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Prepared by:	Patty Burt, RP Bio, AQP (MESL)	)				

# **REVISION LOG**

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0	02 June 2021	Patty Burt, RP Bio, AQP		
1	07 June 2021	Patty Burt, RP Bio, AQP	Werner Beukes, RP Bio	Section 2.2: Provided by PGC Section 3.3: 21 May 2021 incident added. Section 4.6: Changed 5 locations to 7 Section 4.11: Changed suspected to confirmed contaminated soil. Table 4: 19 May 2021 added water data.
2	22 June 2021	Werner Beukes RP Bio		Section 3.3 NCR's 42 & 43 added Section 4.7 bycatch footnote added Acronym descriptions have been added to Appendix 3

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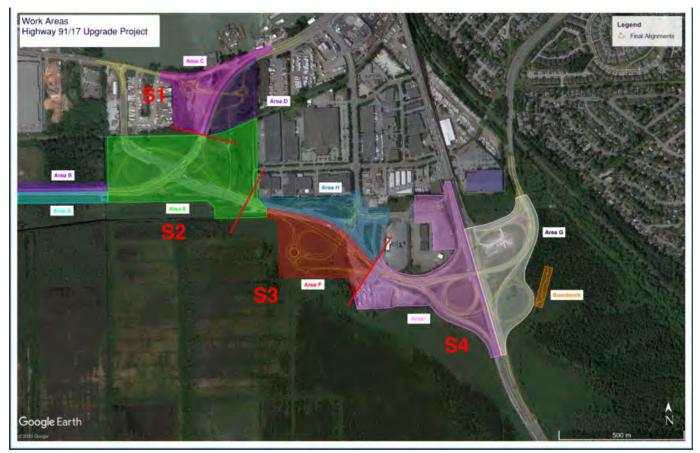
Appendix 1 Key Plan Drawing Appendix 2 Spill and Incident Tracker Appendix 3 Wildlife/Fish Salvage Results Appendix 4 Permit Tracker Appendix 5 Permit Conditions Tracker Appendix 6 Status of TOCA Commitments Table Appendix 7 Water Quality Data Appendix 8 Toolbox Training Records Appendix 9: Incident Reports-Including Spills over 5 L



## 1.0 INTRODUCTION

This report covers all construction activities that had occurred from 01 to 31 May 2021 on the Highway 91 17 Upgrades project. During this period works occurred in Areas C, E, F, G, H, and I. For the purposes of this report, the following areas shall be defined as:

- Area C: Portion of River Road West of Highway 17 (Includes L250, L275, L325, L350, part of L375)
- Area E: Sunbury Mounds L500, L575 and L550
- Area F: MK Delta (L1150S/1160/1170/1400) and C01 detour
- Area H: L1300 Weigh Scale
- Area G: Delta Nature Reserve (L2300/2400)
- Area I: West side of Hwy 91, truck parking area, E02 and E04 Detour (L2100/L2200/L600E and W)



• A Key Plan has been included showing the project alignments (See Appendix 1).



# 2.0 CONSTRUCTION ACTIVITIES

## 2.1 Activities for this Period

#### The following works took place within Section 1 from 01 to 31 May 2021:

#### Area C

- Preload removal at L275 & L250 material hauled to S3 parking lot. L350/L275 slopes are shaped to embankment design, continued progress of removal of sand and placement of Sub-Grade, Sub-Base lifts at these locations. Placed curbs along the L275, L325 and slopes nearing completion along the L250.
- Power pole relocation by BC Hydro and Telus relocating fibers.
- First concrete pour was completed at the Section 1 Bridge (west side). Jacob Brothers poured the bridge abutment on the North Wall and working on rebar installation on South wall stem wall which was completed later in the month (Photos 1 to 3).
- Load, hauled and placed surcharge along the L350 / L325 / L375.
- Subbase placement, curb, and gutter at the west roundabout on the below listed alignments, L350, L375, L325, L275, L250, L375.
- Installed CB 140 and its lead on River Road asphalt removal area and final preparation work below the sidewalk grade at the west roundabout on the Southwest side.
- PGC Environmental manager conducted a bird nest sweep before Triex trimmed trees for lighting installations. TWE installed light bases, electrical streetlamp vault and electrical connection at roundabout.
- SFPR basket wall was removed and backfilled.
- FRPD started pile driving for guide sign #42 and #50.

#### <u>Area D</u>

- No works were completed in Area D.
- General view of Silda Ditch conditions at low tide (Photo 4).

#### The following works took place within Section 2 from 01 to 31 May 2021:

#### <u>Area A</u>

- No works in Area A.

#### <u>Area B</u>

- No works in Area B.

#### <u>Area E</u>

- L575: Menard operations and installations ongoing, placed 6 out of 7 stone columns in test pad area (Photo 5), removed preload and temporary wire wall along 91C. Slope shaping along the L575 adjacent to the ditch line. Topsoil placement on north slopes, excavation of the crane pad-hauling material to stockpile north of L575 and continued with wet feed columns.
- L500: Removed preload and completed testing compaction, wildlife sweep was completed prior to geo-tech investigation (Photo 6).
- L550E: Mitigation of the steep slope to a flatter slope. The removal of sand that migrated from site (uphill) to an area near the bog watercourse (Photos 7 and 8). No instream works were done as no sand entered the watercourse. Removed wire baskets & the sand behind them from the temporary wire basket wall. Wildlife sweep completed prior to geo-tech investigation.
- Continued the wildlife crossing installation Culvert 240 (Photos 9 and 10).
- Excavated suspect contaminated material North of IN240, placed on and covered with poly sheeting. Soil samples were sent to the lab for analysis.
- Old guide sign located at L500 by Silda Ditch was taken down to make room for Culvert 240.
- L500N excavated for the temporary detour CB lead, stripping adjacent to Silda Ditch for further excavation for STM 330 and breaking the concrete base of the guide sign that was taken down.



- Stormtec water treatment facility was used during the excavation of STM 330, suspected contaminated groundwater. Continued the installation of STM 255.

#### <u>Hwy 99</u>

- No works at Hwy 99.

#### The following works took place in Section 3 from 01 to 31 May 2021:

#### <u>Area F</u>

- L500E Lock block placement continued.
- L1150 and L1160 continued placing preload.
- Removal of asphalt at the old truck parking entrance
- Placement of peat for berm stabilization (Photo 11)

#### <u>Area H</u>

- Fish salvage completed on 04 May 2021 (Photo 12).

#### The following works took place in Section 4 from 01 to 31 May 2021:

#### <u>Area I</u>

- L2100 Placement of road plates downstream of Bog perimeter ditch (Photos 13 and 14). Infilling of ditch PGC Environmental Representative did regular monitoring during this entire operation.
- L2100 Building wire wall, embankment filling and preload placement and row of baskets (Photos 15 to 18).
- L2200 Hauling preload sand to L2400 and installing culvert, installed lamp post base and backfilled.
- L600W Stone columns progressed and Menard preformed CPT tests
- L600 Completed preload placement up to north end of L600 alignment
- Wall 407 Completed mid-21st row out of total 24.
- Wall 405 Working on the 6th row of baskets.
- Filled in the shoulders against E04 barriers.

#### <u>Area G</u>

- Continue work on the L600 E wall with the installed seismic geogrid from L2100 tie-in and placement of basket rows.
- L2300 Placing preload.

#### New Truckstop B01 Detour Nordel Way

- No works at the New Truckstop.

#### 2.2 Upcoming Activities

#### Section 1:

L325 - CB installations, subgrade preparation, install street lighting, placement of curbs and gutters, placement of topsoil. Install bioswales and spillways, hydro-seeding. Placement of barriers and line painting.

L350 - Subgrade preparation install street lighting, placement of topsoil. Install bioswales and spillways, hydro-seeding. Placement of barriers and line painting.

L375 - Curb and gutter work, completion of sidewalk, roundabout island landscaping. Complete shouldering activities, topsoiling, hydro-seeding, and line painting.

L275 - Complete sidewalks. S1 Bridge- Install Overhangs/Edges. Form, rebar, form, pour and cure diaphragm. Form, rebar, form, setup, pour, cure and strip deck. Form, guiding installations to continue.

#### Section 2:

L575 - Placement of SGSB & WGB, install street lighting and bases. Install rip rap end treatments at all culverts as well as swales, Complete streetlight poles & wiring. Guide sign removal, subgrade preparation and install CBs. L550 - Complete STM 210 & culverts. Subgrade preparation (C03).



L400 - Surcharge preload fill placement. L575 - Stone column installations to continue.

Section 3: No activities planned

Section 4: L600 E- Placement of surcharge fill.

L2200 Mill and overlay tie-ins, add shouldering material, install roadside barrier and eradicate old line painting. Complete STM 405. Remove detour electrical services, remove existing ramp, complete STM420, complete swales and ditching, hydroseed/planting.

## 3.0 ENVIRONMENTAL ISSUES

#### 3.1 Environmental Incidents

5 May 2021: At approximately 20:25 a sand delivery truck and trailer had a mechanical failure and spilled approximately 2 L of hydraulic fluid onto placed preload. The spill was contained, and absorbent spill pads were placed on the surface to absorb any surface fluid. All the contaminated soil was dug out and sent to the PGC waste management for disposal by the sub-contractor. The used spill pads were properly disposed of at the Haz-Mat area by the office trailers.

#### 3.2 Non-Compliance

No reportable non-compliance for this reporting period.

#### 3.3 Non-Conformance

21 May 2021: L1400. During a site inspection, it was observed that construction materials (River Sand) have migrated into the water course area of the Burns Bog approximately 500 mm after an isolation road plate was removed. Upon further investigation it was found that the sand was within the extended WSA permit area. PGC has removed the excess sand from the bog-ditch area with a long reach excavator. Bog peat has been placed on the sides for stabilization

27 May 2021: During a Province audit conducted on March 19, 2021 (NCR 0042), it was discussed between the Province Representatives and PGC that the existing stockpiles of contaminated materials on the L550 location should have a poly protective covering over them. PGC has tasked their operations teams to complete the action of covering the in-situ stockpiles appropriately in accordance with the requirements of the applicable specifications. The teams used an impermeable 6 mil poly, that was installed over the entire stockpile(s) and weighted in place with sandbags, ensuring that the protective covering does not come off.

28 May 2021: During a Province inspection conducted on April 14, 2021 (NCR 0043), it was observed by the Province representative that Water was mixing with the sand and providing the opportunity the for introduction of water and sand that in not compatible with bog Vegetation (Mineralization and pH above bog levels). This is mostly in part because there is no barrier preventing surface water from flowing down through the sand and then into the bog. PGC acted by using a long-reach excavator to remove excess sand from the toe of the slope where the issue was witnessed. Slopes were packed with the back of the excavator bucket to stabilize the slopes. PGC has started with the placement of bog-peat on the slopes of the embankment fill. This is work in progress and will be completed shortly.



31 May 2021: A stockpile (excavated as part of STM 255) was located outside the allowable Project Limits on Vancouver Fraser Port Authority (VFPA) land, adjacent to the VFPA access road. STM 255 is located outside the known contaminated soil delineation boundaries and therefore the excavated soil was not contaminated. The PGC Environmental Representative responded immediately and inspected the incident. It was witnessed that the surrounding environment was not impacted with no signs of sediment migration into any waterbodies. Preparations were made and a crew was mobilized a crew to relocate the stockpile into the project right of way. (*Appendix 9* for the report).

## 3.4 Opportunities for Improvement

Toolbox training is staying relevant with the activities on site. Construction Superintendents are being reminded that works in and around environmentally sensitive areas require the presence of an AQP.

### 3.5 Outstanding Environmental Issues

The following ongoing monitoring is being conducted (Table 1):

Item No	Date	Environmental Issue or Required Action	Corrective Action	Projected Closure Date	Open/ Closed	Comments
83	14-April	L1170. It was observed by the Province representative that placed preload sand has migrated from the embankment fill to the toe of the slope. Water was mixing with the sand and providing the opportunity for Mineralization	NCR 0043 was raised. PGC has commenced with work to remove sand from the toe of the slope with a long reach excavator and the placement of bog peat on the embankment slopes for stabilization.	11 June	Open	Work is currently underway to remove sand from the toe of the slope and to complete the placement of peat on the sides of the embankment fill.

Table 1: Environmental Issues Tracking Table

## 4.0 ENVIRONMENTAL MONITORING AND INSPECTION RESULTS

Daily site inspections were held during the reporting period by PGC (a representative was available during the day and night shift, as applicable). PGC also conducted a '*Bird and Bat Awareness (5 and 14 May 2021), Stormwater Control Practices (5 May 2021), Spill Tray Use and Hazardous Materials Management/Hazardous Materials Storage (18 May 2021) and Dewatering (28 May 2021) Toolbox' trainings to remind crews on environmental practices (see Appendix 8). All operators and equipment were visited/inspected numerous times to ensure that all BMPs are adhered to. Regular equipment inspections are being done and kept on record by PGC.* 

MESL conducted field visits on the mornings of 5, 11, 19 & 26 May 2021. PGC had indicated that all equipment is checked prior to arriving onsite to ensure that each piece is free of excess grease, leaks, and foreign materials. Machinery is also checked to ensure they are equipped with a fully stocked spill kit, spill tray and fire extinguisher.

## 4.1 Air Quality and Dust Control

Water trucks are onsite and are put into use during drier periods for dust suppression. No issues were recorded during the month of May.



## 4.2 Noise and Vibration Management

Monthly noise monitoring was conducted over a 24-hour period on 20/21 May 2021 results are in **Table 2** below. Slightly higher readings for maximum results were observed during both shifts due to nearby construction activities however, all recorded values were within a 15% exceedance of the baseline data. The slight exceedances are anticipated and no cause for concern. The shading used in **Table 2** described as follows:

**Grey shaded**: New revised baseline data (PGC letter Rev01 PGC-COR-000174 to MoTI - dated April 28, 2021) **Green shaded**: Noise monitoring data not exceeding 15% of the baseline data **Yellow shaded** (not used): Noise monitoring data is between 15%-30% of the baseline data **Red shaded** (not used): Noise monitoring data exceeds 30% of the baseline data



#### Table 2. Monthly Noise Monitoring Data.

					BAS	ELINE (N	light)	RESULTS (Night)		
Start time	Location	Description	Ambient noise	GPS, Lat Long	Avg. (dB)	Min. (dB)	Max. (dB)	Avg. (dB)	Min. (dB)	Max. (dB)
			20	May 2021						
21:00:00	2	Sunbury Mounds (Section 2)	C03 construction. Menard activities at the L575	49°8'59.37 <b>"N;</b> 122°57'23.23"W	60.5	51.9	74.9	62.7	52.9	72.8
21:40:00	4	Nordel underpass South (Section 4)	Construction of the L600E & L600W wall	49°8'37.41"N; 122°56'19.07"W 60.		54.9	87.9	65.1	59	90
			21	May 2021						
		River Road	Preparation work for	49°9'9.58"N;	BASELINE (Day)			RESULTS (Day)		
11:45:00	1	West (Section 1)	pavement installation. Bridge construction.	122°57'6.55"W	68.1	64.7	73.9	70.9	68.9	83.9
12:30:00	2	Sunbury Mounds (Section 2)	CO3 construction. Menard activities at the L575- Excavations at STM330	49°8'59.37"N; 122°57'23.23"W	73.6	65.8	86.7	75.7	70.1	90.9
13:45:00	4	Nordel underpass South (Section 4)	Construction of the L600E & L600Wwall	49°8'37.41"N; 122°56'19.07"W	68.1	64.7	73.9	73.3	69.9	84

#### 4.3 Erosion and Sediment Control

Daily monitoring is done by PGC Environmental Representatives, Site Supervisors, and Foreman to ensure the installed sediment fences are fully functional in affected areas. Sediment control fences have been installed in active areas to prevent sediment run-off from clearing and grubbing activities in addition to containment of preload, stockpiles, and isolation of wildlife. Silt fencing has been kept in place and maintained to deter salvaged wildlife from reentering active construction areas. PGC continues to proactively inspect fencing and direct repairs as needed, as is a high priority activity.

Paved surfaces were observed in overall clean condition and TSI has been routinely observed at the site actively sweeping public roadways during night shifts. Most areas were relatively stable having been covered with preload sand which was generally absorbed the erosive forces of the rain and they drain well.

#### 4.4 Water Quality Management

Water was monitored in the L2100 ditch before and after the installation of a road plate to block off the ditch for construction purposes on 05 May 2021. No significant change water parameters were recorded during or after the completion of the construction activity in this area. Water monitoring was conducted in Silda Ditch during low tide to investigate if tidal influence makes a difference in the turbidity of water in this ditch.

For the rest of the month, water monitoring was conducted in Silda Ditch during low tide to investigate if tidal influence makes a difference in the turbidity of water in this ditch. This data will be used as a baseline to compare in coming weeks and the tide timetables are being incorporated into this section (*Appendix 7*).





Figure 2: Current water sampling locations.

#### 4.5 Wildlife and Habitat Management

No wildlife savages had been completed during the reporting period. The General Wildlife Permit for wildlife salvage (SU20-601719) has expired and PGC has applied to FLNRORD for a permit renewal. The renewal has not yet been received, FLNRORD has indicated that the time lag is anywhere from 30 to 60 days from 10 May 2021. The permit tracking table has been updated.

## 4.6 Vegetation Management.

PGC witnessed Japanese knotweed plants emerging in new areas and regrowth in areas that were previously infested. PGC contacted Diamond Head Consulting and herbicide treatment was applied at seven locations on 28 May 2021 (Photo 19).

#### 4.7 Fisheries Habitat Management

PGC and MESL/Brybil completed the fish salvage<sup>1</sup> at Area H on 03/04 May 2021. In total there were 26 Northwestern salamanders (*Ambystoma gracile*), 439 three-spined stickleback (*Gasterosteus aculeatus*), one coho (*Oncorhynchus kisutch*), one green frog (*Lithobates clamitans*) and 8 bullfrogs (*Rana catesbeiana*) (*Appendix 3*).

<sup>&</sup>lt;sup>1</sup> As bycatch under Condition 3 of the fish salvage permit which is held by a QEP, the non-fish and non-listed (red or blue listed) species were carefully returned to immediately adjacent suitable habitat (i.e. not translocated over kms or hours) outside of the area of construction.



## 4.8 Concrete Works and Grouting Management

PGC held a meeting with Jacob Brothers (PGC sub-contractor) who are responsible for concrete works at the Section 1 Bridge construction area. The meeting was to discuss the importance of the correct handling of concrete waste and wastewater. The first concrete pour was completed 6 May 2021 at the Section 1 Bridge by Jacob Brothers, who have been observed by a PGC representative following to steps that were outlined in the recent toolbox training and are adhering to the correct protocols for handling of concrete waste and wastewater. PGC has obtained a CO<sup>2</sup> bubbler for high pH water run-off mitigation and is on standby during all concrete pours. All concrete trucks are washed off site and all concrete mixes that do not meet the specified criteria are removed from site by the service provider. By the end of May it is estimated that approximately 40% of all concrete work at the west section of the bridge have been completed.

#### 4.9 Waste Management

Yellow wheelie bins were readily available and fully stocked at each active work location while mobile equipment was also equipped with spill kits. PGC has provided checklists based on the CEMP (Rev 6) and ensures that any depleted supplies within these bins are restocked immediately (as per the inventory posted on the inside of the lid).

It is MESL understanding that mobile equipment is frequently moved, but extra drip trays have been observed in equipment storage locations. Crews are being reminded that drip trays are readily available should they encounter a piece of equipment that is missing one. Toolbox Training in this month focused on spill trays usage (*Appendix 8*). There has been an overall improvement and awareness on site with regards the use of drip trays.

Hydrocarbon wastes were neatly stored in labelled drums near the site office. The tent covering at the hazardous waste management area that was previously damaged by the wind in still functioning at intended and the secondary containment that was installed is being used. All drums are to be placed on plywood inside the secondary containment berm to prevent damage to the secondary containment liner.

Date (2020/21)	Location	Haz-Material Stored	Volume m <sup>3</sup>	Comments	Date of Disposal
13 July 2020	PGC Site Office Yard	Spent absorbents	N/A	Approximately 2-3 L of diesel was spilled on the pavement. Spent absorbents to be collected by Tervita.	TBD
28 July 2020	L575 Preload Area	Spent absorbents	N/A	Less than 1L of oil to spill tray, absorbent pads used to mitigate spill to ground. Spent absorbent pads to be collected by Tervita.	TBD
17 Sept 2020	Burns Bog perimeter ditch	Spent Absorbents	N/A	<ul> <li>~100 mL of engine oil to water. Spent</li> <li>N/A absorbent pads to be collected by Tervita.</li> </ul>	
21 Sept 2020	Site office waste area	Spent Absorbents	N/A	Excess pads that were placed in spill trays. Spent absorbent pads to be collected by Tervita.	24 September 2020-3 barrels
24 Sept 2020	Site office waste area	Spent Absorbents	N/A	Excess pads that were placed in spill trays. Spent absorbent pads to be collected by Tervita.	24 September 2020-3 barrels
24 Sept 2020	Site office waste area	Used aerosols	N/A	Spray paint cans that had collected to date.	24 September 2020-3/4 of a bin
25 Oct 2020	PGC Site Office Yard	Used aerosol paint cans, contaminated	55 m <sup>3</sup>	Spray paint cans that had collected to date, damaged drum with the soil and empty containers.	25 October 2020

Table 3: Hazardous Waste Storage and Disposal Tracking



		soil and plastic oil containers.			
3 Nov 2020	Site office waste area	Wood waste bin	N/A	Pallets and other wood by products	3 November 2020
2 Dec 2020	Site office waste area	Spent absorbents, drum contaminated soil, plastic oil containers, bags with contaminated soil.	1.7 m <sup>3</sup>	Used spill response materials and contaminated soils.	02 December 2020
11 Feb 2021	PGC Site Office Yard	Used spill pads, used aerosols, oily plastics and contaminated soil	N/A	Aerosols taken to recycling depot by PGC, spill pads, oily plastic and soil removed from site by Tervita	11 February 2020
21 March 2021	PGC Site Office Yard	Hazardous Waste	N/A	All hazardous waste was removed from the site by Tervita: manifest #BC064745-5	21 March 2021

#### 4.10 Emergency Response

No emergency responses were recorded during this reporting period.

#### 4.11 Contaminated Sites Management

Suspected contaminated soils have been sampled and stored correctly while excavating the wildlife culvert. Poly sheeting is being used and monitored when covering confirmed contaminated soils (Photo 20). PGC is currently waiting for the Application in Principle (AiP) Approval from the Ministry of Environment and Climate Change to dispose of contaminated stockpiles as per the stipulated requirements.

#### Date Soil Water Section 1 Nothing to report this period. Nothing to report this period. Section 2 Approximately 200 m<sup>3</sup> suspect contaminated soil excavated Water treatment plant samples from STM 330 excavation 19 May 2021 from wildlife culvert - Samples has been obtained. Suspect sent to the lab 31 May 2021 prior to discharge. Results stockpile has been placed on poly sheeting and covered. are currently pending. Lab results indicated that the soils were <IL standards. 80 m<sup>3</sup> suspect contaminated soil excavated from STM 255. 28 May 2021 Placed on poly and covered. Samples have been sent to the lab 31 May 2021 - Results are currently pending. Section 3 Nothing to report this period. Nothing to report this period. Section 4 Nothing to report this period. Nothing to report this period.

#### Table 4: Contaminated Sites Tracking

# 5.0 ENVIRONMENTAL PERMITS

## 5.1 Status Update

A Permit Tracker is provided in *Appendix 4*. Still outstanding: Renewal of the FLNRORD wildlife salvage permit was submitted 31 March 2021. On 05 May 2021, FLNRORD informed Brybil that it could take up to 30-60 days for a permit based on COVID and as of 31 May 2021, it tracking number has not been assigned to anyone for review.

A Permit Conditions Tracker is included as *Appendix 5* outlining all DFO and WSA permit terms and conditions.



## 5.2 Status of the Table of Commitments and Assurances

The status of completed and ongoing commitments in the Table of Commitments and Assurances is provided in *Appendix 6*.

## 6.0 CONCLUDING REMARKS

Although minor deficiencies were noted and being communicated to the operational team so they can be addressed in a timely fashion and active construction areas were generally compliant with pertinent guidance documents and legislation. PGC continues to issue an internal tracking list that is related to the respective sections. This will provide information pertaining to all open issues on the respective work fronts. When new issues are highlighted this list and remaining pending items will be sent to each section's site superintendent for action. PGC has observed that this is an effective way to highlight open items to the responsible people on site.



## 7.0 SITE PHOTOS



Photo 1. Section 1 Bridge west (C), temporary waste concrete management area.



Photo 2. L275 (C), general site view of Section 1 bridge construction.





Photo 4. L475 (D), general view Silda Ditch during low tide.









Photo 9. L550 (E), wildlife sweep at the old wildlife culvert prior to closure of the entrance with geo-textile fabric.



Photo 11. L1170, (F), peat placement on the sides of the embankment fill for bank stabilization.





Photo 12. L1300 (H), electro-fishing fish salvage.





Photo 14. L2100 (I), obtaining baseline data prior to instream works at Bog perimeter ditch.







Photo 18. L2100 (I), shaping the slopes of the preload.



49°8'39"N -122°56'21"W Delta HWY 91/17 Upgrade project May 17, 2021 9:06:38 p.m. Photo 15. L2100 (I), general view of wire wall construction activities.



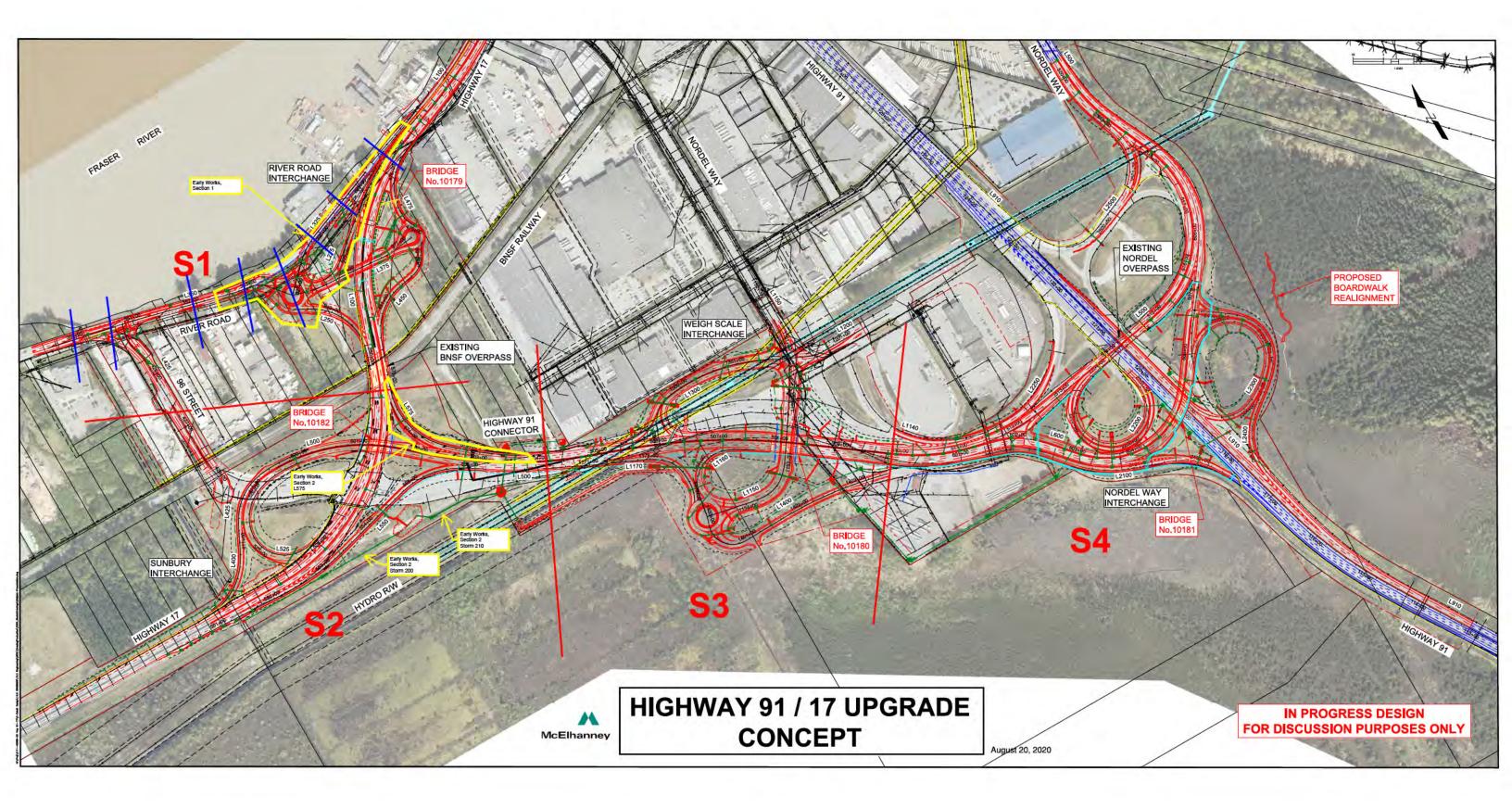
Photo 17. L2100 (I), general view of work activities.



Photo 19. L550 (E), treatment of Japanese Knotweed plants done at 7 locations on site.



## APPENDIX 1: KEY PLAN DRAWING



## APPENDIX 2: SPILL AND INCIDENT TRACKER

	HWY 91/7 SI E Environmental Spill and Incident racking																
ncident #	Date Of Event	Date Reported	Date Initial Notification Issued	Shift	Approx ime	Contractor	Sub Contractor	Silo	Classification	Description of Event	Location	Fluid Amount (L)	Fluid ype	ype of Equipment	Causal Factors	Action aken	Corrective Actions Date Complete
21	-Jan-21	-Jan-21	ssuea 5-Jan-21	Night	20:31-21:00	PGC	Delta Aggregate		Minor sp II (<1L)	Hydraulic ine broke	S3L1 00	<500mL	Hydraulic fluid	Rock truck (Volvo T-13)	Normal wear and tear on moving machine parts (hydraulic line); unforseen circumstances.	Leaking hydraulic line noticed during pre-shift inspection. Operator shut drwn the machine scurce and or the provide block with the leak. Machine was parked with its box up how leak was found and in the locket position. A split tray was placed be ov the leak, and contaminated pads and lead block ware removed. A split tray bads and lead block ware removed in leak in the morning (05 Jan 2021).	5Jan-21
22	6-Jan-21	6-Jan-21	6-Jan-21	Day	9:01-9:30	PGC			Minor sp II (<1L)	Hydraulic ine broke	S2 L500 preload	<500mL	Hydraulic fluid	Excavator (CAT 320E)	Normal wear and tear on moving machine parts (hydraulic line); unforseen circumstances.	Leaking hydraulie line noticed on born during operation. Operator shut down the machine immed ately and p aced spill pads on the leak. Source and on the ground below the leak. Charamaniated pads and sand below the leak. Charamaniated pads and sand below the provide for disposal. Mechanic repaired the broken ine ater in the day.	6-Jan-21
23	12-Jan-21	12-Jan-21		Night	00:01-00:30	PGC				Silty water re eased to 96th St d tch	S2 adjacent to 96th st ditch	unknown quant ty of water	silty water		not ollowing sit practices. No EM present. Working during heavy rain event	Work was immediately stopped and pumps turned off.	Jan 17 - EM will be present for operations to resume with a dewatering p an in p ace.
2	1 -Jan-21	1 -Jan-21	1 -Jan-21	Day	1 :31-15:00	PGC			Spill (1.1 L - 5L)	Hydraulic hose broke	S2 L500 preload	<5L	Hydraulic fluid	Dump truck	Normal wear and tear on moving machine parts (hydraulic line); unforseen circumstances.	Hydraul c line burst whi e raising box of dumptruck to foad sand. Machine was immed ately turned off. Hydrau ic fluid spilled onto machine and preload sand. Spil pads were apple et to ground and machine. Contaminated sand that had aborbed o lues guiddy removed and bagged for disposal. O I was fully cleaned off machine and surrounding ground.	Trucking company took machine out of service and wil complete repairs offs te.
25	10-Feb-21	10-Feb-21	11-Feb-21	Night	3:31- :00	PGC	Nordel Trucking		Spill (1.1 L - 5L)	Tandem truck fai ed to ower box causing coll sion with bridge	Underside of the Nordel Way overpass	3- L	Hydraulic fluid	Dump truck	Damage to the bridge and the luid re ease	It is unclear at this point what immediate act on was taken by the sub-contractor after the in-dent occurred. This incident is currently under invest gatom. The daysh if one we observed the spi in the asphalt and the read shoulder. A desmap was initiated and approximately 2.5 m <sup>2</sup> into super sack hags. The bags were taken to the RFC waster management area and placed under polyethene plasts. The removal of the contaminated solid by the PGC service provider has been requested.	Incident s currently under investigation
26	16-Feb-21	16-Feb-21	16-Feb-21	Night	11:01-11:30	PGC	Delta Aggregate		Minor sp II (<1L)	Mechan cal ailure caused oil to spill into spill tray	L1 00 pre-load	approx. 500ml	Engine oil	Rock truck (Volvo T-13)	Mechanical failure	At approximately 11:15 pm a smal amount of engine oil spil ed onto the placed pre oad sand. This was because of a mechanical falure of a stat onary rock truck not in use. The oil was dripping into the drip tray and approximately 500 mm of oil was spil ed on the preload surface.	Equipment main enance
27	17-Feb-21	17-Feb-21	17-Feb-21	Day	8:31-9:00	PGC	Norland		Minor sp II (<1L)	Mechan cal ailure caused hydrau I c oil to sp II into excavator bucket	L-550 culvert instala ion	approx. 500ml	Hydraulic fluid	Excavator (CAT 328D)	Mechanical failure	At approximately 8:57am a sp T occurred during a bucket change on accurator which resulted in less than 1. of hydraul coil making con act with the ground. Luck ly the excavator arm was above the bucket and the majority of the hydraul coil dripped into the excavator bucket. Sp II pads were immediately deployed, and the sp II was cleaned up.	The Excavator was repaired
28	23-Mar-21	23-Mar-21	23-Mar-21	Night	13:31-1 :00	PGC	Norland		Large Spill (5.1L - 99.9L)	Mechan cal ailure caused hydraul c oil to sp II into asphalt	L-2 00 on the higway off ramp	approx. 10L	Hydraulic fluid	Haul truck	Mechanical failure	At approximately 13. 5 a soil occurred when a dump truck was uncleafugs and for profeed placement. The hydrau ic oil spill released apportimately (10. to the asphalt Luckly the asphalt was covered in fine sand wh ch absorbed the spiller material. Spill pads were immed ately dep oyed, and the contaminated sand was exervated by hand bagged and stored on s te for later disposal to an appropriate off s te to Fig. 19.	The Dump truck was removed from s e and sent to a fac ity for repairs
29	23-Mar-21	23-Mar-21	23-Mar-21	Night	21:31-22:00	PGC	Nordel Trucking		Spill (1.1 L - 5L)	Mechan cal ailure caused hydraul c oil to sp II into asphalt	L-2 00 on the higway off ramp	3-5 L	Hydraulic fluid	Haul truck	Mechanical failure	At approximately 21: 5 a tandem truck was busy offloading preland sand. "While fitting the load box in hydrau ic line burst open causing approximately 3-6 L of hydraulic fluid to spil onto the asphat area. Absorbert pads were placed at the spil area and all contaminated so is were removed. A hazardous waste pickup is schedu ed by Tervita.	The Dump truck was removed from s e and sent to a fac ity for repairs
30	26-Mar-21	26-Mar-21	26-Mar-21	Day	16:01-16:30	PGC	Menard		Large Spill (5.1L - 99.9L)	Mechan cal ailure caused a d esel spi1 onto soll	L910 on the shoulder of the road	approx 10-20 L	Diesel Fuel	Dump Trusk	Mechanical failure	At approximately 16:00 a spi ) occurred when a dump truck drove of the read. The spil released approximately 20L of dieset to the ground. The spi I did to affect the nearby vaterway and the spi I accontained the nearby vaterway and the spi I accontained the spi I. Spi I pads, boroms and a drop tray ware immediately dep oyed, and the contaminated soil was excavated with a hydro- viac and sent off a feo for dspoal to an appropriate off-ate facility.	Truck immediately removed from ete and will be repaired by a mechanic in the morning.

										E	HWY 91/17 SI E nvironmental Spill and Inciden	racking					
ncident #	Date Of Event	Date Reported	Date Initial Notification Issued	Shift	Approx ime	Contractor	Sub Contractor	Silo	Classification	Description of Event	Location	Fluid Amount (L)	Fluid ype	ype of Equipment	Causal Factors	Action aken	Corrective Actions Date Complete
31	1 -Apr-21	1 -Apr-21	1 -Apr-21	Day	15:31-16:00	PGC	Delta Aggregate			Mechan cal ailure caused a hydraul c oil spi i onto soll	L1 00 on the sand preload haul road	approx 5- 10 L	Hydraulic fluid	Water Truck	Mechanical failure	At approximately 15:30 a spil occurred when a wheter truck expersenced a mechanical failure who is praying water for dust suppression. The spil released approximately 100, dhyrdau L affect any usatry waterways and the spil was affect any usatry waterways and the spil was ontained to the immediate area. PGC immed ately response The contaminated adaption of the spile was adapted by handwidth as hough latfect adapted to spin and with a should be being stored into a contaminated on waste bin. The soil will be sent off-site for disposal to an appropriate off-site facility on a later date.	source of the leak was wapped of a sp I pads to provent more full con leaking out. The equipment will be repaired by a mechanic and ce aneld before put ing back to service.
32	18-Apr-21	18-Apr-21	18-Apr-21	Night	20:31-21:00	PGC	Menard		Large Spill (5.1L - 99.9L)	Improper fue ing operations	L2300 and L600W	approx 10- 20 L	Diesel Fuel	Fuel Truck	Improper Fueling Procedure	At approximately 20:30 three sp is were observed under various equipment on sile which were not reported to the environmental department. Approximately 20:40 CHose fuel mound and 1 does not appear to have af ected any nearby waterways. The sp il vaso does wet to be contacted the responsible party the to kowing morning when they were present on site to ind at the split persone. The contaminated and the split persone. The contaminated placed into plant L Har water bags before being appropriate off-site for disposal to an appropriate off-site for disposal to an appropriate off-site for disposal to an	PGC will be issuing a split response and relateling boloch cyclic of the subcontractor to present to their employees which will be required to any and achoneklege their environmental obligations on this site.
33	20-Apr-21	20-Apr-21	20-Apr-21	Night	2:01-2:30	PGC	Pro Quip		Spill (1.1 L - 5L)	Improper fue ing operations	Truck parking (o d)	approx 2L	Diesel Fuel	Excavator	Improper Fueling Procedure	Improper fueling practices at truck parking. Spi I to asphalt- absorbent powder placed on sp II- a I contaminants scooped up with a shovel and taken to the Hazardous waste management area for proper disposal.	
3	25-Apr-21	26-Apr-21	26-Apr-21	Night	2:01-2:30	PGC	Steamer Transport		°99.9L)	Hydraulic ine failure	12200	10-16L	Hydraulic fluid	Gravel haul truck	Hydoic mechan cal ailure	Absorbent pads paced on surface	At approximately: Zam one of the sub- contractor grant which having a sub from the L2200, deve speed a leak while at empting to of dead. (Steamer Transport, unit 0, plate number MM 485.). We estima e about 10 to 15 lines of hydraiu to 19 was spied to grant of parks put down. At yeals inspection of the truck was done and determined it was a line coming from the trucks PTOL. It was noticed that so if it ramaled a singapaed there was no turker chance of datio and a eakage, the truck was sent away for spins. Park wave cleaned up and disposed of as to cut p ans and the sol was monoid and placed in a lenge to a mb brought to our year for disposal.
	5-May-21	6-May-21	6-May-21	Night	20:01-20:30	PGC	Steamer Transport		Spill (1.1 L - 5L)	Mechan cal ailure- spill to pre oad	L2300	2L	Hydraulic fluid	Sand delivery truck	Mechanical failure	At approximately 20.25 a Sand delivery truck and trait er had a mechanical failure and spilled approximately two Iters of hydrau ic Luid onto the placed pro ead. The spill was contained, and absorbent spill pads were placed on the surface to absorb any surface ful d. Al the containniated soil was dug out and sent to the PGC waste management for d sposal by the sub-contractor.	

SL	IMMARY	
otals	Unit/Value	otal
Total Volume	L	0
Total Spils	#	15
Classification		otal
Minor Spi I (<1L)	#	4
Sp II (1.1L-5L)	#	0
Large Spill (5.1L-99.9L)	#	5
Significant Spill (To water or	#	0
>100L)		
Total	#	9
Fluid ype		otal
Hydraulic	#	10
Ant freeze	#	0
Diesel	#	3
Oil	#	1
Gasoline	#	0
Black Water	#	0
Glycol	#	0
Unknown	#	0
Ttl	#	14

#### APPENDIX 3: WILDLIFE SALVAGE RESULTS

## May 3 and 4 2021 Fish Salvage Results for Area H

Fish Salvage	NW Salamander	TSB	Coho	G Frog	Bull Frog
May 3					
Section 1 M	4	13			
Section 2 M	4	266	1	1	4
Section 3 M	3	85			1
Section 1 DN					
Section 2 DN	6	4			
Section 3 DN					
Section 1 E					
Section 2 E		1			
Section 3 E					
May 4					
Section 1 M	1	4			
Section 2 M	4	44			2
Section 3 M	4	22			1
Total	26	439	1	1	8

## APPENDIX 4: PERMIT TRACKER

cElhanney															
							Environmental Perm	nits and Approvals Tra	acking Sheet: For Infor	nation Only					
rende Section 5 le Description	Work Description	Correct Status	arget Submission Data to C. V	IDR(3 Deys)	Agency Submission Date	Agency's Approval Process Ime (Days) *	Regulator racking Number	Artic pated Approval Date	repprover cent	Permit Nambers	Actual Approval Data	Anticipated Submission Date	Enhancement Management Plan Antic patied Approval Date	Approval Exp ration	1001
A 2. 96th St eet 0 tch	Sto meate outfall south of Hey 17	Olita nel	14-feb-20	20-Feb-2020	21-Feb-2020	45	100310655	Sec 11 WSA Not 5-Ap -2020	1-May-2020	100310655	8-Ap -20	N/A.	N/A	May 02, 2020-May 02, 2021	Piecus rote that the sta t data a May 2, 2020
E 1 R we Road D tch	Culve tinsfallet ons (U30/U325)	Obta ned	14-feb-20	20-feb-2020	21-feb-2026	45	300330655	Sec 11 WSA Ap	I-May-2020 oproval	100310655	5-Ap -20	N/A	N/A.	May 02, 2020-May 02, 2021	Presse note that the star 1 date s May 2, 2020
8 2 96552 eet D tch	Hwy 17 Calve 1 Extens on (1300/1400)	Unde Regulato y Review - ans gred to a Water Office	14-Feb-20	20-Feb-2020	21-Feb-2020	140	100311219	15-hr-2020	22-66-2030	2007795	23-tal-20	4-(las)20	2-846-22	31-Dec-33	P o tytems send to IVARCID by the P or no.8 o 124, 2020. B held rights provided IC consultation scott A. Meet rg with IVARDOB May 20, 2020. Held 1020 and seponderion have 9, 2000. G metanol of scott production and the VARDOB held with 143324 P o fytelis send to IVARCID by the P or no.8 o 124, 2020. B held rights provided IC Consultation scott A. Meet rg with IVARDOB May 20, 2020. Held P o fytelis send to IVARDID by the P or no.8 o 124, 2020. B held rights provided IC Consultation scott A. Meet rg with IVARDOB May 20, 2020. Held
E 2 Side D tch and wetland	Colve 12stens on Dovenst earn of Hwy 93C and said of II	Unde Regulato y Review - acc goed to a Wate Office	14-Feb-20	20-Feb-2020	21-Feb-2026	140	100311219	13-41-2020	22-44-2030	2007795	23-tai-20	4-Dao;20	2446-73	31-Dec-33	1000 end expended on lare 8, 1000. Coef matco of exe pton lares 13, 2000. Date windto buly 53, 2000. 1040000 Lobe 114334 Fo by Lette sand bul 1040000 by the Porock jo 124, 2000. Biblid rights por del GC Canultaton son du. Maetrog wih 1020 end expended on lare 8, 2010. Coef matco of exe pton lares 13, 2000. Date windto buly 53, 2020. 1140000 be 114334 Arendomets set fo
D 1 Side Ditch wetland F 3 EW Burn Bog Permeta Ditch	Roundabout and Remp Enc. cachment (L 175, L475, L450) Block ng of the D tch, cundabout and new cast in Bog (11400, 11150, L1160, L1177	Unde Regulato y Review - assigned to a Wate Office	21-feb-20 21-feb-20	20-feb-2020	21-Feb-2020	140	100311219	15-41-2020	22-44-2020 27-6ap-2020	2007795	23-Jul-20 17-Aug-20	4-Den-20 4-Den-20	2-146-21	31-Dec-33	5 ké Dich on 13 August 2020 F o tylete sand to 10 B010 Dich fini Fornca Ap 1 24, 2020. B Radd rythin por ded (iC climaitation scoch. Meet nye th FUMORD May 20, 2020. Hidd 2020 and exponded on laine 8, 2020. Cold mation of scorptom laine 13, 2020
H 3 West D tch/IC239 and We gh Scale Road No dei D tch, West D tch, and unnerned		Unde Regulato y Review - ans grad to a Wate. Office	13-Mit -20	16-Ma -2020	17-Ma -2020	140	100312729	4-Aug-2020	23-Aug-2020	2007755	21-Aug-20	4-000-00	2400-21	31-0w-83	F = 1 y Lates sund to (MalCAD by the P or noi Ap. 124, 2020. B Aukid rights p or each G Cansultation woods. Meeting with (MARCAD May 20, 2020, Hold 2020 and appointed on June 3, 2020, Canif mait non if way thin June 33, 2020.
t 4 d tohes by FC219	Road and d toh elocat on (SW co ne of No del Inte change 12100, 12200, 12250)	Unde Regulato y Rev ew-ass gned to s Water Off ce Under Regulato y Rev ew-ass gned to a Water Off ce	5-Ma -20	9-Ma -2025	11-Ma -2020	140	100312676	29-Ju -2020	21-Aug-2020	2007770	20-Aug-20	4-Des-20	2-feb-71	33-Dec-33	<sup>2</sup> δ you as and to tradectibly the 'σ ready 12, 1000. Blead regist private its factors as the renge on tradection by 2, 2000, read 2000 and approximation haved, 1000, read read read register private its factors and the renge on tradection by 20, 2000. Head 2000 and approximation haved, 1000, read read read register private its factors and the renge on FUNCRO May 20, 2000. Head 2000 and approximation haved, 1000, read read read read read read register private its factors and the second ready 2000 contained to the Second ready and and the read ready and the second ready and the second ready and the second ready and the second read read read read read read ready and the second read ready and the second read read read read read read read rea
G 4 Delta Nature Reserve	Road and d tch viocat on (SE co ne of No del Inte change 12300, 12400)	Under Hegeland y Her Her and gives to a Water Die Ce Under Hegeland y Her Her and gives to a Water Die Ce	21-460-20	26-740-2020	28-Feb-2020	140	100311391	DFO Request for	r Review	2007749	17-448-20	4-Die-10	24(8-2)	31-Dec-53	P ov nos adv sed that Boa dealk will be emoved f om scope. Off c al Change O de Panding.
4 2 36th 32 eet D 1ch 2 98th 32 eet D 1ch	Sto mwate outfall south of Hwy 17 Hwy 17 Calve t Extens on (L300/400)	Letter to Auro cl and M 1 gate	14-fab-20	20-7+6-2020 20-7+6-2020	21-feb-2020 21-feb-2020	60	20-HPAC-00095 20-HPAC-00694	21-Ap -2020	15-Jun-2020	20-HPAC-00594 20-HPAC-00594	17-Jun-20 17-Jun-20	N/A.	N/A N/A	Dec-23	010 bas date mont that they spectrations so mag, as a more addatied were. With other weren graps attair, they cousde this sell one poject. New 2020 add source in for providely by Ag2.2.1. Recore dies bas how of and for type in 2017 bas date mont that the poject submission aga, as a more data ladier were. With other weren graps attair, they cousde this sill one poject. Mee 2017 bas date mont that the poject submission aga, as a more data ladier were. With other weren graps attair, they cousde this sill one poject. Mee
1 R vs Road D tch	Hwy 17 Galve ( Estens on (L100/1400) Galve ( Installat ors	Letter to Avo d and M 1 gate	14-Fab-20	20-1+6-2020 20-1+6-2020	21-Feb-2020	60	20-HPAC-00834	23-Ap -2020	15-May-2020	20-HPAC-00194 20-HPAC-00095	17-Jun-20 15-Map-20	N/A N/A	N/A N/A	0ec-23 31-lan-21	12020 edit unui ning zo della film May 22. Rocc well elles to Ano al and VI spine 1010 han della ma priditata de papet unatosi son, equi en as o della indi en ene. Vi il nothe en energiaspa abely, they cons de this a ill orang aject. Rev Based on DFO metra ng, May 2, 2020, Rocc well elles to Ano al and MI spine 1010 han della me della tata de papet administra son age, an as an administra and energiaspa abely, they cons de this a ill orang aject. Ske
1 Side Ditds	Roundabout Enc oachment ( owil)	Letter to Avoid and Mitigate	14-feb-20	20-7+b-2020	21-feb-2020	60	20-HFAC-006:34	22-Ap -2020	15-me-2020	20-HPAC-00694	17-Jun-20	N/A	N/A	Dec-23	2020 add ton all n fop ov ded by May 22 Jacx well lette to Avod and Mitgate. DFD has dete mined that the pidject submission iequi es a moe detailed, eview. Will not be eview ng sepsiately, they contride this all one pidject. Mee
Side Dish 3 EW Bu m Bog Pe mete Dish	Calve t Extens on Downat earn of Hwy 51C Block ng of the D tch, oundebout and new part in Bog (1.1400, 13.150, 1.1140, 1.137)	Lette to Avo d and M 1 gate	14-fab-20 21-fab-20	20-Feb-2020 26-Feb-2020	21-Feb-2020 26-Feb-2020	60	20-HPAC-00634 20-HPAC-00303	21-Ap -2020 25-Ap -2020	15-Jan-2020 184	20-HPAC-00594 20-HPAC-00303	17-lun-20 2-lui-20	N/A	N/A	Dec-23 Dec-23	1202 of dt unai fop provided by Way 22. Roce well etters to Ano Sand At Egnie 1310 has deer mined that the project submission equivaience effective environment of the seven registera ataly, they consider this all one project. Mer 1202 of dt unai for provided by May 27. Roce well etters to Ano Sand At Egnie
3 West D tch/FC239 and We gh Scale Road		Letter to Avo d and M t gate	11-Ma -20	16-Ma -2020	17-Ma -2020	60	20-HPAC-00350	18-Mary-2070		20-HPAC-00150	6-Aug-20	N/A.	N/A	Dec-23	D/D has defer m ned fast thep opertudes as on equiles are edetal led eview. Will not be eviewing separately, they consider this all one project. Me J020 additional info provided by May 22
No del D tch, West D tch, and attramed 4 d tches by FC219	Roed and d toh woost on (SW co ne of No del inte change L2300, L2200, L2250)	Letter to Auto cl and M 1 gate	23-Feb-20	9-Ma -2020	11-Ma -2020	60	20-HFAC-00349	10-May-2020	N4	20-HPAC-00341	6-Aug-20	N/A	N/A	Dec-23	DIO has deta m ned fait tha poject subm ss on aqui as a mp e deta led, ev ex. Will not be ev exing sapa ately, they conside this all one poject. Nee 2020 add tionel info pion ded by May 22
4 Delte Netz e Rese ve	Road and d tch elocation (SE come of No del Inte change 12300, 12400)	Letter to Avo d and M t gate	21-feb-20	26-7+6-2020	26-Feb-2020	60	20-HPAC-00304	26-4p -3020 DFO Authoriz	ation	20-HPAC-00304	18-aul-20	N/A	N/A	Dec-23	010 has dear mind that the project submits on ways as time a data lind ar wer. Will not be wrive hystepistaly; they conside this all one poject. Me 2020 add tonel info provided by May 22. Race well letter to Ano diand Mitgate
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2 9665.52 ent D tch 2 It we Read D tch	Hwy 17 Calve t Extens on (L10C/L400) Calve t Installet ons	equi ed Pending outcome of DFO Request for Nev es-No Author set on equi ed				90	NA.	NA NA	NA.	NA.	NA NA	N/A.	N/A.	NA.	Bec weed lattle to Avin d and Mit gete on June 17, 2020 not need for an Author sation Nec weed lattle to Avin d and Mit gete on May 25, 2020 not need for an Author sation
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<sup>4</sup> Side Dich <sup>3</sup> EW Bu na Bog Pel metel Dich	Calve 1 Extens on Bownat earn of Hwy 91C Block ng of the D tch, oundebout and new ced in Bog (11400, 11150, 11160, 1117	equi ed Finding outcome of DFO Request for New we-No Asthoriset on graps ed Finding outcome of DFO Request for New we-No Asthoriset on	2	1		90	NA	NA	NA NA	NA. NA.	NA NA	N/A N/A	N/A.	NA NA	Base weed latter to Avro d and M 1 gate on June 17, 2020 not need to an Autho sait on Date weed latter to Avro d and M 1 gate on July 2, 2020 not need to an Autho sait on
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## APPENDIX 5: PERMIT CONDITIONS TRACKER

#### Subject: River Road Interchange (Section 1), Site C -Watercourse Infilling and Highway Upgrades, Fraser River, Delta - Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

Conditions	Responsibility
1 The removal of or disturbance to riparian vegetation should be kept to a minimum during the works.	PGC
2 Whenever possible, works are to be conducted when the watercourse is dry.	PGC
3 If works are not conducted in the dry, works are to be conducted in isolation of flow and the following measures are to be implemented:	PGC
An appropriately qualified professional is to conduct a fish salvage of the isolated work area. Choose low impact salvage methods such as minnow trapping and	
a seining before opting for higher impact electrofishing. In the event that isolation is breached, stop work and repeat fish salvage efforts.	Brybil
b Dewater the isolated area gradually to reduce the potential for stranding fish.	PGC
Ensure bypass pump intakes and outlets are located within the confines of the fish-isolated work area (i.e., to prevent fish impingement on pump intakes, and to	
prevent dewatering areas where fish may be present). Ensure pumps are screened to prevent entrainment or impingement of fish in accordance with DFO's interim	
c code of practice for End-of-pipe Fish Protection Screens for Small Water Intakes in Freshwater (https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecraneng.html).	PGC/Brybil
When diverting watercourse flows, maintain an appropriate depth and flow (i.e., base flow) for the protection of fish and fish habitat downstream of the isolated	
d work area.	PGC
4 Complete the works as quickly as possible once they are started.	PGC
5 Undertake works during dry weather and low water conditions.	PGC
6 Equipment is to be situated in the dry watercourse channel within the footprint of the works or operated from the top of the bank.	PGC
7 Ensure that material such as rock, riprap, or other materials placed on the banks or within the active channel or floodplain of the watercourse is inert and free of silt	
overburden, debris, or other substances deleterious to aquatic life.	PGC
8 Minimize the introduction of sediments (e.g., silts, clays and sand) into the watercourse or downstream reaches of the watercourse.	PGC
9	
Develop and implement an erosion and sediment control plan to avoid and minimize the introduction of sediment into or induced sedimentation in the watercourse	PGC
10	
Do not deposit any substances deleterious to fish or fish habitat directly or indirectly into the watercourse or downstream reaches of the watercourse.	PGC
11 Develop and implement a response plan to avoid a spill of deleterious substances into the watercourse.	PGC
12 Works should be monitored full-time during start-up and any instream works or sensitive activity. The environmental monitor must be an appropriately qualified	
professional and ensure mitigation measures are implemented for the protection of fish and fish habitat.	PGC, weekly audit MESL
13 While the Program recommends works be conducted during the least risk to fish instream work window of August 1 – September 15 where possible. It is recognized	
instream works will be required to commence upland works. Therefore, if works are proposed for outside the least risk window, work should especially be conducted	4
under the direction of an appropriately qualified professional as per item 12 above.	PGC
14	
Monitor before, during, and after all phases of construction to ensure that fish do not become trapped/isolated, stranded, or entrained within the project area.	PGC, weekly audit MESL
15 If fish are observed at the site, or upstream or downstream of the site, work should be halted. Works may only resume following implementation of appropriate	
mitigation measures and under the direction of an appropriately qualified professional.	PGC
16 Ensure that when dewatering, site water is appropriately managed to prevent sediment laden water from entering downstream watercourses.	PGC

#### Subject: Highway 91/17 – Site F – Wetland Infilling, Burns Bog Ditches, Delta - Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

	Conditions	Responsibility
1	The removal of or disturbance to riparian vegetation should be kept to a minimum during the works.	PGC
2	Whenever possible, works are to be conducted when the watercourse is dry.	PGC
3	If instream works are not conducted in the dry, works are to be conducted in isolation of flow and the following measures are to be implemented:	PGC
а		
	An appropriately qualified professional is to conduct a fish salvage of the isolated work area. Choose low impact salvage methods such as minnow trapping and	
	seining before opting for higher impact electrofishing. In the event that isolation is breached, stop work and repeat fish salvage efforts.	Brybil
b	Dewater the isolated area gradually to reduce the potential for stranding fish.	PGC
	Ensure bypass pump intakes and outlets are located within the confines of the fish-isolated work area (i.e., to prevent fish impingement on pump intakes, and to	
	prevent dewatering areas where fish may be present). Ensure pumps are screened to prevent entrainment or impingement of fish in accordance with DFO's interim	
	code of practice for End-of-pipe Fish Protection Screens for Small Water Intakes in Freshwater (https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-	
	ecraneng.html).	PGC/Brybil
d	When diverting watercourse flows, maintain an appropriate depth and flow (i.e., base flow) for the protection of fish and fish habitat downstream of the isolated	
	work area.	PGC
4	Complete the works as quickly as possible once they are started.	PGC
5	Undertake works during dry weather and low water conditions.	PGC
6	Equipment is to be situated in the dry watercourse channel within the footprint of the works or operated from the top of the bank.	PGC
7	Ensure that material such as rock, riprap, or other materials placed on the banks or within the active channel or floodplain of the watercourse is inert and free of	
	silt, overburden, debris, or other substances deleterious to aquatic life.	PGC
8	Minimize the introduction of sediments (e.g., silts, clays and sand) into the watercourse or downstream reaches of the watercourse.	PGC
9	Develop and implement an erosion and sediment control plan to avoid and minimize the introduction of sediment into or induced sedimentation in the	
	watercourse.	PGC
10		
	Do not deposit any substances deleterious to fish or fish habitat directly or indirectly into the watercourse or downstream reaches of the watercourse.	PGC
11	Develop and implement a response plan to avoid a spill of deleterious substances into the watercourse.	PGC
12	Works should be monitored full-time during start-up and any instream works or sensitive activity. The environmental monitor must be an appropriately qualified	
	professional and ensure mitigation measures are implemented for the protection of fish and fish habitat.	PGC, weekly audit MESL
13		
	The Program recommends works within fish-bearing or potentially fish-bearing watercourses be completed during the least risk to fish instream work window of	
	August 1 – September 15 where possible. However, it is recognized that there are proposed instream works outside this window. Therefore, if works are proposed	
	for outside this time window, additional measures should be implemented under the direction of an appropriately qualified professional, as per item 12 above.	PGC
14		
	Monitor before, during, and after all phases of construction to ensure that fish do not become trapped/isolated, stranded, or entrained within the project area.	PGC, weekly audit MESL
15	If fish are observed at the site, or upstream or downstream of the site, work should be halted. Works may only resume following implementation of appropriate	
	mitigation measures and under the direction of an appropriately qualified professional.	PGC
16	Ensure that when dewatering, site water is appropriately managed to prevent sediment laden water from entering downstream watercourses.	PGC
17	Use non-acid rock drainage and metal leaching (non-ARD/ML) riprap.	

#### Subject: Highway 91/17 - Site G - Wetland Infilling, Burns Bog, Delta - Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

Conditions	Responsibility
1 The removal of or disturbance to riparian vegetation should be kept to a minimum during the works.	PGC
2 Whenever possible, works are to be conducted when the watercourse is dry.	PGC
3 If works in the roadside ditches are not conducted in the dry, works are to be conducted in isolation of flow. When diverting watercourse flows, maintain an	
appropriate depth and flow (i.e., base flow) for the protection of fish and fish habitat downstream of the isolated work area.	PGC
4 Complete the works as quickly as possible once they are started.	PGC
5 Undertake works during dry weather and low water conditions.	PGC
6 Equipment is to be situated in the dry watercourse channel within the footprint of the works or operated from the top of the bank.	PGC
7 Ensure that material such as rock, riprap, or other materials placed on the banks or within the active channel or floodplain of the watercourse is inert and free of	
silt, overburden, debris, or other substances deleterious to aquatic life.	PGC
8 Minimize the introduction of sediments (e.g., silts, clays and sand) into the watercourse or downstream reaches of the watercourse.	PGC
9 Develop and implement an erosion and sediment control plan to avoid and minimize the introduction of sediment into or induced sedimentation in the	Brybil -develop
watercourse.	PGC - lead and implement
10	
Do not deposit any substances deleterious to fish or fish habitat directly or indirectly into the watercourse or downstream reaches of the watercourse.	PGC
1 Develop and implement a response plan to avoid a spill of deleterious substances into the watercourse.	PGC, weekly audit MESL
2 Works should be monitored full-time during start-up and any instream works or sensitive activity. The environmental monitor must be an appropriately qualified	
professional and ensure mitigation measures are implemented for the protection of fish and fish habitat.	PGC, weekly audit MESL
3 If fish are observed at the site, or upstream or downstream of the site, work should be halted. Works may only resume under the direction of an appropriately	
qualified professional, as per Item 12 above, with the following measures in place:	PGC
a Works are to be conducted in isolation of flow.	PGC
An appropriately qualified professional is to conduct a fish salvage of the isolated work area. Choose low impact salvage methods such as minnow trapping and	
seining before opting for higher impact electrofishing. Use appropriate fish handling techniques and relocate salvaged fish to a nearby undisturbed location. In the	
b event that isolation is breached, stop work and repeat fish salvage efforts.	Brybil
c Dewater the isolated area gradually to reduce the potential for stranding fish.	PGC
Ensure bypass pump intakes and outlets are located within the confines of the fish-isolated work area (i.e., to prevent fish impingement on pump intakes, and to	
prevent dewatering areas where fish may be present). Ensure pumps are screened to prevent entrainment or impingement of fish in accordance with DFO's interim	
code of practice for End-of-pipe Fish Protection Screens for Small Water Intakes in Freshwater (https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-	
d eng.html).	PGC, Brybil
e Monitor before, during, and after all phases of construction to ensure that fish do not become trapped/isolated, stranded, or entrained within the project area.	PGC
f Ensure that when dewatering, site water is appropriately managed to prevent sediment laden water from entering downstream watercourses.	PGC
g Ensure that flows are maintained to downstream fish habitat in East Ditch, West Ditch, Silda Ditch, and 96 Street Ditch.	PGC
14 Use non-acid rock drainage and metal leaching (non-ARD/ML) riprap.	PGC

DFO 20-HPAC-00694 Subject: Highway 91/17 - Sites A, B, D & E (Sections 1 and 2) -Watercourse Infilling and Highway Upgrades, Fraser River, Delta - Implementation of Measures t	o Avoid and Mitigate the Potential	for Prohibited Effects to Fish and Fish H
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<ol> <li>The removal of or disturbance to riparian vegetation should be kept to a minimum during the works.</li> </ol>		1
2 Whenever possible, works are to be conducted when the watercourse is dry.		]
3 If works are not conducted in the dry, works are to be conducted in isolation of flow and the following measures are to be implemented:		1
An appropriately qualified professional is to conduct a fish salvage of the isolated work area. Choose low impact salvage methods such as minnow trapping and		
a seining before opting for higher impact electrofishing. In the event that isolation is breached, stop work and repeat fish salvage efforts.		
b Dewater the isolated area gradually to reduce the potential for stranding fish.		
Ensure bypass pump intakes and outlets are located within the confines of the fish-isolated work area (i.e., to prevent fish impingement on pump intakes, and to prevent dewatering areas where fish may be present). Ensure pumps are screened to prevent entrainment or impingement of fish in accordance with DFO's interim		
c code of practice for End-of-pipe Fish Protection Screens for Small Water Intakes in Freshwater (https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecraneng.html). When diverting watercourse flows, maintain an appropriate depth and flow (i.e., base flow) for the protection of fish and fish habitat downstream of the isolated		
d work area.		
4 Complete the works as quickly as possible once they are started.		1
5 Undertake works during dry weather and low water conditions.		1
6 Equipment is to be situated in the dry watercourse channel within the footprint of the works or operated from the top of the bank.		1
7 For works in fish-bearing waters, fish passage is to be maintained through any culverts in fish-bearing waters upon completion of works.		1
8 Ensure that material such as rock, riprap, or other materials placed on the banks or within the active channel or floodplain of the watercourse is inert and free of		1
silt, overburden, debris, or other substances deleterious to aquatic life.		
9 Minimize the introduction of sediments (e.g., silts, clays and sand) into the watercourse or downstream reaches of the watercourse.		
10 Develop and implement an erosion and sediment control plan to avoid and minimize the introduction of sediment into or induced sedimentation in the		1
watercourse.		
11		1
Do not deposit any substances deleterious to fish or fish habitat directly or indirectly into the watercourse or downstream reaches of the watercourse.		
12 Develop and implement a response plan to avoid a spill of deleterious substances into the watercourse.		]
13 Works should be monitored full-time during start-up and any instream works or sensitive activity. The environmental monitor must be an appropriately qualified		
professional and ensure mitigation measures are implemented for the protection of fish and fish habitat.		
14		1
While the Program recommends works be conducted during the least risk to fish instream work window of August 1 – September 15 where possible. It is recognized		
that there are proposed instream works outside this window. Therefore, if works are proposed for outside the least risk window, work should especially be		
conducted under the direction of an appropriately qualified professional and additional measure should be implemented, as per item 13 above.		
15		1
Monitor before, during, and after all phases of construction to ensure that fish do not become trapped/isolated, stranded, or entrained within the project area		
16 If fish are observed at the site, or upstream or downstream of the site, work should be halted. Works may only resume following implementation of appropriate		]
mitigation measures and under the direction of an appropriately qualified professional.		
17 Ensure that when dewatering, site water is appropriately managed to prevent sediment laden water from entering downstream watercourses.		]
18 Use non-acid rock drainage and metal leaching (non-ARD/ML) riprap.		]

#### Highway 91/17 Upgrades - Site I, Nordel Ditches & West Ditch - Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

Conditions	Responsibility
1 The removal of or disturbance to riparian vegetation should be kept to a minimum during the works.	PGC
2 Whenever possible, works are to be conducted when the watercourse is dry.	PGC
3 If works are not conducted in the dry, works are to be conducted in isolation of flow and the following measures are to be implemented	PGC/Brybil
a An appropriately qualified professional is to conduct a fish salvage of the isolated work area. Choose low impact salvage methods such as minnow trapping and seining before opting for higher impact	
electrofishing. In the event that isolation is breached, stop work and repeat fish salvage efforts.	Brybil
b Dewater the isolated area gradually to reduce the potential for stranding fish.	PGC
c Ensure bypass pump intakes and outlets are located within the confines of the fish-isolated work area (i.e., to prevent fish impingement on pump intakes, and to prevent dewatering areas where fish may be	
present). Ensure pumps are screened to prevent entrainment or impingement of fish in accordance with DFO's interim code of practice for End-of-pipe Fish Protection Screens for Small Water Intakes in	
Freshwater (https://www.dfompo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html).	PGC
d When diverting flows, maintain an appropriate depth and flow (i.e., base flow) for the protection of fish and fish habitat, both upstream and downstream of the isolated work area.	PGC
4 Complete the works as quickly as possible once they are started.	PGC
5 Undertake works during dry weather and low water conditions.	PGC
6 Equipment is to be situated in the dry stream channel within the footprint of the works or operated from the top of the bank.	PGC
7 Ensure that material such as rock, riprap, or other materials placed on the banks or within the active channel or floodplain of the watercourse is inert and free of silt, overburden, debris, or other substances	
deleterious to aquatic life.	PGC
8 Minimize the introduction of sediments (e.g., silts, clays and sand) into the watercourse or downstream reaches of the watercourse.	PGC
9 Develop and implement an erosion and sediment control plan to avoid and minimize the introduction of sediment into or induced sedimentation in the watercourse.	PGC
10 Do not deposit any substances deleterious to fish or fish habitat directly or indirectly into the watercourse or downstream reaches of the watercourse.	PGC
11 Develop and implement a response plan to avoid a spill of deleterious substances into the watercourse.	PGC
12 Works should be monitored full-time during start-up and any instream works or sensitive activity. The environmental monitor must be an appropriately qualified professional and ensure mitigation measures	
are implemented for the protection of fish and fish habitat.	PGC, weekly audit MESL
13 Monitor before, during, and after all phases of construction to ensure that fish do not become trapped/isolated, stranded, or entrained within the project area.	PGC
14 Ensure that when dewatering, site water is appropriately managed to prevent sediment laden water from entering downstream watercourses.	PGC
15 Use non-acid rock drainage and metal leaching (non-ARD/ML) rip rap.	PGC

#### Highway 91/17 Upgrades – Site H, Unnamed Tributary Ditches to Silda Ditch – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

Conditions	Responsibility
1 The removal of or disturbance to riparian vegetation should be kept to a minimum during the works.	PGC
2 Whenever possible, works are to be conducted when the watercourse is dry.	PGC
3 If works are not conducted in the dry, works are to be conducted in isolation of flow and the following measures are to be implemented:	PGC/Brybil
a An appropriately qualified professional is to conduct a fish salvage of the isolated work area. Choose low impact salvage methods such as minnow trapping and seining before opting for higher impact	
electrofishing. In the event that isolation is breached, stop work and repeat fish salvage efforts.	Brybil
b Dewater the isolated area gradually to reduce the potential for stranding fish.	PGC
c Ensure bypass pump intakes and outlets are located within the confines of the fish-isolated work area (i.e., to prevent fish impingement on pump intakes, and to prevent dewatering areas where fish may be	
present). Ensure pumps are screened to prevent entrainment or impingement of fish in accordance with DFO's interim code of practice for End-of-pipe Fish Protection Screens for Small Water Intakes in	
Freshwater (https://www.dfompo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html).	PGC
d When diverting flows, maintain an appropriate depth and flow (i.e., base flow) for the protection of fish and fish habitat, both upstream and downstream of the isolated work area.	PGC
4 Complete the works as quickly as possible once they are started.	PGC
5 Undertake works during dry weather and low water conditions.	PGC
6 Equipment is to be situated in the dry stream channel within the footprint of the works or operated from the top of the bank.	PGC
7 Ensure that material such as rock, riprap, or other materials placed on the banks or within the active channel or floodplain of the watercourse is inert and free of silt, overburden, debris, or other substances	
deleterious to aquatic life.	PGC
8 Minimize the introduction of sediments (e.g., silts, clays and sand) into the watercourse or downstream reaches of the watercourse.	PGC
9 Develop and implement an erosion and sediment control plan to avoid and minimize the introduction of sediment into or induced sedimentation in the watercourse.	PGC
10 Do not deposit any substances deleterious to fish or fish habitat directly or indirectly into the watercourse or downstream reaches of the watercourse.	PGC
11 Develop and implement a response plan to avoid a spill of deleterious substances into the watercourse.	PGC
12 Works should be monitored full-time during start-up and any instream works or sensitive activity. The environmental monitor must be an appropriately qualified professional and ensure mitigation measure:	
are implemented for the protection of fish and fish habitat.	PGC, weekly audit MESL
13 Monitor before, during, and after all phases of construction to ensure that fish do not become trapped/isolated, stranded, or entrained within the project area.	PGC
14 Ensure that when dewatering, site water is appropriately managed to prevent sediment laden water from entering downstream watercourses.	PGC
15 Use non-acid rock drainage and metal leaching (non-ARD/ML) rip rap.	PGC

#### WSA Notification 100310655 Notice to Habitat Officer / Changes in and about a Stream under Part 3 Water Sustainability Regulation

Conditions	Responsibility
1 Any work associated with the proposed changes in and about a stream must not cause stream channel instability or increase the risk of sedimentation into the stream.	PGC
2 During work onsite, erosion and sediment control materials must be available on site at all times and must be installed if sedimentation is likely to occur into the stream. A contingency plan	
must be developed outlining the measures to be taken by workers when carrying out any work to control erosion and sediment.	PGC
3 Soil disturbance must not occur in heavy rain conditions and any soil removed must be placed in a location that ensures that sedimentor debris does not enter the stream.	PGC
4 Within a work area, water that contains sediment must be pumped to a vegetated area away from the stream where it can seep into the ground, or to a settling pond that is sufficiently far	
from the stream to allow sediment to settle out before the water returns to the stream.	PGC
5 The disturbance of stream bank vegetation must not occur or be minimized as much as possible.	PGC
6 Any areas that are disturbed during the work (such as exposed soil) must be promptly restored at a minimum to the pre-disturbance condition. Note: Guidance is	
provided in the Enhancement Section of the Best Management Practices Instream Works	PGC
7 If possible, work must be conducted on, and equipment located and operated from, dry land (no water present) and the worksite must be isolated from flowing water.	PGC
8	
Any equipment used in conducting work must be in good mechanical condition and, when operating in close proximity to the wetted perimeter of a stream, the operator must prevent entry	
of any substance, sediment, debris or material (e.g., hydrocarbons, silt) into the stream so as to prevent harm to fish, wildlife or the aquatic ecosystem of a stream. Note that Section 46 of	
the Water Sustainability Act prohibits the introduction of foreign matter into a stream. Failure to comply may result in a remediation order and it is also an offence to do so.	PGC
9 The original rate of water flow in the stream (existing prior to commencing work) must be maintained upstream and downstream of the worksite during all phases of instream activity	
associated with the work.	PGC
10	
When work requires de-watering or isolation of the worksite in the stream, a permit for the salvage of fish and wildlife must be obtained prior to commencing work. All required salvage	
permits must be obtained from Front Counter BC :http://www.frontcounterbc gov.bc.ca/. Any salvage must be carried out by a qualified environmental professional (such as an R.P.Bio.).	Brybil
11 Following de-watering or isolation of the worksite, stream flow must be returned gradually to the de-watered or isolated area within the stream and not in a single sudden rush so as to avoid	
erosion of the stream channel and sediment delivery to the stream.	PGC
12 The stream channel width must not change as a result of the work.	PGC
13	
Any materials, such as riprap or gabion rock, placed within the stream must be clean and not contain substances that could be harmful to fish, wildlife or the aquatic ecosystem of the stream.	PGC
14	
Any areas disturbed as part of the work must be restored as close as possible to their pre-disturbance condition. Any soil exposed at the worksite must be promptly re-vegetated.	PGC
15	
Subject to section 16 and 17 below, the work must be completed during the timing window for the stream in respect of which the changes are proposed. The applicable timing window (by	
region and/or by stream) are specified in the following links (see below) and are designed to protect fish, wildlife or the aquatic ecosystem of a stream. To determine the timing window,	
please select the relevant region from the map: http://www.frontcounterbc ca/pdf/RegionMap.pdfand then determine the applicable timing window:*Regional Timing	
Windows:http://www2 gov.bc.ca/gov/content/environment/air-land-water/water/licensing-rights/working-around-water/regional-terms-conditions-timing-windows< <for td="" that<=""><td></td></for>	
region and for the stream where the proposed changes will be made. For projects proposed to take place outside these timing windows, please see section 16 and 17 below	PGC
16	
In addition to the timing windows specified in section 15 above, work may be carried out during the following times provided these requirements are met when the changes are carried out:	PGC
i. If the stream channel is naturally dry (no flow) or frozen to the bottom at the worksite and the instream work / activity associated with the proposed change will not adversely impact fish,	
wildlife or the aquatic ecosystem of the stream (e.g. not result in any substance, sediment, debris or other material entering or leaching into the stream that would adversely affect fish,	
wildlife or the aquatic ecosystem),	PGC
ii. In the construction of a winter crossing, the stream channel is frozen to the bottom at the worksite and related work does not adversely impact the stream channel (including stream bed and	200
banks), or fish, wildlife or the aquatic ecosystem of the stream, or impede their passage (in both directions) in the stream.	PGC
If your work is proposed outside of the timing window (as described in section 15 above), you must retain a qualified environmental professional (such as an R.P. Bio.). The professional will	
be responsible for providing a written technical rational that assesses and addresses the risks of the proposed changes in and about a stream, including proposing site specific mitigation (e.g.	
an Erosion Control Plan that identifies contingency measures and emergency procedures related to the proposal) and onsite monitoring of their implementation. This document must be	200
submitted to the Habitat Officer via Front Counter B.C. with reference to your file number (shown on top of this document).	PGC

WSA Approval 2007795		
Change Approval -Changes In and About 96th Street Ditch and Silda Ditch (Sites B, D, and E)		Legend
		Difference between Appr
		2007783 & 2007795
		Difference between App
Conditions	Responsibility	2007749 & 2007795
If land clearing is to occur within the breeding bird period (March 30 to August 16 in Zone A1, which includes the Lower Mainland and Fraser Valley), a nest survey must be conducted and a 10m no-clearing buff		Difference between Appr
placed around the nest until the nest is determined to be no longer active.	PGC, Brybil	2007770 & 2007795
	100,01100	Difference between App
d The work(s) authorized in this Approval shall be completed on or before Dec. 31, 2023.	PGC	2007755 & 2007795
	rec	2007735 @ 2007735
e All works associated with the Environmental Enhancement Management Plan, as outlined in clause (m) and required in clause (oo) below, shall be completed on or before December 31, 2033 (based on 10 years	and with the state of the	
All works associated with the Environmental Enhancement Management Plan, as outlined in Cause (oo) peow, shall be completed on or perior becember 31, 2033 [based on 10 years f Work in the stream and stream channel shall occur only during the periods outlined below, so that the fisheries interests are protected	PGC, Brybil - development of plan PGC - implementation	
1 Instream work during the reduced risk instream work window shall occur during the period of August 1 to September 15; or	Brybil/MESL - provide input	
2 Based on project justification and risk, instream work outside of the reduced risk instream work window (as stated above), subject to the following		
i An appropriately qualified professional shall provide advice to the holder of this Approval on the timing of the work based on the nature of the works, environmental values (including fish, amphibians, wildlife,		
any listed species present), water quality, channel stability, weather conditions, water levels, and any other relevant factors); and		
ii The Qualified Professional shall also provide additional construction mitigation advice to the holder of this Approval, and daily or full-time supervision of all work in or near the stream; and		
iii Work must be timed and planned appropriately, the stream must be completely dry or have marginal flows for the duration of the construction activities; and		
v The advice of the Qualified Professional on construction timing (as per (i) above) and mitigation measures (as per (ii) above), as well as the timing of work and the presence of the Qualified Professional, must be		
documented in writing. This documentation must be submitted as part of the post construction reporting for this project.		
All machinery and equipment operating within the stream shall be clean, free of external grease, oil or fluid leaks and shall use biodegradable grease, oil and fluids.	PGC	
а жи пасилету ала едарлиент орегала, источната ликато с селат, пее от ехента ризае, он от нага тело ала тако зна зна вое селат, он ала нако.	rec .	
Fuelling and servicing of vehicles and equipment must occur a minimum of 30 metres away from all streams, lakes and waterbodies. Keep a spill containment kit on site and train on site staff in its use.	1 million 1	
Immediately report any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities to the Dangerous Goods Incident Report 24-hour phone line at 1-800-663-3456.	PGC	
The works shall not result in depressions that have the ability to trap fish and other aquatic life.	PGC	
The holder of this approval shall take reasonable care to avoid damaging any land, works, trees, or other property and shall make full compensation to the owners for any damage or loss resulting from the		
exercise of the rights granted with this approval.	PGC	
c Riparian areas which are disturbed by the works shall be restored to their original condition and protected from erosion.	PGC	
All material utilized during construction shall be contoured and placed in a stable area such that it is not able to mobilize, and it shall be managed to avoid entry into any stream or watercourse.	PGC	
All works shall be completed in accordance with	PGC	
ENG DWG Site E Culvert Plan and Profile, 2020-01-27	PGC	
PING DWG Site 8 Culvert Plan and Profile, 2020-01-27	PGC	
ENG DWG Site D River Road Interchange Sida Wetland Encroachment, 2020-02-19	PGC	
Report Section 11 Approval Application Highway 91/17 Upgrades, Section 1 And 2, By Brybil Projects Ltd., February 21, 2020		
seport section 11 Approva Approaction regimer 93.17 Opgrades, section 1 And 2, by Bryon Projects Ltd., reordary 21, 2020 5 Stormwater Management Plan, McEhanney May 6, 2020	PGC PGC	
6 CEMP, 3rd Revision, May, 2020	PGC	
7 Surface Water Quality & Sediment Control Plan (of CEMP)	PGC	
8 Fisheries Habitat Mitigation and Compensation Plan (of CEMP)	PGC	
9 Environmental Enhancement Management Plan (EEMP), Brybil Projects Ltd., June 2020	PGC	
Memo Additional FLNRO Information, Dave Hayward, Brybil, June 8, 2020	PGC	
n The holder of this approval must adhere to the standards of professional accountability, as signed off by Qualified Professional(s), Dave Hayward and Rob Hoogendorn on June 2, 2020, regarding the Key Aquati		
Habitat Questions for Qualified Professionals specific to Bank Erosion Protection and Stream Diversion/In-filling, on behalf of the holder of this approval. It is the responsibility of the holder of this Approval to		
retain an appropriately qualified professional(s) for the relevant duration of works in order to uphold this signed professional assessment.	PGC	
o All work shall be carried out in accordance with the Provincial "Standards and Best Practices for In-stream Works" (2004). The Provincial guidance document can be found at the following link	100	
o an work strain be can nee you an accorrance with the Provincial standards and best Practices for in-stream works (2004). The Provincial guidance document can be round at the following mix http://www.env.gov.bc.ca/wid/document/Shm/Swstabbsmark2004.pdf.	PGC	
	roc	
P The holder of this Approval must hire an appropriately Qualified Professional to conduct Environmental Monitoring on all in-stream works authorized under this Approval. The Qualified Professional must be an		
applied scientist or technologist, acting alone or together with another		
July 23, 2020 Job Number 114324 File Number 20077955 of 10 Ministry of Forests, Lands, Natural Resource Operations, and Rural Development Water Management Mailing Address 200-10428 153 Street,		
Surrey BC V3R 1E1 Location 200-10428 153 Street, Surrey BC V3R 1E1 Phone (604) 586-4400 Fax (604) 586-4444 Web https://www2.gov.bc.ca/gov/content/environment/air-land-water/waterqualified		
professional. He or she must be registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and		
subject to disciplinary action by that association. The Qualified Professional is responsible for observing the methods of construction and preparing information and reports on the compliance of the construction		
activities. The Qualified Professional shall	PGC	
1 Ensure all best management practices and mitigation measures are in place to avoid and minimize environmental impact on the land and on fish and fish habitat of the stream.	PGC	
2 Where applicable, assist in the isolation of the stream prior to the commencement of works.	PGC	
a implement and ensure ension and sediment control measures are constructed, installed, and maintained appropriately for the full duration of instream works.	PGC	
4 Supervise all instream works authorized under this Approval.	PGC	
5 When the works involve temporary diversions to isolate the work site,	PGC	
i Monitor all diversion works daily to ensure pumps & flow by passes are inproper working condition;	PGC	
ii Ensure diversion works that include pump intakes be screened for fish and aquatic species in accordance with the "Interim code of practice End-of-pipe fish protection screens for small water intakes in		
freshwater"/Fisheries and Oceans Canada, 2020);and	PGC	
ii Ensure fish are prevented from entering the works.	PGC	
5 When the works involve dewatering or isolation of flow and the stream is known or suspected to contain fish and/or amphibians,	PGC	
i Attend the site prior to conducting any instream works to complete fish and wildlife search and salvages;	PGC, Brybil	
i Obtain any permits needed prior to undertaking the salvage(s); and	Brybil	
i Inspect the extraction area for fish stranding at least once after water levels have declined.	PGC,Brybil	
7		
' in the event of an environmental incident or non-compliance with any of the terms or conditions of this Approval, notify the Water Manager (SouthCoastWSAReporting@gov.bc.ca), within 24 hours.	PGC	
in the event of an environmental incident or non-compliance with any of the terms of conditions of this Approval, notity the Water Manager (sournCoastWSAMeportinge(gou.bc.d), within 24 nours. B Ge granted authority to stop the work authorized under this Approval if deemed necessary toaddress risks to the environment. The Qualified professional or their designate (specified in writing) must be on site	100	
	1000 MITT	
during all phases of construction in and around the stream to ensure this component is upheld.	PGC, MESL	
g Upon commencement of the project, the work shall be pursued to completion as quickly as possible.	PGC	
r All equipment and machinery used in or near the stream channel	PGC	
1 Must be in good operating condition and free of leaks, excess oil and grease;	PGC	

	Must have a spill containment kit readily accessible on-site;	PGC
- 5	May not be refuelled within 30 meters of any watercourse; and	PGC
	Must use environmentally sensitive hydraulic fluids which are non-toxic to aquatic life and which are readily or inherently bio-degradable.	PGC
-		
3	Any call of a substance that is taxis colluting or delated out to any tip life of constable substition much to constant to the Department Conder Incident Report 24 hours about	000
	Any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities must be reported to the Dangerous Goods Incident Report 24-hour phone line at 1-800-663-3456.	PGC
t		
	Sediment and Erosion Control measures to prevent the release of silt, sediment or sediment-laden water must be in place before starting works that may result in sediment mobilization. Care shall be exercised	
19	during all phases of the work to prevent the release of silt, sediment, sediment-laden water, raw concrete, concrete leachate or any deleterious substances. All control measures must meet or surpass the	
	Provincial "Standards and Best Practices for In-stream Works" (2004) and the "Land Development Guidelines for the Protection of Aquatic Habitat" (Fisheries and Oceans Canada and the British Columbia, 1993).	PGC
	Sediment removal boundaries must be clearly delineated prior to commencement of work. All sediment excavation for removal purposes shall be completed in isolation of the stream flows.	PGC
-	Care shall be exercised during sediment screening so that fine size fractions are not introduced into wetted areas or left in dry areas of the stream channel following the completion of work.	PGC
	Discharge and runoff water from the site into any watercourse(s) must comply with the BC Approved Water Quality Guidelines for the Protection of Aquatic Life	
D	(https //www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines/approved-water-quality-guidelines and https //www2.gov.bc.ca/assets/gov/environment/air-land	
	water/water/waterquality/wqgs-wqos/approved-wqgs/turbitity-or.pdf) and/or the applicable Local Government Bylaw(s).	PGC
	Water quality monitoring must be conducted by an appropriately qualified professional or their designated Environmental Monitor on every day in which instream works are being conducted. Measurements must	1051
	be taken upstream of any works taking place and within the extent of the sedimentation downstream of where instream work is actively occurring. Measurements should be taken immediately prior to works	
	beginning, and then at regular intervals until the works are completed and may require additional frequency during wet weather conditions. Wet weather conditions will be defined asbeing equal to or greater	
	than 25 millimetres of rainfall within a24-hourperiod.	PGC
Ī	All excavated material and debris shall be removed from the site or placed in a stable area above the high-watermark of the stream. Mitigative measures must be applied	
	July 23, 2020 Job Number 114324 File Number 20077957of Ministry of Forests, Lands, Natural Resource Operations, and Rural Development Water Management Mailing Address 200-10428 153 Street, Surrey	
	BC V3R 1E1 Location 200-10428 153 Street, Surrey BC V3R 1E1 Phone (604) 586-4400 Fax (604) 586-4444 Web https //www2.gov.bc.ca/gov/content/environment/air-land-water/waterto protect the	
	excavated material and debris from erosion and reintroduction into the watercourse. These measures may include covering the material with erosion blankets, seeding and planting with native vegetation, or as	
	otherwise directed by a Qualified Professional.	PGC
		PGC
-	All material utilized during construction shall be contoured and placed in a stable area such that it is not able to mobilize and managed to avoid entry into any stream or watercourse.	Pau
	Measures must be taken to ensure that no harmful material (e.g. fuel and other hydrocarbons, soil, road fill, or sediment) which could adversely impact water quality, fish and other aquatic life, and/or fish	
	habitat, be allowed to enter the wetted perimeter as a result of the project activities. All staff must be trained in handling and applying a spill kit appropriately to any spills/incidents.	PGC
	site preparation is to be carried out from the banks of the stream, thus minimizing disturbance to the stream.	PGC
-		
	The holder of this Approval shall ensure that instream works are designed and installed so as not to restrict fish passage and/or lead to fish stranding.	PGC
	All temporary works (including a ford, stream crossing and flow bypass) shall be removed on completion of the project, and the stream channel restored to its natural condition.	PGC
	Vegetation along the banks of the stream shall be disturbed as little as possible. All disturbed areas must be restored using native vegetation that is suitable for the site conditions.	PGC
Ī	All disturbed areas of the banks of the stream shall be restored to their original condition.	PGC
-	The new channel of the stream must have greater or equal hydraulic capacity than the existing channel.	MESL Design, PGC implementation
		Mcsc besign, PGC implementation
	The hydraulic capacity of installed culvert(s) must be equivalent to the hydraulic capacity of the stream channel or be capable of passing the 1 in 200 year maximum daily flow without the water level at the	and the management of the
	culvert(s) inlet exceeding the top of the culvert(s).	MESL Design, PGC implementation
Í	Rock used as riprap shall be clean of any substances deleterious to aquatic life and shall be durable, angular in shape and suitably graded and sized to resist movement by stream flow. Any other engineering	
	material required for the construction of the works shall be clean of any substances deleterious to aquatic life.	PGC
	All rock used in the works shall be clean and free of sediment producing material, durable, non-acid generating and suitably graded.	PGC
-		
	Treated wood products shall not be used in any construction below the high-water mark of the stream channel.	PGC
1	Large woody debris and the stubs of large diameter trees must be left in place or retained on-site where it is safe to do so.	PGC
1	Care shall be exercised during pile driving to minimize potential adverse impacts to fish or wildlife. The following mitigation measures shall be implemented	PGC
	Where possible and feasible, piles should be installed using a vibratory hammer.	PGC
	The possible wing an impact hammer must implement mitigation measures to reduce water pressure sound waves in excess of 30 kilopascals (kPa).	
		PGC
	Mitigation measures such as bubble curtains, double wall piles, or isolation methods shall be implemented to avoid adverse impacts to fish.	PGC
	Where water pressure sound waves may exceed 30 kPa, isolation methods must be implemented to prevent fish and wildlife from entering the work area.	PGC
	Monitoring underwater sound wave levels must be conducted continuously and within 10 meters of the pile being driven to ensure levels do not exceed 30 kPa. The construction with timber piles does not require	
	underwater sound monitoring.	PGC
	방법 이 문화 방법 이 방법 이 있는 것 같아요. 이 문화 가장 이 집에 있는 것 같아요. 이 집에는 것 같아요. 이 집에는 것 같아요. 이 집에 집에서 있는 것 같아요. 이 집에 집에 집에 있는 것 같아요. 이 집에 집에 집에 있는 것 같아요. 이 집에 집에 집에 집에 있는 것 같아요. 이 집에	
	In the event that distressed, injured or dead fish are observed following the initiation of pile driving, work shall halt immediately and the holder of this Approval or appropriate designate must contact the Water	
J	Manager as soon as practicable for additional requirements before work is resumed.	PGC
	The holder of this Approval shall be responsible for the repair, operation and maintenance of works to the satisfaction of the Water Manager.	
		PGC
	The holder of this Approval must provide a detailed post-construction report no later than December 1 of the year works were completed. The report must be labelled with this Approval file number and labelled	PGC
1	The holder of this Approval must provide a detailed post-construction report no later than December 1 of the year works were completed. The report must be labelled with this Approval file number and labelled	
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3 Fish presence, species composition, and if fish stranding is occurring within the newly constructed channel.	Province
4 Amphibian species presence by egg mass surveys,	Province
5 Recommendations for adaptive management, such as additional channel complexing or modifications if required, to address habitat limitations such as insufficient flows, fish stranding, etc.,	Province
6 Monitoring, maintenance and implementation of the above recommendations if required.	Province
7 Water quality monitoring including temperature, pH, Dissolved Oxygen, and turbidity.	Province
pp To address the permanent in stream and riparian impacts associated with the project, the holder of this Approval must	
1 Retain one or more appropriately qualified professionals to develop an offsetting plan that includes	
The creation of a minimum of 206 m2 of instream, 2,705 m2 of wetland, and 1,082 m2 riparian habitat that is like for like, or like for better habitat, in terms of structure, functionality (e.g., flow regime), and targ	get
species. If the actual instream, wetland, and or riparian impact area is larger than estimated in "Environmental Enhancement Management Plan Hwy 91/17 Upgrade Project, Delta, BC. Submitted to Pacific	Les Correction of the second sec
Gateway Constructors prepared by Brybil Projects Ltd. Dated June, 2020" the compensation works must offset the actual area lost using the above stated like for like for better guidelines.	Brybil/PGC
ii A post-construction monitoring plan of the compensation works over 10 years following the completion of the offsetting measures.	Province
iii A commitment to prepare and submit annual post-construction monitoring reports at the end of every year of the monitoring program. A final monitoring report must be submitted upon completion of the annu	
monitoring program or upon reaching the survivorship and/or functionality requirements if these were not met during the monitoring program.	Province
2 Develop the offsetting plan in collaboration with interested First Nations and the Ministry of Forests, Lands, and Natural Resource Operations and Rural Development.	Brybil/PGC
3 Submit an amendment to this approval, or a new Change Approval or a Water License, whichever is applicable to the offsetting proposal, to authorize the construction of the offsetting works. This application m	
be submitted to Front Counter BC and the tracking number must be provided to WaterActReferrals.LowerMainland@gov.bc.ca no later than December 31, 2020, unless otherwise specified in writing by the Wat	er
Manager.	Brybil/PGC

Conditions Fland clearing is to occur within the breeding bird period (March 30 to August 16 in Zone A1, which includes the Lower Mainland and Fraser Valley), a nest survey must be conducted and a 10m no-clearing buffer	Responsibility
laced around the nest until the nest is determined to be no longer active.	
he work(s) authorized in this Approval shall be completed on or before Dec. 31, 2023.	
Il works associated with the Environmental Enhancement Management Plan, as outlined in clause (m) and requirements in clause (jj) below, shall be completed on or before December 31, 2033 (based on 10	
ears). fork in the stream and stream channel shall occur only during the periods outlined below, so that the fisheries interests are protected	
tore an use sceam and sceam channes shar occur only during the periods outnied below, so that use interests are processed stream work during the reduced risk instream work window shall occur during the period of August 1 to September 15; or	
ased on project justification and risk, instream work outside of the reduced risk instream work window (as stated above), subject to the following	
n appropriately qualified professional shall provide advice to the holder of this Approval on the timing of the work based on the nature of the works, environmental values (including fish, amphibians, wildlife, any	
sted species present), water quality, channel stability, weather conditions, water levels, and any other relevant factors); and	
he Qualified Professional shall also provide additional construction mitigation advice to the holder of this Approval, and daily or full-time supervision of all work in or near the stream; and	
/ork must be timed and planned appropriately, the stream must be completely dry or have marginal flows for the duration of the construction activities; and	
the advice of the Qualified Professional on construction timing (as per (i) above) and mitigation measures (as per (ii) above), as well as the timing of work and the presence of the Qualified Professional, must be	
ccumented in writing. This documentation must be submitted as part of the post construction reporting for this project. I machinery and equipment operating within the stream shall be clean, free of external grease, oil or fluid leaks and shall use biodegradable grease, oil and fluids.	
machinery and equipment operating wromit the solearn shall be tread, the of external grease, on of hud reas and shall use biotegradable grease, on and hubbs.	
elling and servicing of vehicles and equipment must occur a minimum of 30 metres away from all streams, lakes and waterbodies. Keep a spill containment kit on site and train onsite staff in its use. Immediately	
port any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities to the Dangerous Goods Incident Report 24-hour phone line at 1-800-663-3456.	
he works shall not result in depressions that have the ability to trap fish and other aquatic life. The holder of this approval shall take reasonable care to avoid damaging any land, works, trees, or other property and shall make full compensation to the owners for any damage or loss resulting from the exercise	
te noise of this approval shall take reasonable care to avoid damaging any land, works, trees, or other property and shall make tuil compensation to the owners for any damage or loss resulting from the exercise the rights granitated with this approval.	
the rights granted man on approval.	
I material utilized during construction shall be contoured and placed in a stable area such that it is not able to mobilize and managed to avoid entry into any stream or watercourse.	
I works shall be completed in accordance with	
ference ENG DWGs Site F Key Plan/Orawing Index 2020-02-14; Plan 2020-02-14; Profiles 2020-02-14; Typical sections 2020-02-14; Culvert Plan and Profiles, 2020-02-14	
eport Section 11 Approval Application Highway 91/17 Upgrades, Section 3, Site F, By Brybil Projects Ltd., February 28, 2020	
cormwater Management Plan, McElhanney May 6, 2020 EMP, 3rd Revision, May 2020	
nnr, and newson, may 2020	
sheries Habitat Mitigation and Compensation Plan (of CEMP)	
nvironmental Enhancement Management Plan (EEMP), Brybil Projects Ltd., June 2020	
emo Additional FUNRO Information, Dave Hayward, Brybil, June 8, 2020	
he holder of this approval must adhere to the standards of professional accountability, as signed off by Qualified Professional(s), Dave Hayward and Rob Hoogendorn on June 2, 2020, regarding the Key Aquatic	
abitat Questions for Qualified Professionals specific to Bank Erosion Protection and Stream Diversion/In-filling, on behalf of the holder of this approval. It is the responsibility of the holder of this Approval to	
tain an appropriately qualified professional(s) for the relevant duration of works in order to uphold this signed professional assessment.	
I work shall be carried out in accordance with the Provincial "Standards and Best Practices for In-stream Works" (2004). The Provincial guidance document can be found at the following link tp://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf.	
he holder of this Approval must hire an appropriately Qualified Professional to conduct Environmental Monitoring on all in-stream works authorized under this Approval. The Qualified Professional must be an	
oplied scientist or technologist, acting alone or together with another qualified professional. He or she must be registered and in good standing in British Columbia with an appropriate professional organization	
instituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association. The Qualified Professional is responsible for observing the methods of construction and	
eparing information and reports on the compliance of the construction activities. The Qualified Professional shall	
ssure all best management practices and mitigation measures are in place to avoid and minimize environmental impact on the land and on fish and fish habitat of the stream.	
here applicable, assist in the isolation of the stream prior to the commencement of works. Iplement and ensure erosion and sediment control measures are constructed, installed, and maintained appropriately for the full duration of instream works.	
pipement and ensure erosion and secument control measures are constructed, installed, and maintained appropriately for the full duration of instream works. Instream works authorized under this Approval.	
pervise all instream works autonized under this Approval. Hen the works involve temporary diversions to isolate the work site,	
Initian all diversion works daily to ensure numes & flow hypasses are in proper working condition-	
started from the standard of the cloude pump interactions of profiles of the final quality species in a coordance with the "Interim code of practice End-of-pipe fish protection screens for small water intakes in sure diversion works that include pump intakes be screened for fish and quality species in a coordance with the "Interim code of practice End-of-pipe fish protection screens for small water intakes in	
eshwater" (Fisheries and Oceans Canada, 2020); and	
sure fish are prevented from entering the works.	
fhen the works involve dewatering or isolation of flow and the stream is known or suspected to contain fish and/or amphibians,	
tend the site prior to conducting any instream works to complete fish and wildlife search and salvages;	
btain any permits needed prior to undertaking the salvage(s); and spect the extraction area for fish stranding at least once after water levels have declined.	
Spect the Extraction area for that an annung as reast white differ white interest large decument.	
the event of an environmental incident or non-compliance with any of the terms or conditions of this Approval, notify the Water Manager (SouthCoastWSAReporting@gov.bc.ca ), within 24 hours.	
e granted authority to stop the work authorized under this Approval if deemed necessary to address risks to the environment. The Qualified Professional or their designate (specified in writing) must be on site	
ring all phases of construction in and around the stream to ensure this component is upheld.	
pon commencement of the project, the work shall be pursued to completion as quickly as possible.  I equipment and machinery used in or near the stream channel	
i equipment and macruniery used in or near the stream Channel ust be in good operating condition and free of leaks, excess oil and grease;	
ust have a give operating continuent in the orients, eaches on and greate, ust have a give in containment in the orients, eaches on and greate, ust have a give in containment in the readily accessible on-site;	
lay not be refuelled within 30 meters of any watercourse; and	
ust use environmentally sensitive hydraulic fluids which are non-toxic to aquatic life and which are readily or inherently bio-degradable.	

WSA Approval 2007783

Legend Difference between Approval 2007795 & 2007783 Difference between Approval 2007749 & 2007783 Difference between Approval 2007770 & 2007783 Difference between Approval 2007755 & 200783

Sediment and Erosion Control measures to prevent the release of silt, sediment or sediment-laden water must be in place before starting works that may result in sediment mobilization. Care shall be exercised	
<sup>5</sup> during all phases of the work to prevent the release of silt, sediment, sediment-laden water, raw concrete, concrete leachate or any deleterious substances. All control measures must meet or surpass the	
Provincial "Standards and Best Practices for In-stream Works" (2004) and the "Land Development Guidelines for the Protection of Aquatic Habitat" (Fisheries and Oceans Canada and the British Columbia, 1993).	
t Sediment removal boundaries must be clearly delineated prior to commencement of work. All sediment excavation for removal purposes shall be completed in isolation of the stream flows.	
Discharge and runoff water from the site into any watercourse(s) must comply with the BC Approved Water Quality Guidelines for the Protection of Aquatic Life U (https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines/approved-water-quality-guidelines and https://www2.gov.bc.ca/assets/gov/environment/air-land-	
<ul> <li>untps://www.gov.oc.ca/gov/coment/emmonment/ani-anio-water/w</li></ul>	
Water quality monitoring must be conducted by an appropriately qualified professional or their designated Environmental Monitor on every day in which instream works are being conducted. Measurements must	
be taken upstream of any works taking place and within the extent of the sedimentation downstream of where instream work is actively occurring. Measurements should be taken immediately prior to works	
beginning, and then at regular intervals until the works are completed and may require additional frequency during wet weather conditions. Wet weather conditions will be defined as being equal to or greater	
than 25 millimetres of rainfall within a 24 hour period. All excavated material and debris shall be removed from the site or placed in a stable area above the high water mark of the stream. Mitigative measures must be applied to protect the excavated material and	
v debris from erosion and reintroduction into the watercourse. These measures may include covering the material with erosion blankets, seeding and planting with native vegetation, or as otherwise directed by a	
Qualified Professional.	
w All material utilized during construction shall be contoured and placed in a stable area such that it is not able to mobilize and managed to avoid entry into any stream or watercourse.	
x Site preparation and construction of the works is to be carried out from the banks of the stream, thus minimizing disturbance to the stream. y The holder of this Approval shall ensure that instream works are designed and installed so as not to restrict fish passage and/or lead to fish stranding.	
2 All temporary works (including a ford, stream crossing and flow bypass) shall be removed on completion of the project, and the stream channel extered to its natural condition.	
a Vegetation along the banks of the stream shall be disturbed as little as possible. All disturbed areas must be restored using native vegetation that is suitable for the site conditions.	
bb The new channel of the stream must have greater or equal hydraulic capacity than the existing channel.	
The hydraulic capacity of installed culvert(s) must be equivalent to the hydraulic capacity of the stream channel or be capable of passing the 1 in 200 year maximum daily flow without the water level at the culvert(s) inlet exceeding the top of the culvert(s).	
cover (a) mere exceeding use top or the curver (a). , Rock used as riprap shall be clean of any substances deleterious to aquatic life and shall be durable, angular in shape and suitably graded and sized to resist movement by stream flow. Any other engineering	
<sup>14</sup> material required for the construction of the works shall be clean of any substances deleterious to aquatic life.	
ee Treated wood products shall not be used in any construction below the high-water mark of the stream channel.	
ff Large woody debris and the stubs of large diameter trees must be left in place or retained on-site where it is safe to do so. gg Care shall be exercised during pile driving to minimize potential adverse impacts to fish or wildlife. The following mitigation measures shall be implemented	
gg care shan be exercised ouring pile driving to manimize potential average impacts to ray or whome, the following mugation measures shan be implemented 1 Where possible and feasible, piles should be installed using a vibratory hammer.	
2 Piles installed using an impact hammer must implement mitigation measures to reduce water pressure sound waves in excess of 30 kilopascals (kPa).	
3 Mitigation measures such as bubble curtains, double wall piles, or isolation methods shall be implemented to avoid adverse impacts to fish.	
4 Where water pressure sound waves may exceed 30 kPa, isolation methods must be implemented to prevent fish and wildlife from entering the work area. Monitoring underwater sound wave levels must be conducted continuously and within 10 meters of the pile being driven to ensure levels do not exceed 30 kPa. The construction with timber piles does not require	
5 monoting uncertainty output events must be conducted commodaty and wram to meters or the pite being driven to ensure revers to increated to the conduction with innover pites boes not require undervater sound monitoring.	
6 In the event that distressed, injured or dead fish are observed following the initiation of pile driving, work shall halt immediately and the holder of this Approval or appropriate designate must contact the Water	
Manager as soon as practicable for additional requirements before work is resumed.	
The holder of this Approval must provide a detailed post-construction report no later than December 1 of the year works were completed. The report must be labelled with this Approval file number and labelled in the subject line of the email and submitted to SouthCoastWSAReporting@gov.bc.ca.	
the subject line of the email and submitted to SouthCaskWarkeporting@got.Oc.ca. That report Shall include a signed statement from an appropriately Qualified Professional summarizing	
1 The in-stream works undertaken,	
2 The timing of those works,	
3 The total in-stream area directly affected,	
4 The volume of gravel or sediment removed (if applicable), 5 The frequency of monitoring including who the QP or EM was;	
6 The turbidity reporting and accompanying data along with a description of any levels higher than the authorization and what immediate steps were taken (if applicable),	
7 Representative site photographs;	
8 Whether or not they observed or were otherwise aware of any non-compliance with the terms and conditions of this Approval; and	
9 A description of any environmental incidents, non-compliance or other difficulties, and how these were addressed and reported.	
ii The holder of this Approval must retain an appropriately Qualified Professional to design, implement and report on the effectiveness of mitigation, restoration, and/or offsetting measures required in this Approval.	
The effectiveness monitoring term required for this approval is 10 years, ending on Dec. 31, 2033, or 10 years following the completion of construction, whichever is later. Monitoring for riparian, instream, and	
wetland habitats should occur on years 1, 2, 3, 6, 7, and 10.	
Effectiveness Monitoring Reports shall be submitted no later than December 1 of each calendar year for the duration of monitoring. The reports shall be submitted via email to SouthCoastWSAReporting@gov.bc.ca, with the approval file number listed in the report and the subject line of the email.	
sourcos waneportingegoro.c.a, win the approvalme number insteam in the port and the subject the or the email. The reports shall include	
Documentation (including photographs) and summary of the survival of planted trees and shrubs. Tree survival rates must be 100%. Shrub and other plant survival rates must exceed 80%. Replanting may be	
required to achieve this success rate. If the area is susceptible to invasive species, the riparian planting plan should be modified to include a denser plant spacing as well as additional monitoring and maintenance	
to ensure an adequate plant survival rate of 80% can be achieved. It is recommended that trees and shrubs be protected from beavers and voles with metal fencing and vole guards, respectively. 2 Observation and documentation (including photographs) related to flows and function of the restored or new channel and its features.	
2 Over taken and obtained about the standing provide stands to new and taken to the taken and taken an	
4 Amphibian species presence by egg mass surveys,	
5 Recommendations for adaptive management, such as additional channel complexing or modifications if required, to address habitat limitations such as insufficient flows, fish stranding, etc.,	
6 Monitoring, maintenance and implementation of the above recommendations if required. 7 Water quality monitoring including temperature, pH, Dissolved Oxygen, and turbidity.	
7 water quarky monitoring including temperature, pr., ussoved oxygen, and turbidity. jij To address the permanent instream and riparian impacts associated with the project, the holder of this Approval must	
a Tetain one or more appropriately qualified professionals to develop an offsetting plan that includes	
The creation of a minimum of 382 m2 of instream, 21,648 m2 of wetland, and 52 m2 riparian habitat that is like for like, or like for better habitat, in terms of structure, functionality (e.g., flow regime), and target	
species. If the actual instream, wetland, and or riparian impact area is larger than estimated in "Environmental Enhancement Management Plan Hwy 91/17 Upgrade Project, Delta, BC. Submitted to Pacific Gateway Constructors prepared by Brybil Projects Ltd. Dated June, 2020" the compensation works must offset the actual area lost using the above stated like for like for like for better guidelines.	
A post-construction monitoring plan of the compensation works over 10 years following the completion of the offsetting measures. Monitoring must take place during the same time of year each year to provide	

A commitment to prepare and submit annual post-construction monitoring reports at the end of every year of the monitoring program. A final monitoring report must be submitted in	upon completion of the annual
monitoring program or upon reaching the survivorship and/or functionality requirements if these were not met during the monitoring program. Develop the offsetting plan in collaboration with interested First Nations, local governments, and the Ministry of Forests, Lands, and Natural Resource Operations and Rural Developm	
Develop the disecting plan in consolication with interested in at halouns, local governments, and the winner or roless, cance, and new machine beeroopin Submit an amendment to this approval, or a new change Approval or a Water License, whichever is applicable to the offsetting proposal, to authorize the construction of the offsetting	
be submitted to Front Counter BC and the tracking number must be provided to WaterActReferrals. LowerMainland@gov.bc. ca no later than December 31, 2020, unless otherwise spi	
Manager.	
Effectiveness monitoring must take place during the same time of year each year to provide comparable data.	
Monitoring of plant survival in riparian and wetland areas and of instream areas should be scheduled during the summer, during a period between high and low water (likely July). Ta	reats include
Plant survival is 280%. Tree survival rate of 100 %.	Berninger
Native plant cover is two thirds greater than invasive species cover within 5 years;	
Visual survey of LWD and boulders to confirm they are in place and intact, and that boulders are effectively creating riffles and pools, creating cover for fish and habitat for amphibiar	is; and
Fish are present in instream areas and there are no new barriers to movement.	

W5A Approval 2007749 Change Approval - Changes In and About a Stream (Site G)

Conditions	Responsibility
If land clearing is to occur within the breeding bird period (March 30 to August 16 in Zone A1, which includes the Lower Mainland and Fraser Valley), a nest survey must be conducted and a 10m no-clearing buffer placed around the nest until the nest is determined to be no longer active.	
d The work(s) authorized in this Approval shall be completed on or before Dec. 31, 2023.	
All works associated with the Environmental Enhancement Management Plan, as outlined in clause (m) and requirements in clause (jj) below, shall be completed on or before December 31, 2033 (based on 10 years).	
f Work in the stream and stream channel shall occur only during the periods outlined below, so that the fisheries interests are protected	
1 Instream work during the reduced risk instream work window shall occur during the period of August 1 to September 15; or	
2 Based on project justification and risk, instream work outside of the reduced risk instream work window (as stated above), subject to the following	
An appropriately qualified professional shall provide advice to the holder of this Approval on the timing of the work based on the nature of the works, environmental values (including fish, amphibians, wildlife, any	
listed species present), water quality, channel stability, weather conditions, water levels, and any other relevant factors); and	
ii The Qualified Professional shall also provide additional construction mitigation advice to the holder of this Approval, and daily or full-time supervision of all work in or near the stream; and	
iii Work must be timed and planned appropriately, the stream must be completely dry or have marginal flows for the duration of the construction activities; and	
The advice of the Qualified Professional on construction timing (as per (i) above) and mitigation measures (as per (ii) above), as well as the timing of work and the presence of the Qualified Professional, must be	
V documented in writing. This documentation must be submitted as part of the post construction reporting for this project.	
g All machinery and equipment operating within the stream shall be clean, free of external grease, oil or fluid leaks and shall use biodegradable grease, oil and fluids.	
h Fueling and servicing of vehicles and equipment must occur a minimum of 30 metres away from all streams, lakes and waterbodies. Keep a spill containment kit on site and train onsite staff in its use. Immediately	
report any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities to the Dangerous Goods incident Report 24-hour phone line at 1-800-663-3456.	
The works shall not result in depressions that have the ability to trap fish and other aquatic life.	
The holder of this approval shall take reasonable care to avoid damaging any land, works, trees, or other property and shall make full compensation to the owners for any damage or loss resulting from the exercise of the rights granted with this approval.	
k Riparian areas which are disturbed by the works shall be restored to their original condition and protected from erosion.	
All material utilized during construction shall be contoured and placed in a stable area such that it is not able to mobilize and managed to avoid entry into any stream or watercourse.	
m. All works shall be completed in accordance with	
1 Reference ENG DWGs Site G Key Plan/Drawing Index 2020-02-14; Plan 2020-02-14; Typical sections 2020-02-14; Culvert Plan and Profiles, 2020-02-14	

## Legend Difference between Approval 2007795 & 2007749 Difference between Approval 2007783 & 2007749 Difference between Approval 2007770 & 2007749 Difference between Approval 2007755 & 2007749

2 Report Section 11 Approval Application Highway 91/17 Upgrades, Section 4, Site G, By Brybil Projects Ltd., February 28, 2020 3 Stormwater Management Plan, McElhanney May 6, 2020 4 CEMP 3rd Revision May 2020 5 Surface Water Quality & Sediment Control Plan (of CEMP) 6 Fisheries Habitat Mitigation and Compensation Plan (of CEMP) 7 Environmental Enhancement Management Plan (EEMP), Brybil Projects Ltd., June 2020 8 Memo Additional FLNRO Information, Dave Hayward, Brybil, June 8, 2020 The holder of this approval must adhere to the standards of professional accountability, as signed off by Qualified Professional(s), Dave Hayward and Rob Hoogendom on June 2, 2020, regarding the Key Aquatic n Habitat Questions for Qualified Professionals specific to Bank Erosion Protection and Stream Diversion/In-filling, on behalf of the holder of this approval. It is the responsibility of the holder of this Approval to retain an appropriately qualified professional(s) for the relevant duration of works in order to uphold this signed professional assessment. All work shall be carried out in accordance with the Provincial "Standards and Best Practices for In-stream Works" (2004). The Provincial guidance document can be found at the following link http://www.env.gov.bc.ca/wid/documents/bmp/iswstdsbpsmarch2004.pdf. The holder of this Approval must hire an appropriately Qualified Professional to conduct Environmental Monitoring on all in-stream works authorized under this Approval. The Qualified Professional must be an papplied scientist or technologist, acting alone or together with another qualified professional. He or she must be registered and in good standing in British Columbia with an appropriate professional organization constructed under an Act, acting under that association's code of ethics and subject to disciplinary action by that association. The qualified Professional is responsible for observing the methods of construction and preparing information and reports on the compliance of the construction activities. The Qualified Professional shall 1 Ensure all best management practices and mitigation measures are in place to avoid and minimize environmental impact on the land and on fish and fish habitat of the stream. 2 Where applicable, assist in the isolation of the stream prior to the commencement of works. 3 Implement and ensure erosion and sediment control measures are constructed, installed, and maintained appropriately for the full duration of instream works. 4 Supervise all instream works authorized under this Approval. 5 When the works involve temporary diversions to isolate the work site, i Monitor all diversion works daily to ensure pumps & flow bypasses are in proper working condition; Ensure diversion works that include pump intakes be screened for fish and aquatic species in accordance with the "Interim code of practice End-of-pipe fish protection screens for small water intakes in freshwater" (Fisheries and Oceans Canada, 2020); and iii Ensure fish are prevented from entering the works. 6 When the works involve dewatering or isolation of flow and the stream is known or suspected to contain fish and/or amphibians, i Attend the site prior to conducting any instream works to complete fish and wildlife search and salvages; ii Obtain any permits needed prior to undertaking the salvage(s); and iii Inspect the extraction area for fish stranding at least once after water levels have declined. <sup>7</sup> In the event of an environmental incident or non-compliance with any of the terms or conditions of this Approval, notify the Water Manager (SouthCoastWSAReporting@gov.bc.ca ), within 24 hours. Be granted authority to stop the work authorized under this Approval if deemed necessary to address risks to the environment. The Qualified Professional or their designate (specified in writing) must be on site during all phases of construction in and around the stream to ensure this component is upheld. q Upon commencement of the project, the work shall be pursued to completion as quickly as possible.

r All equipment and machinery used in or near the stream channel 1 Must be in good operating condition and free of leaks, excess oil and grease; 2 Must have a spill containment kit readily accessible on-site;

3 May not be refuelled within 30 meters of any watercourse; and 4 Must use environmentally sensitive hydraulic fluids which are non-toxic to aquatic life and which are readily or inherently bio-degradable

"Standards and Best Practices for in stream Works" (2004) and the "Land Development Guidelines for the Protection of Aquatic Habitat" (Fisheries and Oceans Canada and the British Columbia, 1993).	
Sediment removal boundaries must be clearly delineated prior to commencement of work. All sediment excavation for removal purposes shall be completed in isolation of the stream flows. Discharge and runoff water from the site into any watercourse(s) must comply with the BC Approved Water Quality Guidelines for the Protection of Aquatic Life	
inscring a numeri water more more more are water courses in more comply more not approved in more county and enter the mor	
water/water	
Water quality monitoring must be conducted by an appropriately qualified professional or their designated Environmental Monitor on every day in which instream works are being conducted. Measurements must	
be taken upstream of any works taking place and within the extent of the sedimentation downstream of where instream work is actively occurring. Measurements should be taken immediately prior to works	
beginning, and then at regular intervals until the works are completed and may require additional frequency during wet weather conditions. Wet weather conditions will be defined as being equal to or greater than 25 millimetres of rainfall within a 24 hour period.	
than 25 minimetres or raintail writin a 24 nour period. All excavated material and debris shall be removed from the site or placed in a stable area above the high water mark of the stream. Mitigative measures must be applied to protect the excavated material and	
debris from existing and reintroduction into the watercourse. These measures may include covering the material with erosion blankets, seeding and planting with native vegetation, or as otherwise directed by a Qualified Professional.	
All material utilized during construction shall be contoured and placed in a stable area such that it is not able to mobilize and managed to avoid entry into any stream or watercourse.	
Site preparation and construction of the works is to be carried out from the banks of the stream, thus minimizing disturbance to the stream.	
The holder of this Approval shall ensure that instream works are designed and installed so as not to restrict fish passage and/or lead to fish stranding.	
All temporary works (including a ford, stream crossing and flow bypass) shall be removed on completion of the project, and the stream channel restored to its natural condition. Vegetation along the banks of the stream shall be disturbed as little as possible. All disturbed areas must be restored using native vegetation that is suitable for the site conditions.	
vegetation and the statement of the stream state to existing the state state of the stream state of the st	
The hydraulic capacity of installed culvert(s) must be equivalent to the hydraulic capacity of the stream channel or be capable of passing the 1 in 200 year maximum daily flow without the water level at the culvert(s) inlet exceeding the top of the culvert(s)	
Rock used as riprap shall be clean of any substances deleterious to aquatic life and shall be durable, angular in shape and suitably graded and sized to resist movement by stream flow. Any other engineering material required for the construction of the works shall be clean of any substances deleterious to aquatic life.	
material requires for the construction or the works shall be clean of any substance percentions to aquator line. Treated wood products shall into the used in any construction below the high-water mark of the stream channel.	
Large woody debris and the stubs of large diameter trees must be left in place or retained on-site where it is safe to do so.	
Care shall be exercised during pile driving to minimize potential adverse impacts to fish or wildlife. The following mitigation measures shall be implemented	
where possible and feasible, piles should be installed using a vibratory hammer or helical (screw) method.	
Piles installed using an impact hammer must implement the following mitigation measures to reduce water pressure sound waves in excess of 30 kilopascals (kPa)	
Mitigation measures such as bubble curtains, double wall piles, or isolation methods shall be implemented to avoid adverse impacts to fish. Where water pressure sound waves may exceed 30 kPa, isolation methods must be implemented to prevent fish and wildlife from entering the work area.	
Monitoring underwater sound waves may exceed 30 kPa, loadcommentous may be implemented to prevent that and minume normenteing une work area. Monitoring underwater sound wave levels must be conducted continuously and within 10 meters of the pile being driven to ensure levels do not exceed 30 kPa. The construction with timber piles does not require	
underwater sound monitoring.	
In the event that distressed, injured or dead fish are observed following the initiation of pile driving, work shall halt immediately and the holder of this Approval or appropriate designate must contact the Water Manager as soon as practicable for additional requirements before work is resumed.	
The holder of this Approval must provide a detailed post-construction report no later than December 1 of the year works were completed. The report must be labelled with this Approval file number and labelled in	
the subject line of the email and submitted to SouthCoastWSAReporting@gov.bc.ca.	
That report shall include a signed statement from an appropriately Qualified Professional summarizing	
The in-stream works undertaken, The timing of those works.	
The turning of those works, The total in-stream area directly affected.	
The volume of gravel or sediment removed (if applicable),	
The frequency of monitoring including who the QP or EM was;	
The turbidity reporting and accompanying data along with a description of any levels higher than the authorization and what immediate steps were taken (if applicable),	
Representative site photographs;	
Whether or not they observed or were otherwise aware of any non-compliance with the terms and conditions of this Approval; and A description of any environmental incidents, non-compliance or other difficulties, and how these were addressed and reported.	
The holder of this Approval must retain an appropriately Qualified Professional to design, implement and report on the effectiveness of mitigation, restoration, and/or offsetting measures required in this Approval.	
The effectiveness monitoring term required for this appropriately deamated in the contract of the effectiveness monitoring term required for this approval is 10 years, ending on Dec. 31, 2033, or 10 years following the competition of construction, whichever is later. Monitoring for riparian, instrument end of the effectiveness of the effective	
wetland habitats should occur on years 1, 2, 3, 6, 7, and 10.	
Effectiveness Monitoring Reports shall be submitted no later than December 1 of each calendar year for the duration of monitoring. The reports shall be submitted via email to	
SouthCoastWSAReporting@gov.bc.ca, with the approval file number listed in the report and the subject line of the email.	
The reports shall include	
Documentation (including photographs) and summary of the survival of planted trees and shrubs. Tree survival rates must be 100%. Shrub and other plant survival rates must exceed 80%. Replanting may be	
required to achieve this success rate. If the area is susceptible to invasive species, the riparian planting plan should be modified to include a denser plant spacing as well as additional monitoring and maintenance	
to ensure an adequate plant survival rate of 80% can be achieved. It is recommended that trees and shrubs be protected from beavers and voles with metal fencing and vole guards, respectively.	
Observation and documentation (including photographs) related to flows and function of the restored or new channel and its features.	
Fish presence, species composition, and if fish stranding is occurring within the newly constructed channel.	
Amphibian species presence by egg mass surveys, Recommendations for adaptive management, such as additional channel complexing or modifications if required, to address habitat limitations such as insufficient flows, fish stranding, etc.,	
Recommensations or adaptive management, such as adaptive compressing or modimations in required, to address natival minitations socials insurfacement rows, has such adaptive compressing or modimations in required.	
Water quality monitoring including temperature, pH, Dissolved Oxygen, and turbidity.	
To address the permanent instream and riparian impacts associated with the project, the holder of this Approval must	
Retain one or more appropriately Qualified Professionals to develop an offsetting plan that includes	
The creation of a minimum of, 7,617 m2 of wetland habitat that is like for like, or like for better habitat, in terms of structure, functionality (e.g., flow regime), and target species. If the actual instream, wetland,	
and/or riparian impact area is larger than estimated in "Environmental Enhancement Management Plan Hvy 91/12/Upgrade Project, Delta, BC. Submitted to Pacific Gateway Constructors prepared by Brybil	
Projects Ltd. Dated June, 2020" the compensation works must offset the actual area lost using the above stated like for like or like for better guidelines. A post-construction monitoring plan of the compensation works over 10 years following the completion of the offsetting measures.	
A post-construction monitoring plan of the compensation works over 10 years following the completion of the onsetting measures. A commitment to prepare and submit annual post-construction monitoring reports at the end of every year of the monitoring program. A final monitoring report must be submitted upon completion of the annual	
monitoring program or upon reaching the survivorship and/or functionality requirements if these were not met during the monitoring program.	

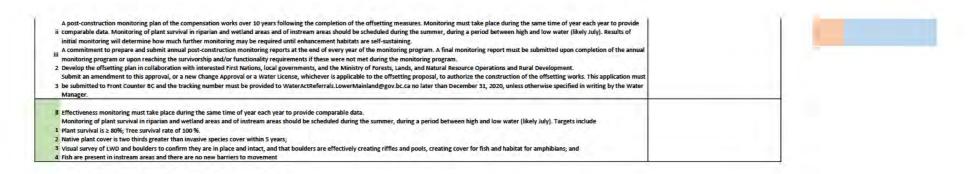
Submit an amendment to this approval, or a new Chanze Approval or a Water License, whichever is applicable to the offsetting proposal, to authorize the construction of the offsetting works. This application must	1.72
summa an amenament to this approval, or a new change approval or a water License, whichever is applicable to the onsetting proposal, to automize the construction of net the onsetting works. This applicable to the onsetting proposal, to automize the construction of net the onsetting works. This applicable to the onsetting proposal, to automize the construction of net onsetting works. This applicable to the onsetting proposal, to automize the construction of net onsetting works. This applicable to the onsetting proposal, to automize the construction of net onsetting works. This applicable to the onsetting proposal, to automize the construction of networks applicable to the onsetting proposal, to automize the construction of networks applicable to the onsetting works. This applicable to the onsetting proposal, to automize the construction of networks applicable to the onsetting proposal, to automize the construction of networks applicable to the onsetting proposal, to automize the construction of networks applicable to the onsetting proposal to automize the construction of networks applicable to the onsetting proposal to automize the construction of networks applicable to the onsetting proposal to automize the construction of networks applicable to the onsetting proposal to automize the construction of networks applicable to the onsetting proposal to automize the construction of networks applicable to automize the construction of networks applicable to applicable t	
Manager.	
kk Effectiveness monitoring must take place during the same time of year each year to provide comparable data.	
Monitoring of plant survival in riparian and wetland areas and of instream areas should be scheduled during the summer, during a period between high and low water (likely July). Targets include	
1 Plant survival is ≥ 80%; Tree survival rate of 100 %.	
<ol> <li>Native plant cover is two thirds greater than invasive species cover within 5 years;</li> </ol>	
3 Visual survey of LWD and boulders to confirm they are in place and intact, and that boulders are effectively	
4 creating riffles and pools and creating cover for fish and habitat for amphibians; and	
5 Fish are present in instream areas and there are no new barriers to movement	

WSA Approval 2007770		(
Change Approval - Changes in and About a Stream (Site I)		Legend Difference between App
		2007795 & 2007770
Conditions	Responsibility	Difference between App 2007783 & 2007770
If land clearing is to occur within the breeding bird period (March 30 to August 16 in Zone AL, which includes the Lower Mainland and Fraser Valley), a nest survey must be conducted and a 10m no-clearing	Responsibility	Difference between App
buffer placed around the nest until the nest is determined to be no longer active.		2007749 & 2007770
If it is possible amphibians may be present in the streams, such as Nordel Ditches, an amphibian salvage must be undertaken prior to works taking place.		Difference between Ap
The works authorized shall be completed on or before December 31, 2023.		2007755 & 2007749
All works associated with an authorized Environmental Enhancement Management Plan, as outlined in clause (n) and required in clause (ff) below shall be completed on or before December 31, 2033 (based on		
10 years).		
Work in the stream and stream channel shall occur only during the periods outlined below, so that the fisheries interests are protected Instream work during the reduced risk instream work window shall occur during the period of August 1 to September 30; or		
Based on project justification and risk, instream work outside of the reduced risk instream work window (as stated above), subject to the following		
An appropriately qualified professional shall provide advice to the holder of this Approval on the timing of the work based on the nature of the works, environmental values (including fish, amphibians, wildlife,		
any listed species present), water quality, channel stability, weather conditions, water levels, and any other relevant factors); and The Qualified Professional shall also provide additional construction mitigation advice to the holder of this Approval, and daily or full-time supervision of all work in or near the stream; and		
Work must be timed and planned appropriately the strange must be completely doy or base matriced flows for the duration of the construction activities, and		
The advice of the Qualified Professional on construction timing (as per (i) above) and mitigation measures (as per (ii) above), as well as the timing of work and the presence of the Qualified Professional, must be		
documented in writing. This documentation must be submitted as part of the post construction reporting for this project. All works shall be completed in accordance with		
All works shall be completed in accordance with Reference END Works Site I Plan 2020-02-27, Profiles 2020-02-27, Typical Sections 2020-02-27, Culvert/ Storm Plans and Profiles 2020-02-27		
Report Section 11 Approval Application Highway 91/17 Upgrades, Section 4, Site I, By Brybil Projects Ltd., March 10, 2020		
Stormwater Management Plan, McElhanney May 6, 2020 CEMP, 3rd Revision, May, 2020		
CEMP, 310 Revision, May, 2020 Surface Water Quality & Sediment Control Plan (of CEMP)		
Fisheries Habitat Mitigation and Compensation Plan (of CEMP)		
Environmental Enhancement Management Plan (EEMP), Brybil Projects Ltd., June 2020		
Memo Additional FLNRO Information, Dave Hayward, Brybil, June 8, 2020 The holder of this approval must adhere to the standards of professional accountability, as signed off by Qualified Professional(s), Dave Hayward and Rob Hoogendom on June 2, 2020, regarding the Key Aquatic		
The holds to the approximate and the standards or protession as eccontraling, as signed only quantized protessionals), over naryial and non-mogenoum of June 2, 2020, regaring the Key Aquato Habitat Questions for Qualified Professional specific to Bank resolution and stream Diversion/In-filing, on behalf of the holder of this Approval. Its the responsibility of the holder of this Approval to		
retain an appropriately qualified professional(s) for the relevant duration of works in order to uphold this signed professional assessment.		
All work shall be carried out in accordance with the Provincial "Standards and Best Practices for In-stream Works" (2004). The Provincial guidance document can be found at the following link		
http://www.enx.gov.bc.ca/wid/documents/bmp/iswstdsbpsmarch2004.pdf. The holder of this Approval must hire an appropriately Qualified Professional must be an		
applied scientist or technologist, acting alone or together with another qualified professional. He or she must be registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association. The Qualified Professional is responsible for observing the methods of construction		
and preparing information and reports on the compliance of the construction activities. The Qualified Professional shall		
Ensure all best management practices and mitigation measures are in place to avoid and minimize environmental impact on the land and on fish and fish habitat of the stream. Where applicable, assist in the isolation of the stream prior to the commencement of works.		
where approximate, basis in the posterior to the plasmin prior to the commencement on mono- implement and ensure ensoin and sediment control measures are constructed, installed, and maintained appropriately for the full duration of instream works.		
Supervise all instream works authorized under this Approval.		
When the works involve temporary diversions to isolate the work site, Monitor all diversion works daily to ensure pumps & flow bypasses are in proper working condition;		
monitor an unerson mons dany or ensure pumps is now uppesses are in poper wonting command; Ensure diversion works that include pump indicates be screened for fish and equatic species in accordance with the "Interim code of practice. End-of-pipe fish protection screens for small water intakes in		
freshwater" (Fisheries and Oceans Canada, 2020); and		
Ensure fish are prevented from entering the works. When the works involve dewatering or isolation of flow and the stream is known or suspected to contain fish and/or amphibians,		
when the noise involve deviation go to bolloot in now and use and is another to a supervised or supervised and any another to any another to any another to any another to any any another to any		
Obtain any permits needed prior to undertaking the salvage(s); and		
Inspect the extraction area for fish stranding at least once after water levels have declined.		
In the event of an environmental incident or non-compliance with any of the terms or conditions of this Approval, notify the Water Manager (SouthCoastWSAReporting@gov.bc.ca.), within 24 hours.		
Be granted authority to stop the work authorized under this Approval if deemed necessary to address risks to the environment. The Qualified Professional or their designate (specified in writing) must be on site		
during all phases of construction in and around the stream to ensure this component is upheld. All equipment and machinery used in or near the stream channel		
An equipment ato maximery used into the use stream transment Must be in good operating condition and free of leaks, excess all and grease;		
Must have a spill containment kit readily accessible on-site;		
May not be refuelled within 30 meters of any watercourse; and Must use environmentally sensitive hydraulic fluids which are non-toxic to aquatic life and which are readily or inherently bio-degradable.		
Must use environmentary setsione nyoraoutic notis which are non-rook, to aquiout me and which are readily or innerency biology asable.		
Fueling and servicing of vehicles and equipment must occur a minimum of 30 metres away from all streams, lakes and waterbodies. Keep a spill containment kit on site and train onsite staff in its use.		
Immediately report any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities to the Dangerous Goods Incident Report 24-hour phone line at 1-800-663-3456.		
Open commencement of the project, the work shall be pursued to completion as quickly as possible.		
Sediment and Erosion Control measures to prevent the release of silt, sediment or sediment-laden water must be in place before starting works that may result in sediment mobilization. Care shall be exercised		
during all phases of the work to prevent the release of silt, sediment, sediment-laden water, raw concrete, concrete leachate or any deleterious substances. All control measures must meet or surpass the		
Provincial "Standards and Best Practices for In-stream Works" (2004) and the "Land Development Guidelines for the Protection of Aquatic Habitat" (Fisheries and Oceans Canada and the British Columbia, 1993). Sediment removal boundaries must be clearly delineated prior to commencement of work. All sediment excavation for removal purposes shall be completed in isolation of the stream flows.		
Security removes contracts must be charged prime to commencement on work as securities to exact a contract or the contract of		
debris from erosion and reintroduction into the watercourse. These measures may include covering the material with erosion blankets, seeding and planting with native vegetation, or as otherwise directed by a		
Qualified Professional. Discharge and runoff water from the site into any watercourse(s) must comply with the BC Approved Water Quality Guidelines for the Protection of Aquatic Life		
Uscharge and runom water from the site into any watercourse(s) must comply winn the bc Approved water quality duolenes for the Protection of Aquatic Line (https://www.gov.bc.ca/gov.ontent/environment/ai-indu-environment/ai-indu-environment/ai-indu-equality-guidelines/approved-water-quality-guidelines/approved-w		
land-water/water/water/units/water/water/units/water/		

Water quality monitoring must be conducted by an appropriately qualified professional or their designated Environmental Monitor on every day in which instream works are being conducted. Measurements	1
value quanky monitoring must be consistent by an appropriately quanties processional or used designated in the constraints of an experiment should be a set of the constraint works are being conducted, weasarements must be taken immediately prior to must be taken immediately prior to	
works beginning, and then at regular intervals until the works are completed and may require additional frequency during wet weather conditions. Wet weather conditions will be defined as being equal to or	
greater than 25 millimetres of rainfall within a 24 hour period. The holder of this approval shall take reasonable care to avoid damaging any land, works, trees, or other property and shall make full compensation to the owners for any damage or loss resulting from the	
Ine noise or this approval shall take teasonable care to along a anging any land, works, trees, or other property and shall make full compensation to the owners for any damage or loss resulting from the exercise of the rights granted with this approval.	
Secretary or the right of planted multi as approva. Site preparation and construction of the works is to be carried out from the banks of the stream, thus minimizing disturbance to the stream.	
The works shall not result in depressions that have the ability to trap fish and other aquatic life.	
The holder of this Approval shall ensure that instream works are designed and installed so as not to restrict fish passage and/or lead to fish stranding.	
All temporary works (including a ford, stream crossing and flow bypass) shall be removed on completion of the project, and the stream channel restored to its natural condition. Riparian areas which are disturbed by the works shall be restored to their original condition and protected from erosion.	
reprint methan micro a counted of the stream of the transformed or approximation and produced.	
The hydraulic capacity of installed culvert(s) must be equivalent to the hydraulic capacity of the stream channel or be capable of passing the 1 in 200 year maximum daily flow without the water level at the	
culvert(s) inlet exceeding the top of the culvert(s).	
Rock used as riprap shall be clean of any substances deleterious to aquatic life and shall be durable, angular in shape and suitably graded and sized to resist movement by stream flow. Any other engineering material required for the construction of the works shall be clean of any substances deleterious to aquatic life.	
material required for the construction of the works shall be clean of any substances detections to aquatic (ine. All rock used in the works shall be clean and free of sediment producing material quarteriating and suitably graded.	
Treated wood products shall not be used in any construction below the high-water mark of the stream channel.	
Large woody debris and the stubs of large diameter trees must be left in place or retained on-site where it is safe to do so.	
Care shall be exercised during pile driving to minimize potential adverse impacts to fish or wildlife. The following mitigation measures shall be implemented	
Where possible and feasible, piles should be installed using a vibratory hammer.	
Piles installed using an impact hammer must implement mitigation measures to reduce water pressure sound waves in excess of 30 kilopascals (kPa). Mitigation measures such as bubble curtains, double wall piles, or isolation methods shall be implemented to avoid adverse impacts to fish.	
mogation measures social as bookies on tants, bookies on previous sont methods such as emplemented to are not avoid average in pack to instruct a social as a bookies on tants, bookies on the social as a bookies on tants and the social as a bookies of the social as a bookies on tants and the social as a bookies on tants and the social as a bookies of the social as a bo	
Monitoring underwater sound wave levels must be conducted continuously and within 10 meters of the pile being driven to ensure levels do not exceed 30 kPa. The construction with timber piles does not	
require underwater sound monitoring.	
In the event that distressed, injured or dead fish are observed following the initiation of pile driving, work shall halt immediately and the holder of this Approval or appropriate designate must contact the Water	
Manager as soon as practicable for additional requirements before work is resumed. The holder of this Approval must provide a detailed post-construction report no later than December 1 of the year works were completed. The report must be labelled with this Approval file number and labelled	
The index of the approximate proceedings por consistence in the time occurred to the pair which we complete the type index of the approximate number of the approximate procedure of the pair which we complete the type index of the approximate number of	
That report shall include a signed statement from an appropriately Qualified Professional summarizing	
The in-stream works undertaken,	
The timing of those works,	
The total in-stream area directly affected, The volume of gravel or sediment removed (if applicable),	
The frequency of monitoring including who the QP or EM was;	
i The turbidity reporting and accompanying data along with a description of any levels higher than the authorization and what immediate steps were taken (if applicable),	
/ Representative site photographs;	
8 Whether or not they observed or were otherwise aware of any non-compliance with the terms and conditions of this Approval; and 9 A description of any environmental incidents, non-compliance or other difficulties, and how these were addressed and reported.	
The bolder of this Approval must retain an appropriately Qualified Professional to design, implement and report on the effectiveness of mitigation, restoration, and/or offsetting measures required in this	
Approval.	
The effectiveness monitoring term required for this approval is 10 years following the completion of construction of the offsetting habitat. Monitoring for riparian, instream, and wetland habitat should occur for	
5 years, over a 10-year period following the completion of construction of the habitat offsetting unless a Qualified Professional deems the site functional prior to the end of the 5 years of monitoring. Monitoring must occur until the habitat is deemed functional at like for like or like for greater than the original habitat by a Qualified Professional.	
must occur unit the networks shall be submitted to later than become to greater than the original industry of accuments by a logarine to processional. Effectiveness Monitoring Reports shall be submitted to later than becomer to i each calendar year for the duration of monitoring. The reports shall be submitted via email to	
SouthCoastWSAReporting@gov.bc.ca, with the approval file number listed in the report and the subject line of the email.	
The reports shall include	
Documentation (including photographs) and summary of the survival of planted trees and shrubs. Tree survival rates must be 100%. Shrub and other plant survival rates must exceed 80%. Replanting may be	
required to achieve this success rate. If the area is susceptible to invasive species, the riparian planting plan should be modified to include a denser plant spacing as well as additional monitoring and maintenance to ensure an adequate plant survival rate of 80% can be achieved. It is recommended that trees and shrubs be protected from beavers and voles with metal fencing and vole guards, respectively.	
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required to achieve this success rate. If the area is succeptible to invasive species, the riparian planting plan should be modified to include a denser plant spacing as well as additional monitoring and maintenance to ensure an adequate plant survival rate of 80% can be achieved. It is recommended that trees and shrubs be protected from beavers and voles with metal fencing and vole guards, respectively. Observation and documentation (including photographs) related to flows and function of the restored or new channel and its features. Fish presence, species composition, and if fish stranding is occurring within the newly constructed channel. Amphibian species presence by egg mass surveys, Recommendations for adaptive management, such as additional channel complexing or modifications if required, to address habitat limitations such as insufficient flows, fish stranding, etc., Monitoring, maintenance and implementation of the above recommendations if required. Water quality monitoring including temperature, pt, biossoved Oxygen, and turbidity. To address the permanent instream and riparian impact associated with the project, the holder of this Approval must Retain one or more appropriately qualified professionals to develop an offsetting plan that includes The creation of a minimum of 1,310 m2 of instream, vel2nd, and 743 m2 riparian habitat that is like for like or like for secting plans. The creation of a minimum of 1,310 m2 of instream, vel2nd, and 743 m2 riparian habitat that is like for like, or like for like or like for like or like for like or like for beeter guidelines. A post-construction mono	

WSA Approval 2007755		1
Change Approval - Changes In and About SFPR Offset site FC239, and drainage between SFPR Offset site FC239 and Silda Ditch (Site H)		Legend
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Conditions	Responsibility	2007783 & 2007755
if land clearing is to occur within the breeding bird period (March 30 to August 16 in Zone A1, which includes the Lower Mainland and Fraser Valley), a nest survey must be conducted and a 10m no-clearing buffer placed around the nest until the nest is determined to be no longer active.		Difference between Approv 2007749 & 2007755
The work(s) authorized in this Approval shall be completed on or before Dec. 31, 2023.		Difference between Approv 2007770 & 2007755
All works associated with an Environmental Enhancement Management Plan, as outlined in clause (m) and requirements in clause (jj) below shall be completed on or before December 31, 2033 (based on 10		
years).		
Work in the stream and stream channel shall occur only during the periods outlined below, so that the fisheries interests are protected instream work during the reduced risk instream work window shall occur during the period of August 1 to September 30; or Based on project justification and risk, instream work window shall occur during the period of August 1 to September 30; or Based on project justification and risk, instream work window fail states and with the state above), subject to the following An appropriately qualified professional shall provide additional construction mitigation advice to the holder of this Approval on the timing of the work based on the nature of the works, environmental values (including fish, amphibians, wildlife, any listed species present), water quality, channel stability, weather conditions, water levels, and any other relevant factors); and the Qualified Professional all also provide additional construction mitigation advice to the holder of this Approval, and daily or full-time supervision of all work in or near the stream; and Work must be timed and planned appropriately, the stream must be completely dry or have marginal flows for the duration of the construction activities; and The advice of the Qualified Professional on construction timing (as per (i) above) and mitigation measures (as per (ii) above), as well as the timing of work and the presence of the Qualified Professional, must be documented in writing. This documentation must be submitted as part of the post construction reporting for this project.		
All machinery and equipment operating within the stream shall be clean, free of external grease, oil or fluid leaks and shall use biodegradable grease, oil and fluids.		
Fuelling and servicing of vehicles and equipment must occur a minimum of 30 metres away from all streams, lakes and waterbodies. Keep a spill containment kit on site and train onsite staff in its use. Immediately report any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities to the Dangerous Goods Incident Report 24-hour phone line at 1-800-663-3456. The works shall not result in depressions that have the ability to trap fish and other aquatic life.		
The holder of this approval shall take reasonable care to avoid damaging any land, works, trees, or other property and shall make full compensation to the owners for any damage or loss resulting from the exercise of the rights granted with this approval.		
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In parameters minice are documented by the works main be resorted to their organic constant and protection into a resort. All material utilized during construction shall be constanted and placed in a stable area such that it is not able to mobilize and managed to avoid entry into any stream or watercourse.		
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ING DVG site is the Key Plan/Dyawing Index, by McElhanney, 2020-02-20		
ENG DWG Site H Plan, by McElhanney, 2020-02-20		
ENG DWG Site H Profile, by McElhanney, 2020-02-20		
ENG DWG Site H Typical Sections, by McElhanney, 2020-02-20		
ENG DWG Site H Culvert Plan and Profiles, by McElhanney, 2020-02-20		
Report Section 11 Approval Application Highway 91/17 Upgrades, Section 1 And 2, By Brybil Projects Ltd., February 21, 2020		
Stormwater Management Plan, McElhanney May 6, 2020		
CEMP, 3rd Revision, May 2020		
Surface Water Quality & Sediment Control Plan (of CEMP)		
Fisheries Habitat Mitigation and Compensation Plan (of CEMP)		
Environmental Enhancement Management Plan (EEMP), Brybil Projects Ltd., June 2020		
Memo Additional FLNRO Information, Dave Hayward, Brybil, June 8, 2020; and		
Any other documents related to the File No. 2007755.		
The holder of this approval must adhere to the standards of professional accountability, as signed off by Qualified Professional(s), Dave Hayward and Rob Hoogendorn on June 2, 2020, regarding the Key Aquatic		
Habitat Questions for Qualified Professionals specific to Bank Erosion Protection and Stream Diversion/In-filling, on behalf of the holder of this approval. It is the responsibility of the holder of this Approval to		
retain an appropriately qualified professional(s) for the relevant duration of works in order to uphold this signed professional assessment.		
All work shall be carried out in accordance with the Provincial "Standards and Best Practices for In-stream Works" (2004). The Provincial guidance document can be found at the following link		
http://www.env.gov.bc.ca/wild/documents/bmp/iswstdsbpsmarch2004.pdf.		
The holder of this Approval must hire an appropriately Qualified Professional to conduct Environmental Monitoring on all in-stream works authorized under this Approval. The Qualified Professional must be an		
applied scientist or technologist, acting alone or together with another qualified professional. He or she must be registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association. The Qualified Professional is responsible for observing the methods of construction and preparing information and reports on the compliance of the construction activities. The Qualified Professional shall		
Ensure all best management practices and mitigation measures are in place to avoid and minimize environmental impact on the land and on fish and fish habitat of the stream. Where applicable, assist in the isolation of the stream prior to the commencement of works. mplement and ensure ension and sediment control measures are constructed, installed, and maintained appropriately for the full duration of instream works.		
Supervise all instream works authorized under this Approval.		
When the works involve temporary diversions to isolate the work site,		
Monitor all diversion works daily to ensure pumps & flow bypasses are in proper working condition;		
Ensure diversion works that include pump intakes be screened for fish and aquatic species in accordance with the "Interim code of practice End-of-pipe fish protection screens for small water intakes in		
freshwater" (Fisheries and Oceans Canada, 2020); and		
Ensure fish are prevented from entering the works.		
When the works involve dewatering or isolation of flow and the stream is known or suspected to contain fish and/or amphibians,		
Attend the site prior to conducting any instream works to complete fish and wildlife search and salvages;		
Obtain any permits needed prior to undertaking the salvage(s); and		
Inspect the extraction area for fish stranding at least once after water levels have declined.		
In the event of an environmental incident or non-compliance with any of the terms or conditions of this Approval, notify the Water Manager (SouthCoastWSAReporting@gov.bc.ca), within 24 hours.		
Be granted authority to stop the work authorized under this Approval if deemed necessary to address risks to the environment. The Qualified Professional or their designate (specified in writing) must be on site		
during all phases of construction in and around the stream to ensure this component is upheld.		
Upon commencement of the project, the work shall be pursued to completion as quickly as possible.		
All equipment and machinery used in or near the stream channel Must be in good operating condition and free of leaks, excess oil and grease;		
Must have a spill containment kit readily accessible on-site,		

<ul> <li>A bit place of the sort is the power the solution of the solution</li></ul>	4 Must use environmentally sensitive hydraulic fluids which are non-toxic to aquatic life and which are readily or inherently bio-degradable.	
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## APPENDIX 6: STATUS OF TOCA COMMITMENTS TABLE

Ref	Objective Commitments & Assurances	Timina	Delivered	Status	Update
Rei		Timing	Ву	Ongoing	Complete
1.0 Re	sponsible Environmental Management				
1.1	Develop, implement, and maintain an Environmental Management Plan (EMP) for the Project to demonstrate how the design, construction and operation, including maintenance, of the Project: - Will be carried out to avoid or mitigate negative impacts; - Will be carried out in an environmentally responsible manner, in accordance with DBSS 165 [Protection of the Environment]; - Will employ Best Management Practices (BMPs3); and - Will comply with federal and provincial legislation, permits, approvals and authorizations, including the Environmental Assessment Certificate (EAC).	All phases	Contractor	x	
1.2	Prepare and implement a Construction Environmental Management Plan (CEMP), (which is a component of the EMP), including relevant sub-plans, for the Project prior to the start of relevant construction activities.	Pre-construction	Contractor	x	
1.3	Obtain required statutory permits, approvals, and authorizations before proceeding with construction that requires such permits.	All phases	Contractor	x	
1.4	Adhere to the terms and conditions of the: EAC; federal screening report; the EMP; DBSS 165 [Protection of the Environment]; and any other applicable permits, licenses and approvals.	Pre-construction, construction	Contractor	x	
1.5	Establish an Inter-Agency Environmental Review Committee (IAERC), in accordance with the Terms of Reference developed during Application review, to provide for agency review and comment on plans and designs prior to construction, including but not limited to: - Detailed design of stormwater management infrastructure;	Pre-construction, construction	MOTI / Contractor	N/A	

	<ul> <li>Detailed vegetation and wildlife mitigation plans and mitigation monitoring plans; and</li> <li>Environmental management plans.</li> </ul>		1	
1.6	Provide all project related EMPs, including component EMPs, to applicable regulatory agencies in the IAERC for review and comment, at least 30 calendar days prior to the start of construction that requires such plans.	Pre-construction	Contractor	N/A
1.7	Relevant sub-plans to be included in the CEMP will include those to address environmental issues identified in the Application and supporting documentation submitted to the EAO during the Application review, and described in the Application (Section 11, pg. 523), including but not limited to: - Agriculture Mitigation Plan; - Air Quality and Dust Control Plan; - Archaeological Mitigation / Monitoring Plan; - Construction and Hazardous Waste Management Plan; - Contaminated Sites Management Plan; - Contractor Awareness and Education Plan; - Contractor Awareness and Education Plan; - Environmental Monitoring Plan; - Fisheries Habitat Mitigation and Compensation Plan; - Health and Safety Plan; - Invasive Species Management Plan; - Noise and Vibration Management Plan; - Spill Management and Emergency Response Plan; - Surface Water Quality and Sediment Control Plan; - Wildlife and Habitat Management Plan.	Pre-construction	Contractor	X
1.8	Manage contamination encountered during project development, regardless of the current assessment of potential contamination, in accordance with applicable regulatory requirements.	All phases	Contractor	x
1.9	Prepare and implement an Operational Environmental Management Plan, prior to operation and maintenance activities. Provide the operational EMP to relevant reviewing and regulatory agencies, for review and comment, at least 30 calendar days prior to the onset of operation and maintenance activities.	Pre-construction	Contractor	TBD
1.10	At a minimum, review the Wildlife and Habitat Management Plan and modify if required, three years post- construction and make a decision regarding the next review date and/or determine the closure date for the plan(s). The method for review, modification, and decision on closure of the plan(s) will be defined by the applicable regulatory agencies within the IAERC	Operations	Contractor	N/A
2.0 Mc	onitoring			
2.1	Ensure that environmental monitoring and reporting for the Project will be conducted, with respect to the terms and conditions of the EAC and other regulatory permits, approvals and authorizations as applicable.	Construction	Contractor	x
2.2	Incorporate a monitoring component into all applicable sub-plans of the construction EMP developed for the construction phase of the Project.	Pre-construction	Contractor	x
2.3	Outline in each of the sub-plans of the construction EMP: - Rationale for monitoring; - Parameters to be monitored;	Pre-construction	Contractor	x

	- Monitoring program details; and				
2.4	<ul> <li>Required follow-up actions.</li> <li>The Owner will engage an Environmental Monitor for the construction phases of the Project to undertake environmental monitoring activities and oversee implementation of each of component plans of the EMP developed for the Project. The Environmental Monitor will monitor, evaluate, and report to the owner on construction activities and the effectiveness of the environmental management strategies and mitigation measures, with respect to the terms and conditions of the Application and other regulatory Permits, Approvals and Authorizations that may apply. The Monitor will be responsible for making onsite decisions and taking on-site action to avoid/respond to potential environmental effects which could include temporary stop work orders if necessary.</li> </ul>	Construction	Contractor	x	
2.5	Implement environmental quality management program through monitoring, auditing and reporting activities for the Project with respect to the terms and conditions of the EAC and other regulatory permits, approvals and authorizations.	All phases	Contractor	Х	
3 0 In	cident Management		1		
3.1	Respond to environmental incidents, including spill incidents in accordance with the Emergency Response Plan to minimize effects and risks to the general public, on-site workers and the environment.	All phases	Contractor	x	
3.2	Include protocols, consistent with the BC Spill Reporting Regulation, for reporting spills to appropriate emergency response authorities, including; - The Provincial Emergency Program, in the case of any spills of reportable deleterious substances into waters frequented by fish, regardless of the amount of the spill; and - To adjacent property owners and occupiers, including local government, where utilities cross the highway and there is a potential for an incident to extend beyond the Project boundaries.	Pre-construction	Contractor	X	
3.3	Train all field Project personnel regarding implementation of the Construction and Hazardous Waste Management and Spill Management and Emergency Response Plans.	All phases	Contractor	X	
3.4	Incorporate relevant municipal contacts into the emergency contacts for the Construction and Hazardous Waste Management and Spill Management and Emergency Response Plans prepared for construction of the Project.	Pre-construction	Contractor	Х	
3.5	Follow applicable DBSS 165 and Canadian Council of Ministers of Environment codes and procedures if temporary fuel storage/fueling facilities are required during construction. Where there is a difference in standards, the most stringent measure for environmental protection will take precedence.	Construction	Contractor	Х	
4.0 Co	ommunity Consultation				
4.1	Consult with local governments, stakeholders and the public during all stages of Project development.	Pre-construction; construction	MoT, Contractor	x	
4.2	Conduct community open houses and information sessions during the design review stage to obtain input on design refinements, during the preliminary and final design review stages.	Pre-construction	MoT, Contractor	N/A	
4.3	Provide regular public information updates on the progress of construction, the schedule, and upcoming milestones.	Construction	MoT, Contractor	x	

4.4	Consult with the Corporation of Delta (CoD) and the City of Surrey (CoS) during all stages of project development and construction.	Pre-construction; construction	Contractor	Х	
4.5	Provide updated media information materials, as part of the Project commitment to making project information available to the public.	All phases	Contractor	Х	
4.6	Track project enquiries and responses.	All phases	Contractor	Х	
4.7	Discuss potential economic opportunities generated by the Project with participating First Nations throughout the Post-EA Certification, Design and Construction Phases of the Project.	Pre-construction; construction	MoT, Contractor	Х	
4.8	Obtain input from participating First Nations to identify appropriate measures to mitigate potential project related impacts on their previously identified interests in relation to fisheries and habitat matters.	Pre-construction	Contractor	Х	
5.0 St	ormwater Management		11		
5.1	Ensure that the design, construction and maintenance of stormwater management infrastructure for the Project takes an integrated approach to stormwater management and contributes to maintaining, or improving, drainage and water quality conditions directly adjacent to the corridor.	All phases	Contractor	TBD	
5.2	Design, construct and maintain stormwater management infrastructure, such that it to meets the performance objectives outlined in the Stormwater Management Plan Outline (July, 2007) and the Application. Monitoring of the infrastructure will be undertaken to confirm performance objectives are met or, if necessary, additional steps are taken to ensure performance objectives are achieved.	All phases	Contractor	Х	
5.3	Consult with municipalities adjacent to the new construction area such that the approach to the management of stormwater and drainage design is complementary to, and can be integrated with, adjacent municipal stormwater infrastructure.	Pre-construction	Contractor	TBD	
5.4	Provide final designs for stormwater management infrastructure to relevant First Nations and reviewing and regulatory agencies for review and comment at least 30 calendar days prior to relevant construction activities in order to verify that the proposed infrastructure achieves agreed upon performance measures identified in the Stormwater Management Plan Outline (July 2007).	Pre-construction	Contractor	TBD	
5.5	Drain stormwater and road runoff away from red and blue listed plant communities and do not construct integrated stormwater management infrastructure in such habitat areas.	Construction; operation	Contractor	TBD	
5.6	Obtain input from participating First Nations regarding mitigation measures outlined in the stormwater and drainage plan and effective integration of those measures into the design and operation of the Project.	Pre-construction	Contractor	TBD	
6.0 Aç	riculture				
6.1	Consult with the Agricultural Land Commission (ALC), Ministry of Agriculture and Lands (MAL), Delta Farmers' Institute (DFI), individual farm owners and the CoD, through all future stages of Project development, construction and operation, to ensure impacts to agricultural lands and operations are minimized where possible and appropriately addressed where impacts are unavoidable.	All phases	MoT, Contractor	Х	
6.2	Obtain ALC approvals regarding areas within the Agricultural Land Reserve (ALR) required for the project, prior to construction.	Pre-construction	MoT, Contractor		Х

6.3	Develop and implement an Agricultural Mitigation Plan as outlined in the Application that identifies potential impacts to agriculture as a result of project construction activities and measures for avoiding and addressing such impacts where possible. The scope will include those measures outlined in the Application and the Agricultural Enhancement Strategy (April 2008), including but not limited to mitigation measures focused on: - Road access; - Drainage and irrigation; - Utilities; and - Maintaining the agricultural land base.	Pre-construction	Contractor	X	
6.4	Finalize and implement specific agricultural enhancement initiatives, including but not limited to, compensation mechanisms focused on improving road access and drainage and irrigation, as part of the application process to the ALC and summarily as part of the Agricultural Enhancement Strategy (April 2008).	Pre-construction; construction	МоТ	X	
6.5	Retain the services of a Professional Agrologist to: - Liaise with the owner, Design-Builder and farmer(s); - Oversee a consultation and dispute resolution process for individual farmers affected by the Project; and - Oversee monitoring and effectiveness of measures proposed to address impacts to agriculture during design, construction and operation.	All phases	МоТ	X	
6.6	Avoid, to the extent possible, using agricultural lands outside of the Right-Of-Way (ROW), for staging areas. For all agricultural lands that are required for use as staging areas, implement construction BMPs (as noted in the Agriculture Mitigation Plan in the EMP) to manage potential construction related effects and restore lands to pre- construction condition, or better agricultural capability, upon completion of project works.	Pre-construction; construction	Contractor	X	
6.7	Consult with individual farm owners, as well as MAL, ALC, CoD, DFI and other stakeholders, to identify potential impacts to agricultural operations and infrastructure and ensure that such impacts are avoided, mitigated for, or appropriately addressed during future stages of design and construction of the Project. The scope of potential impacts to farm operations includes, but is not limited to: - Agricultural drainage; - Utilities; - Road Access; and - Pollinators.	Pre-construction; construction	MoT; contractor	X	
6.8	Undertake reasonable measures to facilitate the consolidation of parcels of isolated agricultural lands, to promote continued agricultural use of such lands.	All phases	МоТ	Х	
6.9	Undertake reasonable measure to minimize potential loss of ALR lands, including existing farm(s) by: - Refining the Project footprint where feasible; and - Optimizing use of existing ROW.	Pre-construction; construction	Contractor	X	
7.0 Ai	r Quality				
7.1	Ensure that the construction works and operations for the Project are conducted in compliance with environmental permits and approvals and that all reasonable measures are taken to address project-related effects on air quality.	Construction, operation	Contractor	X	

7.2	<ul> <li>Develop and implement an Air Quality and Dust Control Plan for the construction phase of the project. The plan will:</li> <li>Include an air quality monitoring program with thresholds, which if exceeded, will trigger the implementation of additional mitigation and corrective measures;</li> <li>Commit to the best available, known and effective, measures for mitigating construction related air emissions, including diesel particulate matter (PM), as identified by relevant regulatory agencies. This would include, where practical, the use of diesel oxidation catalysts (DOCs) or diesel particulate filters (DPFs) on all on-road and off-road project equipment in combination with use of a B20 biodiesel blend;</li> <li>Include an anti-idling policy for construction equipment and other vehicles associated with construction related activities;</li> <li>Commit to fugitive dust minimization strategies (e.g. wheel wash and sweeping), and dust suppression techniques (e.g. watering) on roads; and</li> <li>Identify site specific considerations, where applicable, such as proximity to sensitive environmental or human receptors.</li> </ul>	Pre-construction; construction	Contractor	X	
7.3	Provide the Air Quality and Dust Control Plan to Metro Vancouver, Environment Canada (EC), Ministry of Environment (MoE), Transport Canada, Health Canada (HC) and other relevant agencies for review and comment at least 30 calendar days prior to relevant construction activities.	Pre-construction	MoT, Contractor	X	
7.4	Avoid burning as a means for disposing of land clearing debris.	Construction	Contractor	Х	
8.0 Tr	affic Management				
8.1	Ensure that the design of the Project is integrated with local road networks, and that construction of the proposed project includes measures for avoiding or minimizing impacts to local road networks.	Pre-construction; construction	MoT, Contractor	X	
8.2	Prepare and implement a Traffic Management Plan in coordination with CoS and CoD to address construction related traffic conditions.	Pre-construction; construction	Contractor	Х	
8.3	Consult with the CoD, CoS, MoT district office, and other stakeholders to design and construct project infrastructure so that it is effectively integrated with existing and planned local road networks.	Pre-construction; construction	Contractor	X	
9.0 No	pise and Vibration				
9.1	Ensure that potential noise impacts associated with the project are considered and mitigation provided for during design, construction and operation of the project.	All phases	Contractor	Х	
9.2	Prepare and implement a Noise and Vibration Management Plan for the construction phase of the Project that will include specific mitigation measures, and locations where they will be applied to address construction related noise.	Pre-construction; construction	Contractor	X	
9.3	Prepare a noise complaint protocol as part of the CEMP Noise and Vibration Management Plan to respond in a timely manner to concerns and complaints raised by residents and take reasonable actions to reduce the Project-related construction noise in question.	Pre-construction	Contractor	X	
9.4	Provide the construction Noise and Vibration Management Plan to the CoS, CoD and other stakeholders for review and comment 30 calendar days prior to the onset of relevant construction activities.	Pre-construction	Contractor	Х	

9.5	Design and construct mitigation measures to address potential operational noise impacts on residential areas as part of the project according to the MoT Noise Policy (1993) [referenced as the Noise Policy in this Agreement].	Pre-construction; construction	Contractor	TBD	
9.6	Conduct noise monitoring at the baseline sites during the first year after construction is complete to assess the effectiveness of mitigation measures, with a commitment to further mitigation if necessary, technically feasible and practical.	Operation	Contractor	TBD	
9.7	Consult with the CoD and CoS to look for opportunities to use tree planting and landscaping to mitigate potential visual, noise and air quality impacts.	Pre-construction; construction	Contractor		
9.8	Participate in meetings with affected communities and residents to address site-specific noise issues in the event that late evening or night time construction works prove necessary in the vicinity of residential areas.	Pre-construction; construction	Contractor	TBD	
9.10	Perform pre-condition surveys to document existing state of buildings and facilities in the vicinity of SFPR construction activities as per standard geotechnical BMPs. This will form the baseline conditions, against which post-construction condition surveys will be carried out to assess any vibration impacts to buildings and facilities as a result of Project construction.	Pre-construction	Contractor	X	
9.11	Monitor ground vibrations, as per standard geotechnical BMPs, adjacent to buildings to confirm that vibration levels are within ranges expected to avoid construction-related vibration.	Construction	Contractor	X	
	ontaminated Sites and Property Acquisition	1			
10.1	Ensure that potential site contamination is investigated, and managed in compliance with the Contaminated Sites Regulation (Environmental Management Act), during all stages of project development including property acquisition, design and construction.	All phases	Contractor	X	
10.2	Assess all Tier 1 and Tier 2 properties required for the ROW for potential contamination prior to construction and take steps, as required, to investigate and address site contamination that may exist.	Pre-construction; construction	MoT; Contractor	X	
10.3	Manage any contaminated groundwater encountered in accordance with the requirements of the Environmental Management Act and associated regulations.	Pre-construction; construction	MoT; Contractor	Х	
10.4	Undertake risk assessment and remediation activities, as required, and manage potential contamination in compliance with the provincial Environmental Management Act and Contaminated Sites Regulation.	Pre-construction; construction	MoT; Contractor	X	
10.5	Should contaminated groundwater be identified along the route, include measures to control/mitigate the potential for impacts to surface water in future stormwater design.	All phases	MoT; Contractor	x	
10.6	Notify MoE of potential migration of contaminants from known or identified Tier 1 off- corridor properties of concern discovered during supplementary investigations or Project-related activities and use information to manage and mitigate contaminated sites issues prior to construction.	Pre-construction	Contractor	X	
10.7	As part of the CEMP, the Contaminated Sites Management, Construction and Hazardous Waste Management and Spill Management and Emergency Response Plans, develop and implement a protocol for identifying and managing contaminated and potentially contaminated materials during the construction phase of the Project.	Pre-construction; construction	Contractor	X	

11.1	Ensure that all works and activities associated with the construction, operation and maintenance of the project are conducted in compliance with the Fisheries Act. This includes implementing mitigation measures and best management practices to ensure that the project does not cause any unauthorized harmful alteration, disruption or destruction of fish habitat, that the project does not cause any harm or mortality to fish, and that the project does not cause or result in the deposit of a deleterious substance of any type, including sediment, into a watercourse that is frequented by fish.	All phases	Contractor	X	
11.2	Obtain an authorization under subsection 35(2) of the Fisheries Act for any unavoidable harmful alteration, disruption or destruction of fish habitat prior to relevant construction works or activities.	All phases	Contractor	X	
11.3	Develop and construct fish habitat compensation measures that offset all project impacts to fish habitat. These fish habitat compensation measures will be constructed by the proponent as directed by Fisheries and Oceans Canada and in accordance with any s. 35(2) Fisheries Act authorizations.	Pre-construction; construction	Contractor	x	
11.4	Implement appropriate measures to adequately mitigate the effects of the creation of impervious surfaces on volume of surface runoff, rate of runoff, and water quality. These will meet performance targets established in the Stormwater Management Plan Outline (July, 2007) for the project.	Pre-construction; construction; operation	Contractor	TBD	
11.5	Establish and maintain riparian setback areas from drainage channels and watercourses in accordance with regulatory requirements.	Pre-construction; construction; operation	Contractor	X	
11.6	Take all reasonable measures to prevent substances that may be harmful to fish from entering the aquatic environment at the construction sites in the proximity to fish and aquatic habitat, paying particular attention to discharges of suspended sediments, construction waste, handling of uncured concrete and other deleterious substances.	Construction	Contractor	x	
11.7	Construct bridges for watercourse crosses in the vicinity of Delta Ravines (i.e. Norum, McAdam, Collings, Nelson View and Gunderson Creeks), as shown in plans attached to the Application (Technical Volume 1) and over a minimum 450 m portion of the Fraser Heights Wetlands, using the design and the construction methods outlined in the draft Fraser Heights Wetlands Bridge Preliminary Design Report.	Pre-construction; construction	Contractor	N/A	
11.8	Obtain input from the Musqueam Indian Band and other participating First Nations to identify appropriate measures to mitigate potential project related impacts on the identified interests of the Musqueam Band in relation to fisheries and habitat matters. Identify potential opportunities for mutually agreeable opportunities to assist in advancing the fisheries interests of the Musqueam Indian Band or other participating First Nations.	All phases	MoT, contractor	X	
11.9	Review with the applicable regulatory agencies, including but not limited to DFO and MOE, proposals for compensation habitat, including opportunities for habitat to be constructed in advance of other Project construction (i.e. "habitat banking"), to determine the ratio of habitat types and to which drainage compensation will apply.	Pre-construction	Contractor	x	
	Follow BMPs in the construction of all new ditches and stormwater watercourses.			Х	

11.11	Retain maintenance responsibility for compensation sites within the Project limits. For sites constructed in areas outside of the Project limits, establish site-specific agreements for access and maintenance with the relevant stakeholder/landowner.	Operations	Contractor		
12.0 W	ater Quality	1	11		
12.1	Ensure that the construction works and operations for the Project are conducted in compliance with environmental requirements and BMPs in order to avoid impacts to water quality.	All phases	Contractor	Х	
12.2	Develop and implement a Surface Water Quality and Sediment Control Plan and provide the plan for review and comment by relevant environmental agencies at least 30 calendar days prior to the start of relevant construction activities.	Pre-construction	Contractor	X	
12.3	Sample water from potentially impacted drinking water wells to assess potential adverse effects to water quality associated with during construction and operation phases of the project. Provide sampling water quality data to the local health authority for review and comment.	Construction; operation	Contractor	TBD	
12.4	The Surface Water Quality and Sediment Control Plan will at a minimum: - Identify requirements for additional water quality monitoring prior to and during construction to ensure preventative and mitigation measures can be taken as appropriate, to avoid impacts to water quality; - Identify potential water quality contaminants of concern generated by construction activities and associated preventative and mitigative measures; - Include a BMP maintenance plan to ensure BMPs implemented are functioning as designed and corrective actions are taken when required; and - Be submitted to the applicable regulatory agencies at least 30 calendar days prior to start of construction activities for review.	Pre-construction; construction	Contractor	X	
13.0 W	ildlife and Vegetation				
13.1	Ensure that the design, construction, and operation of the project, avoids where practical and technically feasible, impacts to vegetation and wildlife.	All phases	Contractor	Х	
13.2	Prepare and implement a Wildlife and Habitat Management Plan to avoid and, where necessary, mitigate potential impacts to vegetation, wildlife and wildlife habitat. Provide the Plan to relevant regulatory and reviewing agencies for review and comment at least 30 calendar days prior to relevant construction activities beginning. The Wildlife and Habitat Management Plan will include best practices including but not limited to those identified in the Application (Table 7.717, draft Wildlife Mitigation Crossing Plan (April 2007) [replaced by the Wildlife and Wildlife Habitat Mitigation Plan (September 2008)], and Zones of Influence memo (July 2007) [replaced by the Wildlife Habitat Mitigation Plan (September 2008)] in order to avoid, and where necessary, mitigate potential effects on vegetation and wildlife. This plan will also identify protocols for the survey and salvage of vegetation and wildlife as appropriate and required.	Pre-construction; construction	Contractor	X	
13.3	Develop and implement mitigation measures to avoid and minimize impacts to wildlife during construction and operation of the project including, but not limited to those measures identified in the Application (September, 2006), draft Wildlife Mitigation Crossing Plan (April 2007) [replaced by the Wildlife and Wildlife Habitat Mitigation Plan (September 2008)] and Zones of Influence Assessment memo (July 2007) [replaced by the Wildlife and Wildlife Habitat Mitigation Plan (September 2008)].	Pre-construction; construction	Contractor	X	

13.4	During the design phase, MoT will finalize its determination of the type and location of sound barriers to be constructed along the perimeter of Burns Bog. For the south-western alignment (adjacent to Crescent Slough), this design will include the construction of a solid sound barrier or a barrier that will provide equivalent mitigation. MoT will ensure on-going consultation with TC, EC, MoE and other IAERC members as appropriate, during design regarding the proposed type and location of sound barriers to be installed around Burns Bog.	Pre-construction Pre-construction	MoT, Contractor	TBD	
	to identify suitable compensation, including but not limited to that identified in the Wildlife and Habitat Management Plan and Habitat Compensation Plan (February, 2007) [replaced by Habitat Compensation Plan (May 2007)], to address residual effects on vegetation and wildlife as a result of the Project.				
13.6	Work with reviewing and regulatory agencies to develop and implement a comprehensive and long term Mitigation Monitoring Plan (MMP) [currently known as the SFPR Vegetation and Wildlife Mitigation Monitoring Plan], based on the Vegetation and Wildlife Mitigation Monitoring Strategy (April 2007) [replaced by the SFPR Vegetation and Wildlife Mitigation Monitoring Plan], to monitor the effectiveness of proposed mitigation measures in addressing Project-related effects on vegetation and wildlife, including species at risk. Data collection and monitoring in support of the implementation of the MMP will begin prior to construction and continue for a period of time, to be determined with relevant regulatory agencies, during operation. Information collected in relation to the MMP will be used to guide detailed planning of mitigation, assess the effectiveness of such mitigation, and determine where additional measures may be required. The MMP will include scientifically defensible thresholds or performance measures to facilitate the evaluation of the effectiveness of mitigation.	All phases	Contractor	X	
13.7	Undertake site-specific vegetation surveys in accordance with the regionally supported Protocols for Rare Plants Surveys, to identify the presence and distribution of red- and blue-listed plants species prior to final design and construction. Provide information on the presence and distribution of such plants species to MoE for review and use the information to guide final design and construction to avoid or mitigate impacts to these species.	Pre-construction	Contractor	X	
13.8	Avoid direct impacts to sensitive red and blue listed plant communities where possible and adhere to construction exclusion windows determined by regulators.	Construction	Contractor	X	
13.9	Develop a plan for salvaging plants and seeds, for review by MoE, where impacts to red and blue listed plant species cannot be avoided, for replanting off-alignment.	Pre-construction	Contractor		
13.10	Make all reasonable efforts to avoid impacts to confirmed streambank lupine habitat and confirmed stream bank lupine seed banks in the project corridor, as identified in consultation with the Streambank lupine recovery team, during design construction and operation of the Project. Where impacts to such areas cannot be avoided, work with the Ministry of Environment and the Streambank Lupine Recovery team to identify and carry out appropriate mitigation measures including, but not limited to, the stockpiling of soil containing streambank lupine seeds.	Construction	Contractor	X	

13.11	<ul> <li>Undertake pre-construction bird nest surveys and restrict clearing during the breeding season. Pre- construction bird nest surveys will include, but not necessarily be limited to the following:</li> <li>Conduct pre-construction raptor, heron or any listed species nest and roost tree surveys, consistent with applicable BMPs, to determine presence of active/inactive raptor and heron nests in the corridor and work scheduling with respect to the nest locations and applicable timing restrictions;</li> <li>Prepare pre-construction bird nest survey protocols should works include clearing of vegetation during the general bird breeding time period as determined by MOE;</li> <li>Conduct pre-construction bird nest surveys to the satisfaction of the MOE should the Design-Builder intend to seek approval from the MOE for vegetation clearing within the bird breeding time period (defined by MOE) in any year during the Term.</li> </ul>	Pre-construction	Contractor	X	
13.12	Consult with MoE on the development and implementation of an Invasive Species Management Plan to address potential effects of the project related to the spread of invasive plant and aquatic wildlife species within the project corridor.	Pre-construction; construction	Contractor	Х	
13.13	Include large mammal crossings adjacent to the perimeter of Burns Bog. The final number and location of wildlife crossings will be identified in the Wildlife Mitigation Crossing Plan [replaced by the Wildlife and Wildlife Habitat Mitigation Plan (September 2008)] which will be finalized in consultation with MoE and EC.	Pre-construction	Contractor	Х	
13.14	Follow the design criteria outlined in the MOT Manual of Aesthetic Design Practice and the MOT Landscape Policy and Design Standards that form the landscape and site restoration design criteria for the Project.	Pre-construction; construction	Contractor	Х	
13.15	Use data collected through the MOT administered Wildlife Accident Reporting System to identify areas of increased wildlife collisions and to monitor direct effects on wildlife.	Operations	Contractor	TBD	
13.16	Identify the location of sensitive wildlife habitats, including but not limited to habitat for species at risk, red and blue listed plant communities and high biodiversity habitats, on detailed design drawings in order to avoid or minimize potential effects to these areas.	Pre-construction	Contractor	Х	
	becies at Risk		<b>•</b> • • • • •		
14.1	Ensure that all reasonable measures are taken to avoid or lessen effects of the Project on listed wildlife species and their critical habitat and that potential effects that could occur are monitored. All mitigation and monitoring measures will be undertaken in a manner that is consistent with applicable recovery strategy and actions plans.	Pre-construction; construction	MoT, contractor	Х	
14.2	Undertake a salvage program for Pacific water shrew from, at a minimum, high and moderate-rated habitat adjacent to the SFPR. Other areas potentially requiring salvage will include lower-rated habitat, connected to higher-rated habitat, and will be determined in consultation with MoE and the PWS Recovery Team.	Pre-construction; construction	Contractor	Х	
14.3	Consult with MoE regarding the mitigation of potential effects on Pacific water shrew, and take all practical steps to apply the most recent Pacific water shrew best management practices to address potential effects, including identifying additional opportunities to avoid direct effects to areas, designated as critical habitat by the PWS Recovery Team, during design, construction and operation.	Pre-construction; construction	Contractor	TBD	

14.4	Consult with MOE to develop a mitigation and compensation strategy for Pacific water	Pre-construction;	MoT,	TBD	
	shrew, where opportunities are available, based on habitat quality and connectivity to surrounding habitat. Undertake sampling program, where required, to determine the presence and distribution of Pacific water shrew to support detailed design of mitigation.	construction	Contractor		
14.5	Detailed design of wildlife crossing mitigation for southern red-backed vole (RBV) will be conducted assuming the presence of RBV in high and moderate rated habitat identified in the EA. Monitoring of the use of wildlife crossing structures will include provisions for assessing the use of such structures by RBV.	Pre-construction	Contractor	TBD	
14.6	Undertake a review of local museum specimens to confirm the distribution of <i>Sorex rowheri</i> within the Lower Fraser Valley. Where possible, use findings to support detailed design of mitigation.	Pre-construction	Contractor	TBD	
14.7	Use information obtained through the Mitigation Monitoring Plan [currently known as the SFPR Vegetation and Wildlife Mitigation Monitoring Plan (February 2008)] to support detailed planning of mitigation to address potential noise, visual and collision effects of the project on barn owl. Undertake long term monitoring of the effectiveness of such mitigation as part of the implementation of the Mitigation Monitoring Plan [currently known as the SFPR Vegetation and Wildlife Mitigation Monitoring Plan (February 2008)].	All phases	Contractor	TBD	
14.8	Use information obtained through the Mitigation Monitoring Plan [currently known as the SFPR Vegetation and Wildlife Mitigation Monitoring Plan (February 2008)] to support detailed planning of mitigation, including pre-construction salvage where appropriate, to address potential effects of the project, including those related to collision and changes in hydrology, on red-legged frog and western toad. Undertake long term monitoring of the effectiveness of such mitigation as part of the implementation of the Mitigation Monitoring Plan [currently known as the SFPR Vegetation and Wildlife Mitigation Monitoring Plan (February 2008)].	All phases	Contractor	X	
14.9	Consult with MOE to plan and undertake at least one preconstruction, one construction and two operational inventories of at-risk aquatic insects in habitat known to or suspected of supporting such species and potentially affected by the project, including but not necessarily limited to the Fraser Heights Wetland, to confirm the findings of the environmental assessment and to monitor potential impacts of the project on aquatic insects.	All phases	Contractor	×	
14.10	Consult with the Canadian Wildlife Service to develop and implement a Mitigation Monitoring Plan [currently known as the SFPR Vegetation and Wildlife Mitigation Monitoring Plan] to monitor and assess the effectiveness of measures proposed to avoid or mitigate potential effects on Sandhill Crane. The Plan will identify: - species habitat requirements; - existing conditions in the project area; - potential project related effects and mitigation; - core indicators for assessing the effectiveness of mitigation; and - proposed study methodology and data interpretation and reporting protocols.	Pre-construction; construction	МоТ	TBD	
	urns Bog				
15.1	Avoid potentially significant impacts to hydrological and ecological values associated with Burns Bog (i.e. alignment refinements to avoid ecological and hydrological values, development of hydrological mitigation that meet the hydrologic objectives identified).	All phases	MoT, Contractor	Х	

15.2	Consult with the MV, CoD, MoE, EC, and the Burns Bog Management Planning Committee (BBMPC) and Scientific Advisory Panel (SAP) to ensure design, construction and operation of the Project complements long term management objectives established for the Burns Bog Ecological Conservation Area.	All phases	Contractor	TBD	
15.3	Consult with the reviewing agencies to finalize construction and post construction monitoring requirements related to Burns Bog including, but not limited to, those identified in the Vegetation and Wildlife Mitigation Monitoring Strategy (April 2007) [replaced by the SFPR Vegetation and Wildlife Mitigation Monitoring Plan]. Monitoring requirements with respect to Burns Bog will include but not be limited to those relating to: air quality, water quality, water levels, red-listed plant communities, and wildlife	Construction, operation	Contractor	Х	
15.4	Share environmental data from Burns Bog collected as part of the development of the SFPR project, with agencies responsible for the management of the Burns Bog Ecological Conservancy Area in order to support the implementation of the long term management plan for the Bog.	All phases	Contractor	TBD	
15.5	<ul> <li>Design, construct and operate hydrology mitigation infrastructure, to mitigate potential effects of the project on the hydrology of Burns Bog, in a way that meets the following performance objectives:</li> <li>Site specific solutions – the design, construction and operation of hydrology mitigation will be based on, and take into account, site specific conditions.</li> <li>Compatibility between highway water management and bog water management – Providing for active water level controls in the Bog that are independent of SFPR-related water management.</li> <li>Prevention of mineral migration into the Bog. – Where indicated, providing a low permeability barrier between the SFPR highway ditch and the lagg ponds/ditches by: using material to construct the berm that supports appropriate vegetation on the berm and prevents the introduction of mineral material into the Bog; and maintaining hydraulic gradients so that Type 1 bog waters flow toward the highway at all times.</li> <li>Resilience – Providing a design that is sufficiently robust to maintain and actively manage water levels under average and extreme conditions and if Bog conditions change.</li> <li>Highway and mitigation construction does not preclude future restoration of Burns Bog – Providing flexibility of design that allows, for example, for future water control structures that allow for raising of water level as part of future bog restoration.</li> <li>Holistic design – Hydrology mitigation concepts are designed in way that ensure they will be compatible with, and help achieve multiple, mitigation requirements. As the design of hydrology mitigation is advanced, it will be documented in a Hydrology Work Plan [currently known as Hydrology Workplan (Burns Bog)]. This document will be finalized prior to commencement of pre-load activities around Burns Bog.</li> </ul>	All phases	МоТ	TBD	
15.6	Pre-load activities around Burns Bog, including areas north of the Highway 99 interchange and west of Nordel Way, will not commence until TC (and other decision-making authorities as required) has reviewed and is satisfied with the final Hydrology Work Plan and the status of the hydrology mitigation design.	Pre-construction	МоТ	TBD	

t with MV, CoD, EC and MoE on the development of a water balance model and age model to support the design, construction and operation of hydrology on infrastructure adjacent to Burns Bog and support implementation of the Burns cological Conservancy Area Management Plan. an Air Quality Management Plan [currently known as SFPR Air Quality ement Plan (Burns Bog Segment)], in consultation with TC, EC and other IAERC ars as appropriate, prior to commencing pre-loading activities around Burns Bog. boument will identify all technically and economically feasible mitigation measures inplemented to prevent generation and transmission of dust during the pre-load instruction phases of the project. a minimum of 4 months of baseline dust fall monitoring between June and ther 2008. Following the collection of this information, the MoT will meet with TC to discuss the baseline monitoring information collected and the approach for the data collection, prior to the commencement of pre- loading activities around Bog (i.e., north of the Highway 99 interchange and west of Nordel Way).	Pre-construction Pre-construction Pre-construction	Contractor MoT, contractor MoT	TBD	x
ement Plan (Burns Bog Segment)], in consultation with TC, EC and other IAERC ers as appropriate, prior to commencing pre-loading activities around Burns Bog. ocument will identify all technically and economically feasible mitigation measures inplemented to prevent generation and transmission of dust during the pre-load instruction phases of the project. a minimum of 4 months of baseline dust fall monitoring between June and the 2008. Following the collection of this information, the MoT will meet with TC to discuss the baseline monitoring information collected and the approach for ted data collection, prior to the commencement of pre-loading activities around		contractor		
ber 2008. Following the collection of this information, the MoT will meet with TC to discuss the baseline monitoring information collected and the approach for led data collection, prior to the commencement of pre- loading activities around	Pre-construction	МоТ		Х
o-operatively with the Tsawwassen First Nation to maintain appropriate access I members to Burns Bog to facilitate TFN's harvesting rights pursuant to the assen Final Agreement.	All phases	MoT, Contractor	TBD	
that the development and operation of Stormwater management infrastructure ot compromise the ability to achieve hydrology mitigation objectives adjacent to Bog.	All phases	MoT, Contractor	TBD	
ent the monitoring and follow-up activities identified in the Screening document, eriod of five years after the project has commenced operation, to ensure the eness of mitigation measures related to aerial deposition, hydrology, and Sandhill n the vicinity of Burns Bog.	All phases	MoT, Contractor	TBD	
•	riod of five years after the project has commenced operation, to ensure the eness of mitigation measures related to aerial deposition, hydrology, and Sandhill	riod of five years after the project has commenced operation, to ensure the eness of mitigation measures related to aerial deposition, hydrology, and Sandhill	riod of five years after the project has commenced operation, to ensure the Contractor eness of mitigation measures related to aerial deposition, hydrology, and Sandhill	riod of five years after the project has commenced operation, to ensure the eness of mitigation measures related to aerial deposition, hydrology, and Sandhill



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17.0 H	eritage	Andrew Street		
17.1	Ensure that the design, construction and operation of the proposed project is advanced in a way that avoids, or minimizes potential impacts to heritage buildings	All phases	MoT, contractor	x
17.2	Consult with the Delta Heritage Advisory Commission and the Surrey Heritage Committee to define heritage interests and work with the Delta Museum and Archive to develop a photo record and inventory of potentially affected heritage houses.	Pre-construction, construction	Contractor	N/A
17.3	Prior to construction, undertake pre-condition surveys with respect to heritage buildings, as further described in commitment 9.9.	Pre-construction	Contractor	N/A
17.4	Avoid, where practical and technically feasible, direct impacts to heritage buildings.	All phases	Contractor	NA/
18.0 N	avigable Waters			
18.1	Obtain regulatory approval related to crossings of designated Navigable Waters pursuant to the Navigable Waters Protection Act (NWPA), including but not necessarily limited to, McAdam Creek, Collings Creek, Manson Canal, and Crescent Slough, prior to commencement of works.	Pre-construction, construction	MoT, Contractor	N/A
19.0 S	ocio-economic			
19.1	Mitigate potential Project-related visual/lighting impacts through use of screening, fencing and landscaping in consultation with local government. Use dark-sky compliant lighting for the Project.	Pre-construction, construction	Contractor	TBD
19.2	Manage potential impacts to emergency response services by: - Ensuring emergency response plans (including a Spill Response Management and Emergency Response Plan) are in place during the construction phase of the Project, and updated annually, at a minimum; - Consulting first responders in Traffic Management Plan development; and - Consulting with local fire departments to ensure adequate access.	Pre-construction, construction	Contractor	x
20.0 R				
20.1	Avoid or minimize potential impacts from Project works and activities to rail corridors.	All phases	Contractor	Х
20.2	Notify Transport Canada of project works as required under the <i>Notice of Railway Works Regulations</i> . Notify the public and affected stakeholders in accordance with the <i>Railway Safety Act</i> .	All phases	Contractor	TBD
20.3	Comply with Canadian transportation standards and regulations as well as the design specifications of the respective railway with regard to vertical and horizontal railroad clearance of new or upgraded infrastructure.	Pre-construction	Contractor	TBD
20.4	Minimize railroad closures during construction.	Construction	Contractor	Х

## APPENDIX 7: WATER QUALITY DATA

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	рН	TDS (ppt)	Turbidity (NTU)	Comments
WQ- 12	Fortis Culvert DS	02/11/2020	01:00	9.6	4.38	0.35	4.75	0.17	3.0	Sampling done duringnight shift
WQ- 12	Fortis Culvert DS	02/11/2020	03:00	8.4	4.25	0.45	4.80	0.25	5.2	Sampling done duringnight shift
WQ-2	Silda DitchMS	02/11/2020	13:15	11.6	4.98	0.22	7.20	0.16	7.9	· · · · _ · _ · · · · · · ·
WQ-3	Silda DitchDS	02/11/2020	13:20	11.7	6.77	0.16	6.91	0.09	12.1	
WQ-4 WQ-	Fraser RrInlet Fortis Culvert	02/11/2020	13:00	11.4	8.37	0.26	7.84	0.13	92.8	High tide, coming in
11	US Fortis Culvert	02/11/2020	13:30	12.4	4.06	0.10	5.08	0.06	3.0	No instreamworks today
WQ- 12	DS	02/11/2020	13:35	12.1	5.98	0.11	4.71	0.05	3.5	No instreamworks today.
WQ- 11	Fortis Culvert US	03/11/2020	01:30	11.4	4.53	0.80	4.95	0.07	3.8	Nightshift- dewatering and instreamworks
WQ- 12	Fortis Culvert DS	03/11/2020	01:00	11.5	4.09	0.73	4.85	0.11	5.9	Nightshift- dewatering and instream works
WQ-2	Silda DitchMS	03/11/2020	11:00	10.7	7.00	0.31	6.69	0.15	36.2	Heavy rainwhile sampling
WQ- 12	Fortis Culvert DS	02/11/2020	01:00	9.6	4.38	0.35	4.75	0.17	3.0	Sampling done during night shift
WQ-3	Silda DitchDS	03/11/2020	10:50	10.6	6.99	0.32	6.67	0.16	64.5	Heavy rain while sampling. Sand washouts noticed ~6 m US. Observed turbidity passing through straw waddle into stream from washout direction. Dispatchedcrew to re-build washout, remove sediment inrunoff path, and install ESC measures.
WQ-4	Fraser Rrinlet	03/11/2020	10:00	10.6	8.77	0.16	8.00	0.08	95.5	High tide, going out. Heavy rain while sampling.
WQ- 11	Fortis Culvert US	03/11/2020	10:30	9.6	5.60	0.10	5.32	0.05	8.5	Heavy rain while sampling. No instream works.
WQ-	Fortis Culvert	03/11/2020	10:30	9.1	8.21	0.10	5.29	0.05	3.4	Heavy rain while sampling. No
12	DS	03/11/2020	10.00	5.1	0.21	0.10	0.20	0.00	0.4	instream works.
WQ-2	Silda DitchMS	04/11/2020	13:05	10.9	4.23	0.28	6.73	0.12	19.8	Heavy rain during sampling and Fraser River high tide moving out had an impact on theturbidity as water levels were higher than normal.
WQ-3	Silda DitchDS	04/11/2020	13:00	11.1	6.17	0.22	6.82	0. <b>1</b> 6	25. <mark>6</mark>	Heavy rain during sampling and Fraser River high tide moving out had an impact on theturbidity as water levels were higher than normal.
WQ-4	Fraser RrInlet	04/11/2020	10:30	11.5	7.85	0.14	7.95	0.07	70.6	High tide, going out. Heavy rainwhile sampling.
WQ- 11	Fortis Culvert US	04/11/2020	11:15	11.2	5.76	0.11	5.22	0.06	4.8	No instreamworks.
WQ- 12	Fortis Culvert DS	04/11/2020	11:15	11.0	7.22	0.10	5.06	0.05	2.6	No instreamworks.
WQ-2	Silda DitchMS	05/11/2020	11:25	9.6	4.97	0.13	6.79	0.08	5.9	
WQ-3	Silda DitchDS	05/11/2020	1 <mark>1</mark> :30	9.5	5.21	0.13	6.92	0.08	7.1	Spillway installed at previous washouts onnightshift prior to sampling
WQ-4	Fraser Rrinlet	05/11/2020	10:30	9.2	8.49	0.04	7.59	0.04	70.6	High tide
WQ- 11	Fortis Culvert US	05/11/2020	10:50	9.2	5.09	0.10	5.46	0.05	2.9	No instreamworks.
WQ- 12	Fortis Culvert DS	05/11/2020	10:45	9.4	4.07	0.10	4.83	0.05	3.2	No instreamworks.
WQ-2	Silda DitchMS	06/11/2020	10:00	9.4	4.77	0.14	6.65	0.07	6.4	-
WQ-3	Silda DitchDS	06/11/2020	10:05	9.2	5.96	0.16	6.68	0.08	6.8	
WQ-4	Fraser Rrinlet	06/11/2020	10:20	9.2	8.49	0.04	7.59	0.04	1.8	High tide
WQ- 11	Fortis Culvert US	06/11/2020	10:55	9.2	4.87	0.10	5.50	0.05	2.5	No instreamworks
WQ- 12	Fortis Culvert DS	06/11/2020	11:00	9.5	3.59	0.09	4.65	0.04	1.4	No instreamworks
WQ-2	Silda DitchMS	08/11/2020	13:00	7.1	5.87	0.13	6.59	0.06	5.9	-
WQ-3 WQ-4	Silda DitchDS Fraser RrInlet	08/11/2020 08/11/2020	13:05 12:00	7.6 8.9	4.69 9.12	0.15	6.98 7.94	0.08	11.6 92.4	- High tide
WQ-4 WQ-	Fortis Culvert	A second se	1	10-17 - I	1.57.57	T/127 - 1	1.000	1. 1. 1. 1. 1.		
11 WQ-	US Fortis Culvert	08/11/2020	12:10	7.4	4.11	0.10	5.23	0.06	3.7	- Sampling location in grass
12 WQ-2	DS Silda DitchMS	08/11/2020 09/11/2020	12:15 12:00	7.5	3.90	0.10	4.99	0.05	3.6	along bank
VVU-Z	Slud DICHWS	09/11/2020	12:00	7.4	6.06 9.06	0.33 0.34	6.58 6.54	0.16 0.17	8.9 13.4	17

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	рН	TDS (ppt)	Turbidity (NTU)	Comments
WQ-4	Fraser Rrinlet	09/11/2020	10:45	8.7	9.54	0.14	7.23	0.07	80.2	Mid-tide, coming in
WQ- 11	Fortis Culvert US	09/11/2020	11:15	7.4	5.59	0.10	5.20	0.05	4.1	
WQ- 12	Fortis Culvert DS	09/11/2020	11:10	6.7	5.22	0.09	4.71	0.05	1.8	Sampling location in grass along bank
WQ-2	Silda DitchMS	12/11/2020	12:25	6.9	6.57	0.29	6.42	0.16	12.4	Raining whilesampling
WQ-3	Silda DitchDS	12/11/2020	12:30	7.0	8.73	0.32	6.71	0.16	20.1	Raining whilesampling
WQ-4	Fraser RrInlet	12/11/2020	8:00	7.9	9.66	0.15	7.86	0.06	81.7	Low tide, coming in
WQ-2	Silda DitchMS	13/11/2020	14:55	9.1	7.77	0.16	6.46	0.08	12.2	Ditch runninghigh ~50mm of rain in 24 hr
WQ-3	Silda DitchDS	13/11/2020	15:00	10.3	6.73	0.15	6.41	0.07	14.3	Ditch runninghigh ~50mm of rain in 24 hr
WQ-4	Fraser RrInlet	13/11/2020	13:40	7.7	9.05	0.15	7.18	0.07	47.0	High tide, coming in
WQ-2	Silda DitchMS	16/11/2020	14:25	8.1	7.83	0.07	5.52	0.04	4.3	Ditch runninghigh, raining
WQ-3	Silda DitchDS	16/11/2020	14:30	8.7	6.73	0.08	5.66	0.04	5.2	Ditch runninghigh, raining
WQ-4	Fraser RrInlet	16/11/2020	13:30	8.9	9.14	0.19	7.04	0.10	27.3*	High-tide, coming in, raining
WQ-2	Silda DitchMS	17/11/2020	12:30	7.9	7.13	0.19	5.67	0.09	4.0	Ditch runninghigh, raining
WQ-3	Silda DitchDS	17/11/2020	12:25	8.2	5.84	0.18	5.92	0.09	5.8	Ditch runninghigh, raining
WQ-4	Fraser RrInlet	17/11/2020	12:15	8.4	8.99	0.24	7.26	0.12	43.8*	High-tide, coming in, raining
WQ-2	Silda DitchMS	18/11/2020	15:35	9.2	6.24	0.11	5.99	0.05	9.7	Ditch runninghigh, raining
WQ-3	Silda DitchDS	18/11/2020	15:30	9.5	6.39	0.12	6.23	0.06	14.2	Ditch runninghigh, raining
WQ-4	Fraser RrInlet	18/11/2020	14:00	8.1	8.16	0.15	6.91	0.07	23.3*	High tide, coming in, raining
WQ-2	Silda DitchMS	19/11/2020	14:40	9.0	6.03	0.11	5.95	0.06	9.2	-
WQ-3	Silda DitchDS	19/11/2020	14:35	9.6	4.51	0.12	6.17	0.06	6.9	
WQ-4	Fraser RrInlet	19/11/2020	14:00	8.9	8.49	0.12	6.76	0.06	17.5*	High tidegoing out
WQ-2	Silda DitchMS	20/11/2020	11:45	8.6	6.27	0.11	6.01	0.06	9.7	
WQ-3	Silda DitchDS	20/11/2020	11:50	8.4	5.12	0.11	6.12	0.05	8.7	-
WQ-4	Fraser RrInlet	20/11/2020	11:00	8.8	9.01	0.13	7.06	0.06	30.1*	Mid-tide, coming in
WQ-2	Silda DitchMS	23/11/2020	16:00	8.2	7.16	0.25	6.35	0.12	12.1	
WQ-3 WQ-4	Silda DitchDS Fraser Rr	23/11/2020 23/11/2020	16:05 12:30	8.7 8.4	5.38 4.03	0.24	6.28 7.05	0.12	8.3 20.4	High tide
WQ-3	Inlet West Ditch	23/11/2020	15:50	10.2	4.53	0.12	6.14	0.06	6.7	
WQ-2	(Area 13) Silda DitchMS	24/11/2020	13:20	8.9	3.95	0.24	6.33	0.12	11.0	
WQ-3	Silda DitchDS	24/11/2020	13:15	9.4	4.25	0.22	6.58	0.11	10.0	A set and a set of the
WQ-4	Fraser RrInlet	24/11/2020	11:50	8.7	6.33	0.14	7.17	0.07	13.8	High tide coming in
WQ-2	Silda DitchMS	25/11/2020	9:00	8.7	4.12	0.24	6.29	0.13	7.6	
WQ-3	Silda DitchDS	25/11/2020	9:05	9.1	5.06	0.23	6.48	0.12	8.2	
WQ-4	Fraser RrInlet	25/11/2020	8:30	8.6	8.97	0.14	7.03	0.07	14.9	Mid-tide, coming in
WQ-2	Silda DitchMS	26/11/2020	14:40	10.1	9.24	0.23	6.13	0.11	8.3	Raining whilesampling
WQ-3	Silda DitchDS	26/11/2020	14:35	11.1	4.69	0.23	6.29	0.11	7.3	Raining whilesampling
WQ-4	Fraser River Inlet	26/11/2020	13:45	10.9	8.35	0.13	6.93	0.07	11.2	High tide coming in. Raining whilesampling.
WQ-2	Silda DitchMS	27/11/2020	7:45	8.8	4.59	0.24	6.24	0.12	7.6	
WQ-3	Silda DitchDS	27/11/2020	7:50	9.0	5.19	0.23	6.51	0.12	8.4	
WQ-4	Fraser Rrinlet	27/11/2020	8:00	8.6	9.06	0.14	7.09	0.07	19.7	Mid-tide going out
WQ-2	Silda DitchMS	01/12/2020	9:45	8.8	4.59	0.24	6.24	0.12	7.6	
WQ-3	Silda DitchDS	01/12/2020	9:50	9.0	5.19	0.23	6.51	0.12	8.4	
WQ-4	Fraser Rrinlet	01/12/2020	9:00	8.6	9.06	0.14	7.09	0.07	19.7	High tide coming in
WQ-2	Silda DitchMS Silda Ditch	03/12/2020	11:15	8.6	4.61	0.23	6.16	0.12	7.1	
WQ-3	DS	03/12/2020	11:20	8.5	5.94	0.24	6.43	0.12	7.9	Mid tide gaing and
WQ-4	Fraser Rrinlet	03/12/2020	10:45	8.7	8.77	0.13	7.39	0.07	22.5	Mid tide going out
WQ-2	Silda DitchMS	08/12/2020	14:40	10.1	9.24	0.23	6.13	0.11	8.3	-
WQ-3	Silda DitchDS	08/12/2020	14:35	11.1	4.69	0.23	6.29	0.11	7.3	- Mid tido going out
WQ-4	Fraser Rrinlet	08/12/2020	13:45	10.9	8.35	0.13	6.93	0.07	11.2	Mid tide going out
WQ-2	Silda DitchMS	10/12/2020 10/12/2020	12:30	10.4	8.71	0.24 0.23	6.19	0.12	9.1	-
WQ-3 WQ-4	Silda DitchDS Fraser RrInlet	10/12/2020	12:35 13:15	11.3	5.43 9.12	0.23	6.33 6.98	0.11 0.07	6.9 13.9	- High tide
WQ-4 WQ-2	Silda DitchMS	15/12/2020	15:10	9.4	6.69	0.14	6.41	0.07	10.9	
WQ-2	Silda DitchDS	15/12/2020	15:15	11.1	4.84	0.31	6.35	0.15	22.2*	Likely due to rain/wind with potentialto disturb sediment & turbid river athigh tide mixing at Siteinterface. No work occurring between mid-& DS locations.
WQ-4	Fraser Rrinlet	15/12/2020	15:30	8.1	5.67	0.17	7.30	0.08	37.1*	High tide
WQ-2	Silda DitchMS	17/12/2020	13:45	10.2	7.12	0.20	6.34	0.10	11.1	
WQ-3	Silda DitchDS	17/12/2020	13:40	11.0	7.01	0.19	6.37	0.09	10.40	
WQ-4	Fraser Rrinlet	17/12/2020	14:00	7.3	13.81	0.13	7.25	0.06	47.4*	Mid tide, inflow
WQ-2	Silda DitchMS	22/12/2020	12:40	6.9	12.28	0.15	6.31	0.08	3.8	
VVQ-Z	onda bitonino									

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	pН	TDS (ppt)	Turbidity (NTU)	Comments
	DS	( management	1000		2000			3	1.00	
WQ-4	Fraser RrInlet	22/12/2020	12:10	7.3	8.34	0.13	6.50	0.06	11.2	High tide
2	Silda ditchMS	05/01/2021	10:45	7.0	9.63	0.12	6.77	0.06	8.7	
3	Silda ditch DS	05/01/2021	10:30	7.5	7.70	0.16	6.64	0.08	10.30	A REAL PROPERTY OF THE
4	Fraser River	05/01/2021	10:20	7.6	7.82	0.36	7.01	0.18	37.4	Mid tide coming in
311	S4 pump intake	06/01/2021	7:30	8.29	-	5	-	÷	5	-
2	S4 pump dischargeafter passing through channel	06/01/2021	7:35		10.6	9	2.0		-	-
	Cougar Creek US ofeffluent	06/01/2021	8:30		2.36	-	2.	-	7	7
-	Cougar Creek DS of effluent	06/01/2021	9:00	5	3.60	3	-	-	-0	-
2	Silda ditchMS	07/01/2021	13:35	7.2	4.99	0.14	6.93	0.07	42.2	High tide
3	Silda ditch DS	07/01/2021	13:30	7.9	5.82	0.18	6.71	0.09	7.94	
4	Fraser River	07/01/2021	13:00	7.6	8.71	0.34	6.86	0.17	9.21	High tide
2	Silda ditchMS	2021/01/12	9:00	7.2	3.67	0.12	6.58	0.06	10.4	
3	Silda ditch DS	2021/01/12	9:05	7.8	4.83	0.16	6.79	0.08	7.94	
4	Fraser River	2021/01/12	8:30	7.6	7.21	0.32	7.08	0.16	36.3	Mid tide going out
13	Cougar Creek US	2021/01/13	13:30	-	-	-	-	-	3.64	No pumpingfrom S4 for past 48 hours
14	Cougar Creek	2021/01/13	13:40	á a m	-	-	é i	-	2.04	no pumpingfrom S4 for past 48hours
N/A	96 Street US	17-JAN-21	20:00	9.2	6.25	0.19	6.23	0.25	2.8	Dewateringactivities
N/A	96th Street DS	17-JAN-21	20:15	9.5	6.20	0.10	6.67	0.36	3.0	Dewateringactivities
2	Silda DitchMS	18-JAN-21	10:00	6.4	6.67	0.37	6.50	0.18	8.36	
3	Silda DitchDS	18-JAN-21	10:00	6.6	8.22	0.18	6.74	0.09	13.10	2
4	Fraser River	18-JAN-21	10:30	5.4	11.03	0.13	7.19	0.06	9.58	Mid-tide going out
5	96 Street US	18-JAN-21	11:15	6.4	7.12	0.03	4.51	0.00	1.30	No dewateringactivities
6	96th Street DS	18-JAN-21	11:00	6.4	12.42	0.05	5.24	0.02	1.54	No dewateringactivities
13	Cougar Creek US	18-JAN-21	10:15	6.8	9.64	0.20	6.98	0.10	1.34	No dewateringactivities
14	Cougar Creek DS	18-JAN-21	10:20	6.9	9.24	0.21	7.02	0.11	2.24	No dewateringactivities
TEMP	A	18-JAN-21	11:30	6.4	8.39	0.02	4.29	0.01	0.77	-
TEMP	В	18-JAN-21	11:20	6.8	4.85	0.21	5.57	0.10	6.02	-
TEMP	С	18-JAN-21	11:50	7.0	6.40	0.11	5.64	0.06	2.14	14
TEMP	D	18-JAN-21	11:55	6.7	9.27	0.10	5.72	0.05	5.66	
TEMP	E	18-JAN-21	12:00	7.3	10.60	0.10	5.52	0.05	2.29	
TEMP	F	18-JAN-21	12:30	7.6	3.36	0.14	5.72	0.07	3.38	-
TEMP	G	18-JAN-21	12:40	7.1	5.97	0.37	5.75	0.18	9.89	
TEMP	H	18-JAN-21	13:00	9.2	6.36	0.19	5.81	0.09	7.83	-
TEMP		18-JAN-21	12:55	8.2	8.28	0.08	5.37	0.04	1.14	22
TEMP	J	18-JAN-21	13:30	8.0	6.43	0.06	5.34	0.03	1.14	-
TEMP	ĸ	18-JAN-21	13:20	7.4	5.24	0.11	5.69	0.05	4.20	2-2
TEMP	L	18-JAN-21	13:40	7.9	3.72	0.04	3.94	0.02	1.74	1 - A
TEMP	M	18-JAN-21	13:35	9.6	4.80	0.20	5.64	0.10	1.90	1-1
TEMP	N	18-JAN-21	14:00	8.5	5.63	0.09	5.31	0.05	1.02	
N/A	96 Street US	18-JAN-21	23:30	4.8	6.66	0.85	6.63	0.15	3.6	Dewateringactivities
N/A	96th StreetDS	18-JAN-21	23:45	4.2	5.59	0.59	6.69	0.16	4.3	Dewateringactivities
N/A	96 Street US	19-JAN-21	23:45	5.1	6.00	0.23	6.60	0.45	4.6	Dewateringactivities
N/A	96th Street DS	19-JAN-21	23:15	<b>5</b> .3	5.23	0.22	6.45	0.46	7.3	Dewateringactivities
N/A	Fraser River Inlet	20-JAN-21	10:20	6.9	5.29	0.13	6.91	0.06	8.78	3
N/A	Cougar Creek DS	20-JAN-21	10:20	8.8	6.93	0.22	6.64	0.11	1.38	No dewateringactivities
N/A	Cougar Creek US	20-JAN-21	10:15	9.4	6.62	0.22	6.43	0.11	1.67	No dewateringactivities
N/A	96th Street DS	20-JAN-21	13:30	7.3	0.48	0.04	5.50	0.02	0.96	-
N/A	96 Street US	20-JAN-21	13:45	7.4	0.24	0.04	5.12	0.02	0.93	14
N/A	Silda DitchMS Silda Ditch	20-JAN-21	12:35	9.0	2.70	0.42	6.31	0.21	7.87	-
N/A N/A	DS 96 Street US	20-JAN-21 21-JAN-21	12:40 00:30	7.6 5.9	2.95 7.01	0.26	6.50 6.03	0.13	9.26 1.8	- Dewateringactivities
	96 StreetDS	21-JAN-21 21-JAN-21	00:55	4.7	6.25	0.34	6.17	0.35	1.0	Dewateringactivities
N/A										

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	рН	TDS (ppt)	Turbidity (NTU)	Comments
N/A	96 Street DS	21-JAN-21	22:00	3.6	4.05	0.72	0.04	0.35	1.25	Dewateringactivities
NA	96 StreetUS	24-Jan-21	23:30	2.3	3.00	0.23	6.33	0.75	1.8	Dewateringactivities
NA	96 StreetDS	24-Jan-21	23:55	2.5	2.45	0.19 0.51	6.37 6.39	0.86	2.3 9.27	Dewateringactivities
NA NA	Silda DitchDS Silda DitchMS	25-Jan-21	11:05 11:00	6.8 6.8	6.01 8.21	0.52	6.45	0.26	9.27	
	Fraser River	25-Jan-21		· · · · · · · · · · · · · · · · · · ·	12/2012/02/02		5 x 7 2		1000 S	Construction and the second
NA	Inlet	25-Jan-21	11:40	6.1	13.93	1.17	6.87	0.59	4.98	Mid-tide going out
NA	96 StreetDS	25-Jan-21	12:00	5.5	9.21	0.06	5.65	0.03	0.78	
NA	96 StreetUS	25-Jan-21	12:15	5.0	5.91	0.05	5.11	0.03	0.99	
NA	Cougar CkDS	25-Jan-21	10:35	7.5	13.25	0.43	6.56	0.21	4.46	
NA	Cougar CkUS	25-Jan-21	10:40	8.2	14.02	0.41	6.35	0.21	4.02	
NA	96 StreetUS	26-Jan-21	13:30	2.1	1.11	0.33	6.63	0.88	0.9	Dewateringactivities
NA	96 StreetDS	26-Jan-21	13:55	2.1	1.98	0.32	6.39	0.79	1.3	Dewateringactivities
NA	96 StreetDS	27-Jan-21	00:25	2.5	7.31	0.17	5.95	0.63	2.90	Dewateringactivities
NA	96 StreetUS	27-Jan-21	00:45	2.3	6.51	0.25	5.74	0.53	1.95	Dewateringactivities
NA	96 StreetDS	28-Jan-21	02:00	4.1	4.44	0.22	6.13	0.33	3.90	Dewateringactivities
NA	96 StreetUS	28-Jan-21	02:35	4.3	7.90	0.14	6.00	0.48	2.10	Dewateringactivities
NA	Silda Ditch	29-Jan-21	11:05	8.4	8.38	0.24	6.27	0.12	7.56	
1.11.1	DS	ACCE COMM MAN	10 C			and Second			2.5.5	
NA	Silda DitchMS	29-Jan-21	11:10	7.7	3.28	0.50	6.30	0.25	15.60	
NA	Fraser Rrinlet	29-Jan-21	11:30	6.0	7.91	0.66	6.71	0.33	8.37	Dowotoring activities
NA NA	96 St DS 96 St DS	29-Jan-21 29-Jan-21	11:45 21:00	6.0	0.90	0.05	5.65 5.19	0.03	1.32	Dewateringactivities Dewateringactivities
NA	96 StreetDS	29-Jan-21 31-Jan-21	21:00	6.4 3.5	0.33	0.04	5.19	0.02	1.12	Dewateringactivities
NA	96 StreetUS	31-Jan-21 31-Jan-21	21:00	3.5	1.99	0.91	5.78	0.23	1.89	Dewateringactivities
NA	96 StreetUS	1-Feb-21	21.45	3.0	0.11	0.75	5.89	0.42	2.90	Dewateringactivities
NA	96 StreetDS	1-Feb-21	23:30	3.0	0.89	0.95	5.79	0.06	1.90	Dewateringactivities
NA	96 StreetUS	2-Feb-21	15:17	7.5	-	0.06	6.05	0.00	1.79	DO meter notrecording
NA	96 StreetDS	2-Feb-21	15:34	8		0.07	6.07	0.03	3.84	DO meter notrecording
NA	Silda DitchUS	3-Feb-21	12:20	8.9	3.37	0.3	6.49	0.15	9.72	Baseline
NA	Silda DitchDS	3-Feb-21	11:30	7.6	4.9	0.29	6.32	0.15	11.20	Baseline
NA	96 StreetUS	3-Feb-21	2:45	6.0	0.55	0.09	6.04	0.44	2.10	Dewateringactivities
NA	96 StreetDS	3-Feb-21	3:15	5.9	0.47	0.03	6.02	0.56	2.16	Dewateringactivities
NA	96 StreetUS	3-Feb-21	4:41	5.5	0.52	0.45	5.98	0.57	1.65	Isolated ditchtie in to 96 St ditch
NA	96 StreetDS	3-Feb-21	3:45	5.3	0.59	0.34	5.90	0.78	2.35	Isolated ditchtie in to 96 Street ditch
NA	L1300 US	3-Feb-21	22:00	6.2	1.15	0.14	6.37	0.14	25.35	Upcoming ditch infilling activities baseline data stagnantwater
NA	L1300 DS	3-Feb-21	22:30	6.2	1.28	0.59	6.25	0.59	28.00	Upcoming ditch infilling activities baseline data stagnant water
NA	Cougar Crk US	4-Feb-21	11:12	8.2	1.76	0.20	5.96	0.10	1.88	Institute sampling
NA	Cougar Crk DS	4-Feb-21	11:26	8.3	0.81	0.20	5.94	0.10	1.92	Institute sampling
NA	L2100 Road sideDitch US	2021-02- 08	1:00	7.4	0.12	0.30	6.30	0.18	21.0	Installing road platesand access pad
NA	L2100 Road sideDitch DS	2021-02- 08	12:45	7.4	0.13	0.34	6.25	0.20	25.23	Installing road platesand access pad
NA	L2100 Road sideDitch US	2021-02- 08	2:00	6.9	0.10	0.28	6.60	0.17	21.0	Installing road platesand access pad - completed
NA	L2100 Road sideDitch DS	2021-02- 08	2:15	6.5	0.12	0.29	6.75	0.25	23.5	Installing road platesand accesspad - completed
NA	L2100 Road sideDitch US	2021-02- 09	21:00	6.8	0.12	0.45	6.78	0.18	21.45	Installing sand accesspad for culvert installation
NA	L2100 Road sideDitch DS L2100 Road	2021-02- 09 2021-02-	21:15	6.9	0.34	0.25	6.34	.23	25.10	Installing sand accesspad for culvert installation Installing sand accesspad for
NA	sideDitch US	2021-02- 09 2021-02-	23:00	2.4	0.11	0.35	6.30	0.20	21.39	Installing sand accesspad for culvert installation Installing sand accesspad for
NA	sideDitch DS	2021-02- 09 2021-02-	23:15	2.5	0.10	0.27	6.44	0.34	22.90	culvert installation
NA	Silda DitchDS	2021-02- 12 2021-02-	10:40	4.4	NA	0.35	6.79	0.18	9.04	
NA	Silda DitchMS Fraser River	2021-02- 12 2021-02-	10:55	3.3	NA	0.47	6.73	0.23	8.91	÷
NA	Inlet	12 2021-02-	9:40	4.2	NA	1.64	6.72	0.82	1.19	5
NA	96 <sup>th</sup> StreetDS	12 2021-02- 2021-02-	8:30	3.8	NA	0.06	6.25	0.03	2.75	-
NA	Silda DitchUS	12	8:45	0.7	NA	0.03	4.70	0.01	2.18	-

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	pН	TDS (ppt)	Turbidity (NTU)	Comments
NA	L100 DS	2021-02- 12	8:50	0.3	NA	0.98	6.21	0.52	59.8	Broke ice to get sample. No works occurring. Resampling will occur when temperatures increase.
NA	L100 US	2021-02- 12	9:00	2.1	NA	1.62	6.44	0.81	79.6	Broke ice to get sample. No works occurring. Resampling will occur when temperatures increase.
NA	Cougar Creek US	2021-02- 12	13:33	4.9	NA	0.25	6.94	0.12	3.79	New gravel fill was placed on the trail next tothe creek
NA	Cougar Creek 10 m	2021-02- 12	13:40	3.0	NA	0.25	7.26	0.13	1.92	Discharge
NA	Cougar Creek 90 m	2021-02- 12	13:50	2.7	NA	0.25	7.30	0.12	1.61	New gravel fill was placed on thetrail next to the creek
NA	E04 wet area discharge L2100 (Pre work baseline)	2021-02- 16	20:30	2.6	-	0.56	6.23	0.19	18.9	Baseline dischargearea data
NA	E04 wet area discharge L2100	2021-02- 16	21:45	2.4	4	0.45	6.45	0.18	22.3	Discharge tovegetation
NA	E04 wet area discharge L2100	2021-02- 17	02:00	0.5	9	0.42	6.33	0.25	24.8	Discharge to sediment bag
NA	E04 wet area discharge L2100	2021-02- 17	3:30	0.3	4	0.14	6.34	0.17	23.7	Discharge to sediment bag
NA	E04 wet area discharge L2100 (Pre work baseline)	2021-02- 17	20:30	5.9	÷	0.91	6.25	0.37	25.5	Discharge to sediment bag - low water levels at submersiblepump
NA	E04 wet area discharge L2100	2021-02- 18	02:30	2.4		0.14	6.34	0.17	23.7	Discharge to sediment bag - low water levels at submersible pump
NA	E04 wet area discharge L2100 (Pre work baseline)	2021-02- 18	21:00	3.8		0.23	6.67	0.22	22.8	Baseline dischargearea data
NA	E04 wet area discharge L2100	2021-02- 19	03:00	3.2	+	0.45	6.53	0.36	23.7	Discharge to sediment bag - low water levels at submersiblepump
NA	Cougar Creek - US	2021-02- 19	09:50	8.4	-	0.49	6.38	0.24	3.60	Baseline
NA	Cougar Creek - 10m	2021-02- 19	10:00	7.1	-	0.49	6.46	0.24	3.49	Baseline
NA	Cougar Creek - 90m	2021-02- 19	10:10	6.2	-	0.48	6.60	0.24	3.20	Baseline
NA	Fraser River Inlet	2021-02- 18	9:25	6.6	•	0.46	6.43	0.23	6.0	Baseline
NA	96 St DS	2021-02- 18	9:35	3.7	9	0.04	6.25	0.03	<b>1</b> .75	Baseline
NA	96 St US	2021-02- 18	9:45	3.2	-	0.05	6.04	0.02	1.00	Baseline
NA	Silda ditch upstream	2021-02- 18	10:30	3.8	2	0.79	6.73	0.40	7.9	Baseline
NA	Silda ditch downstream	2021-02- 18	10:45	5.6	+	0.81	6.5	0.41	11.90	Baseline
NA	E04 wet area discharge L2100	2021-02- 21	21:15	8.78	Ţ.	0.56	6.62	0.34	11.8	Discharge to sediment bag – large poolof stagnant water from weekend rainfall
NA	E04 wet area discharge L2100	021-02-21	02:30	7.23	5	0.45	6.53	0.36	12.7	Discharge to sediment bag – large poolof stagnant water from weekendrainfall
NA	E04 wet area discharge L2100	2021-02- 23	2 <b>1</b> :45	7.22	Ţ	0.45	6.23	0.23	10.9	Discharge to sediment bag – limited dewatering due to low levels of groundwater in trench
NA	E04 wet area discharge L2100	2021-02- 23	01:30	7.05		0.67	6.11	0.39	11.2	Discharge to sediment bag – limited dewatering due to low levels of groundwater in trench
NA	E04 wet area discharge L2100	2021-02- 23	22:30	7.05	*	0.67	6.11	0.39	11.2	Discharge to sediment bag – limited dewatering due to low levels of groundwater in trench

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	pН	TDS (ppt)	Turbidity (NTU)	Comments
NA	E04 wet area discharge L2100	2021-02- 24	02:45	5.25	÷	0.33	7.03	0.43	10.3	Discharge to sediment bag – limited dewatering due to low levels of groundwater in trench
NA	Fraser River Inlet	2021-02- 24	9:25	7.0	- 1	0.24	6.79	0.12	13.80	-
NA	96 StreetDS	2021-02- 24	12:30	6.7	4	0.05	4.73	0.03	2.20	÷
NA	96 StreetUS	2021-02- 24	12:45	6.3	÷	0.04	4.70	0.02	0.75	-
NA	Silda DitchUS	2021-02- 24	14:10	8.9	9	0.78	6.68	0.41	12.00	-
NA	Silda DitchDS	2021-02- 24	14:20	8.4	¥.	0.71	6.52	0.35	13.30	-
NA	L100 DS	2021-02- 24	13:10	7.0	2	0.83	6.13	0.42	48.70	4.1
NA	L100 US	2021-02- 24	13:15	7.8	-	0.82	6.15	0.45	42.30	-
NA	Cougar Creek US	2021-02- 24	14:40	7.8	-	0.32	7.16	0.16	1.37	-
NA	Cougar Creek	2021-02- 24	14:48	7.1	-	0.32	7.12	0.16	1.24	4
NA	10m Cougar Creek	2021-02-	14:54	7.4	4	0.32	7.12	0.16	1.20	4
NA	90m E04 wet area discharge L2100	24 2021-02- 24	20:15	5.80	+	0.10	7.13	0.13	10.9	Discharge to sediment bag – limited dewatering due to low levels of groundwater in trench
NA	E04 wet area discharge L2100	2021-02- 25	02:45	5.25	-	0.27	7.01	0.3	12.2	Discharge to sediment bag – limited dewatering due to low levels of groundwaterin trench
NA	Fraser River Inlet	2021-03- 02	09:25	7.8	4	3.43	6.68	1.71	16.40	Low Tide -2:27 High Tide -21:02
NA	96 StreetDS	2021-03- 02	12:30	7.2		0.06	6.11	0.03	2.83	Low Tide -2:27 High Tide -21:02
NA	96 StreetUS	2021-03- 02	12:45	7.8	4	0.06	5.27	0.03	1.29	Low Tide -2:27 High Tide -21:02
NA	L100 DS	2021-03- 02	13:10	7_9	-	0.95	6.15	0.48	82.0	High turbidityrecorded in ditch, water stagnant. Water quality tested in 96 <sup>th</sup> St Ditch and no issues observed. ESC measure: being addedto ditch.
NA	L100 US	2021-03- 02	13:15	8.2		0.95	6.23	0.49	102.3	High turbidityrecorded in ditch, water stagnant. Water quality tested in 96 <sup>th</sup> St Ditch and no issues observed. ESC measure being added to ditch.
NA	Cougar Creek US	2021-03- 04	14:40	8.4	-	0.29	6.40	0.15	1.52	-
NA	Cougar Creek 10 m	2021-03- 04	14:48	7.9	-	0.30	6.62	0.30	1.85	-
NA	Cougar Creek 90 m	2021-03- 04	14:54	7.8	-	0.30	6.69	0.15	1.90	
NA	Silda DitchUS	2021-03- 04	14:10	7.7	+	0.23	6.18	0.14	6.43	Low tide -15:56 High tide -22:57
NA	Silda DitchDS	2021-03- 04	14:20	7.7	-	0.18	6.14	0.09	5.64	Low tide -15:56 High tide -22:57
NA	Fraser River Inlet	2021-03- 10	10:30	7.7	÷	4.00	6.81	2.00	27.70	Low tide –10:30 High tide -14:57
NA	96 StreetDS	2021-03- 10	10:40	8.0	210.1	0.12	6.28	0.06	4.70	-
NA	96 StreetUS	2021-03-	10:50	7.9	-	0.04	5.47	0.02	0.98	-
NA	Silda DitchUS	10 2021-03-	11:45	7.8	11-11	0.67	6.64	0.33	12.30	Low tide -10:30
NA	Silda DitchDS	10 2021-03-	11:35	7.5		0.67	6.73	0.33	12.30	High tide -14:57 Low tide -10:30
NA	L100 DS	10 2021-03- 10	11:35	7.5	-	0.94	6.30	0.47	99.30	High tide -14:57 High turbidityrecorded in ditch, water stagnant. Water quality tested in 96 <sup>th</sup> St Ditch and no issues observed. ESC measure: being addedto ditch. Sediment fence addedalong the side of preload.
NA	L100 US	2021-03- 10	11:10	8.0	-	1.06	6.31	0.53	80.20	-

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	рH	TDS (ppt)	Turbidity (NTU)	Comments
NA	Cougar Creek US	2021-03- 10	11:20	10.1	4	0.26	6.61	0.13	2.38	2
NA	Cougar Creek	2021-03-	13:45	8.3		0.26	6.86	0.14	2.07	4.1
NA	Cougar Creek 90 m	2021-03-	13:50	8.9	-	0.26	6.97	0.13	1.65	-2
NA	L	2021-03- 10	14:05	8.9	2	-	13	1.20	L	2
NA	М	2021-03- 10	14:30	-		0.45	6.05	0.20	+	2
NA	N	2021-03-	14:35	3		4	5	5		2
NA	к	2021-03- 10	14:40	-	-	3.86	7.48	1.98	4	-
NA	к	2021-03-	14:45	6	-	0.11	6.02	0.06	2	2.
NA	J	10 2021-03-	14:50	-		0.12	5.82	0.06	5 - 1	4,
NA	Fraser River	10 2021-03-	10:30	6.1	11.62	0.90	7.20	0.45	11.50	High tide -8:57
NA	Inlet 96 StreetDS	17 2021-03-	10:45	7.2	7.15	0.11	6.20	0.05	4.78	Low tide -16:41
NA	96 StreetUS	17 2021-03-	11:05	6.7	4.88	0.03	4.50	0.03	4.70	
NA	Silda DitchUS	17 2021-03-	9:50	6.5	11.40	0.32	7.21	0.02	12.50	- High tide -8:57
NA	Silda DitchDS	17 2021-03-	9.50 10:10	7.7	4.80	0.32	6.44	0.10	22.00	Low tide -16:41 High tide -8:57
		17	10.10	1.1	4.00	0.12	0.44	0.00	22.00	Low tide -16:41 Stagnant ditch. ESCmeasures
NA	L100 DS	2021-03- 17	1 <mark>1</mark> :10	6.2	3.68	0.84	6.15	0.42	72.30	have beeninstalled including sediment fence and straw wattles. Check dam in place at the inlet to 96 <sup>th</sup> ditch. Nowater qualityissues observed in 96 <sup>th</sup> ditch.
NA	L100 US	2021-03- 17	11:40	6.8	4.23	0.88	6.53	0.51	103.50	Stagnant ditch. ESCmeasures have beeninstalled including sediment fence and straw wattles. Check dam in place at the inlet to 96 <sup>th</sup> ditch. Nowater quality issues observed in96 <sup>th</sup> ditch.
NA	Cougar Creek US	2021-03- 17	13:45	9.3	9.36	0.30	6.89	0.15	3.19	
NA	Cougar Creek	2021-03- 17	13:50	8.8	9.71	0.28	7.05	0.14	3.68	-
NA	Cougar Creek 90 m	2021-03- 17	14:05	8.8	9.68	0.28	7.04	0.14	3.70	4
NA	Fraser River Inlet	2021-03- 25	9:10	6.1	11.62	0.90	7.20	0.45	11.50	Low tide -10:02 High tide -16:27
NA	96 StreetDS	2021-03- 25	9:40	8.1	6.13	0.25	6.31	0.12	5.24	Light way 10.21
NA	96 StreetUS	2021-03- 25	9:55	8.1	5.37	0.06	5.08	0.03	1.39	
NA	Silda DitchUS	2021-03- 25	8:40	8.4	5.64	0.33	6.38	0.17	24.50	Low tide -10:02 High tide -16:27
NA	Silda DitchDS	2021-03- 25	8:50	8.9	5.83	0.28	6.78	0.14	21.30	Low tide -10:02
NA	L100 DS	2021-03-	10:00	7.9	4.89	0.76	6.36	0.38	71.30	High tide -16:27
NA	L100 US	25 2021-03-	10:15	8.3	5.44	0.78	6.53	0.36	88.60	
NA	Cougar Creek	25 2021-03-	14:00	10.7	9.43	0.20	7.00	0.10	8.52	
NA	US Cougar Creek	25 2021-03-	14:10	10.4	9.35	0.20	6.84	0.10	7.66	
NA	10 m Cougar Creek	25 2021-03-	14:20	10.4	9.68	0.20	6.88	0.10	7.23	
NA	90 m Ditch dewateringfor culvert 105 DS	25 30-Mar-21	9:30	8.3	5.83	0.13	6.94	0.32	322	Dewateringto the baseof preload.
NA	Ditch dewateringfor culvert 105 US	30-Mar-21	9:35	8.8	5.32	0.08	6.88	0.12	64.3	Dewateringto a storm water draineast of the ditch.

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	pН	TDS (ppt)	Turbidity (NTU)	Comments
NA	Ditch dewateringfor culvert 105 DS	31-Mar-21	10:00	10.4		0.68	6.33	0.33	384	
NA	Ditch dewateringfor culvert 105 US	31-Mar-21	10:25	10.3		0.45	6.27	0.24	3.10	
NA	Fraser River Inlet	31-Mar-21	10:15	9.4	10.58	0.17	7.03	0.08	30.50	
NA	96 StreetDS	31-Mar-21	10:30	8.7	6.19	0.06	5.70	0.03	8.50	
NA	96 Street US	31-Mar-21	10:45	8.6	6.05	0.03	4.28	0.02	1.14	
NA	L100 DS	31-Mar-21	10:50	7.8	5.07	1.08	6.07	0.54	87.50	
NA	L100 US Ditch	31-Mar-21	11:05	8.5	5.83	1.88	6.13	0.75	103.2	· · · · · · · · · · · · · · · · · · ·
NA	dewatering for culvert105 DS	01-April - 21	10:00	12.1	6.15	0.56	6.24	0.28	173	Dewateringto the baseof preload.
NA	Ditch dewatering for Culvert 105 US	01-April - 21	10:25	10.3	6.23	0.45	6.27	0.24	116	Dewateringto a storm water draineast of the ditch
NA	Silda ditchUS	1-Apr-21	9:15	7.7	4.87	0.17	6.18	0.09	5.64	High tide -7:25 Low tide -14:22
NA	Silda ditchDS	1-Apr-21	9:30	7.7	4.37	0.23	6.14	0.14	6.83	High tide -7:25 Low tide -14:22
NA	Cougar Creek - US	1-Apr-21	11:00	8.5	9.38	0.26	6.45	0.14	2.65	
NA	Cougar Creek	1-Apr-21	11:10	8.0	9.36	0.26	6.60	0.13	2.19	
NA	Cougar Creek - 90m	1-Apr-21	11:20	8.1	9.37	0.25	6.52	0.14	2.68	-
NA	J - Off Site	8-Apr-21	1:00AM	7.9	4.76	0.13	5.92	0.07	4.37	
NA	K - Off Site	8-Apr-21	1. St. 27. 1	7.8	4.74	0.14	5.74	0.07	37.1	Stagnantwater, no flows.
		CD COM A REAL	1:15AM			0.8050	C.A. 0	C THE DOWN IN		5
NA	L - Off Site	8-Apr-21	1:40AM	5.0	4.11	0.3	6.01	0.15	20.6	Stagnantwater, no flows.
NA	M - Off Site	8-Apr-21	2:20AM	5.8	4.32	0.3	6.28	0.1	40.3	Stagnantwater, no flows.
NA	N - Off Site	8-Apr-21	3:20AM	6.3	4.58	0.18	5.78	0.11	20.3	Stagnant water, noflows.
NA	K - On Site	8-Apr-21	1:20AM	7.8	9.6	4.24	7.64	2.12	3.03	Clear, transparentwater
NA	O - On Site	8-Apr-21	2:35AM	5.8	6.33	0.28	7.08	0.07	16.4	Stagnantwater, noflows.
NA	P - On Site	8-Apr-21	2:50AM	6.8	6.3	0.33	6.68	0.35	60.3	Turbid waterwith light brown color
NA	Fraser River Inlet	9-Apr-21	12:50	7.5	9.68	0.65	6.29	0.33	20.10	High tide -5:23 Low tide -11:48
NA	96 StreetDS	9-Apr-21	1:05	9.0	8.44	0.07	6.01	0.03	4.43	
NA	96 StreetUS	9-Apr-21	1:20	8.8	6.38	80.0	6.03	0.03	2.21	List Ed. 5.00
NA	Silda ditchUS	9-Apr-21	1:50	8.7	7.37	0.77	6.31	0.38	28.50	High tide -5:23 Low tide -11:48
NA	Silda ditchDS	9-Apr-21	2:10	8.7	6.22	0.83	6.28	0.41	35.40	High tide -5:23 Low tide -11:48
NA	L100 DS	9-Apr-21	1:35	8.5	5.33	1.06	6.90	0.53	84.60	High tide -5:23 Low tide -11:48
NA	L100 US	9-Apr-21	1:45	8.3	4.21	3.21	6.77	0.72	82.10	High tide -5:23 Low tide -11:48
NA	Cougar Creek - US Cougar Creek	9-Apr-21	2:45	8.7	9.74	0.36	7.93	0.16	3.84	
NA	- 10m	9-Apr-21	2:55	8.6	9.92	0.36	7.88	0.16	1.97	
NA	Cougar Creek - 90m Fraser River	9-Apr-21	3:05	8.6	9.86	0.36	7.88	0.16	1.60	High tide -7:33
NA	Inlet	15-Apr-21	14:18	11.7	9.36	0.88	7.36	0.44	67.30	Low tide -14:44 High tide -7:50
NA	96 StreetDS	16-Apr-21	14:30	15.5	4.27	0.07	6.20	0.04	4.63	Low tide -15:16 High tide -7:50
NA	96 StreetUS	16-Apr-21	14:40	15.2	3.61	0.04	5.41	0.02	1.41	Low tide -15:16
NA	Silda ditchUS	15-Apr-21	20:05	17.2	1.83	0.67	6.95	0.33	30.60	Low tide -14:44 High tide - 21:49
NA	Silda ditchDS	15-Apr-21	19:50	16.2	2.02	0.71	6.34	0.35	67.30	Low tide -14:44 High tide - 21:49 See secondsentence inSection 4.5
NA	L100 DS	16-Apr-21	14:45	20.0	5.22	0.95	6.91	0.47	41.50	See first line in Section 4.5

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	pН	TDS (ppt)	Turbidity (NTU)	Comments
NA	Cougar Creek	15-Apr-21	18:15	14.3	8.89	0.23	6.44	0.12	3.39	
NA	Cougar Ck - 10 m	15-Apr-21	18:25	14.0	8.28	0.24	6.60	0.12	3.46	·
NA	Cougar Ck - 90 m	15-Apr-21	18:35	14.0	8.26	0.23	6.60	0.12	3.44	10000
NA	Fraser River Inlet	22-Apr-21	15:00	13.3	9.93	0.14	7.16	0.07	206.00	High tide -13:36 Low tide -20:16
NA	Silda ditch upstream	22-Apr-21	16:10	20.2	6.81	0.64	6.71	0.39	44.30	High tide -13:36 Low tide -20:16
NA	Silda ditchDS	22-Apr-21	16:00	20.9	7.36	0.72	6.76	0.36	57.90	High tide -13:36 Low tide - 20:16- HighNTU reading dueto Fraser River high NTU during high tide
NA	Cougar Creek	22-Apr-21	16:25	16.3	8.17	0.24	7.07	0.12	7.69	
NA	Cougar Creek - 10m	22-Apr-21	16:35	16.2	7.60	0.25	7.05	0.12	3.63	
NA	Cougar Creek – 90m	22-Apr-21	16:45	16.3	7.82	0.25	7.04	0.12	4.31	
NA	J - Off Site	22-Apr-21	6:30PM	18.1	2.8	0.26	5.79	0.13	14.3	Water contains orange tannins andfloating organics
NA	K - Off Site	22-Apr-21	6:40PM	18.1	3.67	0.1	6.13	0.19	16.8	Water contains orange tannins and floating organics
NA	L - Off Site	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The area isdry therefore no sample was collected
NA	M - Off Site	22-Apr-21	7:15PM	15.3	3.71	0.34	6.51	0.18	28.3	Water contains orange tannins andfine floating organics- mostly stagnant water
NA	N - Off Site	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The area isdry therefore no sample was collected
NA	K - On Site	22-Apr-21	6:50PM	18	5.74	5.58	7.48	2.8	5.62	Clear transparentwater
NA	O - On Site	22-Apr-21	6:55 PM	16.4	4.51	0.13	7.4	0.11	5.22	Transparent with yellow tanning
NA	P - On Site	22-Apr-21	7:30 PM	16.6	4.66	0.36	6.48	0.41	1.6	Turbid water with light brown tannins-Stagnant water- not flowing
NA	Fraser River Inlet	28-Apr- 2021	14:40	10.3	10.28	0.93	7.06	0.68	29.20	Please refer to Table 5.1. Low tide moving out
NA	Silda ditchUS	28-Apr- 2021	18:40	12.8	4.17	0.30	6.37	0.44	37.20	Please refer to Table 5.1. High tide moving in
NA	Silda ditchDS	28-Apr- 2021	18:20	12.4	4.33	0.16	6.33	0.35	41.40	Please refer to Table 5.1. High tide moving in
NA	Cougar Creek - US	28-Apr- 2021	18:55	10.8	9.76	0.22	6.93	0.18	5.13	
NA	Cougar Creek - 10m	28-Apr- 2021	19:10	10.8	9.89	0.28	6.85	0.16	5.44	
NA	Cougar Creek - 90m	28-Apr- 2021	19:20	10.6	9.25	0.28	6.84	0.16	3.38	
NA	L550 Ditch – US	5 May	7:49	13.5	1.88	0.34	6.50	0.44	17.5	The water has brown tannins but is mostly clear with small sized floating organics. No instream activities that will influence water quality
NA	L550 Ditch – DS	5 May	8:00	11.9	1.75	0.27	6.80	0.10	22.3	The water has brown tannins but is mostly clear with small sized floating organics. No instream activities that will influence water quality
NA	L550 Ditch – US	5 May	14:35	15.0	0.68	0.36	6.71	0.42	21.1	The water has brown tannins but is mostly clear with small sized floating organics. No instream activities that will influence water quality
NA	L2100 Ditch DS	6 May	07:30	14.7	4.18	0.80	6.50	0.40	31.2	DS baseline data- prior to road plate installation- Pre work baseline data.
NA	L2100 DS	6 May	12:00	17.0	4.18	0.77	7.19	0.39	11.2	Water has brown tannins and is transparent
NA	L2100 DS	6 May	<b>1</b> 6:30	15.2	8.92	0.76	7.28	0.38	10.9	Water has brown tannins and is transparent
NA	Silda Ditch Upper-US	6 May	11:30	14.7	1.27	0.71	6.33	0.35	32.40	Water is brown and turbid

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	рН	TDS (ppt)	Turbidity (NTU)	Comments
NA	Silda ditch US	6 May	11:45	13.6	2.68	0.73	6.58	0.37	31.20	Water is brown and turbid
NA	Silda ditch DS	6 May	11:55	13.8	7.53	0.72	7.01	0.35	20.80	Water is brownish grey and opaque
NA	Fraser River Inlet	7 May	7:16	9.1	10.81	0.13	7.73	0.06	111.00	
NA	Silda Ditch Upper-US	7 May	7:01	11.3	0.58	0.70	6.36	0.35	47.80	Water is brown and turbid
NA	Silda Ditch US	7 May	6:35	10.4	2.18	0.75	6.53	0.37	33.90	Water is brown and turbid
NA	Silda Ditch DS	7 May	6:10	8.8	10.07	0.16	7.54	0.08	74.50	Water is brownish grey and opaque. High NTU contributed to Fraser river water influx during high tide
NA	Cougar Ck – US	7 May	8:07	10.9	6.99	0.16	6.84	0.08	8.04	
NA	Cougar Ck – 10m	7 May	8:15	11.0	6.39	0.16	6.99	80.0	7.71	
NA	Cougar Ck – 90m	7 May	8:40	11.0	7.30	0.16	7.01	0.08	7.76	
NA	J – Off Site	6 May	9:35	12	2.65	0.15	6	0.08	7.97	Water contains orange tannins and floating organics
NA	K – Off Site	6 May	9:45	11.9	1.09	0.21	5.98	0.1	3.61	Water contains orange tannins and floating organics
NA	L – Off Site	6 May	10:05	11.2	2.83	0.86	6.63	0.43	13	Water is slightly grey with fine floating organics. Water was stagnant during monitoring
NA	M - Off Site	6 May	10:15	10.3	1.35	0.21	6.04	0.1	17.4	Water contains orange tannins and fine floating organics
NA	N – Off Site	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The area is dry therefore no sample was collected
NA	K – On Site	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The area is dry therefore no sample was collected
NA	O – On Site	6 May	10:00	12.5	2.91	0.2	6.32	0.1	4.21	Transparent with yellow tanning
NA	P – On Site	6 May	10:30	11.6	1.03	0.42	6.68	0.53	20.8	Turbid water with light brown tannins. Water was stagnant during monitoring
NA	Fraser River	13-May-21	17:40	17.2	9.10	0.25	7.00	0.13	67.80	Water is Brown/ grey and turbic
NA	Silda ditch Upper-US	13-May-21	15:40	16.5	8.94	0.78	6.46	0.39	68.2	Water is brown and turbid – Slow-flowing almost stagnant
NA	Silda ditch US	13-May-21	16:50	15.4	10.20	1.01	6.76	0.50	55.00	Water is brown and turbid
NA	Silda ditch DS	13-May-21	16:15	17.4	9.53	0.74	7.09	0.38	45.1	Water is brown and turbid
NA	Fraser River Inlet	18-May-21	17:35	14.6	8.60	0.29	5.78	0.14	68.80	Water is grey and turbid
NA	Silda Ditch Upper-US	18-May-21	18:40	16.7	9.10	0.70	6.60	0.35	69.70	Water is brown and opaque, stagnant
NA	Silda Ditch US	18-May-21	18:20	16.0	9.54	0.78	6.43	0.39	44.80	Water is brown and opaque
NA	Silda Ditch DS	18-May-21	18:10	17.4	7.30	0.62	6.77	0.31	29.70	Water is brown and opaque
NA	Nordel Ditches -east of Nordel Way	26-May-21	09:58			4	-	2	31.7	Additional monitoring done to determine high NTU readings in Silda ditch Upstream- Not associated with construction activities
NA	Silda ditch US	26-May-21	10:03	3	-	-	5	÷	61.6	Additional monitoring done to determine high NTU readings in Silda ditch Upstream- Large pond area at the culvert inlet. Mostly stagnant water.
NA	Nordel weigh bridge ditches	26-May-21	10:10	÷	-	-	9	-	17.7	Additional monitoring done to determine high NTU readings in Silda ditch Upstream. Stagnant water
NA	Nordel Ditch Tributary (Planet Ice)	26-May-21	10:36	•	-	÷	-	-	29.1	Additional monitoring done to determine high NTU readings in Silda ditch Upstream. Mostly slow flowing water with high occurrences of ferrous oxide residue.
NA	Fraser River Inlet	28-May-21	12:30	17.3	10.42	0.88	7.15	0.56	108.00	Water is grey and turbid
NA	Silda ditch Upper-US	28-May-21	13:25	20.5	7.88	0.45	6.20	0.22	92.90	Water is brownish grey and turbid

Site Code	Site	Date	Time	Water Temp (°C)	DO (mg/L)	Conductivity (mS/cm)	pН	TDS (ppt)	Turbidity (NTU)	Comments
NA	Silda ditch US	28-May-21	13:15	22.0	4.74	0.53	6.21	0.27	102.00	Water is brownish grey and turbid
NA	Silda ditch DS	28-May-21	13:00	20.2	7.34	0.42	6.03	0.21	92.90	Water is brownish grey and turbid

\* Tidal Chart data collected from: https://www.tides.gc.ca/eng/station?sid=7654

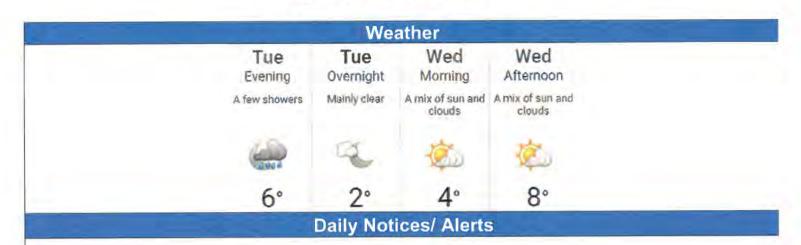
06 May 2	06 May 2021 Tidal Chart 07			07 May 2021 Tidal Chart			1 Tidal Chart	18 May 2021	Tidal Chart	28 May 2021 Tidal Chart		
Time	He	eight	Time	Hei	ght	Time	Height	Time	Height	Time	Height	
PDT	(m)	(ft)	PDT	(m)	(ft)	PDT	<mark>(</mark> m)	PDT	(m)	PDT	(m)	
04:11	2.9	9.5	04:45	2.8	9.2	01:09	2.1	00:50	2.9	02:21	2.4	
11:21	1.6	5.2	11:56	1.4	4.6	05:34	2.8	06:38	2.3	07:01	3.1	
15:36	2.1	6.9	16:46	2.2	7.2	13:59	1.1	09:31	2.4	15:52	1.0	
22:14	1.2	3.9	23:03	1.4	4.6	20:34	3.0	18:11	1.0	21:57	3.2	
04:11	2.9	9.5		NA		1	NA	N	٩	N	Α	

#### APPENDIX 8: TOOLBOX TRAINING RECORDS

Pacific Gateway Constructors	aily Toolbox Talk	Date:May 5 <sup>th</sup> , 2021 Foreman's Initials: <del>ILS</del> _
Crew: Will Wall	Shift (ci	rcle): Day Night
Project Name: Highway 91/17 Upg	rade Superin	ntendent: shown Parell
Project #: 6218101	100 Forema	n: Rat Mains
Proposed Sco	pe of Work (Work Activities to be c	ompleted for the day)
	UX, iBx, siesmic of sand pot trucks sailing 200 Muster P 2100 Emergency	Poremans Muc
WORK AT HEIGHTS	HEAVY EQUIPMENT	MOTOR VEHICLE
Fall Pro/ Dropped objects MATERIAL HANDLING Manual/ Equipment GROUND DISTURBANCE & EXCAVATING	Congestion/ Line of fire/ Overhead hazards CONFINED SPACE Excavations/ Manholes/ culverts WORKING ON LIVE SYSTEMS	Spotters/ Traffic/ Line of Fire HOISTING & LIFTING Rigging/ Cranes/ suspended loads HAZARDOUS ENERGY CONTROL
Underground Utilities/ Cave-in	Electrical/ Water/ Gas/ Equipment	Stored Energy
Critical Tasks 1. parfiel Lifts of par (heavy Equipment) 2 instal baskets geograd (Material handling) 3. execute (ground disturburg)	Hazards - Working around equipment forts - heaving fing - hepelative Motion - digging around - ithilts	- Eige contact with - Eige contact with - Eige contact with - Dend Knees when - Wend Knees when - Wend and flex before stading spotter when - Wee spotter when - Wee of the pole
Additional Hazards in the work area		withthe !



Date: \_\_\_\_May 5<sup>th</sup>, 2021\_\_\_\_\_ Foreman's Initials: \_\_\_\_\_



### **Birds and Bats**

#### Birds:

- The breeding season for birds on this site is March 15 August 15
- No moving/removing nests or eggs. Contact the Environmental team if a nest or eggs are found
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- Report any bird/bat sightings





Date: \_\_\_May 5<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		/
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		/
Travelled outside the country?		/
Been in close contact with a person who recently travelled outside the country?		/
Been contacted by a health authority regarding close contact with a confirmed case?		/

If anyone answered YES to <u>any of the questions above, please</u> isolate and contact site Health and Safety immediately

All workers fit for duty? YES NO

	Tool	box Sign On
#	Print Name	Signature
1	Vouma iosher	(Yha)
2	Ben Warner	man
3	Scort Kuld	
4	black of Hare m	Mars
5	Acim ADVELSS	"Cross
6	Shawa Parrell	2
7	ILYAN FANZA	Fying Ficinza
8	Vate Fail ruff luff	110 pro de
9	Coun Dombroski	(A)
10	MarkAlton	WTo alto
11	Jysor Vanzitt -	Julion
12	K: Kimos	Logo Caylor A
13	Daniela Miz	ABland
14	RODELGO GORTINA	La Martin
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Pacific Gateway Constructors

# **Daily Toolbox Talk**

Date: \_\_\_\_May 5<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

	Daily Debrief	
Foreman:	Time:	

1.	All work areas are cleaned up?	Yes	NO
2.	All work sites/equipment secured?	Yes	No
3.	All lockout/tagouts removed?	Yes	No
4.	All permits closed out?	Yes	No
5.	Are there any injuries, suspected injuries, incidents, damages or deficiencies to report?	Yes	No
6.	Were there any wildlife sightings today? (Note species, number and location in comments below)	Yes	No

Comments or Employee Concerns:	

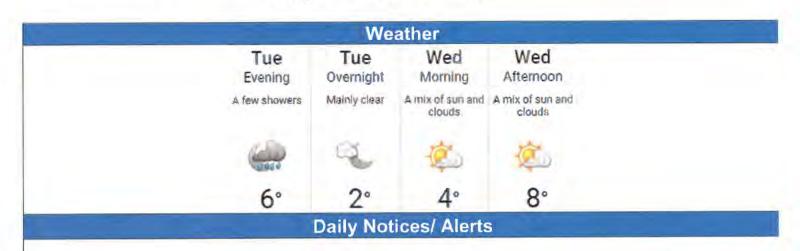
	End of Shift Sign Off				
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3	Pan Evens	William			
4	Amic/Poroz	in great 4 price			
5	PLAN FIGNZA	Ryui Fianza			
6	Calum				
7	ROB MO				
8	Gameron	Bran			
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Pacific Gateway Constructors	aily Toolbox Talk	Date:May 5 <sup>th</sup> , 2021 Foreman's Initials:
Crew:	Shift (c	sircle): Day / Night
Project Name: Highway 91/17 Upg	rade Superin	ntendent: Andrew K.
Project #: 6218101	Forema	an: Jored Make
Proposed Sco	pe of Work (Work Activities to be o	completed for the day)
	3 Emergency	(ed board
Fall Pro/ Dropped objects	Congestion/ Line of fire/ Overhead hazards	Spotters/ Traffic/ Line of Fire
MATERIAL HANDLING	CONFINED SPACE	HOISTING & LIFTING
Manual/ Equipment GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	Excavations/ Manholes/ culverts WORKING ON LIVE SYSTEMS Electrical/ Water/ Gas/ Equipment	Rigging/ Cranes/ suspended loads HAZARDOUS ENERGY CONTROL
Critical Tasks	Hazards	Controls
"material handling	heary Autoral lift	medicial adjusting of fin
2. Henry Equipment	Blind spots, scing zone human/mechan intotecal	spotters, signal persons solico rule 202020 Pre inspections
0	S. D. June	
Hoisting E lifting	meantrallat buds	Pre impet rigging Tayline New go under aspende

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Date: \_\_\_May 5<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_



### **Birds and Bats**

#### Birds:

- The breeding season for birds on this site is March 15 August 15
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- Take extra precautions when working around trees
- Report any sightings or nesting activity
- If you see birds "hanging around" your work area or you see any nests/nesting activity in your work area, report it to Environment Department.
- Report any bird/bat sightings



Date: May 5th, 2021\_\_\_\_



## **Daily Toolbox Talk**

Foreman's Initials:

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		-
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		-
Travelled outside the country?		-
Been in close contact with a person who recently travelled outside the country?		
Been contacted by a health authority regarding close contact with a confirmed case?		1

If anyone answered YES to <u>any of the questions above, please isolate and contact site Health and Safety</u> immediately

All workers fit for duty?

NO

YES

Toolbox Sign On		
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Date: \_\_\_\_May 5<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

Daily Debrief				
Fore	man: MAKS Time: 1650			
1.	All work areas are cleaned up?	Yes No		
2.	2. All work sites/equipment secured?			
3. All lockout/tagouts removed?		Yes No		
4.	4. All permits closed out?			
5.	5. Are there any injuries, suspected injuries, incidents, damages or deficiencies to report?			
6.	<ol> <li>Were there any wildlife sightings today? (Note species, number and location in comments below)</li> </ol>			

Comments or Employee Concerns:	

End of Shift Sign Off		
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1	Jeral M	
2	Jehr J	
3	Trevor	
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Pacific Gateway Constructors	Daily Toolb	F	Date:May 5 <sup>th</sup> , 2021 Foreman's Initials:
Crew: CHRIS - NIGE	2	Shift (circle):	Day / Night
Project Name: Highway 91/17	Upgrade	Superintende	nt: JUSTIN KREYMR.
Project #: 6218101		Foreman:	RIS THOMPSON.
Proposed	Scope of Work (Wor	k Activities to be complet	ed for the day)
INSTACL LAWN STRIP PRE-LOMB LOCK BLOCKS STR - STRIP BANKS.	+ HAVE OUT	Muster Points	REA SIGN.
	VER RD.	Emergency numb	
What are the top 3 LIFE CRI WORK AT HEIGHTS Fall Pro/ Dropped objects MATERIAL HANDLING Manual/ Equipment GROUND DISTURBANCE & EXCAVATING	Excavations/ Ma	DUIPMENT re/ Overhead hazards D SPACE	ific controls to add to FLHA MOTOR VEHICLE Spotters/ Traffic/ Line of Fire HOISTING & LIFTING Rigging/ Cranes/ suspended loads HAZARDOUS ENERGY CONTROL Stored Energy
Underground Utilities/ Cave-in	Haz	ards	Controls
Critical Tasks 1. STRIP PRE - LOAD T HAVE OUT 2. INSTREE CAWN BA SCOPING - ROUND ADD 3.	- MOBILE THU EQUIPMENT	CRS + HEAVY - SI - PR - PR - S - FL - FL	
Additional Hazards in the wor area	*		

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# Birds and Bats

#### Birds:

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- Talk to your Superintendent and the Environmental Department prior to cutting any trees or vegetation
- Take extra precautions when working around trees
- Report any sightings or nesting activity
- If you see birds "hanging around" your work area or you see any nests/nesting activity in your work area, report it to Environment Department.
- Report any bird/bat sightings



Date: May 5th, 2021\_\_\_\_



## Daily Toolbox Talk

Foreman's Initials: \_\_\_\_\_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		X
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		×
Travelled outside the country?		×
Been in close contact with a person who recently travelled outside the country?		K
Been contacted by a health authority regarding close contact with a confirmed case?		×

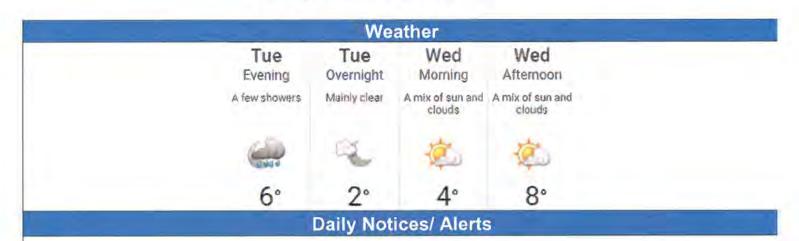
### If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

All workers fit for duty? YES NO

	Toolbox Sign On			
#	Print Name	Signature		
1	thomas dayton	In all		
2	Vitor think	- Nor		
3	Saven Addin	T		
4	1) Felensar *1	6 DA		
5	Jerny Jones	- Martin -		
6	don Verney			
7	Cacquelan Aquida	acqueline Schiede		
8	SCHENZER	A S		
9	Dan Markenzie	A day &		
10	(AC)	yoffe adding ,		
11	Simmy Howells	1 1 fortunter		
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Pacific Gateway Constructors	aily Toolbox Talk	Date:May 4 <sup>th</sup> , 2021 Foreman's Initials: _ <del>\\\</del>
Crew: Harlon's	Shift (ci	rcle): Day / Night
Project Name: Highway 91/17 Upg	rade Superin	tendent: Jack M
Project #: 6218101	Forema	n: Harlon Fair
Proposed Sco	pe of Work (Work Activities to be c	ompleted for the day)
Move concrete to	parriers, so Delta	Agg Rock Trucks
First aid attendant Tere	Muster P	oints Crew Truck
Work location 91C	Emergency	number 911
What are the top 3 LIFE CRITICA WORK AT HEIGHTS	HEAVY EQUIPMENT	
Fail Pro/ Dropped objects MATERIAL HANDLING	Congestion/ Line of fire/ Overhead hazards CONFINED SPACE	Spotters/ Traffic/ Line of Fire HOISTING & LIFTING
Manual/ Equipment	Excavations/ Manholes/ culverts	Rigging/ Cranes/ suspended loads
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	WORKING ON LIVE SYSTEMS	HAZARDOUS ENERGY CONTROL
Critical Tasks	Hazards	Controls
1. Moving barriers Place Traffic Barrels	Moving Equipment	lane Closed Flagperso
2.	Blind spots Lifting / swing Radius	use spotter stand clear
3.	pinch / Crush Points poor lighting	Keep Finger's feet away
Additional Hazards in the work area		check all Rigging light Tower





### **Birds and Bats**

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Date: \_\_\_May 4<sup>th</sup>, 2021\_\_\_ Foreman's Initials: \_\_<del>\_\_\_</del>



# **Daily Toolbox Talk**

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		2
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		1
Travelled outside the country?		1
Been in close contact with a person who recently travelled outside the country?		/
Been contacted by a health authority regarding close contact with a confirmed case?		1

If anyone answered YES to <u>any of the questions above, please isolate and contact site Health and Safety</u> immediately

All workers fit for duty? YES

NO
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	Toolbox	k Sign On
#	Print Name	Signature
1	Harlon Fair	HTai
2	Terence Jeffers-Harris	
3	Loev Plamondon	
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Date: \_\_\_May 4<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_H\_F\_\_\_



# **Daily Toolbox Talk**

Daily Debrief			
Fore	eman: Harlon Fair Time: \$ 00		
1.	All work areas are cleaned up?	Yes	No
2.	All work sites/equipment secured?	Yes	No
3.	All lockout/tagouts removed?	Yes	No
4.	All permits closed out?	Yes	No
5.	Are there any injuries, suspected injuries, incidents, damages or deficiencies to report?	Yes	450
6.	Were there any wildlife sightings today? (Note species, number and location in comments below)	Yes	-110

Comments or Employee Concerns:

End of Shift Sign Off		
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1	Harlon Fair	
2	loev Plamondon	
3	Joev Planondon terence Setters-Harris	
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	aily Toolbox Talk	Date:May 4 <sup>th</sup> , 2021 Foreman's Initials: _ <del></del>
crew: Harlon's	Shift (ci	rcle): Day Night
Project Name: Highway 91/17 Upgr	ade Superin	tendent: Jack M
Project #: 6218101	Forema	n: Harlon F
Proposed Sco Place Sand - Geo Were building win Compaction test	pe of Work (Work Activities to be a ogric! re wall Temp	ompleted for the day)
First aid attendant Rick	SC Muster P	Points Rect Sign Infa
Work location 91 N	Exit 8 Emergency	number 911
What are the top 3 LIFE CRITICA WORK AT HEIGHTS Fall Pro/ Dropped objects MATERIAL HANDLING	L TASKS for the scope. Discuss HEAVY EQUIPMENT Congestion/ Line of fire/ Overhead hazards CONFINED SPACE	Spotters/ Traffic/ Line of Fire HOISTING & LIFTING
Manual/ Equipment GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	Excavations/ Manholes/ culverts WORKING ON LIVE SYSTEMS Electrical/ Water/ Gas/ Equipment	Rigging/ Cranes/ suspended loads HAZARDOUS ENERGY CONTROL
Critical Tasks	Hazards	Controls
1. loading sand,	Moving Equipment	Stary Clear Equip.
Dumping/placing	Blind Spots	Use spotter
Flandling Geolarid	poor lighting Heavy lifts	light Tower 2 man lift
3.	Loud Noise	use proper critoues
Additional Hazards in the work area	Pinch Points Cuts/scrape's	ear plug's Hand Signals Radio's



Date: \_\_\_May 4<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_<del>\_\_\_</del>



### **Birds and Bats**

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Pacific Gateway Constructors

## **Daily Toolbox Talk**

Date: \_\_\_\_May 4th, 2021\_\_ Foreman's Initials:

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In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		1
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		X
Travelled outside the country?		X
Been in close contact with a person who recently travelled outside the country?		X
Been contacted by a health authority regarding close contact with a confirmed case?		×

If anyone answered YES to any of the guestions above, please isolate and contact site Health and Safety immediately

> All workers fit for duty? YES NO

	Ta	oolbox Sign On
#	Print Name	Signature
1	Harlon Fair	HE
2	Jack Willson	Japan
3	Rick carabella	1 Cara
4	Bick carabetta Serence Butter	1 Sant
5	C-BATT STON J. MCKENNA	
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Date: \_\_\_May 4<sup>th</sup>, 2021\_\_\_ Foreman's Initials: \_<del>\{</del>\_\_\_\_

	Daily De	brief		
Fore	Foreman: Harlon F Time: 4,00			
1.	All work areas are cleaned up?		Yes	No
2.			Yes	No
3.	All lockout/tagouts removed?	NA	Yes	No
4.	All permits closed out?	NA	Yes	No
5.	Are there any injuries, suspected injuries, incidents, report?	damages or deficiencies to	Yes	No
6.	Were there any wildlife sightings today? (Note species, n below)	umber and location in comments	Yes	No

End of Shift Sign Off			
#	Print Name	Signature	
1	Harlon Fair	HF.	
2	Jack Willison		
3	RICK Cordetta		
4	Jerome Butler		
5	Dary Patterson		
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Pacific Gateway Constructors	Daily Toolbox Talk	Date:May 5 <sup>th</sup> , 2021_ Foreman's Initials:
rew:	Shift (d	circle): Day / Night
roject Name: Highway 91/17 Upg	grade Superi	intendent:
roject #: 6218101	Forem	an: TB
Proposed Sco	ope of Work (Work Activities to be	completed for the day)
- RE GRADE SLOPE A	LOWE DITCH & BOG	
First aid attendant	Muster	Points
		FULLETIN BOARD
Work location /7+	9/c Emergency	y number 911
		1.1
hat are the top 3 LIFE CRITICA	AL TASKS for the scope. Discus	s specific controls to add to FI
WORK AT HEIGHTS	HEAVY EQUIPMENT	MOTOR VEHICLE
Fall Pro/ Dropped objects	Congestion/ Line of fire/ Overhead hazards	Spotters/ Traffic/ Line of Fire
MATERIAL HANDLING	CONFINED SPACE	HOISTING & LIFTING
	Current Markeley / suburity	
Manual/ Equipment GROUND DISTURBANCE &	Excavations/ Manholes/ culverts WORKING ON LIVE SYSTEMS	Rigging/ Cranes/ suspended loads HAZARDOUS ENERGY CONTROL
EXCAVATING		
	Electrical/ Water/ Gas/ Equipment	Stored Energy
Underground Utilities/ Cave-in		
Critical Tasks	Hazards	Controls
ontiour rusits	BLIND SPOTS	STAY CLEAR
1	DEINE STORS	Communications
. RE GRADE SLOPE	SIDRE STABILITY	COMMUNICATION
RE GRADE SLOPE	SLOPE STABILITY SEPIMENT CONTROL	STAY BACK FROM DITCH
RE GRADE SLOPE	SLOPE STABILITY SEPIMENT CONTROL SLIPS TRIPS	STAY BACK FROM DITCH CHOOSE PATH
RE GRADE SLOPE	SLIPS TRIPS	STAY BACK FROM DITCH
RE GRADE SLOPE		STAY BACK FROM DITCH CHOOSE PATH
2.	SLIPS TRIPS	STAY BACK FROM DITCH CHOOSE PATH
1. RE GRADE SLOPE 2.	SLIPS TRIPS	STAY BACK FROM DITCH CHOOSE PATH
1. RE GRADE SLOPE 2.	SLIPS TRIPS	STAY BACK FROM DITCH CHOOSE PATH
1. RE GRADE SLOPE 2. 3.	SLIPS TRIPS	STAY BACK FROM DITCH CHOOSE PATH
<ol> <li><i>RE GRADE SLOPE</i></li> <li>2.</li> <li>3.</li> <li>Additional Hazards in the work area</li> </ol>	SLIPS TRIPS	STAY BACK FROM DITCH CHOOSE PATH

ē.



Date: \_\_\_\_May 5<sup>th</sup>, 2021\_\_\_\_\_ Foreman's Initials: \_\_\_\_\_

	We	ather	
Tue Evening	Tue Overnight	Wed	Wed Afternoon
A few showers	Mainly clear	A mix of sun and clouds	A mix of sun and clouds
(and a	a.	<b>E</b>	¢.
6°	2°	4°	8°
	<b>Daily Not</b>	ices/ Alerts	5

### **Birds and Bats**

#### Birds:

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- Active Bat Season is from April 15<sup>th</sup> to October 1<sup>st</sup>
- Species at Risk Bats are specially protected, and a buffer is required around a potential maternity roost.
- Half the bat species in BC are considered *species at risk* (vulnerable or threatened of becoming extirpated). With
  their important role in controlling nocturnal insect populations and cycling nutrients from wetlands to forests, bats are a
  critical part of our ecosystems.

- Talk to your Superintendent and the Environmental Department prior to cutting any trees or vegetation
- Take extra precautions when working around trees
- Report any sightings or nesting activity
- If you see birds "hanging around" your work area or you see any nests/nesting activity in your work area, report it to Environment Department.
- Report any bird/bat sightings



Date: \_\_\_\_May 5th, 2021\_\_\_\_\_



### Daily Toolbox Talk

Foreman's Initials:

NO

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		V
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		1
Travelled outside the country?		V
Been in close contact with a person who recently travelled outside the country?		V
Been contacted by a health authority regarding close contact with a confirmed case?		V

If anyone answered YES to <u>any of the questions above,</u> please isolate and contact site Health and Safety immediately

All workers fit for duty? YES

	Toolbox Sign On						
#	Print Name	Signature					
1	T Bell C KIBBY						
2	C KIRBY						
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Date: \_\_\_May 5<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

Daily Debrief						
Fore	eman: TROLL T	ime: 3:00				
	All work areas are cleaned up?		Yes	No		
2. All work sites/equipment secured?			Yes	No		
3. All lockout/tagouts removed?			Yes	No		
	All permits closed out?		Yes	No		
5.	Are there any injuries, suspected injuries, incidents, report?	damages or deficiencies to	Yes	No		
i.	Were there any wildlife sightings today? (Note species, n below)	number and location in comments	Yes	No		

Comments or Employee Concerns:	oyee Concerns:

	End of Shift Sign Off				
#	Print Name	Signature			
1	+ BORL C KIMBY				
2	C KIRBY				
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Gateway Constructors	Daily Toolbox Talk	Date:May 4 <sup>th</sup> , 2021 Foreman's Initials: OX Talk			
	Shift (c	ircle):	Day / Night		
Project Name: Highway 91/17 Upg	grade Superi	ntendent:	Jack		
Project #: 6218101		Foreman: Kody			
Proposed Sco	pe of Work (Work Activities to be	completed t	for the day)		
Remare Barrier's Remare csphalt, Excan Place nock on except Cli	ate for Case and Pipe all urap and level cour	-			
	1 reinstete Barriers and 15m Muster F	csphe.	It. FM track		
Work location	Emergency AL TASKS for the scope. Discuss		9/1/ / 778-873-805		
WORK AT HEIGHTS	HEAVY EQUIPMENT	Specific	MOTOR VEHICLE /		
Fall Pro/ Dropped objects	Congestion/ Line of fire/ Overhead hazards	s	potters/ Traffic/ Line of Fire		
Fall Pro/ Dropped objects MATERIAL HANDLING Manual/ Equipment	Congestion/Line of fire/Overhead hazards CONFINED SPACE		Potters/ Traffic/ Line of Fire HOISTING & LIFTING		
MATERIAL HANDLING		Rigg	potters/ Traffic/ Line of Fire		
MATERIAL HANDLING Manual/ Equipment GROUND DISTURBANCE & EXCAVATING	CONFINED SPACE	Rigg	botters/ Traffic/ Line of Fire HOISTING & LIFTING ing/ Cranes/ suspended loads ARDOUS ENERGY CONTROL		
MATERIAL HANDLING Manual/Equipment GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in Critical Tasks 1 Remore Berner's and asphalt Excavate dam	CONFINED SPACE	Rigg	And the second s		
MATERIAL HANDLING Manual/Equipment GROUND DISTURBANCE & EXCAVATING Underground Utilities/Cave-in Critical Tasks 1 Renove, Berneris asphalt Excavate dam	CONFINED SPACE	Rigg	Controls		
MATERIAL HANDLING Manual/Equipment GROUND DISTURBANCE & EXCAVATING Underground Utilities/Cave-in Critical Tasks 1 lenave berners and asphalt Excavate dam berners	CONFINED SPACE	Rigg	Controls		



Date: \_\_\_\_May 4<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

	We	ather	
Tue Evening	Tue Overnight	Wed Morning	Wed Afternoon
A few showers	Mainly clear	A mix of sun and clouds	A mix of sun and clouds
6000	2	Ċ.	٢
6°	2°	4°	8°

### **Birds and Bats**

#### Birds:

- The breeding season for birds on this site is March 15 August 15
- No moving/removing nests or eggs. Contact the Environmental team if a nest or eggs are found
- The Migratory Bird Convention Act protects migrating birds, their nests, eggs and habitat from destruction
- REPORT ANY BIRDS STARTING A NEST BEFORE they lay eggs (Bird nests cannot be disturbed after eggs have been laid and a 30m no entry buffer zone will be created to protect the nest
- Some examples of birds at risk that you may encounter on this site could include Great blue herons, Falcons, Swans and Common Nighthawks

#### Bats:

- Active Bat Season is from April 15<sup>th</sup> to October 1<sup>st</sup>
- Species at Risk Bats are specially protected, and a buffer is required around a potential maternity roost.
- Half the bat species in BC are considered species at risk (vulnerable or threatened of becoming extirpated). With
  their important role in controlling nocturnal insect populations and cycling nutrients from wetlands to forests, bats are a
  critical part of our ecosystems.

- Talk to your Superintendent and the Environmental Department prior to cutting any trees or vegetation
- Take extra precautions when working around trees
- Report any sightings or nesting activity
- If you see birds "hanging around" your work area or you see any nests/nesting activity in your work area, report it to Environment Department.
- Report any bird/bat sightings



Date: May 4th, 2021



## **Daily Toolbox Talk**

Foreman's Initials:

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		X
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		T
Travelled outside the country?		X
Been in close contact with a person who recently travelled outside the country?		X
Been contacted by a health authority regarding close contact with a confirmed case?		1

If anyone answered YES to <u>any of the questions above, please isolate and contact site Health and Safety</u> immediately

All workers fit for duty? YES NO

	Toolbox Sign On					
#	Print Name	Signature				
1	han M					
2	Shews					
3	Ken					
4	Kale					
5	Rygn					
6	Brandon					
7	Jam					
8	Jack,					
9	Jany 11.					
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Date: \_\_\_May 14<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

100 C 100 C 100 C		Wea	ther		
	Thu Evening Surny	Thu Overnight Mainly clear	Fri Morning Sunny	Fri Afternoon Sunny	
	0	2	<b>(</b>	<b>(</b>	
	16°	9°	13°	20°	
	the second se	aily Notio			

### **BIRDS AND BATS**

#### Birds:

- The breeding season for birds on this site is March 15 August 15
- No moving/removing nests or eggs. Contact the Environmental team if a nest or eggs are found
- The Migratory Bird Convention Act protects migrating birds, their nests, eggs and habitat from destruction
- REPORT ANY BIRDS STARTING A NEST BEFORE they lay eggs (Bird nests cannot be disturbed after eggs have been laid and a 30m no entry buffer zone will be created to protect the nest
- Some examples of birds at risk that you may encounter on this site could include Great blue herons, Falcons, Swans and Common Nighthawks

#### Bats:

- Active Bat Season is from April 15<sup>th</sup> to October 1<sup>st</sup>
- Species at Risk Bats are specially protected, and a buffer is required around a potential maternity roost.
- Half the bat species in BC are considered species at risk (vulnerable or threatened of becoming extirpated). With
  their important role in controlling nocturnal insect populations and cycling nutrients from wetlands to forests, bats are
  a critical part of our ecosystems.

- Talk to your Superintendent and the Environmental Department prior to cutting any trees or vegetation
- Take extra precautions when working around trees
- Report any sightings or nesting activity
- If you see birds "hanging around" your work area or you see any nests/nesting activity in your work area, report it to Environment Department.
- Report any bird/bat sightings







Date: May 14th, 2021



## **Daily Toolbox Talk**

Foreman's Initials:

, o protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:		NO	
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?			
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?			
Travelled outside the country?			
Been in close contact with a person who recently travelled outside the country?			
Been contacted by a health authority regarding close contact with a confirmed case?			

If anyone answered YES to <u>any of the questions above, please isolate and contact site Health and Safety</u> immediately

All workers fit for duty? YES NO

Toolbox Sign On				
#	Print Name	Signature		
1	Joyce adams.			
2	server account			
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Date: \_\_\_May 14<sup>th</sup>, 2021 Foreman's Initials: \_\_\_\_\_ alk

17

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?	1	4
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)? Travelled outside the country?		7
		×
Been in close contact with a person who recently travelled outside the country?	-	7
Been contacted by a health authority regarding close contact with a confirmed case?		7

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

All workers fit for duty? YES NO

Toolbox Sign On				
#	Print Name	Signature		
1	Saram Abdul	(A)		
2	LUDS Crace	the second secon		
3	CHACIS THOMASIN-			
4	BillBergrou	King hand		
5	Jery Xing	10 Bite		
6	1.2	0000		
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Crew:		_ Shift (cir	cle):	Day / Night	
Project Name: Highway 91/17 Upg	grade	Superint	Alcta i	hoy Fair	
Project #: 6218101		Foremar	n: IVALE I	017	
	ope of Work (Work Ad	tivities to be co	mpleted for	r the day)	
fienza permone lock block pull Sand away fre					
remove lock block	5				
all and away fre	om edges				
Their man is 1					
First aid attendant	Far	Muster Po	oints	Foreman tra	K
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Work location	)	Emergency	number	911 604 315	55
	AL TACKS for the see	Discuss	ana alífia a	antrole to add to	EL.
What are the top 3 LIFE CRITIC/ WORK AT HEIGHTS	HEAVY EQUIP	MENT	specific d	MOTOR VEHICLE	FLI
A A		/			1
Fall Pro/ Dropped objects MATERIAL HANDLING	Congestion/ Line of fire/ O			otters/ Traffic/ Line of Fire	7
MATERIAL HANDLING	CONTINLED OF	AUL		loionnio a chi mito	
					/
Manual/ Equipment	Excavations/ Manhole	es/ culverts	Riggin	a/ Cranes/ suspended loa	ads /
Manual/ Equipment GROUND DISTURBANCE &	Excavations/ Manhole		Riggin HAZAI	g/ Cranes/ suspended los RDOUS ENERGY CONTR	ads OL
			Riggin HAZAI	g/ Cranes/ suspended loa RDOUS ENERGY CONTR	ads OL
GROUND DISTURBANCE & EXCAVATING		SYSTEMS	Riggin HAZAI	g/ Cranes/ suspended loa RDOUS ENERGY CONTR CONTR Stored Energy	ads OL
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	WORKING ON LIVE	SYSTEMS Equipment	<u>Riggin</u> HAZAI	RDOUS ENERGY CONTR	ads OL
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in Critical Tasks	WORKING ON LIVE	SYSTEMS Equipment	HAZAI	RDOUS ENERGY CONTR Stored Energy	OL
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	WORKING ON LIVE Electrical/Water/Gas/ Hazard • heavy machinery • Swing 2012	SYSTEMS Equipment	HAZAI	RDOUS ENERGY CONTR Stored Energy	OL
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in Critical Tasks 1. Remove lock blocks	WORKING ON LIVE Electrical/Water/Gas/ Hazard • heavy machinery • swing zone • heisting + lifting	SYSTEMS Equipment S - WOLA OUT Iifty points	oinsput evis/ver	RDOUS ENERGY CONTR Stored Energy Controls lift paints bal contact with	ol th a
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in Critical Tasks	WORKING ON LIVE Electrical/Water/Gas/ Hazard • heavy machinery • swing zone • heisting + lifting	SYSTEMS Equipment S - WOLA OUT Iifty points	oinsput evis/ver	RDOUS ENERGY CONTR Stored Energy Controls lift paints bal contact with	ol th a
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in Critical Tasks 1. Remove lock blocks	WORKING ON LIVE Electrical/Water/Gas/ Hazard • heavy machinery • Swing 2012	SYSTEMS Equipment S - WOLA OUT Iifty points	oinsput evis/ver	RDOUS ENERGY CONTR Stored Energy Controls lift paints bal contact with	ol th a
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in Critical Tasks 1. fremove lock blocks 2. Stack lock blocks	WORKING ON LIVE Electrical/Water/Gas/ Hazard • heavy machinery • swing zone • heisting + lifting • forfis gas line • pinch points	SYSTEMS Equipment S - WOLA OUT Iifty points	oinsput evis/ver	RDOUS ENERGY CONTR Stored Energy	ol th a
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in Critical Tasks 1. Remove lock blocks	WORKING ON LIVE Electrical/Water/Gas/ Hazard • heavy machinery • swing zone • heisting + lifting • forfis gas line • pinch points • heavy lift	SYSTEMS Equipment S - WOLA OUT Iifty points	oinsput evis/ver	RDOUS ENERGY CONTR Stored Energy Controls lift paints bal contact with	ol th a
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in Critical Tasks 1. fremove lock blocks 2. Stack lock blocks	WORKING ON LIVE Electrical/Water/Gas/ Hazard • heavy machinery • swing zone • heisting + lifting • forfis gas line • pinch points	SYSTEMS Equipment S - WOLA OUT Iifty points	oinsput evis/ver	RDOUS ENERGY CONTR Stored Energy Controls lift paints bal contact with	ol th a



	Wea	ther		
Wed Evening	Wed	Thu Morning	Thu Afternoon	
Cloudy with sunny breaks	Cloudy with clear breaks	Mainly cloudy	Light rain	
2	New York	60		
16°	12°	12°	16°	
D	aily Noti	ces/ Ale	rts	

#### STORM WATER CONTROL

#### Stormwater – Storm Response

Storm events involving rain or snow can create stormwater runoff. This runoff can result in pollutants leaving the jobsite and flowing into protected water bodies and communities. Stormwater Best Management Practices (BMPs) must be implemented before work begins to prevent stormwater runoff and sediment erosion. In the case of an event, the site and construction activities must be inspected within 24 hours if there are any signs of erosion or runoff present after an event.

#### Storm Response Inspection Procedures:



Damaged silt fence? Repair as soon as possible!

- Inspect Stormwater erosion and sediment control measures as necessary within 24 hours
- Document and keep record of any corrective actions
- Keep track of the weather
- · Keep track of any pumping and notify the environmental department before you start

The pictures below are examples of an area that needs sediment control. The dewatering hose that is discharging water is turbid and requires sediment control measures such as a silt bag must be used to ensure that the water becomes less turbid when draining into waterways. Please inspect your areas and consult the environmental department before discharging water.



Date: \_\_May 6th, 2021\_\_\_\_

Foreman's Initials:



## **Daily Toolbox Talk**

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		/
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		/
Travelled outside the country?		
Been in close contact with a person who recently travelled outside the country?		/
Been contacted by a health authority regarding close contact with a confirmed case?		-

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

NO

YES

All workers fit for duty?

	Toolbox Sign On				
#	Print Name	Signature			
1	Mark Alton				
2	- Chad Kirby				
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# Daily Debrief Foreman: Time:

1.	All work areas are cleaned up?	Yes	No
2.	All work sites/equipment secured?	es	No
3.	All lockout/tagouts removed?	Yes	No
4.	All permits closed out?	Yes	No
5.	Are there any injuries, suspected injuries, incidents, damages or deficiencies to report?	Yes	No
6.	Were there any wildlife sightings today? (Note species, number and location in comments below)	Yes	No

comments or Employee Concerns:	

	End of Shift Sign Off					
#	Print Name	Signature				
1	Mark Alton					
2	Mark Alton Chael Kirby					
3	1					
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Pacific Gateway Constructors	aily Toolbox	Fo	ate:May 6 <sup>th</sup> , 2021 reman's Initials:
Crew: NIGEZ - CARIS	Ś	Shift (circle):	Day / Night
Project Name: Highway 91/17 Upg	rade	Superintendent	: JUSTW KREYMR
Project #: 6218101		Foreman: Cit	LIS THAMPSON.
- PLACE 3" LIFT - REMOVE NO-F STOCK PILE.	Congestion/Line of fire/Over Congestion/Line of fire/Over Congestion/Line of fire/Over Confined Space Excavations/Manholes/ WORKING ON LIVE SY Electrical/Water/Gas/Eq Couck-HS-TO WAR CONCINED SPACE Congestion/Line of fire/Over CONFINED SPACE CONFISHING ON LIVE SY Electrical/Water/Gas/Eq	Muster Points Muster Points mergency number Discuss specific NT head hazards SE culverts STEMS HA puipment	RED INFO SIGN.
3. Additional Hazards in the work area			



	Wea	ther		
Wed Evening	Wed Overnight	Thu Morning	Thu Afternoon	
Cloudy with sumly breaks	Cloudy with clear breaks	Mainly cloudy	Light rain	
1	1	and		
16°	12°	12°	16°	
D	aily Notic	ces/ Ale	rts	

#### STORM WATER CONTROL

#### Stormwater - Storm Response

Storm events involving rain or snow can create stormwater runoff. This runoff can result in pollutants leaving the jobsite and flowing into protected water bodies and communities. Stormwater Best Management Practices (BMPs) must be implemented before work begins to prevent stormwater runoff and sediment erosion. In the case of an event, the site and construction activities must be inspected within 24 hours if there are any signs of erosion or runoff present after an event.

#### Storm Response Inspection Procedures:



Damaged silt fence? Repair as soon as possible!

- Inspect Stormwater erosion and sediment control measures as necessary within 24 hours
- Document and keep record of any corrective actions
- Keep track of the weather
- Keep track of any pumping and notify the environmental department before you start

The pictures below are examples of an area that needs sediment control. The dewatering hose that is discharging water is turbid and requires sediment control measures such as a silt bag must be used to ensure that the water becomes less turbid when draining into waterways. Please inspect your areas and consult the environmental department before discharging water.





Date: \_\_May 6<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		X
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		X
Travelled outside the country?		K
Been in close contact with a person who recently travelled outside the country?		×
Been contacted by a health authority regarding close contact with a confirmed case?		K

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

All workers fit for duty? YES NO

	Toolbox Sign On					
#	Print Name	Signature				
1	NIGCE LIKAS	-ml				
2	KIREL LASSU	All				
3	Lucas Crove					
4	Tacqueline Schlestel	(Jacqueline techestel)				
5	Thomas Cliefton	the ble				
6	Siam Abdul	" (F)				
7	Alex labelle	aft la				
8	J FERENSON	in				
9	Jarry Jones	m Chel				
10	fon IRVINA	at				
11	Jared Schnücker	AF.				
12	VIETNI ACUMUR	internet in the second				
13	JUSTIN KEEMYR-	100-				
14	Davis Lapelle	12 -				
15	MAX SPEDDINO	1 and i				
16	SamMackener	F.S.				
17	Adam Person	A B				
18	liggin, O'BRIEN	lis.				
19	JACKNEY JEANNED	his				
20	Shanger P	and the second s				
21	RECORD	All .				
22	J. JEFFAROS	GARTY .				
23		10110				
24						

Pacific Gateway Constructors	aily Toolbox T	Fore	te:May 6 <sup>th</sup> , 2021 eman's Initials:
Crew:		Shift (circle):	Day / Night
Project Name: Highway 91/17 Upg	rade	Superintendent:	Andrew K
Project #: 6218101		Foreman: Jerec	l Mah.
Proposed Sco	pe of Work (Work Activit	ties to be completed f	or the day)
lock blochs geo grid-straps semme grid move milling pile			
First aid attendant		Muster Points	red board.
Work location SEC,	3 En	nergency number	911
What are the top 3 LIFE CRITICA WORK AT HEIGHTS	L TASKS for the scope. HEAVY EQUIPMEN	т	CONTROLS TO ADD TO FLHA
Fall Pro/ Dropped objects MATERIAL HANDLING			HOISTING & LIFTING
Manual/ Equipment GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	Excavations/ Manholes/ co WORKING ON LIVE SYS	TEMS HAZ	ARDOUS ENERGY CONTROL
Critical Tasks	Hazards		Controls
1. Heavy Equipment	Blind spots swing mechanical breakot	zone Spotters	, so to rule 20/20/20
2. material handling	D.I.	ying Debru ese	to al the line of dim tosh specific PPE
Horsting & Wary	overheid locals on controlled load	neuro	p ander time bad
Additional Hazards in the work area			

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	Wea	ather		
Wed		Thu Morning	Thu Afternoon	
Cloudy w sunny bre	ith Cloudy with clear aks breaks	Mainly cloudy	Light rain	
1		dia		
16	• 12°	12°	16°	
	<b>Daily Noti</b>	ces/ Ale	rts	

#### STORM WATER CONTROL

#### Stormwater - Storm Response

Storm events involving rain or snow can create stormwater runoff. This runoff can result in pollutants leaving the jobsite and flowing into protected water bodies and communities. Stormwater Best Management Practices (BMPs) must be implemented before work begins to prevent stormwater runoff and sediment erosion. In the case of an event, the site and construction activities must be inspected within 24 hours if there are any signs of erosion or runoff present after an event.

#### Storm Response Inspection Procedures:



Damaged silt fence? Repair as soon as possible!

- Inspect Stormwater erosion and sediment control measures as necessary within 24 hours
- Document and keep record of any corrective actions
- Keep track of the weather
- · Keep track of any pumping and notify the environmental department before you start

The pictures below are examples of an area that needs sediment control. The dewatering hose that is discharging water is turbid and requires sediment control measures such as a silt bag must be used to ensure that the water becomes less turbid when draining into waterways. Please inspect your areas and consult the environmental department before discharging water.





Date: _	_May 6 <sup>th</sup> , 2021
Forema	n's Initials

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:		NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		/
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		1
Travelled outside the country?		
Been in close contact with a person who recently travelled outside the country?		/
Been contacted by a health authority regarding close contact with a confirmed case?		/

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

YES

NO

All workers fit for duty?

Toolbox Sign On				
#	Print Name	Signature		
1	Jerad Make			
2	Jake J.			
3	Truor.			
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#### **Daily Debrief** 1630 Time: Foreman: MAKT Yes No 1. All work areas are cleaned up? No 2. All work sites/equipment secured? Yes 3. All lockout/tagouts removed? Yes No Yes No All permits closed out? 4. Are there any injuries, suspected injuries, incidents, damages or deficiencies to No Yes 5. report? Were there any wildlife sightings today? (Note species, number and location in comments No 6. Yes below)

#### **Comments or Employee Concerns:**

End of Shift Sign Off				
#	Print Name	Signature		
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	Daily Toolbox Talk		
ew:	Shift	(circle):	Day / Night
oject Name: Highway 91/17 Upg	grade Supe	rintendent:	RF
oject #: 6218101	Fore	man:	TB
Proposed Sco	ope of Work (Work Activities to b	e completed fo	r the day)
INCTALL COCOMONT	CUL FRIEF FRIENDEN	1	
JUSTALL COLOMAT	, SILT FENCE + SNOW FENC	06	
First aid attendant	Musta	r Points	1.2
First and attendant	Muste	r Politis	BULLITED BOARD
	1 of Litroom		
Work location # 17	H OF INTUESUCTION Emergen	cy number	911
hat are the top 3 LIFE CRITIC	AL TASKS for the scope. Discu	iss specific o	ontrols to add to
WORK AT HEIGHTS	HEAVY EQUIPMENT		MOTOR VEHICLE
AT 140			Sale)
Fall Pro/ Dropped objects	Congestion/ Line of fire/ Overhead hazard		tters/ Traffic/ Line of Fire
A	CONTINED SPACE	1.1	
Manual/ Equipment GROUND DISTURBANCE &	Excavations/ Manholes/ culverts WORKING ON LIVE SYSTEMS	Riggin HAZAI	g/ Cranes/ suspended load RDOUS ENERGY CONTRO
EXCAVATING			
			Stored Energy
Underground Utilities/ Cave-in	Electrical/ Water/ Gas/ Equipment		Stored Energy
Critical Tasks	Hazards	-	Controls
· INSTALL FENCING	- SLIPS/TRIPS - AWKWARD POSITION	- CHORSO	PATH SPATIL
IN STALL PEDUINO	- COTS	- PROPER	REPE BREAKS
IN STALL PERUING	- CATIO I		
	- OVOR EXECTION		NONTION
IN JIALL PEPUING	- REPETIVE MOTIONS		7 3.00
		- HYDRA	TE
			TE



	Wea	ather		
Wed		Thu Morning	Thu Afternoon	
Cloudy with summy breat		Mainly cloudy	Light rain	
1	1	and	-	
16	12°	12°	16°	
	<b>Daily Noti</b>	ces/ Ale	rts	

#### STORM WATER CONTROL

#### Stormwater – Storm Response

Storm events involving rain or snow can create stormwater runoff. This runoff can result in pollutants leaving the jobsite and flowing into protected water bodies and communities. Stormwater Best Management Practices (BMPs) must be implemented before work begins to prevent stormwater runoff and sediment erosion. In the case of an event, the site and construction activities must be inspected within 24 hours if there are any signs of erosion or runoff present after an event.

#### Storm Response Inspection Procedures:



- Document and keep record of any corrective actions
- Keep track of the weather
- Keep track of any pumping and notify the environmental department before you start

The pictures below are examples of an area that needs sediment control. The dewatering hose that is discharging water is turbid and requires sediment control measures such as a silt bag must be used to ensure that the water becomes less turbid when draining into waterways. Please inspect your areas and consult the environmental department before discharging water.



Damaged silt fence? Repair as soon as possible!



Date: \_\_May 6<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:		NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		e
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		~
Travelled outside the country?		V.
Been in close contact with a person who recently travelled outside the country?		1
Been contacted by a health authority regarding close contact with a confirmed case?		1

If anyone answered YES to <u>any of the questions above, please isolate and contact site Health and Safety</u> immediately

All workers fit for duty? YES NO

	Toolbox Sign On				
#	Print Name	Signature			
1	TBAL	B			
2	Ami Rene L	AD			
3	B WARDE	STE			
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Date: \_\_May 6<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

## Daily Debrief

Foreman:

BUL

1

Time: 3:00

1.	All work areas are cleaned up?	Yes	No
2.	All work sites/equipment secured?	Yes	No
3.	All lockout/tagouts removed?	Yes	No
4.	All permits closed out?	Yes	No
5.	Are there any injuries, suspected injuries, incidents, damages or deficiencies to report?	Yes	No
6.	Were there any wildlife sightings today? (Note species, number and location in comments below)	Yes	No

Comments or Employee Concerns:	

	End of Shift Sign Off				
#	Print Name	Signature			
1	AS PORT B WARNER				
2	AS POUR				
3	B WARNER				
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22					

Pacific Gateway Constructors	Daily Toolbox Talk	Date:May 5 <sup>th</sup> , 2021 Foreman's Initials: _ <del>_{</del>
Crew: Harlon's	Shift (ci	rcle): Day / Night
Project Name: Highway 91/17 Upg	gradeSuperin	tendent: Jack M
Project #: 6218101	Forema	n: Harlon F
Proposed Sco	ope of Work (Work Activities to be c	ompleted for the day)
building wire Bast	ketwall - Preload Sc	and
First aid attendant Rick	j C Muster P	Points Reclim Sign
Work location 91N	Exit 8 Emergency	number 911
Fall Pro/ Dropped objects	AL TASKS for the scope. Discuss HEAVY EQUIPMENT Congestion/ Line of fire/ Overhead hazards	MOTOR VEHICLE
MATERIAL HANDLING	CONFINED SPACE	HOISTING & LIFTING
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	Electrical/ Water/ Gas/ Equipment	HAZARDOUS ENERGY CONTROL
Critical Tasks	Hazards	Controls
1.pre loading Sand Wire Baskets	Mouing Equipment Blind spots	use spotter Handsignals/Radios
2'Geogrid	pinch/Crush points Loud Noise	
3.	poor lighting	Finger's feetawa Wearear plug's
Additional Hazards in the work area	-	use light Tower



	Wea	ther	
Wed	Wed Overnight	Thu Morning	Thu Afternoon
Cloudy with sunny breaks	Cloudy with clear breaks	Mainly cloudy	Light rain
1	÷.	and .	-
16°	12°	12°	16°
	aily Noti	ces/ Ale	rts

#### STORM WATER CONTROL

#### Stormwater - Storm Response

Storm events involving rain or snow can create stormwater runoff. This runoff can result in pollutants leaving the jobsite and flowing into protected water bodies and communities. Stormwater Best Management Practices (BMPs) must be implemented before work begins to prevent stormwater runoff and sediment erosion. In the case of an event, the site and construction activities must be inspected within 24 hours if there are any signs of erosion or runoff present after an event.

#### Storm Response Inspection Procedures:

- Inspect Stormwater erosion and sediment control measures as necessary within 24 hours
- Document and keep record of any corrective actions
- Keep track of the weather
- · Keep track of any pumping and notify the environmental department before you start

The pictures below are examples of an area that needs sediment control. The dewatering hose that is discharging water is turbid and requires sediment control measures such as a silt bag must be used to ensure that the water becomes less turbid when draining into waterways. Please inspect your areas and consult the environmental department before discharging water.







Damaged silt fence? Repair as soon as possible!



Date: \_\_May 5<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_<del>\F\_</del>\_\_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

YES	NO
1	1
	2
	-
	-
	YES

If anyone answered YES to <u>any of the questions above, please isolate and contact site Health and Safety</u> immediately

NO

All workers fit for duty? YES

	Toolbox Sign On					
#	Print Name	Signature				
1	Harlon Fait	本 で				
2	Jack Willson	Jeni				
3	ANDREY LOGAN, 11	194				
4	Bick Carabeta	l Calor				
5	G BATTGTON	of option				
6	T. Jefters- Harros	In Af prin				
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24						



Date: _		
Forema	n's Initials: 🛃	F

## Daily Debrief

Foreman:

Time:

1.	All work areas are cleaned up?	Yes	No
2.	All work sites/equipment secured?	Yes	No
3.	All lockout/tagouts removed?	Yes	No
4.	All permits closed out?	Yes	No
5.	Are there any injuries, suspected injuries, incidents, damages or deficiencies to report?	Yes	No
6.	Were there any wildlife sightings today? (Note species, number and location in comments below)	Yes	No

## Comments or Employee Concerns:

	End of Shift Sign Off					
#	Print Name	Signature				
1	HarlonF					
2	AndrewL					
3	RICK C					
4	LIDIN B					
5	Terence J					
6	Jack W					
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Pacific Gateway Constructors	aily Toolbox Ta	Fore	e:May 5 <sup>th</sup> , 2021 man's Initials:
Crew: Bel Kod's Grew		Shift (circle):	Day / <mark>Night</mark>
Project Name: Highway 91/17 Upgr		Superintendent:	Jeck
Project #: 6218101		Foreman: Kody	
Proposed Sco	pe of Work (Work Activities	2	r the day)
-Excavete + Instell Backfill in 200.m	1806¢ Storm 1/H's		
		uster Points rgency number	FM truck 911/778-073-8056
What are the top 3 LIFE CRITICA WORK AT HEIGHTS Fall Pro/ Dropped objects MATERIAL HANDLING	L TASKS for the scope. L HEAVY EQUIPMENT Congestion/Line of fire/Overhead CONFINED SPACE	hazards Sp	MOTOR VEHICLE
Manual/ Equipment	Excavations/ Manholes/ culve	inte Disali	ng/ Cranes/ suspended loads
GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	WORKING ON LIVE SYSTE	MS HAZA	RDOUS ENERGY CONTROL
Critical Tasks	Hazards		Controls
1 Execute + Instell . Storm	- Mobile Equipment Excavation's occr	A second s	Lect will eperadory stay
2 Filter Cloth Roell	- Pinch pomts - Slipic trops	Material Sure to 25 At 1	will Gravel. Make have a lader every
3 Backfill will 25mm in 200m Lifts to 95%	- Heavy Inths	- Inspe Cleck	it. all rissma tess + periods
Additional Hazards in the work area	- Rissing	-Stept	Back, Stay out of the
	Uverheed fower in	ocument No. CON-	S MAI Machine Ugi C hs near overhad HSE-COM-FM-001 Rev. 00

1



Date: \_\_May 5<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

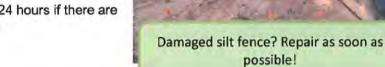
		Wea	ther		
	Wed Evening	Wed Overnight	Thu Morning	Thu Afternoon	
i i i	Cloudy with sunny breaks	Cloudy with class breaks	Mainly cloudy	Light rain	
	1	C	a		
	16°	12°	12°	16°	
	D	aily Notic	ces/ Ale	rts	

#### STORM WATER CONTROL

#### Stormwater – Storm Response

Storm events involving rain or snow can create stormwater runoff. This runoff can result in pollutants leaving the jobsite and flowing into protected water bodies and communities. Stormwater Best Management Practices (BMPs) must be implemented before work begins to prevent stormwater runoff and sediment erosion. In the case of an event, the site and construction activities must be inspected within 24 hours if there are any signs of erosion or runoff present after an event.

#### Storm Response Inspection Procedures:



- Inspect Stormwater erosion and sediment control measures as necessary within 24 hours
- Document and keep record of any corrective actions
- Keep track of the weather
- · Keep track of any pumping and notify the environmental department before you start

The pictures below are examples of an area that needs sediment control. The dewatering hose that is discharging water is turbid and requires sediment control measures such as a silt bag must be used to ensure that the water becomes less turbid when draining into waterways. Please inspect your areas and consult the environmental department before discharging water.





Date: \_\_May 5<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		X
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		X
Travelled outside the country?		+
Been in close contact with a person who recently travelled outside the country?		¥
Been contacted by a health authority regarding close contact with a confirmed case?		S

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

YES

NO

All workers fit for duty?

	Тоо	lbox Sign On
#	Print Name	Signature
1	fina Kicky	burth .
2	Shawnttolloom	SA .
3	Thy Malanall	
4		A
5	VEN REDACIND	A
6	Joy nexaus	
7	7	
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17	Sim Mcmillan	1 TI
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Pacific Gateway Constructors	aily Toolbox Talk	Date:May 6 <sup>th</sup> , 2021 Foreman's Initials: _ <del>_/_/</del> _
crew: Wall arew	Shift (cire	cle): Day Night
Project Name: Highway 91/17 Upgr	adeSuperint	endent: shawn Innel
Project #: 6218101	Foreman	: Kol Dains
Proposed Sco - backfill Afts a - instal wire we - hayout geo grid - hayout geo grid - bael trucks of Remore old to First aid attendant	pe of Work (Work Activities to be co and and and backets UX, Bx, Severnic with side, instal at trucks when dec ad plates, make a Muster Po 2100 Emergency r	pad plates pad to sit on pints Fourman's truch
Vhat are the top 3 LIFE CRITICA WORK AT HEIGHTS	L TASKS for the scope. Discuss	Specific controls to add to FLHA MOTOR VEHICLE
	Congestion/ Line of fire/ Overhead hazards	Spotters/ Traffic/ Line of Fire
Fall Pro/ Dropped objects MATERIAL HANDLING	CONFINED SPACE	HOISTING & LIFTING
Manual/ Equipment GROUND DISTURBANCE & EXCAVATING Underground Utilities/ Cave-in	Excavations/ Manholes/ culverts WORKING ON LIVE SYSTEMS Electrical/ Water/ Gas/ Equipment	Rigging/ Cranes/ suspended loads HAZARDOUS ENERGY CONTROL
Critical Tasks 1. Bachfull 2/ Safsand Nealy Equipment) 2. motht whe fuskets geo Material handling) 3. excavate, guilbug) Mound disturbance	Hazards - Working around equips - Working around equips - Working around equips - Working around point - Working edges, repetited motion - Newry Rifting - dipping droudd wtilltis	Controls - eye contact with operation - proper pre- - alretch and flore - pot bole withey use spotter when

\*



	Wea	ther		
Wed	Wed Overnight	Thu Morning	Thu Afternoon	
Cloudy with suppy breaks	Cloudy with clear breaks	Mainly cloudy	Light rain	
1	1	a la		
16°	12°	12°	16°	
D	aily Notic	ces/ Ale	ts	

#### STORM WATER CONTROL

#### Stormwater – Storm Response

Storm events involving rain or snow can create stormwater runoff. This runoff can result in pollutants leaving the jobsite and flowing into protected water bodies and communities. Stormwater Best Management Practices (BMPs) must be implemented before work begins to prevent stormwater runoff and sediment erosion. In the case of an event, the site and construction activities must be inspected within 24 hours if there are any signs of erosion or runoff present after an event.

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- · Keep track of any pumping and notify the environmental department before you start

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Damaged silt fence? Repair as soon as possible!

Date: _	
Forema	n's Initials:

23

NO

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		/
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		/
Travelled outside the country?		/
Been in close contact with a person who recently travelled outside the country?		/
Been contacted by a health authority regarding close contact with a confirmed case?		/

If anyone answered YES to any of the questions above, please isolate and contact site Health and Safety immediately

All workers fit for duty? YES

	Toolbox Sign On						
#	Print Name	Signature					
1	5. Variel	1 the					
2	Cour Darfuss	a ci i					
3	KEVIN & HAGAN	M					
4	Rylam Fianza	Ruly Figney					
5	henteuons	KIGE					
6	Joing Lauchell	Juic					
7	Trava perj	200					
8	Ben Warner	13.2 mm					
9	Scott Huide	GIOR					
10	brady b	14					
11	Cam purpossie:	n 10.					
12	Brad White	Mh/					
13	Rafael Ramos	R.R.					
14	Deniela Martinez	1 Amerit					
15	JOGESIU	100					
16	Homer Buttes	29					
17	WOLINE &						
18	AVSAN TOPRICI	Jan 1					
19	Findre Felicio	Ale					
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24							



Date: \_\_May 6<sup>th</sup>, 2021\_\_\_ Foreman's Initials:

Daily Debrief					
Fore	eman: 101 Time: 3:30 /5	30			
1.	All work areas are cleaned up?	Yes	No		
2.	All work sites/equipment secured?	Yes	No		
3.	3. All lockout/tagouts removed?		No		
4.	All permits closed out?	Yes	No		
5.	Are there any injuries, suspected injuries, incidents, damages or deficiencies to report?		No		
6.	Were there any wildlife sightings today? (Note species, number and location in comments below)	Yes	No		

Comments or Employee Concerns:			

	End of Shift Sign Off					
#	Print Name	Signature				
1	Ryon Frayza	Fyar Figyza	330			
2	Scott tolda	Sull				
3	Refay Kamos	Kit.				
4	1 Tose Siv	MAT				
5	LUX EVENS	W/ was				
6	Cour Jacos	Children	1			
7	Daniela Mastinez	1000				
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Date: \_\_\_May 18<sup>th</sup>, 2021\_\_\_ Foreman's Initials: \_\_<del>\_\_</del>

1	Wea	ther		
Tue Evening	Tue Overnight	Wed Morning	Wed Afternoon	
Chance of a shower	Chance of a shower	Chance of a shower	A mix of sun and clouds	
-	G	Č.	<u>i</u>	
12°	8°	9°	16°	
	Daily Notic	ces/ Alerts		

#### HAZARDOUS MATERIALS STORAGE

The improper storage and disposal of hazardous materials can have adverse impacts on people and the environment. Please remember to take the time to place all contaminated materials and hazardous waste into the appropriate container. :

- Engine oil
- Grease tubes
- Used spill materials
- Solvents and paint
- Hydraulic oil
- Gasoline
- Diesel
- Concrete curing chemicals
- Prime coat
- Garbage
- Contaminates soils and
- ٠



All hazardous substances on site should be stored at the yard, under the haz-waste tent, in the correct storage container. Please remember to keep the haz-waste storage area clean and tidy.

All Hazardous waste must be separated into the black drums provided at the PGC hazardous waste storage area in the Nordel Way laydown. Drums/bins are labelled and available for contaminated soil, used spill pads, oily rags & plastics, and used aerosols. All hazardous materials used or generated during the construction activities must be disposed of appropriately otherwise the disposal company will not take it.



Date: \_\_\_May 18th, 2021\_\_ Foreman's Initials: \_\_\_\_\_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		X
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		×
Travelled outside the country?		×
Been in close contact with a person who recently travelled outside the country?		×
Been contacted by a health authority regarding close contact with a confirmed case?		X

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

All workers fit for duty? YES

NO

Toolbox Sign On					
#	Print Name	Signature			
1	Harlon Fair	4 Fain			
2	Jack Willson				
3	Joey Plamandon				
4	Lary Batterson				
5	Rick Caberatta				
6	Terrence Harns				
7	Josie Siu				
8	Danelia Mtz				
9	Juan Sanzhaz				
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Date:	_May 18 <sup>th</sup> , 2021	
Forema	n's Initials: <u>ZK</u>	_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

YES	NO
I I I I I I I	1
	1
	1
	-
	1
	YES

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

NO

All workers fit for duty?

	Toolbox	Sign On
#	Print Name	Signature
1	KANN O HANAN	Yan
2	CAUM DOUCHS	(the ) >
3	AL .	citilis leftor
4	Brandon Laverty	3. hartte
5	Fyou Fioniza	Ryman Franza
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Pacific Gateway Constructors

## **Provide Start Daily Toolbox Talk**

Date: \_\_\_May 19<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials:

se ... doth 0004

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		-
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)? Travelled outside the country?		1
Been in close contact with a person who recently travelled outside the country?		-
Been contacted by a health authority regarding close contact with a confirmed case?		1

If anyone answered YES to <u>any of the questions above, please</u> isolate and contact site Health and Safety immediately

All workers fit for duty?

NO

TES

	Toolbox Sign On		
#	Print Name	Signature	
1	Jorel Mich Izzah		
2	Izzak		
3	John		
4	chris K		
5			
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Date: \_\_\_\_May 19<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials:

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)? Travelled outside the country?		
Been in close contact with a person who recently travelled outside the country?	-	
Been contacted by a health authority regarding close contact with a confirmed case?		

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

All workers fit for duty?

NO

YES

	T	oolbox Sign On
#	Print Name	Signature
1	RANDAU CARISON	KC
2	SUSAN CHERNESKY	Souga Chunky
3	Farren Brown 1	
4	REFARI RAMBS	RR.
5	Damis J - P.	D. Anter
6	Parih Danda	(P)
7	Jack Wilson	Surin
8	Divine Valance	Wand
9	Thomas clayton	Mun lu:
10	CARIS BAUDER	
11	toytane	1917
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Date: \_\_\_\_May 19th, 2021\_\_\_



## **Daily Toolbox Talk**

Foreman's Initials: <u>C7</u>

i o protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		4
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		1
Travelled outside the country?		1
Been in close contact with a person who recently travelled outside the country?	-	1
Been contacted by a health authority regarding close contact with a confirmed case?		1

#### If anyone answered YES to <u>any of the questions above, please isolate and contact site Health and Safety</u> immediately

All workers fit for duty? YES NO

	T	oolbox Sign On
#	Print Name	Signature
1	Upis Thompson	N. a
2	NHOUC LINAS	ma
3	for Dave	
4	Jeremy Some	The
5	L12 B.	
6	Salam Abdres	
7	Javed Schneidki	4000
8	Amul Pero 2	Propen
9	Ottex Labelle	TAPE -
10	Joyce adams	la a
11	Ban Muchemine	1 di
12	JALUNEET WAMBE	tim
13	Denis Cahell	DE
14	MAX SPEDDING	( allother
15	111	
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Pacific Gateway Constructors

## **Daily Toolbox Talk**

Date: \_\_\_\_May 19th, 2021\_\_\_\_\_

Foreman's Initials: \_\_\_\_\_

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		5
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		V
Travelled outside the country?		~
Been in close contact with a person who recently travelled outside the country?		V
Been contacted by a health authority regarding close contact with a confirmed case?		J

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

All workers fit for duty? YES NO

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Date: \_\_\_May 19<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_/K



## **Daily Toolbox Talk**

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		1
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		1
Travelled outside the country?		1
Been in close contact with a person who recently travelled outside the country?		1
Been contacted by a health authority regarding close contact with a confirmed case?		1

If anyone answered YES to <u>any of the questions above, please isolate and contact site Health and Safety</u> immediately

All workers fit for duty? (YES)

NO

	Toolbox Sign On		
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1	will Lawson	A	
2	Kam chune		
3	James Kathman		
4	san ko		
5	Matt steele		
6	Vahessa		
7	Josh Devets		
8	carl Pever		
9	Dattyl colp		
10	Yang (wood)		
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Date: May 19th, 2021

Foreman's Initials:

Pacific Gateway Constructors

## **Daily Toolbox Talk**

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the past 14 days; have you:	YES	NO
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Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		/
Travelled outside the country?		1
Been in close contact with a person who recently travelled outside the country?		/
Been contacted by a health authority regarding close contact with a confirmed case?		/

#### If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

All workers fit for duty? YES NO

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Date: \_\_\_\_May 19th, 2021\_\_\_\_\_



## **Daily Toolbox Talk**

Foreman's Initials:

NO

To protect the health and safety of yourself and your co-workers and to reduce the spread of COVID-19 on the project, all personnel must answer the following questions.

In the past 14 days; have you:	YES	NO
Experienced a fever, cough, difficulty breathing or cold and flu-like symptoms?		
Been in close contact with a person with COVID-19 (probable or confirmed) or who has symptoms compatible with COVID-19 (fever, cough, difficulty breathing)?		
Travelled outside the country?		
Been in close contact with a person who recently travelled outside the country?		
Been contacted by a health authority regarding close contact with a confirmed case?		

If anyone answered YES to <u>any of the questions above, p</u>lease isolate and contact site Health and Safety immediately

All workers fit for duty? YES

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# Highway 91\17 Upgrade Project Environmental Talk

#### Dewatering

#### **Before You Pump**

Please contact the environmental department and get approval for the dewatering activity.

All Dewatering on site must be directed through the Environmental department before starting to prevent impacts to the environment.

#### Unauthorised dewatering activities are not permited on site.

#### Why?

- avoid environmental harm: high levels of silt suspended in water can suffocate fish by blocking their gills, can remove essential oxygen from the water, can kill plants, animals and insects living in the water by stopping sunlight reaching them

- avoid environmental harm: silt often combines with other contaminants such as oils and chemicals potentially causing greater pollution than silt alone

avoid prosecution: because of the potential for harm, it is illegal to allow silt to enter a
watercourse or drain. Silt pollution is easily traceable to the site from where it originated. In the
past it has been a major cause of prosecution

#### Pump setup

-Place the pump into a gravel bed to prevent the pump from discharging coarse sediment from the bottom of the sump.

-Attach a dewatering silt bag at the end of the pipe to ensure that water is less turbid when draining into water ways.

#### Inspect

- Regularly Check the pump setup and ensure everything is working correctly
- Keep track of the weather quality if water quality gets worse contact the environmental department
- Keep track of any pumping and notify the environmental department before you start each day

Ask questions! If something does not look right let your PGC representative or your Supervisor know. We all need to help identify and address environmental concerns!



Date: \_\_\_May 28<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

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Pacific Gateway Constructors

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## **Daily Toolbox Talk**

Date: \_\_\_\_May 28th, 2021\_\_\_\_\_

Foreman's Initials: \_

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Pacific Gateway Constructors

## **Daily Toolbox Talk**

Date: \_\_\_\_May 28<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

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Date: \_\_\_\_May 28<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

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2	Chris Laborte:			
3	Izzak Kelly			
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## **Daily Toolbox Talk**

Date: \_\_\_May 28<sup>th</sup>, 2021\_\_\_\_ Foreman's Initials: \_\_\_\_\_

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Date: \_\_\_\_May 28<sup>th</sup>, 2021\_\_\_\_

Foreman's Initials:

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2	Chris Puzzy	M.			
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Date:	_May 27 <sup>th</sup> , 2	2021
Forema	May 27 <sup>th</sup> , 2 n's Initials:	DK

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APPENDIX 9: INCIDENT REPORTS (Including Spills larger than 5L)





Health and Safety Management Environmental Incident Report

			mental Incident	and bears			
General:	-						
Project Name:	Highway 91	1/17 Up	grade Project				
Contractor:	Pacific Gate	eway Co	ay Constructors				
Incident Location:	S2 near L575 next to the VFPA access road						
Internal Incident no.	033		Client incide	ent no:			
Incident date:	31 May 202	21	Incident tim	e:	17:00 approximately		
Reported by:	Jordan Jeff	ares	Reported to	):	Werner Beukes		
Supervisor:	Roy Fair		Witnesses:		N/A		
Report date:	31 May 202	21	Report Pre	bared By:	Andre Felicio		
Incident Description:							
Detailed Description (\	Who, What, Wh	ere, Wh	en, Why, How):				
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Health and Safety Management Environmental Incident Report

Environmental Impact		-	-			
Type of Environmental Im	pact:	🛛 Land	U Watercou	rse 🗌 Air		
Details:	Approximate top of an exis	Approximately 40m3 of soil was placed outside of the allowable project limits on top of an existing berm.				
Incident Cause: Failure of	mechanical equipm	nent	_			
Causal Factor:						
⊠ Failure to Follow Procedures/Site Practices		Other (speci	fy):			
Inadequate Procedures/Site Practices		To be determ	nined/Under investig	ation		
Equipment Failure (spe hydraulic line on excavato						
Describe What Caused th	e Incident:	1				
Incident/ injury consequen	ice and severity rati	ng (act = actual, p	ot = potential)	_		-
Environmental		3(	1		ACT	POT
0 - Near Miss						
1 - Easy to clean up						$\boxtimes$
2 - Inform Authority						
3 - Potential Fine/Court						
4 - Significant fine						
5 - Major fine						
Notification				-		
PGC Supervisor:	Roy Fair		Notified immediately:	🛛 Yes		No





Health and Safety Management Environmental Incident Report

PGC Construction Manager:	Bill Beswick	Notified immediately:	🛛 Yes	🗌 No
PGC Environmental Representative:	Andre Felicio	Notified immediately:	🛛 Yes	🗌 No
MOTI Designate (if required):	Jordan Jeffares	Notified:	🗌 Yes	🛛 No
Environmental Authority (if required):		Notified:	🗌 Yes	🗌 No
Immediate Actions Taker	n:			
Description				

The PGC Environmental Team responded immediately to inspect the incident. The PGC Environmental Coordinator noted that there were no signs of sediment migration into any waterbodies and no surrounding vegetation was permanently damaged during the removal of the stockpiled sand. PGC has met with the landowner to ensure good relations- no issues were noted by the landowner.

Stockpiles were removed the next day (June 01, 2021) and all exposed surfaces were covered with coco-matting on all exposed surfaces to reduce the risk of sediment run-off after a rain event.

This area will be hydroseeded during the landscaping phase to ensure slopes are stabilized.

Follow up Actions:

Actions taken to prevent recurrence

PGC will be conducting an internal investigation to determine the cause of the incident and will develop a strategy to help prevent this incident from reoccurring. All project boundaries will be marked in the field to ensure that site crews are aware of the project boundary limits.

Key Learnings:

Describe the key lessons identified from the incident:

All site crew foremen and site superintendents are responsible to work within the project boundaries. Project boundaries will be highlighted in the construction kick-off meetings going forward





Health and Safety Management Environmental Incident Report

	l
Signature: Environmental Manager	B.

Photos:



Photo 1: Excavated sand placed outside the project limits.

Photo 2: Excavated sand placed outside the project limits.





Health and Safety Management Environmental Incident Report



Photo 3: Excess material removed and exposed surfaces were stabilized with coco-matting

**Photo 4:** Vegetation inspected after material was relocated to see if any permanent damaged was caused