug-21	12:30	-	-	-	-	-	-	-	Dry.
	26-Aug-21	11:35	0.1	13.6	9.30	7.61	56.9	0.03	9.95	Low flow. Cloudy.
	27-Aug-21	9:39	0.1	14.7	0.91	7.89	83.7	0.04	9.81	Low flow. Clear.
	28-Aug-21	9:59	0.1	13.6	0.13	6.46	61.2	0.03	10.09	Low flow. Clear.
	29-Aug-21	12:51	0.1	13.3	1.86	6.50	72.4	0.03	10.13	Low flow. Clear.
	30-Aug-21	14:26	0.1	13.0	0.02	6.49	63.1	0.03	10.13	Low flow. Clear.
	31-Aug-21	-	-	-	-	-	-	-	-	No EM on site to monitor WQ.
	1-Sep-21	-	-	-	-	-	-	-	-	No EM on site to monitor WQ.
	2-Sep-21	15:18	-	-	-	-	-	-	-	Dry.
	3-Sep-21	14:35	0.1	13.1	0.37	6.08	74.0	0.03	10.17	Water appears clear.
	4-Sep-21	13:52	0.1	12.7	5.73	6.27	64.9	0.03	10.34	Water running with moderate flow.
	5-Sep-21	13:32	0.1	12.2	0.01	5.71	58.4	0.03	10.67	Water running with moderate flow.
	6-Sep-21	14:06	0.1	12.3	0.44	6.56	60.4	0.03	10.72	Water running with moderate flow.
	7-Sep-21	14:06	0.1	12.3	0.41	6.13	62	0.03	10.63	Water running with moderate flow. Sample taken near high tide.
	8-Sep-21	-	-	-	-	-	-	-	-	No EM on site to monitor WQ.
	9-Sep-21	14:13	0.1	12.4	0.26	6.66	65.4	0.03	10.54	Water running with moderate flow.
	10-Sep-21	15:07	0.1	11.9	0.34	6.41	66.9	0.03	10.68	Water running with moderate flow.
	11-Sep-21	13:15	0.1	12.4	0.43	6.16	67.7	0.03	10.56	Water running with moderate flow.
	12-Sep-21	14:30	0.1	12.4	0.00	6.43	77.2	0.04	11.03	
	13-Sep-21	13:47	0.1	12.2	0.39	7.04	70	0.03	10.62	Low flow.
	14-Sep-21	15:12	0.1	12.1	0.64	6.76	50.5	0.02	10.61	Water running with moderate flow.
	15-Sep-21	14:48	0.1	11.3	0.19	6.20	56.6	0.03	10.86	Water running with moderate flow.
	16-Sep-21	14:19	0.1	10.7	0.11	6.23	68.1	0.03	11.01	Water running with moderate flow.
	17-Sep-21	13:48	0.1	9.8	0.74	7.03	52.2	0.02	10.81	Water running with moderate flow.
	18-Sep-21	13:51	0.1	10.2	1.67	6.82	48	0.02	10.88	Water running with moderate flow.
	19-Sep-21	14:31	0.1	12.3	6.63	6.27	46.4	0.02	11.04	High flow.
	20-Sep-21	11:56	0.1	10.5	0.05	6.42	44.8	0.02	11.06	High flow.
	21-Sep-21	13:44	0.1	11.7	37.04	6.79	116.4	0.05	10.96	High flow.
	22-Sep-21	14:13	0.1	13.2	0.63	6.82	44.8	0.02	11.00	High flow.
	23-Sep-21	14:28	0.1	11.1	6.54	6.83	47.8	0.02	11.18	High flow.
	24-Sep-21	11:10	0.1	11.3	2.21	5.85	37.2	0.02	11.13	High flow. Bump test with 7.01 pH standard completed following low pH results at Raven creek and meter was within 0.05 of the standard.
	25-Sep-21	14:18	0.1	12.3	8.83	6.66	39.9	0.02	11.03	High flow.
	26-Sep-21	13:15	0.1	11.9	1.90	6.45	37.8	0.02	10.89	High flow.
	27-Sep-21	10:32	0.1	10.1	0.00	5.79	36.6	0.02	10.92	High flow.
	28-Sep-21	14:42	0.1	12.8	2.61	6.61	42.4	0.02	10.85	Moderate to high flow.
	29-Sep-21	15:00	0.1	11.1	18.39	6.26	40.2	0.02	11.25	High flow.
	30-Sep-21	9:38	0.1	10.1	7.31	5.55	34.6	0.02	11.31	High flow.
	1-Oct-21	-	-	-	-	-	-	-	-	No EM to monitor WQ.
	2-Oct-21	-	-	-	-	-	-	-	-	No EM to monitor WQ.
	3-Oct-21	-	-	-	-	-	-	-	-	No EM to monitor WQ.
	4-Oct-21	12:50	0.1	10.3	0.00	6.40	173.9	0.08	11.57	Moderate flow.
	5-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	6-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	7-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	8-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	9-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	10-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	11-Oct-21	10:13	0.1	7.8	0.00	6.89	42.3	0.02	11.92	Moderate flow.
	12-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	13-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	14-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	15-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	16-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	17-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	18-Oct-21	13:21	0.1	6.5	0.00	5.97	41.5	0.02	12.23	Moderate flow.
	19-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	20-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	21-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	22-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	23-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	24-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	25-Oct-21	9:54	0.1	6.9	0.23	6.07	43.2	0.03	11.67	Moderate flow.
	26-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	27-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	28-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	29-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	30-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	31-Oct-21	-	-	-	-	-	-	-	-	No EM on site.
	1-Nov-21	9:49	0.1	4.5	0.09	5.78	40.9	0.02	12.80	Moderate flow.
	2-Nov-21	-	-	-	-	-	-	-	-	Discontinued on November 2, 2021.
Raven Creek (Bish Creek FSR	**18-Jan-21**	10:20	0.10	3.0	11.88	5.97	-	-	-	Measured per protocol in Attachment 2 of the Weekly Construction Water Quality Report.

Raven Creek (Alcan Road and	-	-	-	-	-	-	-	-	-	Discontinued
	4-Jan-21	11:00	0.10	5.2	17.98	7.11	-	-	13.22	Sump, approx 60 m3, Discharged directly to D-Lagoon, approx 3225 m3 total
	5-Jan-21	12:00	0.1	5.3	16.98	7.88	-	-	13.54	Sump, approx 60 m3, Discharged directly to D-Lagoon, approx 3285 m3 total
	6-Jan-21	8:52	0.10	5.7	9.98	7.05	-	-	11.97	Sump, approx 60m3, Discharged directly to D-Lagoon, approx 3345m3 total
	8-Jan-21	8:50	0.50	4.6	8.51	8.44	-	-	9.27	Tank #1, 15m3, Discharged shortly after, approx, 3360m3 total
	8-Jan-21	14:24	0.50	2.5	17.98	8.03	-	-	13.72	Tank #1, 27m3, Discharged shortly after, approx 3387m3 total
	8-Jan-21	16:52	0.50	2.5	17.03	8.08	-	-	13.74	Tank #2, 27m3, Discharged shortly after, approx 3414m3 total
	10-Jan-21	8:06	0.50	1.5	10.07	8.47	-	-	14.91	Tank #2, 27m3, Discharged shortly after, approx 3441m3 total
	10-Jan-21	8:07	0.50	1.3	17.21	8.42	-	-	14.99	Tank #1, 20m3, Discharged shortly after, approx 3461m3 total
	10-Jan-21	15:30	0.50	1.5	19.77	7.41	-	-	15.13	Tank #1, 27m3, Discharged shortly after, approx 3488m3 total
	11-Jan-21	8:16	0.50	2.2	17.23	7.89	-	-	14.38	Tank #2, 27m3, Discharged shortly after, approx 3515m3 total
	11-Jan-21	8:18	0.50	2.1	11.25	8.24	-	-	14.21	Tank #1, 27m3, Discharged shortly after, approx 3542m3 total
	11-Jan-21	13:57	0.50	2.2	14.74	8.47	-	-	14.75	Tank #1, 27m3, Discharged shortly after, approx 3569m3 total
	12-Jan-21	8:40	0.50	1.3	7.97	7.04	-	-	14.00	Tank #1, 20m3, Discharged shortly after, approx 3589m3 total
	12-Jan-21	11:20	0.50	1.1	11.13	8.26	-	-	14.65	Tank #2, 27m3, Discharged shortly after, approx 3616m3 total
	13-Jan-21	14:24	0.50	2.1	16.43	6.42	-	-	12.99	Tank #1, 20m3, Discharged shortly after, approx 3636m3 total
	14-Jan-21	10:48	0.50	2.4	19.71	8.32	-	-	13.55	Tank #1, 25m3, Discharged shortly after, approx 3661m3 total
	14-Jan-21	15:51	0.50	0.9	10.95	8.48	-	-	14.36	Tank #2, 25m3, Discharged shortly after, approx 3686m3 total
	15-Jan-21	8:06	0.50	2.7	23.40	8.48	-	-	13.81	Tank #1, 25m3, Discharged shortly after, approx 3711m3 total
	15-Jan-21	8:15	0.50	3.2	19.22	8.30	-	-	13.54	Tank #2, 25m3, Discharged shortly after, approx 3725m3 total
	15-Jan-21	11:38	0.50	4.7	18.67	6.31	-	-	12.84	Tank #1, 20m3, Discharged shortly after, approx 3745m3 total
	15-Jan-21	12:59	0.50	4.7	17.18	7.65	-	-	12.86	Tank #2, 20m3, Discharged shortly after, approx 3765m3 total
	15-Jan-21	16:23	0.50	5.0	19.12	6.22	-	-	12.87	Tank #1, 18m3, Discharged shortly after, approx 3783m3 total
	16-Jan-21	8:34	0.50	4.8	7.15	7.85	-	-	12.92	Tank #2, 27m3, Discharged shortly after, approx 3810m3 total
	16-Jan-21	11:30	0.50	4.2	7.25	7.85	-	-	12.70	Tank #1, 20m3, Discharged shortly after, approx 3830m3 total
	16-Jan-21	16:26	0.50	4.4	31.56	7.91	-	-	13.02	Tank #2, 20m3, Discharged shortly after, approx 3850m3 total
	17-Jan-21	9:12	0.50	5.2	14.03	8.42	-	-	12.45	Tank #1, 25m3, Discharged shortly after, approx 3875m3 total
	17-Jan-21	9:14	0.50	3.4	26.32	8.48	-	-	13.31	Tank #2, 27m3, Discharged shortly after, approx 3902m3 total
	17-Jan-21	14:01	0.50	4.4	14.90	7.54	-	-	12.93	Tank #1, 13m3, Discharged shortly after, approx 3915m3 total
	17-Jan-21	14:03	0.50	4.1	19.82	7.19	-	-	13.02	Tank #2, 13m3, Discharged shortly after, approx 3928m3 total
	19-Jan-21	8:34	0.50	4.9	49.53	7.89	-	-	12.80	Tank #1, 27m3, Discharged shortly after, approx 3955m3 total
	19-Jan-21	8:46	0.50	4.7	68.96	8.12	-	-	12.90	Tank #2, 27m3, Discharged shortly after, approx 3982m3 total
	19-Jan-21	14:22	0.50	5.5	19.58	7.36	-	-	12.68	Tank #1, 27m3, Discharged shortly after, approx 4009m3 total
	20-Jan-21	10:50	0.50	4.8	16.38	7.70	-	-	12.48	Tank #2, 10m3, Discharged shortly after, approx 4019m3 total
	1-Feb-21	-	-	-	-	-	-	-	-	
	2-Feb-21	-	-	-	-	-	-	-	-	
	3-Feb-21	-	-	-	-	-	-	-	-	
	4-Feb-21	16:37	0.50	1.4	49.24	7.94	-	-	12.12	Tank #2, 27m3, Discharged during night shift due to capacity issues. Approximately 4046m3 total.
	4-Feb-21	16:56	0.50	2.1	116.69	8.49	-	-	13.68	Tank#1, 27m3, Discharged during night shift due to capacity issues. Approximately 4073m3 total.
	5-Feb-21	15:39	0.50	3.5	13.73	7.78	-	-	12.02	Tank#1, 20m3, Discharged shortly after. Approximately 4093m3 total.
	6-Feb-21	14:45	0.50	1.2	19.99	7.33	-	-	13.68	Tank#2, 25m3, Discharged shortly after. Approximately 4118m3 total.
	19-Feb-21	14:16	0.50	0.8	17.12	7.23	-	-	13.58	Tank#1, 27m3, discharged shortly after. Approximately 4145m3 total.
	20-Feb-21	11:40	0.50	0.6	26.85	7.27	-	-	13.74	Tank#2, 26m3, Discharged shortly after. Approximately 4171m3 total.
	20-Feb-21	12:45	0.50	2.5	26.41	7.76	-	-	13.70	Tank#1, 26m3, Discharged shortly after. Approximately 4197m3 total.
	20-Feb-21	17:10	0.50	1.6	15.61	8.47	-	-	12.43	Tank#2, 27m3, Discharged shortly after. Approximately 4224m3 total.
	21-Feb-21	7:58	0.50	3.3	13.16	7.20	-	-	12.66	Tank#2, 27m3, Discharged shortly after. Approximately 4251m3 total.
	21-Feb-21	8:27	0.50	3.1	10.66	7.69	-	-	13.21	Tank#1, 27m3, Discharged shortly after. Approximately 4278m3 total.
	21-Feb-21	10:24	0.50	4.4	12.81	8.01	-	-	12.75	Tank#2, 27m3, Discharged shortly after. Approximately 4305m3 total.
	21-Feb-21	12:36	0.50	4.9	13.31	8.05	-	-	12.69	Tank#1, 27m3, Discharged shortly after. Approximately 4332m3 total.
	21-Feb-21	13:33	0.50	5.0	15.54	8.27	-	-	12.49	Tank#2, 27m3, Discharged shortly after. Approximately 4359m3 total.
	21-Feb-21	15:19	0.50	4.6	9.63	8.21	-	-	12.55	Tank#1, 27m3, Discharged shortly after. Approximately 4386m3 total.
	21-Feb-21	16:56	0.50	4.7	13.41	6.82	-	-	12.71	Tank#2, 20m3, Discharged shortly after. Approximately 4406m3 total.
	22-Feb-21	10:42	0.50	3.5	19.93	7.09	-	-	13.22	Tank#1, 25m3, Discharged shortly after. Approximately 4431m3 total.
	22-Feb-21	13:24	0.50	3.8	12.09	6.72	-	-	13.17	Tank#2, 23m3, Discharged shortly after. Approximately 4454m3 total.
	22-Feb-21	15:24	0.50	4.0	14.03	7.20	-	-	13.30	Tank#1, 27m3, Discharged shortly after. Approximately 4481m3 total.
	25-Feb-21	8:18	0.50	3.0	23.58	7.91	-	-	12.56	Tank#2, 20m3, Discharged shortly after. Approximately 4501m3 total.
	25-Feb-21	8:51	0.50	1.2	13.01	7.96	-	-	13.78	Tank#1, 27m3, Discharged shortly after. Approximately 4528m3 total.
	25-Feb-21	10:37	0.50	0.9	15.58	8.39	-	-	13.48	Tank#2, 27m3, Discharged shortly after. Approximately 4555m3 total.
	25-Feb-21	12:51	0.50	1.6	11.90	6.27	-	-	13.75	Tank#1, 25m3, Discharged shortly after. Approximately 4580m3 total.
	25-Feb-21	14:06	0.50	2.8	10.60	8.14	-	-	13.52	Tank#2, 25m3, Discharged shortly after. Approximately 4605m3 total.
	26-Feb-21	14:07	0.50	3.7	13.99	6.38	-	-	-	Tank#2, 20m3, Discharged shortly after. Approximately 4625m3 total.
	28-Feb-21	7:58	0.50	2.5	10.14	8.14	-	-	13.97	Tank#2, 25m3, Discharged shortly after. Approximately 4650m3 total.
	28-Feb-21	7:59	0.50	2.3	12.23	8.33	-	-	13.69	Tank#2, 25m3, Sampled water in Tank #4, was discharged to Tank #2. Approximately 4675m3 total.
	28-Feb-21	11:12	0.50	4.2	4.18	7.86	-	-	13.54	Tank#1, 20m3, Discharged shortly after. Approximately 4695m3 total.
	28-Feb-21	15:17	0.50	3.9	9.39	8.39	-	-	13.38	Tank#1, 20m3, Discharged shortly after. Approximately 4715m3 total.
	28-Feb-21	16:30	0.50	4.6	28.51	7.37	-	-	12.97	Tank#2, 25m3, Discharged shortly after. Approximately 4740m3 total.
	1-Mar-21	-	-	-	-	-	-	-	-	
	2-Mar-21	9:12	0.50	2.2	17.45	7.78	-	-	14.00	Tank#2, 27m3. Discharged shortly after. Approximately 4767m3 total.
	2-Mar-21	11:36	0.50	1.8	16.77	8.38	-	-	14.66	Tank#1, 27m3. Discharged shortly after. Approximately 4794m3 total.
	2-Mar-21	12:35	0.50	1.8	12.38	8.40	-	-	13.73	Tank#2, 27m3. Discharged shortly after. Approximately 4821m3 total.
	2-Mar-21	16:46	0.50	1.9	12.09	6.85	-	-	12.28	Tank#1, 27m3. Discharged shortly after. Approximately 4848m3 total.
	3-Mar-21	8:49	0.50	1.5	4.27	8.41	-	-	13.86	Tank#2, 27m3, Discharged shortly after. Approximately 4875m3 total.
	4-Mar-21	8:28	0.50	2.5	8.49	8.37	-	-	13.25	Tank#1, 27m3, Discharged shortly after. Approximately 4902m3 total.
	4-Mar-21	12:22	0.50	1.0	12.27	8.46	-	-	14.46	Tank#2, 27m3. Discharged shortly after. Approximately 4929m3 total.
	4-Mar-21	17:15	0.50	0.8	18.50	6.96	-	-	14.42	Tank#1, 27m3. Discharged shortly after. Approximately 4956m3 total.
	5-Mar-21	9:10	0.50	1.6	14.83	8.03	-	-	13.77	Tank#2, 27m3. Discharged shortly after. Approximately 4983m3 total.
	5-Mar-21	17:01	0.50	2.3	14.15	7.07	-	-	12.57	Tank#1, 27m3. Discharged shortly after. Approximately 5010m3 total.
	12-Mar-21	8:17	0.50	4.6	92.05	8.45	-	-	12.08	Tank#2, 20m3. Discharged shortly after. Approximately 5030m3 total.
	12-Mar-21	8:37	0.50	1.9	14.04	8.29	-	-	13.70	Tank#1, 27m3. Discharged shortly after. Approximately 5057m3 total.
Stationary Holding Tanks	12-Mar-21	10:58	0.50	3.1	49.05	7.72	-	-	13.17	Tank#2, 27m3. Discharged shortly after. Approximately 5084m3 total.
	12-Mar-21	11:14	0.50	1.6	16.47	7.37	-	-	13.23	Tank#1, 27m3. Discharged shortly after. Approximately 5111m3 total.
	12-Mar-21	13:56	0.50	1.8	21.50	8.04	-	-	-	Tank#2, 27m3. Discharged shortly after. Approximately 5138m3 total.
	12-Mar-21	14:58	0.50	1.8	17.50	7.83	-	-	-	Tank#1, 27m3. Discharged shortly after. Approximately 5165m3 total.
	12-Mar-21	15:50	0.50	1.7	26.60	7.43	-	-	-	Tank#2, 27m3. Discharged shortly after. Approximately 5192m3 total.
	12-Mar-21	17:25	0.50	2.2	19.10	7.80	-	-	-	Tank#1, 27m3. Discharged shortly after. Approximately 5219m3 total.
	13-Mar-21	8:16	0.50	3.8	31.60	8.03	-	-	12.97	Tank#1, 27m3. Discharged shortly after. Approximately 5246m3 total.
	13-Mar-21	8:42	0.50	3.5	17.80	7.21	-	-	14.76	Tank#2, 27m3. Discharged shortly after. Approximately 5273m3 total.
	13-Mar-21	12:35	0.50	4.3	-	7.04	-	-	23.09	Tank#1, Tank was pumped as water came in, pH was treated, default to 27m3 as tank was full. Approximately 5300m3 total.
	13-Mar-21	12:37	0.50	4.2	-	7.21	-	-	13.24	Tank#2, Tank was pumped as water came in, pH was treated, default to 27m3 as tank was full. Approximately 5327m3 total.
	13-Mar-21	15:50	0.50	4.2	26.50	7.24	-	-	13.38	Tank#1, Tank was pumped as water came in, pH was treated, default to 27m3 as tank was full. Approximately 5354m3 total.
	13-Mar-21	15:57	0.50	4.1	21.20	7.42	-	-	13.92	Tank#2, Tank was pumped as water came in, pH was treated, default to 27m3 as tank was full. Approximately 5381m3 total.
	14-Mar-21	11:52	0.50	3.3	14.60	6.77	-	-	16.01	Tank#2, 27m3. Discharged shortly after. Approximately 5408m3 total.
	14-Mar-21	14:01	0.50	2.7	12.50	7.70	-	-	15.20	Tank#1, 20m3. Discharged shortly after. Approximately 5428m3 total.
	19-Mar-21	8:20	0.50	4.2	36.30	6.51	-	-	12.45	Tank#1, 25m3. Discharged shortly after. Approximately 5453m3 total.
	19-Mar-21	14:22	0.50	3.5	23.53	6.51	-	-	12.85	Tank#2, 27m3. Discharged shortly after. Approximately 5480m3 total.
	19-Mar-21	14:23	0.50	4.6	30.93	6.80	-	-	12.57	Tank#1, 20m3. Discharged shortly after. Approximately 5500m3 total.
	20-Mar-21	12:13	0.50	4.0	19.88	6.57	-	-	12.68	Tank#1, 27m3. Discharged shortly after. Approximately 5527m3 total.
	21-Mar-21	7:10	0.50	2.1	17.47	8.22	-	-	14.57	Tank#1, 27m3. Discharged shortly after. Approximately 5554m3 total.
	21-Mar-21	10:01	0.50	1.7	18.99	8.07	-	-	13.93	Tank#1, 25m3. Discharged shortly after. Approximately 5579m3 total.
	21-Mar-21	10:08	0.50	2.2	77.23	7.97	-	-	14.50	Tank#2, 27m3. Discharged shortly after. Approximately 5606m3 total.
	21-Mar-21	14:27	0.50	1.9	19.49	7.17	-	-	13.55	Tank#1, 25m3. Discharged shortly after. Approximately 5631m3 total.
	21-Mar-21	15:14	0.50	2.3	19.45	7.01	-	-	13.67	Tank#2, 25m3. Discharged shortly after. Approximately 5656m3 total.
	22-Mar-21	9:33	0.50	3.3	7.17	6.11	-	-	13.28	Tank#1, 14m3. Discharged shortly after. Approximately 5670m3 total.
	23-Mar-21	13:18	0.50	4.4	19.72	6.57	-	-	13.23	Tank#2, 25m3. Discharged shortly after. Approximately 5695m3 total.
	23-Mar-21	14:51	0.50	5.2	39.67	7.51	-	-	12.69	Tank#1, 27m3. Discharged shortly after. Approximately 5722m3 total.
	23-Mar-21	16:08	0.50	4.9	32.77	7.78	-	-	12.81	Tank#2, 27m3. Discharged shortly after. Approximately 5749m3 total.
	27-Mar-21	7:47	0.50	5.5	15.27	8.44	-	-	12.56	Tank#2, 27m3. Discharged shortly after. Approximately 5776m3 total.
	27-Mar-21	10:17	0.50	5.3	18.92	8.42	-	-	12.05	Tank#1, 27m3. Discharged shortly after. Approximately 5803m3 total.
	27-Mar-21	12:54	0.50	4.6	19.94	7.45	-	-	12.86	Tank#2, 27m3. Discharged shortly after. Approximately 5830m3 total.
	27-Mar-21	13:46	0.50	4.0	11.94	7.45	-	-	13.01	Tank#1, 27m3. Discharged shortly after. Approximately 5857m3 total.
	1-Apr-21	14:29	0.5	2.9	17.89	8.45	-	-	13.56	Tank#2, 27m3. Discharged shortly after. Approximately 5884m3 total.
	1-Apr-21	14:31	0.5	2.8	15.62	7.85	-	-	13.29	Tank#1, 27m3. Discharged shortly after. Approximately 5911m3 total.
	2-Apr-21	7:26	0.5	3.8	4.64	6.82	-	-	13.64	Tank#2, 27m3. Discharged shortly after. Approximately 5938m3 total.
	2-Apr-21	14:32	0.5	4.3	11.14	7.10	-	-	13.10	Tank#1, 27m3. Discharged shortly after. Approximately 5965m3 total.
	3-Apr-21	7:13	0.5	3.1	4.08	7.88	-	-	13.16	Tank#2, 27m3. Discharged shortly after. Approximately 5992m3 total.
	3-Apr-21	7:15	0.5	2.2	3.79	7.52	-	-	12.37	Tank#1, 27m3. Discharged shortly after. Approximately 6019m3 total.
	6-Apr-21	9:22	0.5	4.4	14.42	8.47	-	-	12.85	Tank#2, 15m3. Discharged shortly after. Approximately 6034m3 total.
	9-Apr-21	6:58	0.5	2.3	7.50	7.82	-	-	13.44	Tank#2, 13m3. Discharged shortly after. Approximately 6047m3 total.
	9-Apr-21	7:00	0.5	2.3	5.56	7.39	-	-	13.68	Tank#1, 20m3. Discharged shortly after. Approximately 6067m3 total.
	9-Apr-21	15:08	0.5	3.5	18.67	8.41	-	-	12.92	Tank#2, 25m3. Discharged shortly after. Approximately 6092m3 total.
	10-Apr-21	9:16	0.5	3.2	5.76	6.11	-	-	12.42	Tank#1, 25m3. Discharged shortly after. Approximately 6117m3 total.
	27-Apr-21	12:22	0.5	9.0	64.43	6.72	-	-	10.87	Tank#1, 27m3, Discharged shortly after. Heavy rain led to capacity issues and water was discharged prior to settling to below 20 NTU. Appr
	27-Apr-21	14:58	0.5	9.3	33.28	7.60	-	-	11.22	Tank#2, 27m3, Discharged shortly after. Heavy rain led to capacity issues and water was discharged prior to settling to below 20 NTU. Appr
	27-Apr-21	15:22	0.5	10.4	62.42	7.92	-	-	10.78	Tank#1, 27m3, Discharged shortly after. Heavy rain led to capacity issues and water was discharged prior to settling to below 20 NTU. Appr
	28-Apr-21	8:41	0.5	6.7	13.07	7.09	-	-	11.77	Tank#1, 27m3, Discharged shortly after. Approximately 6225m3 total.

	28-Apr-21	12:46	0.5	8.2	18.89	7.11	-	-	11.55	Tank#2, 27m3, Discharged shortly after. Approximately 6252m3 total.
	28-Apr-21	15:23	0.5	10.0	19.57	7.57	-	-	11.10	Tank#1, 27m3, Discharged shortly after. Approximately 6279m3 total.
	29-Apr-21	9:14	0.5	7.7	7.99	8.42	-	-	11.82	Tank#2, 27m3. Discharged shortly after. Approximately 6306m3 total.
	29-Apr-21	13:45	0.5	9.3	16.12	6.85	-	-	11.03	Tank#1, 27m3. Discharged shortly after. Approximately 6333m3 total.
	29-Apr-21	14:50	0.5	9.0	40.11	7.10	-	-	11.20	Tank#2, 27m3. Discharged shortly after. Approximately 6360m3 total.
	30-Apr-21	14:40	0.5	8.9	56.90	6.28	-	-	10.88	Tank#2, 27m3. Discharged shortly after. Approximately 6387m3
	3-May-21	11:06	0.5	9.5	15.59	8.27	-	-	11.03	Tank#1, 27m3. Discharged shortly after. Approximately 6414m3 total.
	16-May-21	8:50	0.5	10.8	39.07	6.96	-	-	7.61	Tank#1, 27m3, Discharged shortly after, approx 6441 m3 total, Discharged with high turbidity due to volume of water.
	16-May-21	8:51	0.5	10.2	27.40	7.10	-	-	10.52	Tank#2, 27m3, Discharged shortly after, approx 6468 m3 total, Discharged with high turbidity due to volume of water.
	16-May-21	15:12	-	-	-	-	-	-	-	Tank#1, 27m3, Discharged without testing due to capacity concerns, approx 6495 m3.
	16-May-21	15:12	-	-	-	-	-	-	-	Tank#2, 27m3, Discharged without testing due to capacity concerns, approx 6522 m3.
	18-May-21	13:07	0.5	8.1	19.17	7.04	-	-	11.68	Tank#2, 27m3, Discharged shortly after, approx 6549m3 total.
	18-May-21	15:18	0.5	8.5	16.88	7.26	-	-	11.61	Tank#1, 27m3, Discharged shortly after, approx 6576m3 total.
	26-May-21	-	-	-	-	-	-	-	-	Tank#1, 27m3, Discharged without testing due to capacity concerns, approx 6603 m3 total.
	26-May-21	-	-	-	-	-	-	-	-	Tank#2, 27m3, Discharged without testing due to capacity concerns, approx 6603 m3 total.
	27-May-21	7:03	0.5	11.2	19.47	8.04	-	-	10.60	Tank#2, 27m3, Discharged shortly after, approx 6630 m3 total.
	30-May-21	7:40	0.5	12.9	18.81	7.91	-	-	9.86	Tank#1, 27m3, Discharged shortly after, approx 6657 m3 total.
	30-May-21	13:59	0.5	12.7	12.92	7.25	-	-	10.27	Tank#2, 27m3, Discharged shortly after, approx 6657 m3 total.
	31-May-21	8:23	0.5	12.1	18.29	7.64	-	-	10.77	Tank#2, 27m3, Discharged shortly after, approx 6684 m3 total.
	31-May-21	15:00	0.5	12.0	19.60	7.88	-	-	10.67	Tank#1, 27m3, Discharged shortly after, approx 6711 m3 total.
	1-Jun-21	7:31	0.5	11.8	7.89	7.41	-	-	10.81	Tank#1, 27m3, Discharged shortly after, approx 6738 m3 total.
	1-Jun-21	9:52	0.5	12.7	10.87	7.79	-	-	10.52	Tank#2, 27m3, Discharged shortly after, approx 6765 m3 total.
	1-Jun-21	15:18	0.5	15.7	10.95	7.21	-	-	9.79	Tank#1, 27m3, Discharged shortly after, approx 6792 m3 total.
	2-Jun-21	6:51	0.5	12.4	6.81	7.49	-	-	10.59	Tank#1, 27m3, Discharged shortly after, approx 6819 m3 total.
	2-Jun-21	6:54	0.5	12.9	10.40	7.04	-	-	10.30	Tank#2, 27m3, Discharged shortly after, approx 6846 m3 total.
	2-Jun-21	10:22	0.5	12.8	26.35	7.54	-	-	10.48	Tank#1, 27m3, Discharged shortly after, approx 6873 m3 total. Discharged with high turbidity due to volume of water.
	2-Jun-21	11:59	0.5	13.3	21.85	7.74	-	-	10.37	Tank#2, 27m3, Discharged shortly after, approx 6900 m3 total. Discharged with high turbidity due to volume of water.
	2-Jun-21	14:26	0.5	15.0	13.39	7.19	-	-	9.79	Tank#1, 27m3, Discharged shortly after, approx 6927 m3 total.
	2-Jun-21	15:06	0.5	13.8	16.32	7.24	-	-	10.04	Tank#2, 27m3, Discharged shortly after, approx 6954 m3 total.
	4-Jun-21	12:17	0.5	11.7	109.30	7.93	-	-	10.45	Tank#1, 27m3, Discharged shortly after, approx 6981 m3 total. Discharged with high turbidity due to volume of water.
	4-Jun-21	14:21	0.5	13.2	42.13	7.66	-	-	10.21	Tank#2, 27m3, Discharged shortly after, approx 7008 m3 total. Discharged with high turbidity due to volume of water.
	4-Jun-21	15:44	0.3	12.9	37.74	8.17	-	-	10.32	Tank#1, 13m3, Discharged shortly after, approx 7021 m3 total. Discharged with high turbidity due to volume of water.
	6-Jun-21	7:08	0.3	9.5	8.84	7.39	-	-	11.12	Tank#1, 13m3, Discharged shortly after, approx 7034 m3 total.
	13-Jul-21	-	-	-	-	-	-	-	-	Discontinued and demobilized on July 13, 2021.
Stationary Holding Tanks to U trench Sump	**11-Oct-21**	14:22	0.0	9.0	31.81	6.56	178.60	0.08	11.64	Measurement taken in U-trench sump before high pH water (from north dolphin pour) released into sump.
	11-Oct-21	15:04	0.0	9.1	57.09	7.18	324.80	0.16	11.66	conformance.
	11-Oct-21	15:06	0.0	9.0	67.28	7.10	341.50	0.16	11.60	Measurement taken in U-trench sump just after the completion of the release of high pH water (from north dolphin pour) into the sump.
	1-Nov-21	15:23	0.0	4.1	9.77	7.26	242.8	0.12	10.47	Measurement taken in U-trench sump before high pH water released into sump.
	1-Nov-21	15:31	0.0	4.3	13.61	6.69	243.3	0.12	10.55	Measurement taken in U-trench sump during slow release of high pH water into the sump. Release began at 15:23 and paused periodically t
	1-Nov-21	15:42	0.0	4.7	14.23	6.60	247.3	0.12	10.64	Measurement taken in U-trench sump just after the completion of the release of high pH water into the sump.

Note: n/m = Not monitored
N/A = Not applicable

= Exceedance of P2 permit criteria (where they apply) or BC AWQG (where they apply)

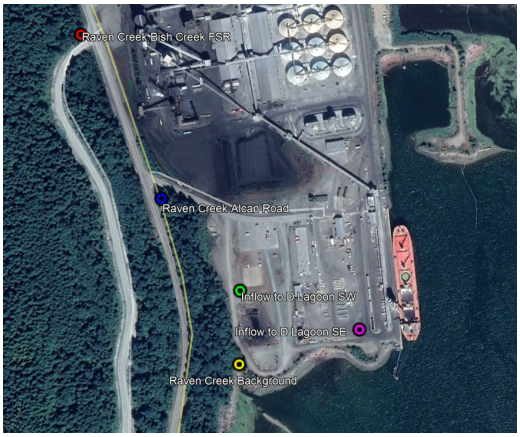
= Parameter elevated above P2 permit criteria (onsite stormwater runoff) or BC AWQG / CCME WQG (marine/freshwater receiving environment); however, P2 permit criteria and BC AWQG / CCME WQG do not apply to these locations

P2 Discharge Permit	
NTU	see BC WQG
TSS (mg/L)	75.0
pH	6.0 - 8.5
DO (mg/L)	N/A
Temp (oC)	30
Dissolved Aluminum (mg/L)	3.0
Dissolved Fluoride (mg/L)	10.0
Cyanide-SAD (mg/L)	0.5
Benzo(a)pyrene (µg/L)	0.5

BC WQ Guidelines (24 h)	
NTU	8.0
TSS (mg/L)	25
FW pH	6.5 - 9.0
Marine pH	7.0 - 8.7
DO (mg/L)	5

Description of Construction Water Quality Monitoring Locations

D Lagoon Inflow (SW) - Stormwater drainage ditch 30 metres north of D
D Lagoon Inflow (SE) - Stormwater pooling behind a sediment wattle
Raven Creek (Background)- Approximately 50 metres upstream of the
Raven Creek (Bish Creek FSR)- Approximately 10 m upstream of the La
Raven Creek (Alcan Road and Site Access Road)- Approximately 10 m



Appendix D: Annual Ex Situ Constrution Water Quality Data for 2021

			Parameter Name	FW pH in Water
			Unit	pH Units
			P2 Discharge Permit	**6.0 - 8.5**
			BC AWQG	**6.5 - 9.0**
			BC CSR WQG	**-**
AGAT Workorder	**Date Sampled**	**Sample Description**	**AGAT ID**	**Result**
21D702157	1/18/2021	RC DS	1983691	6.40
21D702157	1/18/2021	RS US	1983692	6.36

Table Legend:	
	Exceeds BC WQG, CCME WQG, or BC CSR WQG at Compliance Monitoring Locations (Within 50 m of pile driving and 100 m south of Revetment)

Appendix E: Ex Situ Sample Results Of Baseline Samples For Construction Water Quality Monitoring

Guideline Legend: **A Exceeded** *B Exceeded* C Exceeded D Exceeded

AGAT Workorder							19D446443	19D446443
Date Sampled							12-3-2019	12-3-2019
Sample Description							D-Lag In flow-SW	D-Lag In flow-SE
Package Name	**Parameter Name**	**Unit**	**RDL**	**BCWQG(A**	**CCME (M**		**9965325**	**9965350**
BC CSR Omnibus Dissolved Metals (mg/L)	Aluminum Dissolved	mg/L	0.002				0.081	0.047
BC CSR Omnibus Dissolved Metals (mg/L)	Antimony Dissolved	mg/L	0.0002				<0.0002	0.0003
BC CSR Omnibus Dissolved Metals (mg/L)	Arsenic Dissolved	mg/L	0.0001				0.0001	<0.0001
BC CSR Omnibus Dissolved Metals (mg/L)	Barium Dissolved	mg/L	0.0002				0.0122	0.0077
BC CSR Omnibus Dissolved Metals (mg/L)	Beryllium Dissolved	mg/L	0.00001				<0.00001	<0.00001
BC CSR Omnibus Dissolved Metals (mg/L)	Boron Dissolved	mg/L	0.002				0.004	0.002
BC CSR Omnibus Dissolved Metals (mg/L)	Cadmium Dissolved	mg/L	0.00001				0.00004	<0.00001
BC CSR Omnibus Dissolved Metals (mg/L)	Calcium Dissolved	mg/L	0.05				4.41	10.3
BC CSR Omnibus Dissolved Metals (mg/L)	Chromium Dissolved	mg/L	0.0005				<0.0005	<0.0005
BC CSR Omnibus Dissolved Metals (mg/L)	Cobalt Dissolved	mg/L	0.00005				0.00051	0.00017
BC CSR Omnibus Dissolved Metals (mg/L)	Copper Dissolved	mg/L	0.0002				0.0027	0.0008
BC CSR Omnibus Dissolved Metals (mg/L)	Iron Dissolved	mg/L	0.01				0.04	0.02
BC CSR Omnibus Dissolved Metals (mg/L)	Lead Dissolved	mg/L	0.00005				<0.00005	<0.00005
BC CSR Omnibus Dissolved Metals (mg/L)	Lithium Dissolved	mg/L	0.0005				<0.0005	<0.0005
BC CSR Omnibus Dissolved Metals (mg/L)	Magnesium Dissolved	mg/L	0.05				0.7	0.97
BC CSR Omnibus Dissolved Metals (mg/L)	Manganese Dissolved	mg/L	0.001				0.109	0.068
BC CSR Omnibus Dissolved Metals (mg/L)	Molybdenum Dissolve	mg/L	0.00005				0.00043	0.00106
BC CSR Omnibus Dissolved Metals (mg/L)	Nickel Dissolved	mg/L	0.0002				0.0014	0.001
BC CSR Omnibus Dissolved Metals (mg/L)	Potassium Dissolved	mg/L	0.05				1.2	0.97
BC CSR Omnibus Dissolved Metals (mg/L)	Selenium Dissolved	mg/L	0.0005				<0.0005	<0.0005
BC CSR Omnibus Dissolved Metals (mg/L)	Silver Dissolved	mg/L	0.00002				<0.00002	<0.00002
BC CSR Omnibus Dissolved Metals (mg/L)	Sodium Dissolved	mg/L	0.05				16.9	5.34
BC CSR Omnibus Dissolved Metals (mg/L)	Strontium Dissolved	mg/L	0.0001				0.0204	0.0275
BC CSR Omnibus Dissolved Metals (mg/L)	Thallium Dissolved	mg/L	0.00001				<0.00001	0.00002
BC CSR Omnibus Dissolved Metals (mg/L)	Tin Dissolved	mg/L	0.00005				<0.00005	<0.00005
BC CSR Omnibus Dissolved Metals (mg/L)	Titanium Dissolved	mg/L	0.0005				<0.0005	<0.0005
BC CSR Omnibus Dissolved Metals (mg/L)	Tungsten Dissolved	mg/L	0.00001				<0.00001	0.00004
BC CSR Omnibus Dissolved Metals (mg/L)	Uranium Dissolved	mg/L	0.00001				0.00004	0.00001
BC CSR Omnibus Dissolved Metals (mg/L)	Vanadium Dissolved	mg/L	0.0005				0.0036	0.0009
BC CSR Omnibus Dissolved Metals (mg/L)	Zinc Dissolved	mg/L	0.002				0.009	0.023
BC CSR Omnibus Dissolved Metals (mg/L)	Hardness (calc)	mg CaCO3/L	0.5				13.9	29.7
BC CSR Omnibus Total Metals (mg/L)	Aluminum Total	mg/L	0.05				17.9	5.72
BC CSR Omnibus Total Metals (mg/L)	Antimony Total	mg/L	0.0005				0.0007	<0.0005
BC CSR Omnibus Total Metals (mg/L)	Arsenic Total	mg/L	0.0001	12.5			0.0029	0.0008
BC CSR Omnibus Total Metals (mg/L)	Barium Total	mg/L	0.0005				0.104	0.0327
BC CSR Omnibus Total Metals (mg/L)	Beryllium Total	mg/L	0.00005				0.00023	0.00006
BC CSR Omnibus Total Metals (mg/L)	Boron Total	mg/L	0.005	1200			0.005	<0.005
BC CSR Omnibus Total Metals (mg/L)	Cadmium Total	mg/L	0.00001	0.12			0.00014	0.00004
BC CSR Omnibus Total Metals (mg/L)	Calcium Total	mg/L	0.05				7.29	11.1
BC CSR Omnibus Total Metals (mg/L)	Chromium Total	mg/L	0.0005				0.0141	0.0041
BC CSR Omnibus Total Metals (mg/L)	Cobalt Total	mg/L	0.00005				0.00723	0.00186
BC CSR Omnibus Total Metals (mg/L)	Copper Total	mg/L	0.0005	3			0.054	0.0105
BC CSR Omnibus Total Metals (mg/L)	Iron Total	mg/L	0.01				13.3	3.85
BC CSR Omnibus Total Metals (mg/L)	Lead Total	mg/L	0.00005	140			0.0063	0.0017
BC CSR Omnibus Total Metals (mg/L)	Lithium Total	mg/L	0.0005				0.0048	0.0016
BC CSR Omnibus Total Metals (mg/L)	Magnesium Total	mg/L	0.05				5.06	2.12
BC CSR Omnibus Total Metals (mg/L)	Manganese Total	mg/L	0.001				0.482	0.164
BC CSR Omnibus Total Metals (mg/L)	Molybdenum Total	mg/L	0.0001				0.0013	0.0015
BC CSR Omnibus Total Metals (mg/L)	Nickel Total	mg/L	0.0005				0.0169	0.0054
BC CSR Omnibus Total Metals (mg/L)	Potassium Total	mg/L	0.1				2.8	1.5
BC CSR Omnibus Total Metals (mg/L)	Selenium Total	mg/L	0.0005	2			<0.0005	<0.0005
BC CSR Omnibus Total Metals (mg/L)	Silver Total	mg/L	0.0001				<0.0001	<0.0001
BC CSR Omnibus Total Metals (mg/L)	Sodium Total	mg/L	0.1				21.8	6
BC CSR Omnibus Total Metals (mg/L)	Strontium Total	mg/L	0.0001				0.0493	0.036
BC CSR Omnibus Total Metals (mg/L)	Thallium Total	mg/L	0.00002				0.00007	0.00002
BC CSR Omnibus Total Metals (mg/L)	Tin Total	mg/L	0.00005				0.00026	0.00018
BC CSR Omnibus Total Metals (mg/L)	Titanium Total	mg/L	0.001				0.417	0.131
BC CSR Omnibus Total Metals (mg/L)	Tungsten Total	mg/L	0.0001				0.0003	0.0002
BC CSR Omnibus Total Metals (mg/L)	Uranium Total	mg/L	0.00001				0.00048	0.00011
BC CSR Omnibus Total Metals (mg/L)	Vanadium Total	mg/L	0.001				0.058	0.012
BC CSR Omnibus Total Metals (mg/L)	Zinc Total	mg/L	0.005	10			0.083	0.05
BC CSR Omnibus Total Metals (mg/L)	Total Hardness (calc)	mg CaCO3/L	1				39	36
Cyanide, Strong Acid Dissociable (SAD)	Cyanide (SAD)	mg/L	0.002				<0.002	<0.002
Polyaromatic Hydrocarbons in Water Low Leve	Naphthalene	µg/L	0.05	1			0.08	<0.05
Polyaromatic Hydrocarbons in Water Low Leve	Quinoline	µg/L	0.05				<0.05	<0.05
Polyaromatic Hydrocarbons in Water Low Leve	Acenaphthylene	µg/L	0.02				<0.02	<0.02
Polyaromatic Hydrocarbons in Water Low Leve	Acenaphthene	µg/L	0.02	6			0.25	0.18
Polyaromatic Hydrocarbons in Water Low Leve	Fluorene	µg/L	0.02	12			0.15	0.09
Polyaromatic Hydrocarbons in Water Low Leve	Phenanthrene	µg/L	0.04				1.23	0.85
Polyaromatic Hydrocarbons in Water Low Leve	Anthracene	µg/L	0.01				0.29	0.18
Polyaromatic Hydrocarbons in Water Low Leve	Acridine	µg/L	0.05				0.05	<0.05
Polyaromatic Hydrocarbons in Water Low Leve	Fluoranthene	µg/L	0.02				2.26	1.87
Polyaromatic Hydrocarbons in Water Low Leve	Pyrene	µg/L	0.02				2.04	1.61
Polyaromatic Hydrocarbons in Water Low Leve	Benzo(a)anthracene	µg/L	0.01				1.34	1.32
Polyaromatic Hydrocarbons in Water Low Leve	Chrysene	µg/L	0.01	0.1			**1.7**	**1.5**
Polyaromatic Hydrocarbons in Water Low Leve	Benzo(b)fluoranthene	µg/L	0.01				1.67	1.62
Polyaromatic Hydrocarbons in Water Low Leve	Benzo(j)fluoranthene	µg/L	0.01				0.81	0.7
Polyaromatic Hydrocarbons in Water Low Leve	Benzo(k)fluoranthene	µg/L	0.01				0.83	0.84
Polyaromatic Hydrocarbons in Water Low Leve	Benzo(a)pyrene	µg/L	0.01	0.01			**1.85**	**1.92**
Polyaromatic Hydrocarbons in Water Low Leve	Indeno(1,2,3-c,d)pyre	µg/L	0.01				1.45	1.35
Polyaromatic Hydrocarbons in Water Low Leve	Dibenzo(a,h)anthrace	µg/L	0.01				0.38	0.34
Polyaromatic Hydrocarbons in Water Low Leve	Benzo(g,h,i)perylene	µg/L	0.01				1.98	1.84
Polyaromatic Hydrocarbons in Water Low Leve	1-Methylnaphthalene	µg/L	0.05				<0.05	<0.05
Polyaromatic Hydrocarbons in Water Low Leve	2-Methylnaphthalene	µg/L	0.05				0.07	<0.05
Polyaromatic Hydrocarbons in Water Low Leve	Naphthalene - d8	%					105	110
Polyaromatic Hydrocarbons in Water Low Leve	2-Fluorobiphenyl	%					94	99
Polyaromatic Hydrocarbons in Water Low Leve	P-Terphenyl - d14	%					96	105
Polyaromatic Hydrocarbons in Water Low Leve	Total PAH	ug/L	1				18	16
Polyaromatic Hydrocarbons in Water Low Leve	Benzo(b+j)fluoranthe	µg/L	0.01				2.48	2.32
Total Suspended Solids in Water	Total Suspended Solid	mg/L	2				187	42

Appendix F: Planned Monitoring Frequencies And Actual Monitoring Events in 2021 For Construction Water Quality Monitoring

Location	D-Lagoon Inflow (SW)	Raven Creek (Background)	Raven Creek (Alcan Road and Site Access Road)	Raven Creek (Bish Creek FSR Upstream)	Stationary Holding Tanks
Planned Sampling Frequency/ Actual Sampling Events	Daily	Daily	Daily as needed	Daily as needed	Prior to discharge to D-Lagoon
1-Jan-21	*N/M*	*N/M*	*N/A*	*N/A*	*N/A*
2-Jan-21					
3-Jan-21					
4-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN**
5-Jan-21	*NM*	*IN*	*N/A*	*N/A*	*IN**
6-Jan-21	*NM*	*IN*	*N/A*	*N/A*	*IN**
7-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*NM*
8-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
9-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*NM*
10-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
11-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
12-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
13-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
14-Jan-21	*NM*	*NM*	*N/A*	*N/A*	*IN*
15-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
16-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
17-Jan-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
18-Jan-21	*IN*	*IN/EX*	*N/A*	*IN/EX*	*NM*
19-Jan-21	*IN*	*IN*	*N/A*	*NM*	*IN*
20-Jan-21	*NM*	*IN*	*N/A*	*NM*	*IN*
21-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
22-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
23-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
24-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
25-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
26-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
27-Jan-21	*NM*	*NM*	*N/A*	*NM*	*NM*
28-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
29-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
30-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
31-Jan-21	*NM*	*IN*	*N/A*	*NM*	*NM*
1-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
2-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
3-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
4-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
5-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
6-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
7-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
8-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
9-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
10-Feb-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
11-Feb-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
12-Feb-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
13-Feb-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
14-Feb-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
15-Feb-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
16-Feb-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
17-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
18-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
19-Feb-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
20-Feb-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
21-Feb-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
22-Feb-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
23-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
24-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
25-Feb-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
26-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
27-Feb-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
28-Feb-21	*IN*	*IN*	*N/A*	*N/A*	*IN*

1-Mar-21	*IN*	*IN*	*N/A*	*N/A*	*NM*
2-Mar-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
3-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
4-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
5-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
6-Mar-21	*IN*	*IN*	*N/A*	*N/A*	*NM*
7-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
8-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
9-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
10-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
11-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
12-Mar-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
13-Mar-21	*IN*	*NM*	*N/A*	*N/A*	*IN*
14-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
15-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
16-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
17-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
18-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
19-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
20-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
21-Mar-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
22-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
23-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
24-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
25-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
26-Mar-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
27-Mar-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
28-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
29-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
30-Mar-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
31-Mar-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
1-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
2-Apr-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
3-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
4-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
5-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
6-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
7-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
8-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
9-Apr-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
10-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
11-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
12-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
13-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
14-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
15-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
16-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
17-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
18-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
19-Apr-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
20-Apr-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
21-Apr-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
22-Apr-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
23-Apr-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
24-Apr-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
25-Apr-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
26-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
27-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
28-Apr-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
29-Apr-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
30-Apr-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
1-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
2-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*

3-May-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
4-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
5-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
6-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
7-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
8-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
9-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
10-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
11-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
12-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
13-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
14-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
15-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
16-May-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
17-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
18-May-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
19-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
20-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
21-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
22-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
23-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
24-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
25-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
26-May-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
27-May-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
28-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
29-May-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
30-May-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
31-May-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
1-Jun-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
2-Jun-21	*IN*	*IN*	*N/A*	*N/A*	*IN*
3-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
4-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
5-Jun-21	*IN*	*IN*	*N/A*	*N/A*	*NM*
6-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*IN*
7-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
8-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
9-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
10-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
11-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
12-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
13-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
14-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
15-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
16-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
17-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
18-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
19-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
20-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
21-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
22-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
23-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
24-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
25-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
26-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
27-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
28-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
29-Jun-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
30-Jun-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
1-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
2-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
3-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
4-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*

5-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
6-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
7-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
8-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
9-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
10-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
11-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
12-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
13-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
14-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
15-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
16-Jul-21	*NM*	*NM*	*N/A*	*N/A*	*NM*
17-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
18-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*NM*
19-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
20-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
21-Jul-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
22-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
23-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
24-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
25-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
26-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
27-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
28-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
29-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
30-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
31-Jul-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
1-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
2-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
3-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
4-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
5-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
6-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
7-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
8-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
9-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
10-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
11-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
12-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
13-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
14-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
15-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
16-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
17-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
18-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
19-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
20-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
21-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
22-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
23-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
24-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
25-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
26-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
27-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
28-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
29-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
30-Aug-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
31-Aug-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
1-Sep-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
2-Sep-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
3-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
4-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
5-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*

6-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
7-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
8-Sep-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
9-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
10-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
11-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
12-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
13-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
14-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
15-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
16-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
17-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
18-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
19-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
20-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
21-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
22-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
23-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
24-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
25-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
26-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
27-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
28-Sep-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
29-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
30-Sep-21	*IN*	*IN*	*N/A*	*N/A*	*N/A*
1-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
2-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
3-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
4-Oct-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
5-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
6-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
7-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
8-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
9-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
10-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
11-Oct-21	*NM*	*IN*	*N/A*	*N/A*	*IN**
12-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
13-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
14-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
15-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
16-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
17-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
18-Oct-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
19-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
20-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
21-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
22-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
23-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
24-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
25-Oct-21	*NM*	*IN*	*N/A*	*N/A*	*N/A*
26-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
27-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
28-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
29-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
30-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
31-Oct-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*
1-Nov-21	*NM*	*IN*	*N/A*	*N/A*	*IN**
2-Nov-21	*NM*	*NM*	*N/A*	*N/A*	*N/A*

* - In-situ measurements taken from within the sump as water was discharging directly to D-Lagoon

Appendix G: Annual In Situ Marine Water Quality Data for 2021

Marine WQ Monitoring Data

Project #:	6078	*2021*
Project name:	Terminal A Extension Project	*January 2021 to June 2021*
Task name:	Marine Water Quality Monitoring	*Brandi Malo*
Client:	Rio Tinto	

Location	Monitoring Station	Time	Depth (m)	Temp (oC)	Turbidity (NTU)	pH	DO (mg/L)	Comments
50 m within Marine Piling (1 m above seabed)	1-Jan-21	-	-	-	-	-	-	No marine piling
	2-Jan-21	-	-	-	-	-	-	No marine piling
	3-Jan-21	-	-	-	-	-	-	No marine piling
	4-Jan-21	-	-	-	-	-	-	No marine piling
	5-Jan-21	-	-	-	-	-	-	No marine piling
	6-Jan-21	-	-	-	-	-	-	No marine piling
	7-Jan-21	-	-	-	-	-	-	No marine piling
	8-Jan-21	-	-	-	-	-	-	No marine piling
	9-Jan-21	-	-	-	-	-	-	No marine piling
	10-Jan-21	-	-	-	-	-	-	No marine piling
	11-Jan-21	-	-	-	-	-	-	No marine piling
	12-Jan-21	-	-	-	-	-	-	No marine piling
	13-Jan-21	-	-	-	-	-	-	No marine piling
	14-Jan-21	-	-	-	-	-	-	No marine piling
	15-Jan-21	-	-	-	-	-	-	No marine piling
	16-Jan-21	-	-	-	-	-	-	No marine piling
	17-Jan-21	15:35	17.0	7.5	5.53	7.40	7.15	Impact pile driving. Measured from the ME212. Calm
	18-Jan-21	-	-	-	-	-	-	No marine piling
	19-Jan-21	-	-	-	-	-	-	No marine piling
	20-Jan-21	-	-	-	-	-	-	No marine piling
	21-Jan-21	14:26	16.0	5.2	7.54	7.63	9.50	Impact pile driving. Measured from the ME212. Slight wind. Oakton readings were taken out of the water and are inaccurate.
	22-Jan-21	-	-	-	-	-	-	No marine piling
	23-Jan-21	13:42	15.0	7.7	3.97	7.61	5.38	Impact pile driving. Measured from the ME212. Calm.
	24-Jan-21	-	-	-	-	-	-	No marine piling
	25-Jan-21	-	-	-	-	-	-	No marine piling
	26-Jan-21	15:18	15.0	8.1	4.93	7.71	5.32	Impact pile driving. Measured from the ME212. Calm.
	27-Jan-21	17:06	13.0	8.6	3.27	7.39	5.39	Impact pile driving. Measured from the ME212. Calm.
	28-Jan-21	10:03	15.0	8.2	3.19	7.43	6.12	Impact pile driving. Measured from the ME212. Moderate winds.
	29-Jan-21	-	-	-	-	-	-	No marine piling
	30-Jan-21	12:11	15.0	8.3	4.63	7.52	6.23	Impact pile driving. Measured from the ME212. Calm.
	31-Jan-21	15:15	17.0	8.3	1.68	7.46	6.41	Impact pile driving. Measured from the ME212. Calm.
	1-Feb-21	-	-	-	-	-	-	No marine piling
	2-Feb-21	9:45	17.0	7.9	6.13	7.44	8.48	Impact pile driving. Measured from the ME212. Calm.
	3-Feb-21	-	-	-	-	-	-	No marine piling
	4-Feb-21	13:57	17.0	6.1	0.85	7.71	8.98	Impact pile driving. Measured from the ME212. Calm.
	5-Feb-21	-	-	-	-	-	-	No marine piling
	6-Feb-21	-	-	-	-	-	-	No marine piling
	7-Feb-21	-	-	-	-	-	-	No marine piling
	8-Feb-21	-	-	-	-	-	-	No marine piling
	9-Feb-21	-	-	-	-	-	-	No marine piling
	10-Feb-21	-	-	-	-	-	-	No marine piling
	11-Feb-21	-	-	-	-	-	-	No marine piling
	12-Feb-21	-	-	-	-	-	-	No marine piling
	13-Feb-21	14:50	17.0	7.0	1.58	7.68	8.61	Impact pile driving. Measured from the ME212. Moderate winds.
	14-Feb-21	12:04	17.0	7.1	0.51	7.51	7.62	Impact pile driving. Measured from the ME212. Moderate winds.
	15-Feb-21	13:28	15.0	6.6	2.70	8.06	8.61	Impact pile driving. Measured from the Pacific Explorer. Calm.
	16-Feb-21	-	-	-	-	-	-	No marine piling
	17-Feb-21	-	-	-	-	-	-	No marine piling
	18-Feb-21	13:42	16.0	6.2	0.73	7.63	9.29	Impact pile driving. Measured from the ME212.
	19-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	20-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	21-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	22-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	23-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	24-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	25-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	26-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	27-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	28-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
	1-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	2-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	3-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	4-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	5-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	6-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	7-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	8-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	9-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	10-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	11-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	12-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	13-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	14-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	15-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	16-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	17-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	18-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	19-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	20-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	21-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	22-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	23-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	24-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	25-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	26-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	27-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	28-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	29-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	30-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	31-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	1-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	2-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	3-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	4-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	5-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	6-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	7-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	8-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	9-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	10-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	11-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	12-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	13-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	14-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	15-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	16-Apr-21	14:59	12.0	6.5	0.80	7.50	8.67	Impact pile driving. Measured from the ME212. Calm.

17-Apr-21	-	-	-	-	-	-	No pile driving
18-Apr-21	15:24	8.0	6.5	1.05	7.51	8.91	Impact pile driving. Measured from the ME212. Calm.
19-Apr-21	-	-	-	-	-	-	No pile driving
20-Apr-21	-	-	-	-	-	-	No pile driving
21-Apr-21	-	-	-	-	-	-	No pile driving
22-Apr-21	14:28	11.0	10.0	3.20	6.96	8.97	Impact pile driving. Measured from the ME212. Calm.
23-Apr-21	-	-	-	-	-	-	No pile driving
24-Apr-21	-	-	-	-	-	-	No pile driving
25-Apr-21	8:02	15.0	6.3	15.94	7.61	8.60	Impact pile driving. Measured from the ME212. Calm.
26-Apr-21	13:16	16.0	9.0	2.96	7.90	9.07	Impact pile driving . Measured from the ME212. High winds.
27-Apr-21	7:16	16.0	6.8	3.98	7.85	9.05	Impact pile driving. Measured from the ME212. Moderate winds.
28-Apr-21	14:25	11.0	8.8	1.14	8.50	12.40	Impact pile driving. Measured from the traveller. Calm.
29-Apr-21	11:56	15.0	8.7	11.42	8.24	12.28	Impact pile driving. Measured from the traveller. Moderate winds.
30-Apr-21	-	-	-	-	-	-	No pile driving
1-May-21	13:54	15.0	8.8	5.52	8.16	12.37	Impact pile driving. Measured from the ME212 barge. Moderate winds.
2-May-21	-	-	-	-	-	-	No pile driving occurred today.
3-May-21	-	-	-	-	-	-	No pile driving occurred today.
4-May-21	13:38	17.0	9.2	1.33	7.85	10.68	Impact pile driving. Measured from the ME212 barge. Moderate winds.
5-May-21	9:36	15.0	7.3	17.17	8.21	12.48	Impact pile driving. Measured form the trestle. Calm.
6-May-21	-	-	-	-	-	-	No pile driving occurred today.
7-May-21	-	-	-	-	-	-	No pile driving occurred today.
8-May-21	-	-	-	-	-	-	No pile driving occurred today.
9-May-21	-	-	-	-	-	-	No pile driving occurred today.
10-May-21	8:25	17.0	6.8	1.53	7.54	8.59	Impact pile driving. Measured form the ME212. Calm.
11-May-21	9:00	12.0	7.5	0.65	7.83	10.82	Impact pile driving. Measured form the ME212. Calm.
12-May-21	-	-	-	-	-	-	No pile driving occurred today.
13-May-21	-	-	-	-	-	-	No pile driving occurred today.
14-May-21	7:58	11.0	7.5	0.75	7.77	9.62	Impact pile driving. Measured from the ME212 barge. Moderate winds.
15-May-21	11:16	9.0	6.8	2.59	7.71	8.50	Impact pile driving. Measured from the ME212 barge. Moderate winds.
16-May-21	14:34	13.0	6.9	3.42	7.57	9.31	Impact pile driving. Measured from the ME212 barge. Moderate winds.
17-May-21	7:46	14.0	6.9	1.98	7.79	9.37	Impact pile driving. Measured from the ME212 barge. Calm winds.
18-May-21	10:30	10.0	6.8	2.71	7.29	8.53	Impact pile driving. Measured from the ME212 barge. Moderate winds.
19-May-21	10:05	12.0	7.9	0.28	7.98	10.55	Impact pile driving. Measured the next day from the trestle. Calm winds.
20-May-21	6:49	12.0	9.6	1.66	8.25	11.85	Impact pile driving. Measured the next day from the trestle. Calm winds.
21-May-21	7:15	12.0	7.9	0.86	7.96	10.65	Impact pile driving. Measured from the trestle. Calm winds.
22-May-21	11:44	12.0	7.5	0.20	7.76	10.19	Impact pile driving. Measured from the trestle.Calm winds.
23-May-21	12:43	12.0	7.1	1.51	7.76	8.73	Impact pile driving. Measured from the trestle. Calm winds.
24-May-21	16:13	12.0	10.5	2.82	7.46	10.97	Impact pile driving. Measured from the trestle. Calm winds.
25-May-21	7:31	12.0	9.9	3.72	8.06	9.42	Impact pile driving. Measured from the ME212. Calm winds.
26-May-21	7:14	12.0	8.4	1.48	7.78	10.33	Impact pile driving. Measured from the trestle.
27-May-21	7:38	12.0	7.8	1.61	7.92	10.26	Impact pile driving. Measured from the trestle. Calm winds.
28-May-21	15:32	5.0	10.0	0.11	7.73	10.32	Measured from BC45. Low wind, slightly turbid
29-May-21	-	-	-	-	-	-	Not completed. No pile driving conducted.
30-May-21	-	-	-	-	-	-	Not completed. No pile driving conducted.
31-May-21	-	-	-	-	-	-	Not completed. No pile driving conducted.

1-Jan-21	-	-	-	-	-	-	No marine piling
2-Jan-21	-	-	-	-	-	-	No marine piling
3-Jan-21	-	-	-	-	-	-	No marine piling
4-Jan-21	-	-	-	-	-	-	No marine piling
5-Jan-21	-	-	-	-	-	-	No marine piling
6-Jan-21	-	-	-	-	-	-	No marine piling
7-Jan-21	-	-	-	-	-	-	No marine piling
8-Jan-21	-	-	-	-	-	-	No marine piling
9-Jan-21	-	-	-	-	-	-	No marine piling
10-Jan-21	-	-	-	-	-	-	No marine piling
11-Jan-21	-	-	-	-	-	-	No marine piling
12-Jan-21	-	-	-	-	-	-	No marine piling
13-Jan-21	-	-	-	-	-	-	No marine piling
14-Jan-21	-	-	-	-	-	-	No marine piling
15-Jan-21	-	-	-	-	-	-	No marine piling
16-Jan-21	-	-	-	-	-	-	No marine piling
17-Jan-21	15:32	1.0	4.6	4.22	7.27	11.38	Impact pile driving. Measured from the ME212. Calm
18-Jan-21	-	-	-	-	-	-	No marine piling
19-Jan-21	-	-	-	-	-	-	No marine piling
20-Jan-21	-	-	-	-	-	-	No marine piling
21-Jan-21	14:18	1.0	5.5	8.46	7.87	11.40	Impact pile driving. Measured from the ME212. Slight wind. Oakton readings were taken out of the water and are inaccurate.
22-Jan-21	-	-	-	-	-	-	No marine piling
23-Jan-21	13:33	1.0	7.4	2.56	7.67	5.75	Impact pile driving. Measured from the ME212. Calm.
24-Jan-21	-	-	-	-	-	-	No marine piling
25-Jan-21	-	-	-	-	-	-	No marine piling
26-Jan-21	15:10	1.0	7.7	5.07	7.55	6.78	Impact pile driving. Measured from the ME212. Calm.
27-Jan-21	17:04	1.0	7.5	0.67	7.34	7.26	Impact pile driving. Measured from the ME212. Calm.
28-Jan-21	10:04	1.0	8.2	2.95	7.42	5.85	Impact pile driving. Measured from the ME212. Moderate winds.
29-Jan-21	-	-	-	-	-	-	No marine piling
30-Jan-21	12:12	1.0	8.1	2.56	7.55	6.20	Impact pile driving. Measured from the ME212. Calm.
31-Jan-21	15:16	1.0	7.6	0.83	7.47	6.69	Impact pile driving. Measured from the ME212. Calm.
1-Feb-21	-	-	-	-	-	-	No marine piling
2-Feb-21	9:46	1.0	7.1	9.07	7.45	8.34	Impact pile driving. Measured from the ME212. Calm.
3-Feb-21	-	-	-	-	-	-	No marine piling
4-Feb-21	13:57	1.0	4.3	0.65	7.67	10.06	Impact pile driving. Measured form the ME212.
5-Feb-21	-	-	-	-	-	-	No marine piling
6-Feb-21	-	-	-	-	-	-	No marine piling
7-Feb-21	-	-	-	-	-	-	No marine piling
8-Feb-21	-	-	-	-	-	-	No marine piling
9-Feb-21	-	-	-	-	-	-	No marine piling
10-Feb-21	-	-	-	-	-	-	No marine piling
11-Feb-21	-	-	-	-	-	-	No marine piling
12-Feb-21	-	-	-	-	-	-	No marine piling
13-Feb-21	14:48	1.0	7.0	4.33	7.68	8.87	Impact pile driving. Measured from the ME212. Moderate winds.
14-Feb-21	12:03	1.0	6.8	0.47	7.69	8.31	Impact pile driving. Measured from the ME212. Moderate winds.
15-Feb-21	13:31	1.0	6.0	0.62	8.01	8.91	Impact pile driving. Measured from the Pacific Explorer. Calm.
16-Feb-21	-	-	-	-	-	-	No marine piling
17-Feb-21	-	-	-	-	-	-	No marine piling
18-Feb-21	13:42	1.0	9.6	0.62	7.62	9.28	Impact pile driving. Measured from the ME212.
19-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
20-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
21-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
22-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
23-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
24-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
25-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
26-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
27-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
28-Feb-21	-	-	-	-	-	-	No marine piling activities conducted during the fish window
1-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
2-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
3-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
4-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
5-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
6-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
7-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
8-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
9-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
10-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
11-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
12-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
13-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.

50 m within Marine Piling (1 m below surface)	**14-Mar-21**	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	15-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	16-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	17-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	18-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	19-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	20-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	21-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	22-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	23-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	24-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	25-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	26-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	27-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	28-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	29-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	30-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	31-Mar-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	1-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	2-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	3-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	4-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	5-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	6-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	7-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	8-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	9-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	10-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	11-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	12-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	13-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	14-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	15-Apr-21	-	-	-	-	-	-	Marine pile driving discontinued until April 16th.
	16-Apr-21	14:56	1.0	8.4	0.19	7.58	10.95	Impact pile driving. Measured from the ME212. Calm.
	17-Apr-21	-	-	-	-	-	-	No pile driving
	18-Apr-21	15:22	1.0	7.1	0.16	7.58	9.74	Impact pile driving. Measured from the ME212. Calm.
	19-Apr-21	-	-	-	-	-	-	No pile driving
	20-Apr-21	-	-	-	-	-	-	No pile driving
	21-Apr-21	-	-	-	-	-	-	No pile driving
	22-Apr-21	14:31	1.0	11.1	29.91	8.13	12.05	Impact pile driving. Measured from the ME212. Calm. Turbid water likely from spring melt run off.
	23-Apr-21	-	-	-	-	-	-	No pile driving
	24-Apr-21	-	-	-	-	-	-	No pile driving
	25-Apr-21	8:03	1.0	8.0	0.38	8.30	14.30	Impact pile driving. Measured from the ME212. Calm.
	26-Apr-21	13:19	1.0	8.4	1.81	7.91	10.17	Impact pile driving. Measured from the ME212. High winds.
	27-Apr-21	7:17	1.0	7.9	1.42	8.29	12.07	Impact pile driving. Measured from the ME212. Moderate winds.
	28-Apr-21	14:25	1.0	7.3	2.09	8.31	12.75	Impact pile driving. Measured form the traveller. Calm.
	29-Apr-21	11:57	1.0	7.6	2.55	8.21	12.92	Impact pile driving. Measured from the traveller. Moderate winds.
	30-Apr-21	-	-	-	-	-	-	No pile driving
	1-May-21	13:54	1.0	6.8	4.78	8.14	12.36	Impact pile driving. Measured from the ME212 barge. Moderate winds.
	2-May-21	-	-	-	-	-	-	No pile driving occurred today.
	3-May-21	-	-	-	-	-	-	No pile driving occurred today.
	4-May-21	13:41	1.0	10.0	7.64	8.99	11.51	Impact pile driving. Measured from the ME212 barge. Moderate winds.
	5-May-21	9:37	1.0	8.7	6.30	8.84	12.59	Impact pile driving. Measured from the ME212 barge. Calm.
	6-May-21	-	-	-	-	-	-	No pile driving occurred today.
	7-May-21	-	-	-	-	-	-	No pile driving occurred today.
	8-May-21	-	-	-	-	-	-	No pile driving occurred today.
	9-May-21	-	-	-	-	-	-	No pile driving occurred today.
	10-May-21	8:22	1.0	8.3	0.99	8.30	11.90	Impact pile driving. Measured from the ME212 barge. Moderate winds.
	11-May-21	8:57	1.0	9.0	1.24	7.66	12.08	Impact pile driving. Measured from the ME212 barge. Moderate winds.
	12-May-21	-	-	-	-	-	-	No pile driving occurred today.
	13-May-21	-	-	-	-	-	-	No pile driving occurred today.
	14-May-21	7:54	1.0	7.6	4.31	7.58	11.48	Impact pile driving. Measured from the ME212 barge. Moderate winds.
	15-May-21	11:12	1.0	9.3	6.51	8.07	11.59	Impact pile driving. Measured from the ME212 barge. Moderate winds.
	16-May-21	14:31	1.0	8.3	4.11	7.78	12.06	Impact pile driving. Measured from the ME212 barge. Moderate winds.
	17-May-21	7:43	1.0	7.5	7.76	7.76	12.19	Impact pile driving. Measured from the ME212 barge. Calm winds.
	18-May-21	10:26	1.0	8.1	7.90	7.76	11.80	Impact pile driving. Measured from the ME212 barge. Moderate winds.
	19-May-21	9:54	1.0	8.4	1.05	8.14	11.26	Impact pile driving. Measured the next day from the trestle. Calm winds.
	20-May-21	6:50	1.0	9.9	3.59	8.51	12.40	Impact pile driving. Measured the next day from the trestle. Calm winds.
	21-May-21	7:16	1.0	9.2	2.73	8.03	11.01	Impact pile driving. Measured the from the trestle. Calm winds.
	22-May-21	11:45	1.0	9.2	1.27	8.07	10.90	Impact pile driving. Measured from the trestle. Calm winds.
	23-May-21	12:44	1.0	8.0	0.27	7.95	10.39	Impact pile driving. Measured from the trestle. Calm winds.
	24-May-21	16:14	1.0	9.7	3.08	7.97	10.76	Impact pile driving. Measured from the trestle. Calm winds.
	25-May-21	7:35	1.0	10.5	4.29	8.79	11.01	Impact pile driving. Measured from the ME212. Calm winds.
	26-May-21	7:15	1.0	8.7	1.38	8.02	11.18	Impact pile driving. Measured from the trestle. Calm winds.
	27-May-21	7:39	1	9	0.2	8.31	11.61	Impact pile driving. Measured from the trestle. Calm winds.
	28-May-21	15:33	1.0	10.7	1.02	8.23	11.77	Measured from BC45. Low wind, slightly turbid
	29-May-21	-	-	-	-	-	-	Not completed. No pile driving conducted.
	30-May-21	-	-	-	-	-	-	Not completed. No pile driving conducted.
	31-May-21	-	-	-	-	-	-	Not completed. No pile driving conducted.
Ref 1 Mouth of Kitimat River (1 m above seabed)	**18-Jan-21**	13:56	25.0	8.2	1.90	7.35	6.03	Measured form the Haisla Spirit. Calm.
	21-Jan-21	13:43	25.0	-	3.82	7.90	-	Measured form the Pacific Explorer. Rough conditions and drift. Issues with DO meter, oakton readings were taken out of the water and are inac
	26-Jan-21	15:48	20.0	-	1.40	7.39	4.81	Measured from the Pacific Explorer. Some drift. Temp not recorded
	2-Feb-21	10:13	20.0	6.8	1.96	7.60	9.12	Measured from the Pacific Explorer. Cloudy water and drift.
	13-Feb-21	15:38	20.0	7.0	2.60	7.76	9.73	Measured from the Pacific Explorer. Moderate winds.
	15-Feb-21	13:13	20.0	9.4	2.51	8.61	8.04	Measured from the Pacific Explorer. Calm.
	17-Apr-21	9:35	28.0	6.8	0.24	7.68	9.65	Measured from Haisla Spirit. Calm conditions. Turbid surface water.
	22-Apr-21	14:46	27.0	9.5	1.59	7.63	9.17	Measured from the Haisla Spirit. Calm conditions. Turbid surface water likely from spring melt run off.
	27-Apr-21	7:52	26.0	6.9	10.84	7.72	9.34	Measured from the Haisla Spirit. Moderate winds. Turbid water likely from spring melt run off.
	4-May-21	14:01	20.0	6.5	5.23	7.90	9.65	Measured from the Haisla Spirit. Moderate winds.
	10-May-21	9:15	17.0	6.8	0.10	7.75	9.92	Measured from the Haisla Spirit. Low winds.
	18-May-21	11:11	19.0	7.3	0.30	7.62	10.47	Measured from the Haisla Spirit. Moderate winds.
	25-May-21	8:18	19.0	9.0	3.01	8.11	10.37	Measured from the Haisla Spirit. Calm winds.
Ref 1 Mouth of Kitimat River (1 m below surface)	**18-Jan-21**	13:56	1.0	5.5	1.94	7.27	10.01	Measured form the Haisla Spirit. Calm.
	21-Jan-21	13:43	1.0	-	7.61	7.97	-	Measured form the Pacific Explorer. Rough conditions and drift. Issues with DO meter, oakton readings were taken out of the water and are inac
	26-Jan-21	15:40	1.0	-	4.14	7.59	6.70	Measured form the Pacific Explorer. Some drift. Temp not recorded
	2-Feb-21	10:15	1.0	5.4	10.64	7.56	10.22	Measured from the Pacific Explorer. Cloudy water and drift.
	13-Feb-21	15:41	1.0	6.9	5.03	7.71	9.38	Measured from the Pacific Explorer. Moderate winds.
	15-Feb-21	13:15	1.0	7.1	0.21	8.08	8.54	Measured from the Pacific Explorer. Calm.
	17-Apr-21	9:16	1.0	7.1	3.71	7.49	11.05	Measured from Haisla Spirit. Calm conditions. Turbid surface water.
	22-Apr-21	14:47	1.0	9.7	1.75	7.62	8.61	Measured from Haisla Spirit. Calm conditions. Turbid surface water likely due to spring melt run off.
	27-Apr-21	7:54	1.0	7.1	24.03	8.23	11.68	Measured from the Haisla Spirit. Moderate winds. Turbid water likely from spring melt run off.
	4-May-21	14:06	1.0	7.6	9.23	8.98	12.25	Measured from the Haisla Spirit. Moderate winds.
	10-May-21	9:09	1.0	8.2	0.85	7.63	12.17	Measured from the Haisla Spirit. Low winds.
	18-May-21	11:06	1.0	4.8	7.70	8.17	12.76	Measured from the Haisla Spirit. Moderate winds.
	25-May-21	8:21	1.0	8.0	8.22	8.65	11.69	Measured from the Haisla Spirit. Calm winds.

Table Legend:	
	Exceeds BC WQG, CCME WQG, or BC CSR WQG at Compliance Monitoring Locations (Within 50 m of pile driving and 100 m south of Revetment)
	Exceeds BC WQG, CCME WQG, or BC CSR WQG. However, sample location is not a compliance monitoring location.

BC WQ Guidelines (24 h)	
NTU	8.0
TSS (mg/L)	25
FW pH	6.5 - 9.0
Marine pH	7.0 - 8.7
DO (mg/L)	5

Appendix H: Annual Ex Situ Marine Water Quality Data for 2021

			Parameter Name	Total Suspended Solids
			Unit	mg/L
			CCME WQG	-
			BC AWQG	25
			BC CSR WQG	-
AGAT Workorder	Date Sampled	Sample Description	AGAT ID	Result (mg/L)
21D702158	1/17/2021	50m - Deep	1983721	12
21D702158	1/17/2021	50m - Deep B	1983723	<2
21V703699	1/21/2021	50m - Deep	2009413	16
21D705283	1/26/2021	50m - Deep	2020016	11
21D705283	1/26/2021	50m - Deep A	2020017	4
21D707923	2/2/2021	50m - Deep	2057338	8
21D712018	2/13/2021	50m - Deep	2112771	11
21D712018	2/13/2021	50m - Deep B	2112772	<2
21D712052	2/15/2021	50m - Deep	2113002	6
21D736495	4/17/2021	50m - Deep	2372448	4
21D739125	4/22/2021	50m - Deep	2397192	<2
21V740168	4/26/2021	50m - Deep	2405200	7
21V743363	5/4/2021	50m - Deep	2442685	2
21V745830	5/10/2021	50m - Deep	2463480	4
21V750654	5/18/2021	50m - Deep	2502075	6
21V750654	5/18/2021	50m - Deep A	2502078	5
21V753081	5/25/2021	50m - Deep	2524831	<2
21V753081	5/25/2021	50m - Deep B	2524842	<2
21D702158	1/17/2021	50m - Shallow	1983722	6
21V703699	1/21/2021	50m - Shallow	2009412	7
21D705283	1/26/2021	50m - Shallow	2020015	6
21D707923	2/2/2021	50m - Shallow	2057334	7
21D707923	2/2/2021	50m - Shallow A	2057337	6
21D712018	2/13/2021	50m - Shallow	2112769	13
21D712052	2/15/2021	50m - Shallow	2112970	18
21D712052	2/15/2021	50m - Shallow A	2113001	6
21D736495	4/17/2021	50m - Shallow	2372447	15
21D739125	4/22/2021	50m - Shallow	2397194	7
21D739125	4/22/2021	50m - Shallow B	2397195	<2
21V740168	4/26/2021	50m - Shallow	2405198	6
21V740168	4/26/2021	50m - Shallow B	2405199	<2
21V743363	5/4/2021	50m - Shallow	2442759	10
21V743363	5/4/2021	50m - Shallow B	2442760	<2
21V745830	5/10/2021	50m - Shallow	2463479	2
21V745830	5/10/2021	50m - Shallow A	2463483	<2
21V750654	5/18/2021	50m - Shallow	2502073	7
21V753081	5/25/2021	50m - Shallow	2524828	<2
21D702158	1/18/2021	REF1 - Deep	1983717	5
21V703699	1/21/2021	REF1 - Deep	2009410	5
21V703699	1/21/2021	REF1 - Deep A	2009411	6
21D705283	1/26/2021	REF1 - Deep	2020006	8
21D707923	2/2/2021	REF1 - Deep	2057340	4
21D712018	2/13/2021	REF1 - Deep	2112774	9
21D712052	2/15/2021	REF1 - Deep	2113004	35
21D736495	4/17/2021	REF1 - Deep	2372446	8
21D739125	4/22/2021	REF1 - Deep	2397196	<2
21V740168	4/27/2021	REF1 - Deep	2405197	15

21V743363	5/4/2021	REF1 - Deep	2442761	8
21V745830	5/10/2021	REF1 - Deep	2463482	<2
21V750654	5/18/2021	REF1 - Deep	2502076	28
21V753081	5/25/2021	REF1 - Deep	2524844	2
21D702158	1/18/2021	REF1- Shallow	1983720	9
21V703699	1/21/2021	REF1- Shallow	2004784	7
21D705283	1/26/2021	REF1- Shallow	2020014	13
21D707923	2/2/2021	REF1- Shallow	2057339	9
21D712018	2/13/2021	REF1- Shallow	2112773	12
21D712052	2/15/2021	REF1- Shallow	2113003	7
21D736495	4/17/2021	REF1 - Shallow A	2372445	11
21D736495	4/17/2021	REF1- Shallow	2372441	12
21D739125	4/22/2021	REF1- Shallow	2397197	7
21V740168	4/27/2021	REF1- Shallow	2405196	5
21V743363	5/4/2021	REF1- Shallow	2442762	13
21V745830	5/10/2021	REF1- Shallow	2463481	<2
21V750654	5/18/2021	REF1- Shallow	2502077	14
21V753081	5/25/2021	REF1- Shallow	2424843	13

Table Legend:	
	Exceeds BC WQG, CCME WQG, or BC CSR WQG at Compliance Monitoring Locations (Within 50 m of pile driving and 100 m south of Revetment)
	Exceeds BC WQG, CCME WQG, or BC CSR WQG. However, sample location is not a compliance monitoring location.

Appendix I: Assessment Of In Situ Water Quality Against The Long-term Guideline

Sampling Location	Turbidity (NTU)											
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	21-Jul	21-Aug	21-Sep	21-Oct	21-Nov	21-Dec
REF 1 - 1 m below surface (average daily measurement)	4.56	5.29	NR	9.83	6.50	NR	NR	NR	NR	NR	NR	NR
REF 1 - 1 m above surface (average daily measurement)	2.37	2.36	NR	4.22	6.50	NR	NR	NR	NR	NR	NR	NR
REF 1 - Average Turbidity for Vertical Profile	3.47	3.83	NR	7.03	6.50	NR	NR	NR	NR	NR	NR	NR
50 m from Marine Piling - 1 m below surface (average daily measurement)	3.42	2.63	NR	4.81	3.52	NR	NR	NR	NR	NR	NR	NR
50 m from Marine Piling - 1 m above surface (average daily measurement)	4.34	2.08	NR	5.06	2.60	NR	NR	NR	NR	NR	NR	NR
50 m from Marine Piling - Average Turbidity for Vertical Profile	4.34	2.08	NR	5.06	2.60	NR	NR	NR	NR	NR	NR	NR
Compliance check (<2 NTU above REF 1 average turbidity profile)	0.87	-1.74	N/A	-1.97	-3.91	NR	NR	NR	NR	NR	NR	NR
NR = Not Required												

Appendix J: Assessment Of Ex Situ Water Quality Against The Long-term Guideline

Sampling Location	TSS (mg/L)											
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	21-Jul	21-Aug	21-Sep	21-Oct	21-Nov	21-Dec
REF 1 - 1 m below surface (average daily measurement)	9.67	9.33	NR	8.75	10.50	NR	NR	NR	NR	NR	NR	NR
REF 1 - 1 m above surface (average daily measurement)	6.00	16.00	NR	8.33	10.00	NR	NR	NR	NR	NR	NR	NR
REF 1 - Average Turbidity for Vertical Profile	7.83	12.67	NR	8.54	10.25	NR	NR	NR	NR	NR	NR	NR
50 m from Marine Piling - 1 m below surface (average daily measurement)	6.33	10.00	NR	9.33	4.60	NR	NR	NR	NR	NR	NR	NR
50 m from Marine Piling - 1 m above surface (average daily measurement)	10.75	8.33	NR	4.33	3.80	NR	NR	NR	NR	NR	NR	NR
50 m from Marine Piling - Average Turbidity for Vertical Profile	8.54	9.17	NR	6.83	4.20	NR	NR	NR	NR	NR	NR	NR
Compliance check (<25 mg/L above REF 1 average turbidity profile)	0.71	-3.50	N/A	-1.71	-6.05	NR	NR	NR	NR	NR	NR	NR
NR = Not Required												