



# Upper Lillooet Hydro Project

## Weekly Environmental Monitoring Report #99

Reporting Period: July 17-30, 2016

Upper Lillooet River Hydroelectric Facility (Water File No. 2002561, Water licence No. C130613), Boulder Creek Hydroelectric Facility (Water File No. 2003049, Water licence No. C129969) & Transmission Line (TX Line)

Distribution List		Prepared By
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		<b>Date Prepared:</b> October 13, 2016 <b>Date Submitted:</b> October 27, 2016

## Owner Construction Permits and Approvals

Environmental Assessment Certificate No. E13-01 (Amendment 1, 2, 3, 4, 5, 6, 7)  
 Fisheries Act Subsection 35(2)(b) Authorization No. 09-HPAC-PA2-000303 (Amendment 1, 2)  
     Letter of Advice for the Transmission Line No. 09-HPAC0-PA2-000303  
         Leave To Commence Construction (ULRHEF) File No. 2002561  
         Leave To Commence Construction (BDRHEF) File No. 2002453  
     Leave To Commence Construction (TX Line) File No. 2002561/2002453  
         Conditional Water Licence (ULRHEF C130613) File No. 2002561  
         Conditional Water Licence (BDRHEF C129969) File No. 2002453  
         Conditional Water Licence (BDRHEF C131153) File No. 2003601  
 Licence of Occupation & Modification Agreement (ULRHEF #232384) File No. 2409871  
     Licence of Occupation (BDRHEF #232386) File No. 2409998  
     Licence of Occupation (TX Line #2423386) File No. 2410654  
 Occupant Licence to Cut (ULRHEF) No. L49717 (Amendments 1, 2, 3, 4, 5, 6, 7)  
     Occupant Licence to Cut (BDRHEF – KM 38 laydown) No. L49698  
     Occupant Licence to Cut (BDRHEF) No. L49816 (Amendments 1, 2, 3)  
 Occupant Licence to Cut (TX Line) No. L49697 (Amendments 1, 2, 3, 4, 5, 6, 7, 8, 9)  
 General Wildlife Measure Exemption Approval Letter (TX Line & BDRHEF) File No. 78700-35/06 UWR and 39585-20 WHA  
     Heritage Conservation Act – Alteration Permit (ULRHEF) File No. 11200-03/2014-0033  
 Road Use Permit No. 6123-13-02 (Lillooet River FSR); 5673-13-01 (Rutherford Creek FSR); 7977-13-01 (Lillooet South FSR); 8015-13-01 (Ryan River); 8188-13-01 (Pemberton Creek FSR); and 9717-13-01 (Miller Bench FSR)  
     Junction Permit (ULRHEF & BDRHEF) File No. 11250-32/6123 (Amendment 1)  
     Aeronautical Obstruction Approval (Tx Line - Lillooet River Crossing) File No. 2013-004  
         Aeronautical Obstruction Approval (Tx Line - Ryan River) File No. 2013-005  
         Aeronautical Obstruction Approval (Tx Line - North Miller) File No. 2013-006  
         Aeronautical Obstruction Approval (Tx Line - South Miller) File No. 2013-007  
         Aeronautical Obstruction Approval (Tx Line - Pemberton Creek) File No. 2013-008  
         Aeronautical Obstruction Approval (Tx Line - Lillooet River near Pemberton) File No. 2013-009  
         Aeronautical Obstruction Approval (Tx Line - Lillooet River near Meager Creek) File No. 2013-010  
     Navigable Water Protection Act (ULRHEF) File No. 8200-2009-500434-001  
     Navigable Water Protection Act (BDRHEF) File No. 8200-2012-501-032-001  
     Navigable Water Protection Act (Tx Line – North Creek) File No. 8200-2013-500103-001  
     Navigable Water Protection Act (Tx Line – Lillooet River) File No. 8200-2013-500101-001  
     Navigable Water Protection Act (Tx Line – Lillooet River) File No. 8200-2013-500102-01  
     Navigable Water Protection Act (Tx Line – Ryan River) File No. 8200-2013-500104-001  
     Navigable Water Protection Act (Tx Line – South Miller River) File No. 8200-2013-500100-001  
     Navigable Water Protection Act (Tx Line – Boulder Creek) File No. 8200-2013-500099-001  
     Navigable Water Protection Act – Extension Approval (ULRHEF, BDRHEF, Tx Line)  
     Navigable Water Protection Act (Bridge – Ryan River) File No. 8200-2013-500381  
 Navigable Water Protection Act (Bridge – Upper Lillooet Side Channel; Extension Approval) File No. 8200-2013-500383  
     Section 57 Authorization (ULRHEF) File No. 16660-20/REC202717  
         SLRD Temporary Use Permit No. 34 – Boulder Creek HEF  
         SLRD Temporary Use Permit No. 35 – Upper Lillooet River HEF  
         SLRD Building Permit (10864) – Upper Lillooet River HEF Powerhouse  
         SLRD Building Permit (10865) – Boulder Creek HEF Powerhouse  
     Works Permit for Construction within FSR Right-of-Way No. 6123-14-01  
     Works Permit for Construction within FSR Right-of-Way No. 7977-15-01  
     Section 52(1)(b) FRPA Authorization for Ryan River Wet Crossing File No. FOR-19400-01/2014  
 MOTI Permit to Construct, Use and Maintain Works Upon the Right-Of-Way of a Provincial Public Highway No. 2014-06099  
     Magazine Licence File No. UL76018 (Renewal 1)  
     Section 8 Approval – Short Term Use of Water File (Lillooet River and Tributaries) No. A2006123 (Amendment 1)  
     Section 8 - Special Use Permit issued for the operation of an avalanche weather station on Crown land (File No. S25988)

## **Contractor Construction Permits and Approvals**

*Waste Discharge under the Code of Practice for the Concrete and Concrete Products Industry under the Environmental Management Act (Authorization No. 107204) Tracking No. 349424 (Renewal 2)*  
*Wildlife Act Permits – Pacific Tailed Frog Salvage Permit # SU15-164805; Fish Salvage Permit # SU15-174722*  
*Fisheries and Oceans Canada – Anadromous Fish Salvage Permit #XR 178 2015*  
*BC Safety Authority – Temporary Construction Electrical Service Permit EL-140698-2014*  
*Municipal Wastewater Regulation - Authorization # 107032*  
*Water Supply System Construction Permits – VCH-14-613 for Main Camp*  
*Water Supply System Permit to Operate Issued July 30th, 2014 for Main Camp*  
*Section 6(3) and Schedule 3 Wildfire Regulations Fire Exemption for Ryan River Bridge File No. 14350-07*  
*SLRD Building Inspection Report dated August 13, 2014 - Construction Camp Building Permit No. 10830*  
*Lillooet River FSR Temporary Road Closures Approval File No. 11250-32/6123 (Amendment 1, 2)*  
*Lillooet South FSR Temporary Road Closures Approval File No. 11250-32/7977*  
*SLRD Building Permits for Mechanic Shop (10862) and Carpentry Shop (10836) March 18, 2015*  
*SLRD Building Permit Stages 1 - 4 – Boulder Powerhouse Architectural, Electrical and Mechanical (10865) October 8, 2015*  
*SLRD Building Permit Stages 1 - 4 – Upper Lillooet Powerhouse Architectural and Mechanical (10864) October 6, 2015*  
*Water Sustainability Act Section 10(1) Use Approval dated March 24, 2016*  
*Section 7 Explosives Act – Magazine Licence (U76018) Renewal April 30, 2016*

### **ACRONYMS:**

<b>AMBNS</b>	Active Migratory Bird Nesting Survey	<b>HWM</b>	High water mark
<b>Andritz</b>	Andritz Hydro Canada Inc.	<b>IE</b>	Independent Engineer (True North Energy)
<b>ANFO</b>	Ammonia nitrate fuel oil (industrial explosive)	<b>IEM</b>	Independent Environmental Monitor
<b>ARD M/L</b>	Acid Rock Drainage and Metal Leaching	<b>INX</b>	Innergex Renewable Energy Inc.
<b>BCEAO</b>	British Columbia Environmental Assessment Office	<b>ISW</b>	Instream Works
<b>BCCOS</b>	British Columbia Conservation Officer Service	<b>ITM</b>	Environmental Issue Tracking Matrix
<b>BCWQG</b>	British Columbia Water Quality Guidelines	<b>JEM</b>	JEM Energy Ltd. (Delegate Independent Engineer)
<b>BDRHEF</b>	Boulder Creek Hydroelectric Facility	<b>LTC</b>	Leave to Construct
<b>BEBO</b>	ULRHEF Intake Concrete Arch & Foundation Wall	<b>MFLNRO</b>	Ministry of Forests, Lands and Natural Resource Operations
<b>BG</b>	Background	<b>MOE</b>	Ministry of Environment
<b>BKL</b>	BKL Consultants Ltd.	<b>MOTI</b>	Ministry of Transportation and Infrastructure
<b>CE</b>	CRT-ebc Construction Inc.	<b>OGMA</b>	Old Growth Management Area
<b>CEMP</b>	Construction Environmental Management Plan	<b>OLTC</b>	Occupational License to Cut
<b>CTF</b>	Coastal Tailed Frog	<b>PAG</b>	Potentially Acid Generating
<b>DFO</b>	Fisheries and Oceans Canada	<b>QP</b>	Qualified Professional
<b>DS</b>	Downstream	<b>ROW</b>	Right of Way
<b>EPP</b>	Environmental Protection Plan	<b>RVMA</b>	Riparian Vegetation Management Area
<b>EAC</b>	Environmental Assessment Certificate	<b>SES</b>	Sartori Environmental Services
<b>EAO</b>	Environmental Assessment Office	<b>SLRD</b>	Squamish-Lillooet Regional District
<b>Ecofish</b>	Ecofish Research Ltd.	<b>TX Line</b>	Transmission Line
<b>Ecologic</b>	Ecologic Consulting	<b>ULRHEF</b>	Upper Lillooet Hydroelectric Facility
<b>EIR</b>	Environmental Incident Report	<b>UWR</b>	Ungulate Winter Range
<b>ESC</b>	Erosion and Sediment Control	<b>VC</b>	Valued Component
<b>FAM</b>	Field Advice Memorandum	<b>WEL</b>	Westpark Electric Ltd.
<b>FSR</b>	Forest Service Road	<b>WEMR</b>	Weekly Environmental Monitoring Report
<b>Golder</b>	Golder Associates	<b>WHA</b>	Wildlife Habitat Area
<b>GWR</b>	Mountain Goat Winter Range		
<b>Hedberg</b>	Hedberg and Associates Ltd.		

## 1.0 Summary of Site Inspections for Reporting Period

The table presented below summarizes the IEM team site presence, weather and monitoring locations by component:

Date	IEM Team Personnel	Key Monitoring Locations & Activities
July 17 – 23, 2016	MC, SE, TH	<p><b>Construction Camp, Laydown Areas and the Lillooet River FSR</b></p> <ul style="list-style-type: none"> <li>• Road maintenance on the Lillooet River FSR</li> <li>• Temporary culvert installation at KM41.2 of the Lillooet River FSR</li> </ul> <p><b>ULRHEF Intake &amp; Upstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Umbrella system excavation and consolidation</li> </ul> <p><b>ULRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting, shotcrete and tunnel stabilization</li> <li>• Water treatment system maintenance</li> <li>• Installation of secondary water treatment system at KM41.2</li> </ul> <p><b>ULRHEF Penstock</b></p> <ul style="list-style-type: none"> <li>• Welding and coating works</li> <li>• Backfill, compaction and reclamation</li> </ul> <p><b>ULRHEF Powerhouse &amp; Tailrace (above the HWM)</b></p> <ul style="list-style-type: none"> <li>• Tailrace excavation and rock-hammering</li> <li>• Concrete works</li> <li>• Demobilization of water treatment system to KM42.5</li> <li>• Mechanical and electrical works</li> <li>• Generator delivery</li> </ul> <p><b>BDRHEF Intake &amp; Upstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Intake rebar, formwork and concrete works</li> <li>• Ongoing blasting for upstream tunnel portal</li> </ul> <p><b>BDRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and tunnel stabilization</li> </ul> <p><b>BDRHEF Powerhouse &amp; Tailrace (above the HWM)</b></p> <ul style="list-style-type: none"> <li>• Tailrace excavations and insulation</li> <li>• Andritz electrical work</li> </ul> <p><b>TX-Line</b></p> <p>Segment 9a</p> <ul style="list-style-type: none"> <li>• Pole straightening, backfill and framing</li> </ul> <p>Segment 9b</p> <ul style="list-style-type: none"> <li>• Continued ground preparations</li> <li>• Pole framing</li> </ul> <p>Segment 11</p> <ul style="list-style-type: none"> <li>• Bucking of felled timber</li> <li>• Pole framing</li> </ul> <p>Segment 12</p> <ul style="list-style-type: none"> <li>• Ground preparation</li> <li>• Road building</li> </ul> <p>Segment 14</p> <ul style="list-style-type: none"> <li>• Blasting for structure footings</li> </ul>
July 24 – 30, 2016	MC, SE, TH	<p><b>Construction Camp, Laydown Areas and the Lillooet River FSR</b></p> <ul style="list-style-type: none"> <li>• Road maintenance on the Lillooet River FSR</li> <li>• Conduit installation</li> </ul> <p><b>ULRHEF Intake &amp; Upstream Tunnel</b></p> <ul style="list-style-type: none"> <li>• Umbrella system excavation and consolidation</li> </ul> <p><b>ULRHEF Downstream Tunnel</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting, shotcrete and tunnel stabilization</li> </ul>

Date	IEM Team Personnel	Key Monitoring Locations & Activities
		<ul style="list-style-type: none"> <li>• Installation of secondary water treatment system at KM41.2</li> </ul> <p><b>ULRHEF Penstock</b></p> <ul style="list-style-type: none"> <li>• Welding and coating works</li> <li>• Backfill, compaction and reclamation</li> </ul> <p><b>ULRHEF Powerhouse &amp; Tailrace (above the HWM)</b></p> <ul style="list-style-type: none"> <li>• Tailrace excavation, rock-hammering and rip-rap placement</li> <li>• Mechanical and electrical works</li> <li>• Concrete works (PH structure, tailrace and grouted rip-rap)</li> </ul> <p><b>BDRHEF Intake &amp; Upstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Intake rebar, formwork and concrete works</li> </ul> <p><b>BDRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and tunnel stabilization</li> <li>• Excavation of new sediment pond</li> </ul> <p><b>BDRHEF Powerhouse &amp; Tailrace (above the HWM)</b></p> <ul style="list-style-type: none"> <li>• Tailrace rebar and formworks</li> <li>• Tailrace concrete pours</li> <li>• Mechanical and electrical work</li> </ul> <p><b>TX-Line</b></p> <p>Segment 9a</p> <ul style="list-style-type: none"> <li>• Pole framing</li> <li>• Pole straightening, backfill and framing</li> </ul> <p>Segment 9b</p> <ul style="list-style-type: none"> <li>• Anchor installation</li> <li>• Continued ground preparations</li> <li>• Pole placement (heli) and framing</li> </ul> <p>Segment 11</p> <ul style="list-style-type: none"> <li>• Anchor installation</li> <li>• Ground preparation</li> <li>• Bucking previously felled non-merchantable timber and low brush (slashing)</li> <li>• Pole placement</li> </ul> <p>Segment 12</p> <ul style="list-style-type: none"> <li>• Ground preparation</li> <li>• Timber management (Hoe-chucking and RoW timber removal)</li> <li>• Pole dressing and anchor drilling</li> <li>• Road building</li> </ul> <p>Segment 13</p> <ul style="list-style-type: none"> <li>• Installation of culvert liners for pole foundations</li> <li>• Pole dressing and anchor drilling</li> </ul> <p>Segment 14</p> <ul style="list-style-type: none"> <li>• Ground preparation (including blasting)</li> </ul>

**IEM Team Personnel:** TH – Tom Hicks; SE – Stephanie Ellis; MC – Mike Champion

## 2.0 Administrative Summary

Key communications and meetings the IEM team had with the licensees, contractors and/or environmental authorities:

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
July 17 & 18	<i>Email</i>	SES, CE, INX	RE: Non-Bio oil Excavator at ULRHEF tailrace – The IEM requested that CE provide the mechanics inspection report that the excavator at ULRHEF tailrace was in good working order and free of leaks prior to being used within 30m of the Lillooet River. CE responded, informing the IEM that the excavator was new on site and that it was equipped with biodegradable hydraulic oil.	-
	<i>Email</i>	CE, SES, INX	CE informed the IEM and INX that a deer was hit and killed during the night shift at KM39.7 of the Lillooet River FSR, that the event was reported to RAPP, and that an incident report would follow.	<i>EIR028</i>
	<i>Email</i>	CE, INX, SES, BCEAO, MFLNRO, COS, Lil'wat, JEM	RE: 2016-07-17 CE-EIR_028) Final.pdf – CE provided the final incident report for the deer incident on the 17 <sup>th</sup> to INX. INX submitted the report to the relevant government agencies and the Lil'wat Nation.	<i>EIR028</i>
July 18	<i>Email</i>	INX, JEM, SES	INX informed the IE and IEM team that PAG rock was encountered in the ULRHEF lower tunnel. All PAG rock will be transported to the previously constructed PAG storage facility for final disposal.	-
	<i>Email</i>	WEL, INX, SES	WEL's Environmental manager provided an email stating that "operation of the temporary generator site (near structure 14 of the TX Line) did not result in any site contamination". No soil testing results were provided; however, no spills or leaks were reported during the operating period and no staining was evident onsite. The site was contoured to pre-existing condition following the demobilization of the generating equipment from site.	-
July 19	<i>Email</i>	INX, JEM, SES	INX notified the IE and IEM team that they submitted the Leave to Commence Diversion application package for the ULRHEF to agencies on July 15, 2016.	-
July 19 & 20	<i>Email</i>	CE, SES, INX	RE: Pre-restoration Site Surveys – CE requested a site tour to review upcoming restoration works with the IEM and INX.	-
July 20, 22, 23, & 24	<i>Site meeting and email</i>	SES, CE, INX	<p>The IEM observed discharging water from the outlet of the BDRHEF lower-portal infiltration ponds nearing a side channel of Boulder Creek. The IEM requested:</p> <ol style="list-style-type: none"> <li>1. That CE take steps to ensure that water discharging from the ponds met BCWQG.</li> <li>2. That CE inspect the drainage path to determine if additional sediment and erosion mitigation measures were required.</li> </ol> <p>On June 22<sup>nd</sup>, CE installed a CO<sub>2</sub> injection box within the sediment ponds to help mitigate high pH from concrete works in the tunnel. Additionally, CE committed to excavating an additional infiltration pond to increase infiltration capacity and limit the volume of water discharged from the ponds.</p>	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
			<p>The IEM requested that CE first conduct maintenance on the existing infiltration ponds prior to building a new one. If CE preferred to excavate a new infiltration pond, the IEM requested that the following conditions be met:</p> <ol style="list-style-type: none"> <li>1. The pond location should be completely clear of ANFO rock.</li> <li>2. The pond should be fully excavated in native material as the interface between the spoil blasted with gel dyne and ANFO is not likely to be well defined and would likely become mixed during the excavation process.</li> <li>3. Should water discharge overland from the new pond to surface water, it should be tested for ammonia and nitrate concentration to ensure its compliance with BCWQG.</li> <li>4. Prior to commissioning the new cell, the IEM must verify that the cell had been fully excavated in native material.</li> </ol> <p>CE responded confirming that their preference was to excavate a new infiltration pond, and that they would complete it by July 27<sup>th</sup>. CE also confirmed that they would not use the newly constructed infiltration pond until the IEM had inspected the excavation.</p>	
July 21	<i>Email</i>	WEL, SES, INX	<p>RE: AMBNS Survey in Seg. 12 – WEL informed the IEM and INX that they conducted nest surveys prior to clearing vegetation near structures 293, 294, and 295. The environmental manager from WEL did not observe any nesting activity and allowed crews to proceed with clearing at these three sites.</p>	-
July 22	<i>Email</i>	SES, CE, INX	<p>RE: July 21, 2016 – Modified AMBNS report – The IEM provided CE with a modified AMBNS report for a stand watch completed at KM39 of the Lillooet River FSR. The report stated that no active nests were observed and clearing authorization was granted.</p>	-
July 23	<i>Email</i>	CE, SES, INX	<p>CE provided the IEM and SES with meeting minutes from the bi-weekly environmental meeting that occurred on the morning of July 21, 2016.</p>	-
July 25, 26, & 28	<i>Email</i>	CE, SES, INX	<p>RE: Boulder Tunnel Spoil – CE indicated that the Boulder downstream tunnel portal spoil is nearing capacity and proposed to spoil remaining material in the borrow pit adjacent to the crusher pad at the maintenance laydown. INX requested the flowing information prior to considering a new spoil area for ANFO material:</p> <ol style="list-style-type: none"> <li>1. QP Confirmation that the material would be stored above the water table</li> <li>2. QP confirmation that the material would not be stored within an active flood plain of either Boulder Creek or the Lillooet River</li> <li>3. Indicate the volume of material that will be spoiled in this area.</li> </ol> <p>CE agreed to provide this aforementioned information, but requested clarification on the definition of flood plain (i.e., Q2, Q10).</p>	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
July 26	Email	INX, SES, CE	RE: ULHP Site Visit Dates for next two weeks – INX updated CE and the IEM on important upcoming site tours and visits.	-
	Email	INX, SES, CE, Hedberg	RE: ULHP INN-1737E: FW: Boulder Intake Access Road – INX provided the IEM with CE's QP's (Hedberg) assessment of the Boulder Intake Access Road.	-
July 27	Email	CE, SES, INX	RE: Soil sampling results for excavation at crusher pad (Spill report #2016-27) – CE provided lab test indicating that one of the samples (sample #1) exceeded industrial land use standards for HEPH and that further excavation and soil sampling would occur the following week.	-
	Email	INX, JEM, SES	INX forwarded a QP supported plan to deviate from the shutdown conditions defined in the Landslide Risk Management Plan. Temporary deviation was granted to permit the installation of tunnel stabilization work at the upstream heading during a period of High landslide risk. The exemption was granted for a 12hr period (8:00-20:00) on July 27, 2016.	-
July 28	Email	WEL, SES	RE: anchor dig at 316 – WEL requested that the IEM monitor anchor placement work at tower 316 within the RVMA.	-
	Email	WEL, SES	RE: Monitoring request – 272a 30-100m CTF buffer – WEL notified the IEM that clearing of tall regen vegetation would occur within the 30-100 m CTF buffer, but based on the terrain and temperatures it was unlikely CTF's would be present. The IEM agreed that the potential for CTF was low and was not concerned with works proceeding.	-

### 3.0 Current Work Restrictions and Timing Windows

The table presented below outlines work restrictions applicable during the reporting period for each active Project component location:

Component	Location	Wildlife/Archeology Concern	Construction/Timing Restrictions & Mitigations
All Project Areas	TX Line, ULRHEF, & BDRHEF	Active Migratory Bird Nesting Period	AMBNS must occur prior to clearing vegetation in all Project areas according to the survey schedule and methods outlined in the Project's Active Migratory Bird Nest Survey Plan during the nesting period (May 1 – July 31). All nests identified as active must be protected by a no disturbance buffer until the nest is no longer deemed to be active by a QP (buffer distances vary by species and location; further details are provided in the AMBNS Plan).



Component	Location	Wildlife/Archeology Concern	Construction/Timing Restrictions & Mitigations
	ULRHEF intake & tailrace, BDRHEF tailrace, and fish accessible tributaries of the Lillooet River	Reduced Risk Project Specific Instream work windows for the protection of Bull Trout, Cutthroat Trout and Pacific Salmon (Coho, Sockeye), during sensitive life stages	All instream work will be conducted within Project specific timing windows. They are as follows: ULRHEF intake: August 1 – October 31 ULRHEF and BDRHEF powerhouses: July 15 – September 15
Lillooet River FSR, ULRHEF, & BDRHEF intake	Access roads above the lower limit of the 200m buffer to the Truckwash Creek Migration Corridor to the ULRHEF intake, as well as a portion of BDRHEF intake access road and intake structure within UWR u-2-002 UL 12	Mountain Goat UWRs & Migration Corridor	If a mountain goat is observed within 500m line of sight of construction operations, construction must cease for at least 48 hours. Approval from the IEM must be obtained prior to recommencing construction activities, and the IEM must record and submit all goat observations to MFLNRO within 48 hours.
TX Line	Segments 8 - 16	Mountain Goat UWRs SO-04 & SO-08	If a mountain goat is observed within 500m line of sight of construction operations, construction must cease for at least 48 hours. Approval from the IEM must be obtained prior to recommencing construction activities, and the IEM must record and submit all goat observations to MFLNRO within 48 hours.
		Suitable Class 1 & 2 Grizzly Bear forage habitat	IEM monitoring is required when clearing within identified Class 1 & 2 Grizzly Bear forage habitat, to ensure clearing areas are minimized.
		Riparian Vegetation Management Areas (RVMA)	IEM monitoring is required during clearing within RVMA's.
		Ryan River Drainage	Construction of the TX Line into and across the Ryan River drainage will occur during the less critical Grizzly Bear summer foraging period (June 1 – September 1).
		Within 150m of wetlands or 100m of Coastal Tailed Frog Streams	IEM presence is required when clearing within 150m of wetlands or 100m of CTF Streams, to ensure clearing areas are minimized.

## 4.0 Upper Lillooet River HEF – Monitoring Results

### 4.1 Construction Camp, KM38 Laydown, Access Roads & Lillooet River FSR

#### Construction Activities:

- CE continued routine fuel management and maintenance of construction equipment within the mechanic shop at the KM38 laydown. CE temporarily stored all hazardous substance materials (waste oil, contaminated soil, used oil/hydraulic fluid containers, etc.) in a designated area at the laydown prior to off-site disposal. The materials were all well contained and protected from the weather.
- CE continued to apply water to the Lillooet River FSR and construction access roads to minimize fugitive dust production throughout the reporting period (Photo 1).
- CE trenched and installed electrical conduit along the Lillooet River FSR from the ULRHEF downstream tunnel portal to the ULRHEF intake (Photo 2).

#### Environmental Summary:

- The IEM did not observe any environmental issues during the monitoring period.

#### Photos:



Photo 1 – Dust suppression application on the Lillooet River FSR (July 30, 2016).



Photo 2 – Conduit trenching and installation on the Lillooet River FSR (July 28, 2016).

### 4.2 Intake, Concrete Arch Foundation Walls, and Upstream Tunnel

#### Construction Activities:

- No activities occurred at the ULRHEF intake (Photo 3) from July 17 - 18, 2016 and July 25-26 & 28-30, 2016 due to elevated landslide risk according to the conditions of the Landslide Risk Management Plan.
- On July 27, CE performed critical stabilization works in the upstream tunnel heading, during a period of “High” landslide risk as defined by the Landslide Management Plan. A

revised set of safety measures were outlined by a QP prior to initiating the tunnel stabilization works, to protect workers in the event of a landslide.

- Grout injection operations and canopy tube installation at the ULRHEF upstream tunnel occurred from July 19 - 27, 2016 (Photo 4).

Environmental Summary:

- During grout injection and tunnel excavation rounds in the upstream tunnel, CE directed all seepage water to the ULRHEF intake sediment basins for treatment (Photo 5). CE's environmental management team ensured that the active water treatment system was functioning and well maintained. Additional water quality sampling results are available upon request.

Photos:



Photo 3 – ULRHEF intake structure (July 27, 2016).



Photo 4 – ULRHEF upper tunnel portal and BEBO wall (July 20, 2016).



Photo 5 – ULRHEF upper tunnel water treatment system, pond No. 7 (July 17, 2016).

### 4.3 *Downstream Tunnel Portal*

Construction Activities:

- Drilling, blasting, mucking and stabilization works (shotcrete application) within the tunnel.

Environmental Summary:

- The IEM monitored the discharge from the active water treatment system for compliance with BCWQG. Water discharged to ASTR-03 did not exceed > 8 NTU above background turbidity during the reporting period. Additional water quality sampling results are available upon request.
- CE is anticipating the completion of the ULRHEF tunnel at the beginning of August, at which time they will convey all wastewater to the lower portal. To ensure sufficient treatment capacity, CE installed a second active water treatment system on July 20, 2016 (Photo 6).
- Maintenance and sediment removal from the active water treatment system installed near ASTR-03 (Photo 7).

Photos:



Photo 6 – Installation of second active water treatment system at the ULRHEF lower tunnel portal (July 20, 2016).



Photo 7 – Regular maintenance (sediment removal) from the primary ULRHEF lower tunnel portal active water treatment system (July 21, 2016).

### 4.4 *Penstock*

Construction Activities:

- Welding and coating of penstock through the Truckwash Creek crossing (Photo 8).
- Backfill, compaction, and reclamation of penstock east of Truckwash Creek.
- Formwork, insulation, rebar, and concrete works on the Truckwash Creek protection slab (Photo 9).

Environmental Summary:

- The IEM monitored construction activities throughout the monitoring period and observed no environmental issues.

Photos:



Photo 8 – Penstock welding and coating works through the Truckwash Creek crossing (July 17, 2016).



Photo 9 – Formwork and rebar for the Truckwash Creek crossing protection slab (July 28, 2016).

#### 4.5 **Powerhouse, Tailrace & Access Road**

Construction Activities:

- Installation of the new clean water sump outside of the tailrace structure (Photo 10).
- Excavation of the ULRHEF tailrace up to 2 metres from the Lillooet River (Photo 11).
- Placement of grouted riprap at the ULRHEF tailrace (Photo 12 - Photo 13).
- Andritz mechanical works in the ULRHEF powerhouse.

Environmental Summary:

- CE demobilized the active water treatment system from the ULRHEF powerhouse and relocated it to the lower tunnel portal.
- CE completed the installation of a new clean water sump outside of the tailrace structure. The IEM monitored the installation of the new sump and all associated water quality (Photo 10). The IEM did not observe any environmental issues associated with these works.
- CE continued excavation of the ULRHEF tailrace from July 19 - 27 (Photo 11). Crews conducted all works in the dry, and the IEM was present to monitor excavation activities. The IEM did not observe any environmental issues with these construction activities during the monitoring period.

- CE grouted riprap within the ULRHEF tailrace on July 27, 2016 (Photo 12 - Photo 13). CE conducted all concrete works in the dry, behind the tailrace berm. The IEM did not observe any environmental issues with these concrete works during the monitoring period.

Photos:



**Photo 10 – Completion and backfill around the new clean water sump at the ULRHEF powerhouse (July 19, 2016).**



**Photo 11 – Excavation for the ULRHEF tailrace, behind a natural earth berm, isolated from flowing water (July 23, 2016).**



**Photo 12 – Placement of riprap at the ULRHEF tailrace (July 25, 2016).**



**Photo 13 – Grouting riprap at the ULRHEF tailrace (July 26, 2016).**

### 4.6 Water Quality Results

The following table presents the results of the routine WQ sampling program for the ULRHEF. The IEM is undertaking a weekly monitoring program according to the conditions outlined in the Surface Water Quality Protection Plan. The IEM selected the regular monitoring to quantify WQ conditions within the Lillooet River upstream and downstream of active construction areas. The IEM acknowledges the natural variability of instream WQ conditions in the Lillooet River due to seasonal fluctuations in snowmelt. In the event of an exceedance of *in-situ* WQ (turbidity and/or pH) because of project-related activities, the IEM will highlight the exceedance, discuss the cause, and outline measures undertaken by the contractor to correct the issue. When an exceedance cannot be attributed to project-related activities, an asterisk (\*) will be used to denote it.

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (µS)	Temp (°C)
<b>Routine Water Quality</b>						
July 23, 2016	15:33	ULR Background – ULRHEF Intake	7.7	44.3	25	9.2
	15:50	ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge	7.2	43.9	25	10.2
	8:32	ULR # 1 – Upstream of ULRHEF Powerhouse	7.4	53.0	31	7.3
	9:03	ULR #2 – Downstream of ULRHEF Powerhouse between KM 40.5 and KM 41	7.1	48.4	25	8.4
	11:16	ULR #3 – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence	7.6	40.5	26	7.9
	8:05	ULR #4 – Lillooet River FSR KM 24 – D/S of all works and Meager confluence	7.2	60.6*	38	8.1
July 30, 2016	10:50	ULR Background – ULRHEF Intake	7.8	80.10		9.3
	11:10	ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge	7.8	67.40	-	8.7
	12:10	ULR # 1 – Upstream of ULRHEF Powerhouse	7.8	56.3	-	9.6
	12:20	ULR #2 – Downstream of ULRHEF Powerhouse between KM 40.5 and KM 41	7.8	58.3	-	9.5
	12:55	ULR #3 – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence	7.6	46.1	-	10.3
	18:30	ULR #4 – Lillooet River FSR KM 24 – D/S of all works and Meager confluence	8.0	65.5	-	13.5

### 4.7 Recommendations

IEM recommendations for the ULRHEF are as follows:

- CE should continue to convey all water from the ULRHEF upstream tunnel heading to the sediment basins for treatment. CE should perform regularly monitoring to ensure that the water treatment system is functioning as intended and that discharge to the Lillooet River continues to meet BCWQGs.
- CE should provide a QP’s assessment of the mountain goat UWR replacement area affected by last winter’s snow clearing operations (ITM ULR #49; FAM#11), and provide recommendations for remediation.

- CE should continue to perform regular inspections at all parking areas. Crews should clean and properly dispose of all spilled fuel and/or oil, as per the Human-Bear Conflict Management Plan and Hazardous Materials Management Plan.
- CE should continue to remind crews of proper food and wildlife attractant management, as per the Human – Bear and Human – Wildlife Interaction Management Plans.

#### **4.8 *Upcoming Works***

New and/or environmentally sensitive construction activities scheduled to occur at the ULRHEF:

- Installation of stop logs and trash racks within the ULRHEF intake structure.
- Formwork, rebar, and concrete works on the BEBO wall.
- Canopy tube installation, umbrella lattice structure installation, grout injection, drilling, and blasting in class 4CT material will continue at the ULRHEF upstream tunnel portal.
- Breakthrough of ULRHEF tunnel.
- Welding, coating, backfill, and remediation of the penstock alignment.
- Formwork, rebar, and concrete works for the Truckwash Creek penstock crossing.
- Instream works to tie in ULRHEF tailrace to the Lillooet River.
- Installation of turbines and secondary concrete works in the ULRHEF powerhouse.



## 5.0 Boulder Creek Hydroelectric Facility – Monitoring Results

### 5.1 Access Road & Intake

#### Construction Activities:

- Formwork, rebar, and concrete works began on the intake structure (Photo 14).

#### Environmental Summary:

- The IEM did not observe any environmental issues with concrete works or blasting activities during the monitoring period.
- The IEM monitored the discharge from the active water treatment system for compliance with BCWQG. Water discharged to Boulder Creek did not exceed > 8 NTU above background turbidity during the reporting period. Additional water quality sampling results are available upon request.

#### Photos:



Photo 14 – Formwork and rebar for the tunnel-intake transition (July 21, 2016).

### 5.2 Downstream Tunnel Portal and Powerhouse

#### Construction Activities:

- Drilling, blasting, and tunnel stabilization in the downstream tunnel portal.
- Electrical component installation in the BDRHEF powerhouse.
- Excavation of BDRHEF tailrace (Photo 15).
- Insulation, formwork, rebar, and concrete works in BDRHEF tailrace (Photo 16).
- Excavation of new settling/infiltration pond at the downstream tunnel portal (Photo 17).

Environmental Summary:

- CE conveyed all wastewater related to the BDRHEF tunnelling works to the downstream settling ponds for treatment (Photo 18).
- On July 18, 2016, the IEM observed the discharge from the BDRHEF lower tunnel portal settling ponds discharging very close to a side channel of Boulder Creek, before infiltrating into the ground. As of July 18th, there is no surface connection between the settling pond discharge and the side channel of Boulder Creek (Photo 19). On July 20, 2016, the IEM requested that CE take steps to ensure all water discharging from the settling ponds meets BCWQG. On July 22, 2016, CE installed a CO<sub>2</sub> injection box in the first of three settling ponds, to treat water with elevated pH (Photo 18). On July 26, 2016, CE excavated a new infiltration pond to decrease the volume of water discharged off site (Photo 17). The newly excavated pond is functioning as intended, and since the commissioning of the pond on July 27<sup>th</sup>, all tunnel wastewater has infiltrated to ground (Photo 20).

Photos:



Photo 15 – Excavation of BDRHEF tailrace (July 17, 2016).



Photo 16 – Formwork and rebar BDRHEF tailrace (July 23, 2016).



Photo 17 – Excavation of new BDRHEF lower tunnel portal pond (July 26, 2016).



Photo 18 – BDRHEF downstream portal settling ponds and CO<sub>2</sub> injection box (July 23, 2016).



Photo 19 – Discharge from BDRHEF lower tunnel portal flowing within 5m of a side channel of Boulder Creek (July 17, 2016).



Photo 20 – Water infiltrating into the ground within the newly constructed settling/infiltration pond (July 27, 2016).

### 5.3 Water Quality Results

The following table presents the results of the routine WQ sampling program for the BDRHEF. The IEM is undertaking a weekly monitoring program according to the conditions outlined in the Surface Water Quality Protection Plan. The IEM selected the regular monitoring to quantify WQ conditions within Boulder Creek upstream and downstream of active construction areas. The IEM acknowledges the natural variability of instream WQ conditions in Boulder Creek due to seasonal fluctuations in snowmelt. In the event of an exceedance of *in-situ* WQ (turbidity and/or pH) because of project-related activities, the IEM will highlight the exceedance, discuss the cause, and outline measures undertaken by the contractor to correct the issue. When an exceedance cannot be attributed to project-related activities, an asterisk (\*) will be used to denote it.

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (uS)	Temp (°C)
<b>Routine Water Quality</b>						
July 23, 2016	16:43	BDR BG – Upstream of BDRHEF intake	7.7	28.9	28	8.7
	17:00	BDR #1 – Downstream of BDRHEF intake	7.3	26.8	27	8.5
	10:24	BDR #2 – Upstream of BDRHEF Powerhouse	7.4	21.7	24	8.3
	10:40	BDR #3 – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge	7.5	21.1	28	8.2
July 30, 2016	13:21	BDR BG – Upstream of BDRHEF intake	7.7	20.4	-	10.6
	13:28	BDR #1 – Downstream of BDRHEF intake	7.4	21.4	-	10.2
	12:40	BDR #2 – Upstream of BDRHEF Powerhouse	7.6	25.3	-	10.8
	14:00	BDR #3 – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge	7.6	18.8	-	11.6

## 5.4 *Recommendations*

IEM recommendations for the BDRHEF are as follows:

- CE should continue to direct all construction related wastewater to the active water treatment systems/settling ponds. CE should continue to monitor the newly constructed settling/infiltration pond to ensure that it remains in good working condition, and perform all maintenance activities as outlined in the work plan. If water begins to discharge from the newly constructed channel, CE should conduct regular inspections to ensure that it meets BCWQG prior to infiltration near or connection to with the Boulder Creek side channel.
- CE should continue to maintain the BDRHEF intake access road, and continue excavation/maintenance of ditch lines as discussed after the BC EAO site tour on June 9, 2016 and subsequent environmental meetings.

## 5.5 *Upcoming Works*

New and/or environmentally sensitive construction activities scheduled to occur at the BDRHEF:

- Formwork, rebar, and concrete works at BDRHEF intake structure.
- Andritz mechanical works within the BDRHEF powerhouse.
- Riprap placement at BDRHEF tailrace.
- Instream works to connect BDRHEF tailrace to Boulder Creek.

## 6.0 **Transmission Line – Monitoring Results**

### 6.1 *Transmission Line Construction Activities*

#### Construction Activities:

#### **Segment 9**

- Ground preparation for structures 219, 228, and 229.
- Straightening and backfilling structures 203-217.

#### **Segment 11**

- Framing structures 258-267.
- Bucking of felled timber near structures 273-278.
- Installing pole structures via helicopter (264-280).

#### **Segment 12**

- Ground preparation for structures (including blasting) 285-305.
- Road building to access structure 305.

### **Segment 13**

- Installation of pole structure anchors at structure 316, within the RVMA (Photo 21).

### **Segment 14**

- Blasting for pole structure foundations 349-353.

#### Environmental Summary:

- On July 27, 2016, the IEM conducted a site inspection for the manual installation of anchors within the RVMA at structure 316. The IEM did not observe any environmental issues associated with the works.

#### Photos:



Photo 21 – Ground preparation and anchor installation for structure 316 (July 29, 2016).

## **6.2 Recommendations**

IEM recommendations for the Transmission Line are as follows:

- WEL's Environmental Manager continues to provide regular scheduling updates that permits the IEM to assess environmental risks and coordinate monitoring requirements. WEL should continue to provide the IEM with a minimum of 48 hours' notice if IEMs presence is required or expected for construction activities.

## **6.3 Upcoming Works**

New and/or environmentally sensitive construction activities scheduled to occur along the Transmission Line alignment:

### **Segment 9**

- Prepare to install structures via helicopter throughout the segment.

### **Segment 11**

- Bucking felled timber near structures 260-271

- Ground preparation and hand digging structure foundations 275, 276, 281 and 283

**Segment 12**

- Machine ground preparation at structures 305 and up
- Burying of debris piles near structures 300-305

**Segment 13**

- Drilling anchors throughout the segment.

## 7.0 Wildlife Sightings

As per the CEMP, the IEM implemented a wildlife sightings record. Project Personnel are required to regularly update the record and it is mandatory for all personnel to report wildlife sightings including, but not limited to bears, cougars, mountain goats and deer. Wildlife Observation forms will be included in first reporting period following month end. Observation or detection of the following species will trigger notification to identified parties according to the following table.

Species Observed or Detected	Notification Period	Agencies to be Notified
Northern rubber boa	Immediately	IEM, Owner
Grizzly bear	24hrs	IEM, Safety Officer, Conservation Officer, Owner
Wolverine den	24hrs	IEM, MFLNRO, Owner
Spotted owls	24hrs	IEM, MOE, Owner
Mountain goats	48hrs	IEM, MFLNRO, Owner

## 8.0 Mountain Goat Monitoring Program

The spring 2016 Mountain Goat Monitoring Program is complete as of June 15, 2016 according to conditions of the Mountain Goat Management Plan. The mountain goat monitoring program will resume in November 2015.

To mitigate potential impacts to mountain goats during the summer months, Construction activities will cease if a mountain goat(s) is/are observed moving towards the ULRHEF intake and/or if a mountain goat(s) is/are observed within a 500m line of site of a construction activity. No mountain goats were observed within 500m line of sight of construction activities and no work stoppages were required during this monitoring period.

## 9.0 Environmental Issues Tracking Matrix (ITM)

### 9.1 Hydroelectric Facilities (ULRHEF & BDRHEF)

ITM Tracking Legend:		Work Item Open		Work Item Complete		Issue Closed	
Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Date for Completion	Date Completed
ULR#57	CLOSED	Batch plant and ULRHEF intake concrete wash pits	Concrete washing in occurring outside of designated wash pits or in wash pits that are not properly lined to contain cement waste. Maintenance and/or repairs to these pits are required.	<ol style="list-style-type: none"> <li>Line wash pit at the ULRHEF intake with geo-textile to contain all cement powder waste. Concrete waste should be used to make lock blocks at the batch plant or should be cured in designated areas to prevent cement laden runoff. This wash pit should not be used until repairs are completed.</li> <li>Restore capacity of the batch plant concrete wash pit. The IEM recommends removing cured concrete from within the wash pit, and re-lining the wash pit with geo-textile. Cured concrete and cement laden runoff along the edge of the access road adjacent to the wash pit should be removed, broken into smaller pieces, and buried in a designated spoil area.</li> </ol> <p>Update: The concrete sump at ULRHEF was cleaned out and lined with geotextile on July 13, 2016. The sump at the batch plant was also cleaned out and will be emptied on an as needed basis. The IEM will continue to monitor these two areas to ensure compliance.</p>	July 6, 2016	July 9, 2016	July 13, 2016
ULR#58	OPEN	All work areas	Conservation Officer and BCEAO Compliance and Enforcement Officer Inspection noted non-compliance with regard to wildlife attractant management.	<ol style="list-style-type: none"> <li>Develop, implement and document internal waste and attractant management auditing tool. Tool will be available for use by the IEM and CE's EM Team. Records of inspections and noted non-compliances should be tracked internally with clean-up documented in each report. This tracking tool will be available to agencies upon request. This tool should be used similarly to the Spill Reporting tool currently being employed onsite.</li> <li>Repair and adjust the electric fences and charged entrance mats at the construction camp (perimeter fence, camp kitchen fence, and waste compactor fence) and surrounding the septic field.</li> <li>Install self-closing door hinges in all site lunchrooms and anywhere food is being stored temporarily (lunch rooms, kitchen storage area) OR adjust how food is transported, stored and consumed onsite to eliminate the possibility of food and food waste attractants onsite.</li> </ol>	July 6, 2016	July 9, 2016	<p>July 8, 2016</p> <p>July 21, 2016</p> <p>July 21, 2016</p>

				<p>4. Perform maintenance to clean-up grease and liquid waste around and underneath the garbage compactor</p>			<p>July 21, 2016</p>
				<p>5. Install berms surrounding parking areas that are lined with impermeable fabric in areas where tunneling equipment is parked. All leaks could be considered wildlife attractants; therefore all leaky equipment should be repaired and leaks or spills to ground in parking areas must be cleaned up daily and be disposed of in appropriate contaminated soil bins.</p> <p>Update July 30, 2016: CE continues to park equipment on designated parking areas lined with geotextile within perimeter berms. However, equipment parked in these areas continues to leak. CE should ensure that the removal of contaminated soil from parking areas is documented and should continue regular maintenance of the equipment as needed.</p>			
<i>No outstanding environmental issues (next ITM – BDR#28 &amp; ULR#59)</i>							

## 9.2 Transmission Line

<b>ITM Tracking Legend:</b>		<i>Work Item Open</i>					
		<i>Work Item Complete</i>					
		<i>Issue Closed</i>					
Issue Tracking		Environmental Issue			Mitigation Measures		
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Date for Completion	Date Completed
<i>No outstanding environmental issues (next ITM – Tx#3)</i>							













## Environmental Incident Reporting Form

<b>General Information</b>	
<b>Project Name:</b> Upper Lillooet Hydro Project	<b>Project Component</b> Lillooet River FSR @km 39.6
<b>Time/Date of Incident Start:</b>  2016-07-17, 1:00 AM	<b>Time/Date Incident Stopped:</b>  2016-07-17, 1:00 AM
<b>Date of Report:</b> 2016-07-17	<b>Project Incident Report Number:</b> 2016-07-17 CE-EIR-028
<b>Report Prepared By:</b> Jean M. Pelletier	
<b>Contractors Environmental Manager:</b> Jean M. Pelletier	
<b>Independent Environmental Monitor:</b> Mike Champion	
<b>Licensee's Environmental Coordinator:</b> Julia Mancinelli	

<b>Contact Information for Company Involved in Incident</b>	
<b>Company:</b> CRT-ebc, s. e. n. c.	<b>Address:</b> PO Box 585, Pemberton BC – V0N 2L0
<b>Phone #:</b> 604-894-5002	<b>Email:</b> serge,Moalli@ebcinc.com
<b>Contact Person:</b> Serge Moalli	<b>Position:</b> Project Director

<b>Incident Type (check all that apply)</b>			
<b>Encroachment of an Environmentally Sensitive Area (e.g. Riparian/Wildlife Buffer)</b> Please provide details in "Description" section below.	<input type="checkbox"/>	<b>Adverse Impacts to Fish/Wildlife (e.g. Mortality/Injury)</b> Please provide details in "Description" section below.	<input checked="" type="checkbox"/>
<b>Water Quality/Quantity</b> Please provide details in "Description" section below.	<input type="checkbox"/>	<b>Hazardous Material Spills (to ground or water)</b> Please provide details in description section in regards to: <ul style="list-style-type: none"> <li>Perceives extent of damage</li> <li>Type, quantity and area of the spill</li> <li>Containment Procedures</li> <li>Environmental features in close proximity to the spill</li> </ul>	<input type="checkbox"/>
<b>Disturbance of known or unknown archeological /heritage site</b> Please provide details in "Description" section below.	<input type="checkbox"/>	<b>Air Quality</b> Please provide details in "Description" section below.	<input type="checkbox"/>
<b>Spill reported to external agencies</b> If yes, describe the receiving environment and substance/quantity spilled.	<input type="checkbox"/>	<b>Other</b> Please provide details in "Description" section below.	<input type="checkbox"/>

<b>Incident Profile</b>			
<b>Weather at time of incident</b>	 <input type="checkbox"/> Clear	 <input checked="" type="checkbox"/> Partly Cloudy/ Variable	 <input type="checkbox"/> Cloudy
	 <input type="checkbox"/> Showers/ Periods of Rain	 <input type="checkbox"/> Rain	 <input type="checkbox"/> Heavy Rain (>25mm in 24hr)
	 <input type="checkbox"/> <b>Storm</b> (Heavy rain and high winds)		 <input type="checkbox"/> Snow
<b>Specific Location:</b> Upper Lillooet Downstream Portal – Lunchroom (near 39.6 on the FSR)			
<b>Description and Cause of Incident:</b>			
<p><u>Description:</u> At 1:00 AM, a deer struck the truck driven by an electrician driving up the Lillooet River FSR near KM39.6. The driver was not injured. When the buck saw the headlight, it jumped right in front of the pick-up truck. The driver tried to avoid the animal, but nevertheless the deer head hit the front right corner of the pick-up. The buck immediately died of the injuries sustained in the collision. The driver then called Safety to report the incident. A few minutes later, the night shift Environment Manager was informed of the accident. The Sr Environment Manager was informed of the accident at 5:30 AM that morning. He called the RAPP line to inform them of the accident. Later the same day, the deer was buried near km 38.5, in a location approved by the IEM. The deer is buried at about 2.5 m deep.</p> <p><u>Cause:</u> There is plenty of deer on site and they often jump right in front of pick-ups. In this particular situation, the buck darted from the right side at the exact moment the pick-up was coming. The driver reacted as best as he could but unfortunately could not avoid the collision. This occurrence resulted in the death of the deer.</p>			
<b>Incident Witness:</b> No witness of the event as the driver was alone in his pick-up.			
<b>Were there any Potential Environmental impacts as a result of the incident?</b> (e.g., surface contamination, storm sewers, or fish/wildlife mortalities)			<b>Yes</b> <input checked="" type="checkbox"/>
			<b>None Observed</b> <input type="checkbox"/>
<b>If Yes, please describe:</b> See incident description above			
<b>Has Wildlife Salvage Protocol been followed? i.e. Carrion Removal</b>		<b>Yes</b> <input checked="" type="checkbox"/>	<b>No</b> <input type="checkbox"/>
		<b>N/A</b> <input type="checkbox"/>	
<b>If No, please explain:</b>			
<b>Water Quality Samples Collected?</b>		<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
		<b>N/A</b> <input checked="" type="checkbox"/>	
<b>If yes, attach results of water quality analysis to report in table format. Include Laboratory analysis if completed.</b> <b>If No please explain:</b>			
<b>Have applicable photos and/or drawings been attached to the incident report?</b>		<b>Yes</b> <input checked="" type="checkbox"/>	<b>No</b> <input type="checkbox"/>
		<b>N/A</b> <input type="checkbox"/>	
<b>Incident Response Measures</b>			
See incident description above			




**Actions to Prevent Incident Recurrence**

Workers will be reminded at the next mass safety meeting of the danger of deer on the road, and to drive slowly to reduce the risk of colliding with wildlife. Wildlife crossing signage will be installed in the area to remind crews to slow down in key wildlife areas.


**Notification Record**

Agency Reported to	Contact Information	Agency Contacted		Date Reported	Reported By	Method of Reporting
		Yes	No			
<b>External</b>						
MFLNRO	James Davies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 18, 2016	Innergex	Email
BCEAO	Monica Perry Sheldon Foote Justin Carlson	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 18, 2016	Innergex	Email
Lil'wat Nation	Harriet VanWart Carrie Lester	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 18, 2016	Innergex	Email
RAPP	Conservation Officer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 17 <sup>th</sup> , 2016 July 18, 2016	CRT-ebc Innergex	Phone Email
PEP	1-800-663-3456	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
DFO	Herb Klassen	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Environment Canada	604-666-6100	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Canadian Coast Guard	604-666-6011	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Local Fire Rescue	911	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
<b>Internal</b>						
Innergex	Oliver Robson	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 17, 2016	J.M. Pelletier	Email
IEM	Tom Hicks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 17, 2016	J.M. Pelletier	Email
IE	Jenn McCash	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 18, 2016	Innergex	Email

**Independent Environmental Monitor:**

Tom Hicks	IEM - SES		July 18, 2016
Print Name	Position and Company	Signature	Date

**Contractor's Manager:**

Serge Moalli	Project Director – CRT-ebc		2016.07.18
Print Name	Position and Company	Signature	Date