



# Upper Lillooet Hydro Project

## Weekly Environmental Monitoring Report #39

**Reporting Period: September 14 – September 20, 2014**

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
Name	Organization	
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Harriet VanWart	Lil'wat Nation	
		<b>Date Prepared:</b> October 7, 2014 <b>Date Submitted:</b> October 10, 2014

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## Owner Construction Permits and Approvals

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*Environmental Assessment Certificate No. E13-01 (Amendment 1, 2, 3 & 4)*  
*Fisheries Act Subsection 35(2)(b) Authorization No. 09-HPAC-PA2-000303 (Amendment 1)*  
*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 (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 Amendments 1, 2, 3, 4) No. L49717*  
*Occupant Licence to Cut (BDRHEF – KM 38 laydown) No. L49698*  
*Occupant Licence to Cut (BDRHEF Amendments 1, 2, 3) No. L49816*  
*Occupant Licence to Cut (TX Line Amendment 1, 2, 3, 4) No. L49697*  
*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*  
*Works Permit for Construction within FSR Right-of-Way No. 6123-14-01*  
*Section 52(1)(b) FRPA Authorization for Ryan River Wet Crossing File No. FOR-19400-01/2014*

**Contractor Construction Permits and Approvals**

*Magazine Licence File No. UL76018  
 Section 8 Approval – Short Term Use of Water File (Lillooet River and Tributaries) No. A2006123 (Amendment 1)  
 Waste Discharge under the Code of Practice for the Concrete and Concrete Products Industry under the Environmental  
 Management Act (Authorization No. 107204) Tracking No. 326969  
 Wildlife Act Permits – Pacific Tailed Frog Salvage Permit # SU14-95304 & SU13-90538, Fish Salvage Permit # SU14-95329  
 Section 52 of the Fisheries (General) Regulations – Fish Salvage Licence # XR 139 2014  
 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 30<sup>th</sup>, 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*

**ACRONYMS:**

<b>AMBNS</b>	Active Migratory Bird Nesting Survey	<b>IEM</b>	Independent Environmental Monitor
<b>ASMP</b>	Archaeological Sites Management Plan	<b>INX</b>	Innergex Renewable Energy Inc.
<b>ARD/ML</b>	Acid Rock Drainage and Metal Leaching	<b>ISW</b>	Instream Works
<b>BCEAO</b>	British Columbia Environmental Assessment Office	<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>BG</b>	Background	<b>MFLNRO</b>	Ministry of Forests, Lands and Natural Resource Operations
<b>BKL</b>	BKL Consultants Ltd.	<b>MOE</b>	Ministry of Environment
<b>CE</b>	CRT-ebc Construction Inc.	<b>NCD</b>	Non Classified Drainage
<b>DFO</b>	Fisheries and Oceans Canada	<b>OLTC</b>	Occupational License to Cut
<b>DS</b>	Downstream	<b>PAG</b>	Potentially Acid Generating
<b>Ecofish</b>	Ecofish Research Ltd.	<b>RoW</b>	Right of Way
<b>Ecologic</b>	Ecologic Consulting	<b>RVMA</b>	Riparian Vegetation Management Area
<b>EDI</b>	Environmental Dynamics Inc.	<b>SES</b>	Sartori Environmental Services
<b>EIR</b>	Environmental Incident Report	<b>TX Line</b>	Transmission Line
<b>ESC</b>	Erosion and Sediment Control	<b>ULRHEF</b>	Upper Lillooet River Hydroelectric Facility
<b>FAM</b>	Field Advice Memorandum	<b>UWR</b>	Ungulate Winter Range
<b>FSR</b>	Forest Service Road	<b>VC</b>	Valued Component
<b>GWR</b>	Mountain Goat Winter Range	<b>WQ</b>	Water Quality
<b>Hedberg</b>	Hedberg and Associates Ltd.	<b>WEL</b>	Westpark Electric Ltd.
<b>IE</b>	Independent Engineer (True North Energy)	<b>WEMR</b>	Weekly Environmental Monitoring Report

## 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 (on-site)	Weather Conditions	Key Monitoring Locations
Sunday, September 14	AS, MF, VD	Sun and cloud	<p><b>ULRHEF Intake Diversion Channel – South Side</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and excavating at the diversion channel</li> <li>• Shotcrete application at the top of the diversion channel shear wall</li> </ul> <p><b>ULRHEF Intake Open Cut – North Side</b></p> <ul style="list-style-type: none"> <li>• Bulk excavation began below elevation 666m by drilling and blasting</li> </ul> <p><b>ULRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and stabilization of the tunnel</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> </ul> <p><b>ULRHEF Powerhouse</b></p> <ul style="list-style-type: none"> <li>• Continued dewatering of excavation to settling ponds</li> <li>• Continued rebar installation and formwork</li> </ul> <p><b>BDRHEF Intake Access Road &amp; Crane Pad</b></p> <ul style="list-style-type: none"> <li>• Continued access road construction</li> <li>• Continued excavation of the first bench of the crane pad</li> </ul> <p><b>BDRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and tunnel stabilization</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> </ul> <p><b>BDRHEF Powerhouse</b></p> <ul style="list-style-type: none"> <li>• Continued rebar installation and formwork</li> <li>• Drilling for anchor installations</li> </ul> <p><b>TX-Line</b></p> <ul style="list-style-type: none"> <li>• <b>Segment 1</b> <ul style="list-style-type: none"> <li>➢ Line crews stringing between structures 15-23</li> </ul> </li> <li>• <b>Segment 3</b> <ul style="list-style-type: none"> <li>➢ Ground works (including blasting) between structures 44-47</li> </ul> </li> <li>• <b>Segment 5</b> <ul style="list-style-type: none"> <li>➢ Ground works - pole liner installation at structures 119, 137-138</li> </ul> </li> </ul>
Monday, September 15	MF, AS, VD, AA	Sun and cloud	<p><b>ULRHEF Intake Diversion Channel – South Side</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and excavating at the diversion channel</li> <li>• Dewatering of the Obermeyer weir excavation thru sediment filter bag</li> </ul> <p><b>ULRHEF Intake Open Cut – North Side</b></p> <ul style="list-style-type: none"> <li>• Continued bulk excavation below elevation 666m</li> </ul> <p><b>ULRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and stabilization of the tunnel</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> <li>• Temporary PAG stockpiles covered with impermeable plastic tarpaulin</li> </ul> <p><b>ULRHEF Powerhouse</b></p> <ul style="list-style-type: none"> <li>• Continued dewatering of excavation to settling ponds</li> <li>• Continued rebar installation and formwork</li> </ul> <p><b>BDRHEF Intake Access Road &amp; Crane Pad</b></p> <ul style="list-style-type: none"> <li>• Continued access road construction (including blasting)</li> <li>• Continued excavation of the first bench of the crane pad</li> </ul> <p><b>BDRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and tunnel stabilization</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> </ul> <p><b>BDRHEF Powerhouse</b></p>

Date	IEM Team Personnel (on-site)	Weather Conditions	Key Monitoring Locations
			<ul style="list-style-type: none"> <li>• Continued rebar installation and formwork</li> <li><b>TX-Line</b></li> <li>• <b>Segment 2 &amp; 3</b> <ul style="list-style-type: none"> <li>➢ Hand framing at structure 21</li> <li>➢ Stringing lines from structures 36-40</li> <li>➢ Ground works (including blasting) between structures 44-47</li> </ul> </li> <li>• <b>Segment 4</b> <ul style="list-style-type: none"> <li>➢ Hand falling in stream 52a RVMA</li> </ul> </li> <li>• <b>Segment 5</b> <ul style="list-style-type: none"> <li>➢ Machine works (excavator) at structures 119 &amp; 125</li> </ul> </li> <li>• <b>Segment 6</b> <ul style="list-style-type: none"> <li>➢ Continued RoW clearing throughout segment</li> <li>➢ Installation of beaver exclusion fencing around newly installed culvert inlets near 6km of the Lillooet South FSR</li> </ul> </li> <li>• <b>Segment 8</b> <ul style="list-style-type: none"> <li>➢ Temporary bridge installation at Black's Creek following pre-work meeting</li> </ul> </li> <li>• <b>Segment 14</b> <ul style="list-style-type: none"> <li>➢ Road works continued in the vicinity of structure 350</li> <li>➢ Hand falling near Pemberton Creek crossing within 100m CTF buffer</li> </ul> </li> </ul>
Tuesday, September 16	AS, DA, MF, TH, TJ	Sun and cloud	<ul style="list-style-type: none"> <li><b>ULRHEF Intake Diversion Channel – South Side</b></li> <li>• Drilling, blasting and excavating at the diversion channel</li> <li>• Dewatering of the Obermeyer weir excavation thru sediment filter bag</li> <li><b>ULRHEF Intake Open Cut – North Side</b></li> <li>• Continued bulk excavation below elevation 666m</li> <li><b>ULRHEF Downstream Tunnel Portal</b></li> <li>• Drilling, blasting and stabilization of the tunnel</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds, pump and oil/water separator maintenance</li> <li><b>ULRHEF Powerhouse</b></li> <li>• Continued dewatering of excavation to settling ponds</li> <li>• Concrete pour of powerhouse foundations</li> <li><b>BDRHEF Intake Access Road &amp; Crane Pad</b></li> <li>• Continued access road construction (including blasting)</li> <li>• Continued excavation of the first bench of the crane pad</li> <li><b>BDRHEF Downstream Tunnel Portal</b></li> <li>• Drilling, blasting and tunnel stabilization</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> <li><b>BDRHEF Powerhouse</b></li> <li>• Continued rebar installation and formwork</li> <li><b>TX-Line</b></li> <li>• <b>Segment 2</b> <ul style="list-style-type: none"> <li>➢ Stringing from structures 15 to 23</li> </ul> </li> <li>• <b>Segment 3</b> <ul style="list-style-type: none"> <li>➢ Ground works (including blasting) at structures 44 to 47</li> </ul> </li> <li>• <b>Segment 4</b> <ul style="list-style-type: none"> <li>➢ Hand falling in RVMAs progressing through Segments 4 &amp; 5</li> <li>➢ Spider hoe installing pole anchors within stream 73b RVMA</li> </ul> </li> <li>• <b>Segment 5</b> <ul style="list-style-type: none"> <li>➢ Hand falling in RVMAs progressing through Segments 4 &amp; 5</li> <li>➢ Ground works at structures 136 and 137</li> </ul> </li> <li>• <b>Segment 6</b> <ul style="list-style-type: none"> <li>➢ Continued RoW clearing throughout segment</li> </ul> </li> <li>• <b>Segment 8</b></li> </ul>



Date	IEM Team Personnel (on-site)	Weather Conditions	Key Monitoring Locations
			<ul style="list-style-type: none"> <li>➤ Installation of temporary bridge over Black Creek</li> <li>• <b>Segment 9</b> <ul style="list-style-type: none"> <li>➤ RoW clearing near structures 203 to 204</li> </ul> </li> <li>• <b>Segment 14</b> <ul style="list-style-type: none"> <li>➤ Road works continued in the area of structure 348 and branch road 341.1 near Pemberton Creek</li> </ul> </li> </ul>
Wednesday, September 17	MF, KM, TJ, AA, DA	Sun and cloud	<p><b>ULRHEF Intake Diversion Channel – South Side</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and excavating at the diversion channel</li> <li>• Dewatering of the Obermeyer weir excavation thru sediment filter bag</li> </ul> <p><b>ULRHEF Intake Open Cut – North Side</b></p> <ul style="list-style-type: none"> <li>• Continued bulk excavation below elevation 666m</li> </ul> <p><b>ULRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and stabilization of the tunnel</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds, pump and oil/water separator maintenance</li> <li>• Restoration planting of the temporary haul road and auditory berm</li> </ul> <p><b>ULRHEF Powerhouse</b></p> <ul style="list-style-type: none"> <li>• Continued dewatering of excavation to settling ponds</li> <li>• Continued rebar installation and formwork</li> </ul> <p><b>BDRHEF Intake Access Road &amp; Crane Pad</b></p> <ul style="list-style-type: none"> <li>• Continued access road construction (including blasting)</li> <li>• Continued excavation of the first bench of the crane pad</li> </ul> <p><b>BDRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and tunnel stabilization</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> </ul> <p><b>BDRHEF Powerhouse</b></p> <ul style="list-style-type: none"> <li>• Continued rebar installation and formwork</li> </ul> <p><b>TX-Line</b></p> <ul style="list-style-type: none"> <li>• <b>Segment 2</b> <ul style="list-style-type: none"> <li>➤ Stringing from structures 23 to 25</li> </ul> </li> <li>• <b>Segment 3</b> <ul style="list-style-type: none"> <li>➤ Ground works (including blasting) at structures 44 to 47</li> </ul> </li> <li>• <b>Segment 4</b> <ul style="list-style-type: none"> <li>➤ Hand falling in RVMAs progressing through Segments 4 &amp; 5</li> <li>➤ Spider hoe installing pole anchors within stream 73b RVMA</li> </ul> </li> <li>• <b>Segment 5</b> <ul style="list-style-type: none"> <li>➤ Hand falling in RVMAs progressing through Segments 4 &amp; 5</li> <li>➤ Ground works at structure 138</li> </ul> </li> <li>• <b>Segment 9</b> <ul style="list-style-type: none"> <li>➤ RoW clearing near structures 203 to 204</li> </ul> </li> <li>• <b>Segment 14</b> <ul style="list-style-type: none"> <li>➤ Road works continued in the area of structure 348 and branch road 341.1 near Pemberton Creek</li> </ul> </li> </ul>
Thursday, September 18	MF, KM, AA, VD	Periods of rain	<p><b>ULRHEF Intake Diversion Channel – South Side</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and excavating of the Obermeyer weir location</li> <li>• Dewatering of the Obermeyer weir excavation thru sediment filter bag</li> </ul> <p><b>ULRHEF Intake Open Cut – North Side</b></p> <ul style="list-style-type: none"> <li>• Continued bulk excavation below elevation 666m</li> </ul> <p><b>ULRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and stabilization of the tunnel</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds, pump and oil/water separator maintenance</li> <li>• Restoration planting of the temporary haul road and auditory berm</li> </ul> <p><b>ULRHEF Powerhouse</b></p> <ul style="list-style-type: none"> <li>• Continued dewatering of excavation to settling ponds</li> </ul>

Date	IEM Team Personnel (on-site)	Weather Conditions	Key Monitoring Locations
			<ul style="list-style-type: none"> <li>• Continued rebar installation and formwork</li> <li><b><i>BDRHEF Intake Access Road &amp; Crane Pad</i></b></li> <li>• Continued access road construction (including blasting)</li> <li>• Continued excavation of the first bench of the crane pad</li> <li><b><i>BDRHEF Downstream Tunnel Portal</i></b></li> <li>• Drilling, blasting and tunnel stabilization</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> <li><b><i>BDRHEF Powerhouse</i></b></li> <li>• Concrete pour of powerhouse foundation</li> <li><b><i>TX-Line</i></b></li> <li>• <b><i>Segment 2</i></b> <ul style="list-style-type: none"> <li>➢ Stringing from structures 15 - 23</li> </ul> </li> <li>• <b><i>Segment 3</i></b> <ul style="list-style-type: none"> <li>➢ Ground works (including blasting) at structures 44</li> </ul> </li> <li>• <b><i>Segment 4</i></b> <ul style="list-style-type: none"> <li>➢ Hand falling within RVMA and prescribed Grizzly Bear screens in the vicinity of structures 70 to 74</li> </ul> </li> <li>• <b><i>Segment 5</i></b> <ul style="list-style-type: none"> <li>➢ Ground works at structure 119</li> </ul> </li> <li>• <b><i>Segment 9</i></b> <ul style="list-style-type: none"> <li>➢ RoW clearing and helipad works near structures 202 to 206</li> </ul> </li> <li>• <b><i>Segment 14</i></b> <ul style="list-style-type: none"> <li>➢ RoW clearing between structures 329 – 330</li> <li>➢ Road works continued in the area of structure 348 and branch road 341.1 near Pemberton Creek</li> </ul> </li> </ul>
Friday, September 19	MF, KM, AA, VD	Sun and cloud	<ul style="list-style-type: none"> <li><b><i>ULRHEF Intake Diversion Channel – South Side</i></b></li> <li>• Grouting of Obermeyer weir rebar-rock anchors began</li> <li>• Dewatering of the Obermeyer weir excavation thru sediment filter bag</li> <li><b><i>ULRHEF Intake Open Cut – North Side</i></b></li> <li>• Continued bulk excavation below elevation 666m</li> <li><b><i>ULRHEF Downstream Tunnel Portal</i></b></li> <li>• Drilling, blasting and stabilization of the tunnel</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds, pump and oil/water separator maintenance</li> <li>• Restoration planting of the temporary haul road and auditory berm completed</li> <li><b><i>ULRHEF Powerhouse</i></b></li> <li>• Continued dewatering of excavation to settling ponds</li> <li>• Continued rebar installation and formwork</li> <li><b><i>BDRHEF Intake Access Road &amp; Crane Pad</i></b></li> <li>• Continued access road construction (including blasting)</li> <li>• Continued excavation on the first bench of the crane pad</li> <li><b><i>BDRHEF Downstream Tunnel Portal</i></b></li> <li>• Drilling, blasting and tunnel stabilization</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> <li><b><i>BDRHEF Powerhouse</i></b></li> <li>• Continued rebar installation and formwork</li> <li><b><i>Tx-Line</i></b></li> <li>• <b><i>Segment 3</i></b> <ul style="list-style-type: none"> <li>➢ RoW falling near structure 47.</li> </ul> </li> <li>• <b><i>Segment 4 &amp; 5</i></b> <ul style="list-style-type: none"> <li>➢ Hand falling within the North Creek RVMA</li> <li>➢ Hand falling snags and hazard trees from 19 – 33km of the Lillooet River FSR.</li> </ul> </li> </ul>

Date	IEM Team Personnel (on-site)	Weather Conditions	Key Monitoring Locations
			<ul style="list-style-type: none"> <li>• <b>Segment 14</b> <ul style="list-style-type: none"> <li>➢ RoW clearing between structures 329 – 330.</li> <li>➢ Road works continued in the area of structure 348 and branch road 341.1 near Pemberton Creek</li> </ul> </li> </ul>
Saturday, September 20	MF, KM, VD	Sun and cloud	<p><b>ULRHEF Intake Diversion Channel – South Side</b></p> <ul style="list-style-type: none"> <li>• Drilling and grouting of Obermeyer weir rebar-rock anchors continued</li> <li>• Dewatering of the Obermeyer weir excavation thru sediment filter bag</li> </ul> <p><b>ULRHEF Intake Open Cut – North Side</b></p> <ul style="list-style-type: none"> <li>• Continued bulk excavation below elevation 666m</li> </ul> <p><b>ULRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and stabilization of the tunnel</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds, pump and oil/water separator maintenance</li> </ul> <p><b>ULRHEF Powerhouse</b></p> <ul style="list-style-type: none"> <li>• Continued dewatering of excavation to settling ponds</li> <li>• Continued rebar installation and formwork</li> </ul> <p><b>BDRHEF Intake Access Road &amp; Crane Pad</b></p> <ul style="list-style-type: none"> <li>• Continued access road construction (including blasting)</li> <li>• Continued excavation of the first bench of the crane pad</li> </ul> <p><b>BDRHEF Downstream Tunnel Portal</b></p> <ul style="list-style-type: none"> <li>• Drilling, blasting and tunnel stabilization</li> <li>• Seepage from tunnel pumped from sump at portal entrance into settling ponds</li> </ul> <p><b>BDRHEF Powerhouse</b></p> <ul style="list-style-type: none"> <li>• Continued rebar installation and formwork</li> </ul> <p><b>Tx-Line</b></p> <ul style="list-style-type: none"> <li>• <b>Segment 14</b> <ul style="list-style-type: none"> <li>➢ Road works continued in the area of structure 348 and branch road 341.1 near Pemberton Creek</li> </ul> </li> </ul>

**IEM Team Personnel:** TH – Tom Hicks; MF – Matt Fuller; KM – Kathy Mai; AS – Anne Sutherland; VD – Vanessa Dan; AA – Anthony Andrews; DA – Danita Abraham; TJ – Tammie Jenkins

## 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.
September 14	<i>email</i>	INX, CE, SES, MFLNRO, CO	IEM notified of Grizzly Bear sighting by project personnel. The sighting was reported to agencies by the IEM within 24 hours of the sighting.	-
September 15	<i>Pre-work meeting</i>	WEL, Mumleqs, SES	Temporary bridge over Blacks Creek – Reviewed the work plan highlighting the requirement for IEM presence, and mitigations associated with working near water. WEL confirmed that no instream works were required for the footing installations and that no fording of the channel would be required.	-
	<i>emails</i>	INX, MFLNRO, SES	Lillooet South FSR road upgrades – INX responded to the MFLNRO request for further information. A QP prepared memo was submitted outlining why two proposed culverts locations were unsuitable, the rationale for the inlet structures at the twin 1000mm culverts, and the schedule for the installation of beaver exclusion fencing at the culvert inlets.	-



Date	Communication Type	Participants	Issues Discussed	ITM ID No.
September 16	<i>email</i>	INX, WEL, CE, SES	Updated resource road radio channels – INX sent a simplified radio channel frequency map to all contractors as a reminder that the use of the new radio frequencies is mandatory for all project related personnel and vehicles.	-
	<i>email</i>	INX, CE, MFLNRO, SES	ULHP Truckwash Creek Slope Stability Analysis Report – Submitted to MFLNRO.	-
	<i>Site inspection</i>	JEM, SES, INX, CE	Monthly IE inspection of all work areas.	-
September 16 – September 19	<i>emails</i>	INX, WEL, SES	RVMA clearing prescriptions for Segments 6 – 16. INX provided confirmation to the contractor that the Licencee and IEM reviewed and were satisfied with the Work Plan. A pre-work meeting is scheduled for early next week.	-
September 18 - 20	<i>Emails, teleconference</i>	INX, CE, SES	ULRHEF penstock clearing plan – The IEM and Licensee requested that mitigation measures for project VCs be clarified prior to submission of the work plan.	-
September 20	<i>Pre-work meeting</i>	INX, CE	Obermeyer Weir construction – reviewed work plan and dewatering plan for formwork, rebar, and concrete pours.	-

### 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
Tx-Line	Segments 1 –11, & 14	Within 150m of wetlands or 100m of Coastal Tailed-Frog Streams	IEM presence is required when clearing within 150m of wetlands or 100m of Coastal Tailed-Frog Streams, to ensure clearing area is minimized.
		Riparian Vegetation Management Areas (RVMA)	IEM monitoring is required during clearing within RVMAs.
		Old Growth Management Areas (OGMAs)	IEM monitoring is required when clearing within legally designated OGMAs, to ensure clearing area is minimized.
		Ungulate Winter Range (UWR)	IEM monitoring is required when clearing within identified deer and moose UWR, to ensure clearing area is minimized.
		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 area is minimized.
ULRHEF powerhouse, and Intake diversion	Within 50m of identified archeologically significant area	Archaeologically significant site EdRu-3	The ASMP recommends that an archaeological technician from the Lil'wat Nation be present to monitor initial ground-disturbance activities within 50m of the EdRu-3 site boundaries.

channel	Within 30m of the Upper Lillooet River	Riparian area and fish bearing streams	IEM presence is required when working within 30m of the Upper Lillooet River. Instream acoustic pressure monitoring required at the discretion of the IEM when blasting within 30m of the Upper Lillooet River.
Lillooet River FSR; ULRHEF intake access; FSR realignment at Truckwash Creek	Access roads above the lower limit of the 200m buffer Truckwash Creek Migration Corridor to the ULRHEF intake; including FSR realignment at Truckwash Creek	Mountain Goat UWR	If a goat is observed within 500m of construction operations, construction must cease for at least 48 hours. The IEM must record and submit all goat observations to FLNR within 48 hours.
BDRHEF intake	Portion of intake access road and crane pad within UWR	Mountain Goat UWR	IEM monitoring is required when clearing within UWR to ensure that clearing areas are minimized.  If a goat is observed within 500m of construction operations, construction must cease for at least 48 hours. The IEM must record and submit all goat observations to MFLNRO within 48 hours.

## 4.0 Upper Lillooet River HEF – Monitoring Results

### 4.1 Intake (North & South Sides) and Access Roads

#### Construction Activities:

- Shotcrete works on vertical slopes above the Obermeyer weir was completed on September 14.
- Drilling, blasting and excavation works continued during day and night shift within the intake diversion channel concentrating on the Obermeyer weir footprint (Photo 1) on the south side of the Lillooet River. Drilling and grouting of the rebar-rock anchors began on September 19 and continued on September 20.
- Bulk excavation activities for the ULRHEF upstream tunnel portal began below elevation 666m on September 14<sup>th</sup> and continued throughout this reporting period on the north side (Photo 4) of the Lillooet River. Drilling and blasting activities began once rock was encountered in the excavation.
- A gravity fed water extraction system was used for drilling activities according to the conditions of the Short Term Water Use Approval (No.A2006123).

#### Environmental Summary:

- On September 19, the IEM recommended that grouting of the rebar-rock anchors within the Obermeyer weir excavation cease as no pH adjustment equipment was onsite and grouting works were in direct contact with seepage water. Although no exceedance of BCWQGs was noted (pH remained below 9) the IEM determined that insufficient pH mitigation measures were in place should a rise in pH occur. CE's

Environmental Manager halted works until a CO<sub>2</sub> diffuser was brought to site to treat water in contact with grouting works. Seepage water within the Obermeyer weir excavation was managed in two separate cells. In the first cell, seepage water was conveyed directly back to the river via a dewatering bag (Photo 3). The seepage water in contact with grouting works were isolated (Photo 4) and treated with a CO<sub>2</sub> diffuser in one half of the 2<sup>nd</sup> cell before mixing with neutral pH seepage water in the other half of the 2<sup>nd</sup> cell. The treated and diluted water was then directed through a dewatering bag place on the lower section of the diversion channel (Photo 3). The IEM was onsite full-time to monitor turbidity and pH during the grouting works. When pH levels within the 2<sup>nd</sup> cell began to approach pH = 9 the pumps were shut-off until the pH dropped below 8.5. The grouting activities were successfully managed in this way and no environmental incidents of elevated pH discharge to the Lillooet River were recorded.

- The IEM continues to monitor construction activities within 30m of the Lillooet River during day and night shifts.
- No environmental issues were observed on the north side of the Lillooet River during bulk excavation works.
- Dust control along the ULRHEF intake access roads and Lillooet River FSR continued as necessary.

Photos:



**Photo 1 – Continued excavation of ULRHEF intake diversion channel, within the Obermeyer weir footprint (September 20, 2014).**



**Photo 2 – ULRHEF north side tunnel portal excavation below elevation 666m (September 18, 2014).**



**Photo 3 – ULRHEF intake diversion channel, dewatering bag for seepage control during grouting works (September 20, 2014).**



**Photo 4 – Measuring pH in isolated section of Obermeyer weir excavation. This water was treated with a CO<sub>2</sub> and confirmed to be below pH 9 prior to reaching the pump (September 19, 2104).**

## **4.2 Downstream Tunnel Portal**

### Construction Activities:

- Drilling, blasting, mucking and stabilization (anchoring and shotcrete application) continued within the tunnel (Photo 5). Seepage water from the tunnel portal was conveyed effectively to the settling ponds for treatment and storage. Pooling of water at the tunnel portal entrance was observed on September 16, and maintenance of the sump and tunnel ditch was completed on September 17.
- Restoration planting of the temporary haul road and auditory berm within the Mountain Goat migration corridor was completed from September 17-19 (Photo 6).

### Environmental Summary:

- The temporary PAG stockpiles located near the ULRHEF lower tunnel portal were covered with an impermeable tarp to prevent rain water infiltration according to the ARD/ML Monitoring and Control Plan (Photo 7). This material will be temporarily stored in its current location until a final storage plan is presented for review and approval.
- The settling ponds (Photo ) installed adjacent to Truckwash Creek were used to treat the seepage and process water emanating from the tunnel. No surface discharge from the sediment ponds was observed this week; therefore no WQ measurements were taken by the IEM.
- Blast rock was hauled to the lower spoil area and managed according to the ULRHEF ARD/ML Monitoring and Control Plan.



Photos:



**Photo 5 – ULRHEF downstream tunnel portal (September 16, 2014).**



**Photo 6 – Restoration planting along the temporary haul road near the ULRHEF downstream tunnel portal (September 17, 2014).**



**Photo 7 – Temporary PAG stockpiles located near the ULRHEF downstream tunnel portal were covered with impermeable plastic tarps (September 15, 2014).**



**Photo 8 – Inlet of the ULRHEF settling ponds, no discharge observed (September 16, 2014).**

### **4.3 Powerhouse & Access Road**

Construction Activities:

- Rebar installation and form works for the powerhouse foundation continued throughout the reporting period.
- A portion of the concrete powerhouse foundation was poured on the 16<sup>th</sup> of September (Photo 9).
- Two pumps (6" and 10") previously installed in the sump draining seepage waters in the powerhouse excavation continued to convey water to the existing settling ponds.

No flowing surface water was observed within the excavation and pump capacity appears to be adequate to maintain isolation from active work areas.

Environmental Summary:

- Turbidity was visually monitored during periodic visits to the ULRHEF powerhouse by the IEM. Water entering the Lillooet River from the discharge (through vegetation) of the settling ponds remained within water quality guidelines during each inspection and concrete poured for the mud slabs and powerhouse foundation did not come in contact with the seepage water during this reporting period, as no leak in the form work were observed (Photo 10). Future opportunistic WQ sampling will be conducted at the discretion of the IEM.

Photos:



**Photo 9 – Concrete pour for ULRHEF powerhouse foundation (September 16, 2014).**



**Photo 10 – Settling ponds at ULRHEF powerhouse, dewatering from excavation remains isolated from concrete works (September 16, 2104).**

#### **4.4 Water Quality Results**

The following table presents the results of the routine water quality 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 regular monitoring sites have been selected 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 melt fluctuations and large tributary inputs. In the event that an exceedance of *in-situ* water quality (turbidity or pH) is deemed to be caused by 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, the exceedance will be marked by an asterisk (\*).



Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (µS)	Temp (°C)
<b>Routine Water Quality</b>						
September 20, 2014	8:45	<b>ULR Background</b> – ULRHEF Intake	8.0	43.0	40	Na
	9:10	<b>ULR #0.5</b> – Downstream of ULRHEF intake at Keyhole Bridge (new site)	8.0	42.6	42	Na
	9:25	<b>ULR # 1</b> – Upstream of ULRHEF Powerhouse	8.1	47.7	43	Na
	10:09	<b>ULR #2</b> – Downstream of ULRHEF Powerhouse between 40.5k and 41k	8.1	50.4	44	Na
	10:20	<b>ULR #3</b> – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence	8.0	26.5	40	Na
	10:31	<b>ULR #4</b> – Lillooet River FSR 24km – D/S of all works and Meager confluence	8.0	26.6	39	Na

## 4.5 Recommendations

IEM recommendations for the ULRHEF are as follows:

- On September 19, the IEM met with the contractor's Environmental Manager at the ULRHEF intake to discuss pH management concerns with the grouting works in the Obermeyer Weir foundation. The IEM recommends that a static mixer type manual pH adjustment system be sourced and used for the remainder of the grouting activities. It was agreed that the Environmental Manager would discuss potential options and communicate back to the IEM.
- Settling ponds at the downstream portal should be continually monitored to ensure appropriate treatment of seepage from tunnelling activities is occurring. Although dry weather persists, rain events typical of the changing season may result in increased water volumes and current infiltration rates may result in discharge from the ponds. The pH treatment measures proposed for the grouting works at the ULRHEF intake diversion channel could be used for the downstream portal dewatering in the event that the treatment ponds begin to overflow and require treatment.
- Cut slopes directly adjacent to the ULRHEF intake and powerhouse have been identified by the IEM as requiring additional ESC protection. The contractor is aware and will be implementing measures in the coming reporting periods.

## 4.6 Upcoming Works

The following new and/or environmentally sensitive construction activities are scheduled to occur at the ULRHEF in the upcoming reporting period(s):

- Grouting of the Obermeyer weir structure anchors within the ULRHEF intake diversion channel is to continue in the next reporting period.
- Bulk excavation at the north side ULRHEF intake open cut below elevation 666m will continue and will required excavation and drilling and blasting in close proximity to the Lillooet River.

## 5.0 Boulder Creek Hydroelectric Facility – Monitoring Results

### 5.1 Intake Access Road & Crane Pad

#### Construction Activities:

- Sequences of drilling, small controlled blasts, and blast rock excavation proceeded on the first bench of the crane pad throughout the reporting period (Photo 12). Care was taken to prevent material from escaping down the slope adjacent to the excavation.
- Intake access road construction, including bulk excavation (Photo 11); material spoiling; slope contouring; drilling and blasting; and road fill/grading (Photo 11) continued throughout the reporting period.

#### Environmental Summary:

- Construction activities occurred along the BDRHEF intake access road and crane pad with the IEM onsite for construction activities within 30m of Boulder Creek. No environmental issues were observed.

#### Photos:



Photo 11 – BDRHEF Intake access road construction (September 16, 2014).



Photo 12 – BDRHEF crane pad excavation at upper pad (September 16, 2014).

### 5.2 Downstream Tunnel Portal and Powerhouse

#### Construction Activities:

- Rebar installation and formworks (Photo ) at the powerhouse continued throughout the reporting period.
- Concrete works – Powerhouse foundation pour occurred on September 17, 2014.
- Drilling, blasting, mucking and stabilization (anchoring and shotcrete application) continued within the tunnel.

Environmental Summary:

- The concrete poured for the powerhouse foundation was completed in the dry and fully isolated from seepage water. No environmental issues were observed.
- The gravity fed water diversion system was used in tunneling and shotcrete process works in accordance with Short Term Water Use Approval (No.A2006123). No WQ or environmental concerns were noted within Boulder Creek.
- Seepage flowing out of the tunnel continues to be collected at the portal tunnel entrance in a sump and this water is then pumped from the sump to the oil/water separator, pH adjustment holding tank, and settlement ponds for treatment. The pH was monitored daily by the contractor and a CO<sub>2</sub> diffuser was used as necessary to ensure pH was within acceptable surface water quality guidelines (pH 6.5 – 9). No discharge from the treatment ponds occurred during this reporting period (Photo 14); therefore, the IEM did not collect WQ results. The first pond is now completely full of sediment and requires maintenance (Photo 14). The maintenance of these ponds was discussed with the Environmental Manager and it was agreed that confirmatory samples would be taken to determine whether the sediment (mostly rock fines from the tunnel drilling activities) should be treated as PAG or non-PAG.
- Water from the Boulder Creek water withdrawal site authorized in the Short Term Water Use Approval (No.A2006123) was used effectively for dust suppression above KM 37.5 of the Lillooet River FSR and on active construction site access roads.

Photos:



Photo 13 – BDRHEF downstream tunnel portal and powerhouse rebar/formworks (September 18, 2014).



Photo 14 – BDRHEF powerhouse settling pond, no discharge observed; however pond #1 is now full of sediment and requires maintenance. (September 16, 2014).

**5.3 Water Quality Results**

The following table presents the results of the routine water quality 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 regular monitoring



sites have been selected 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 Boulder Creek due to seasonal fluctuations in snowmelt. In the event that an exceedance of *in-situ* water quality (turbidity or pH) is deemed to be caused by 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, the exceedance will be marked by an asterisk (\*).

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (µS)	Temp (°C)
<b>Routine Water Quality</b>						
NA	NA	<b>BDR Background</b> –Upstream of BDRHEF intake *not currently accessible*	-	-	-	-
NA	NA	<b>BDR #1</b> – Downstream of BDRHEF intake *not currently accessible*	-	-	-	-
September 20, 2014	14:30	<b>BDR #2</b> – Upstream of BDRHEF Powerhouse	7.8	43.3	45	Na
September 20, 2014	15:00	<b>BDR #3</b> – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge	8.0	57.4	59	Na

#### **5.4 Recommendations**

IEM recommendations for the BDRHEF are as follows:

- Settling ponds at the downstream portal should be continually monitored to ensure appropriate treatment of seepage from tunnelling activities is occurring. Although dry weather persists, rain events typical of the changing season may result in increased water volumes and current infiltration rates may result in discharge from the ponds. The maintenance of these ponds was discussed with the Environmental Coordinator and it was agreed that confirmatory samples would be taken to characterize whether the sediment/slurry (mostly rock fines from the tunnel drilling activities) should be treated as PAG or non-PAG.

#### **5.5 Upcoming Works**

The following new and/or environmentally sensitive construction activities are scheduled to occur at the BDRHEF in the upcoming reporting period(s):

- Construction is scheduled to continue on the intake access road and crane pad a portion of which extends within the 30m riparian buffer and UWR.

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

#### **6.1 Transmission Line by Segment**

##### Construction Activities:

##### **Segment 1**

- Line crews stringing between structures 15-23

**Segment 2**

- Hand framing at structure 21
- Stringing lines from structures 15-25, 36-40

**Segment 3**

- Ground works (including blasting) between structures 44-47
- RoW falling near structure 47

**Segment 4**

- Hand falling in stream 52a RVMA
- Hand falling within RVMA and prescribed Grizzly Bear screens in the vicinity of structures 70 to 74
- Spider hoe installing pole anchors within stream 73b RVMA

**Segment 5**

- Ground works – pole liner installation at structures 119, 125, 137-138
- Hand falling within the North Creek RVMA
- Hand falling snags and hazard trees from 19 to 33km of the Lillooet River FSR

**Segment 6**

- Continued RoW clearing via helicopter access throughout segment
- Installation of beaver exclusion fencing around newly installed culvert inlets near 6km of the Lillooet South FSR (Photo 15)

**Segment 8**

- Temporary bridge installation at Black's Creek following pre-work meeting

**Segment 9**

- RoW clearing near structures 202 to 206

**Segment 14**

- Hand falling near Pemberton Creek crossing within 100m CTF buffer
- Continued RoW clearing (hand-falling) and road works

*Environmental Summary:*

- The Blacks Creek temporary bridge installation was monitored by the IEM on September 15<sup>th</sup>, following a pre-work meeting. The installation did not involve any instream works and no fording of machinery was required (Photo 16). Water quality remained visually unaffected throughout the work activities and no environmental concerns were noted.

- Beaver exclusion fencing surrounding the inlets of the two 1000mm culverts (Photo ) at approximately 6km of the Lillooet South FSR was installed prior to September 15 which coincides with the end of the 2014 ISW window for the works area. No environmental issues were observed.
- The IEM was present as required when clearing activities occurred within 150m of wetlands, 15m RVMAs (30m for CTF streams), 100m of Coastal Tailed Frog Streams, Class 1 & 2 suitable Grizzly Bear WHA and/or suitable forage habitat, moose and deer UWR, and within legally designated Old Growth Management Areas (OGMAs). All flagged boundaries were respected during clearing activities. No environmental issues were observed.

Photos:



**Photo 15 – South Lillooet FSR – Beaver exclusion fencing installed at the inlet of the doubled 1000mm culverts (September 15, 2014).**



**Photo 16 – Excavator installing temporary bridge footing at Blacks Creek Temporary Bridge. No instream works were required (September 15, 2014).**

## 6.2 Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded at active Tx-line work areas during this reporting period. Construction and clearing activities had no visual effect on WQ.					

## 6.3 Recommendations

No recommendations are provided for this reporting period.

## 6.4 Upcoming Works

The following new and/or environmentally sensitive construction activities are scheduled to occur along the Tx line in the upcoming reporting period(s):

- The majority of works described in the construction activities section described above will continue. Construction activities are tentatively scheduled to continue



within RVMAs (Segment 5 & 14), as well as within 100m CTF (Segment 5 & 14) and 150m western toad breeding pond (Segment 3 & 5) buffers.

- Segment 8 road construction and preparations for the permanent bridge approaches will continue past the Blacks Creek temporary bridge crossing at the beginning of road 197.1.
- Road upgrades will continue in Segment 14 past the end of Pemberton Main FSR along road 371.1 including continued box culvert construction in dry stream bed (stream 347a).

## 7.0 Wildlife Sightings

As per the CEMP, a wildlife sightings record has been implemented and will be updated regularly by Project Personnel. It is mandatory for all personnel to report wildlife sightings including, but not limited to bears, cougars, mountain goats and deer. Wildlife sighting will be reported and recorded by the contractor(s) and will be submitted to the IEM on a weekly basis. Wildlife Observation forms will be summarized on a monthly basis and appended to the first WEMR of the following month. 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

A Grizzly Bear sighting was reported on September 14, 2014. All parties identified in the above table were notified within 24hr of the sighting log submission to the IEM. The sighting log is appended to this report.

## 8.0 Mountain Goat Monitoring Program

The critical early summer forage period for Mountain Goats ended; therefore Mountain Goat Monitoring has been temporarily suspended until the fall monitoring period as outlined in the Mountain Goat Management Plan.

No Mountain Goats were observed within 500m line of sight of construction activities during this reporting period; therefore no work stoppages were required.

## 9.0 Environmental Issues Tracking Matrix (ITM)

### 9.1 Hydroelectric Facilities (ULRHEF & BDRHEF)



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#17	Open	BDR Intake Access Road	Damage to standing timber and impacts outside of minimized clearing boundary & approved OLTC limit (both within and adjacent to UWR)	1. Prepare and submit EIR#011 outlining the root cause of the incident and how it will be avoided in future.	July 25, 2014	July 30, 2014	August 1, 2014
				2. Assess damage to standing timber and impacts outside of the minimized clearing boundaries and approved OLTC (both within and adjacent to UWR). Preliminary information has been provided to satisfy the requirements of ULR#18, however detailed survey is necessary to confirm impacted areas and access is currently not available due to slope stability issues.	Confirmed in Hedberg report July 25, 2014	Pending safe work access – mid-September, 2014	-
<i>next ITM – ULR#20</i>							

### 9.2 Transmission Line

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Date for Completion	Date Issue Closed
<i>No outstanding environmental issues (next ITM – Tx#2)</i>							

Appendix B. Bear sighting log.

**BEAR OBSERVATION CARD**  
Return to: Local BC Parks Office

BC 9587  

14/09/14 14 311 Upper Lillooet River  
YY/MM/DD Time (24 hrs) District Name of Protected Area

Observer Name, Address and Phone Number: Daniel Sauve (604) 894-8002

Location in protected area (i.e., name of campground, campsite, dayuse area, trail name, lake, stream, nearest geographic feature, etc.): Lillooet River FSR km 46.5

Elevation (metres or feet) Observer Distance (metres or feet)

U.T.M. Zone Easting or Longitude Northing or Latitude

Weather: Rain, Overcast, Cloudy, Clear Map Datum: NAD27  NAD83  GPS

Bear Species: Grizzly bear Black bear Unknown ID Confidence: High Medium Low

Colour code: Reddish-brown, Black, Grey, Dark brown, Light brown, Blond, Other:

Distinguishing features (tag, collar, scars): NONE

Abundance: Common, Frequent, Occasional, Rare

Observation Type: sighting, track, scat, digging, hair, foraging sign, rub tree, bed, den

Number Observed: Adult male  Adult fem.  1 Young of yr.  2 Sub-Adult  Unclassified

Food association: None, odour, unattended garbage, vehicle cache Was the bear aware of your presence? Yes No N/A

Bear(s) activity: a) feeding b) hunting c) fishing d) scavenging e) drinking f) travelling g) bedded h) courtship/mating  
i) playing j) call k) fighting Other:

Reaction: a) indifferent b) flee c) curious d) food seeking e) illegally fed f) threatening g) charge h) rut i) fight j) play k) travel  
Other:

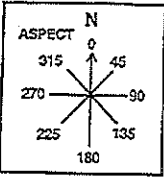
Estimated level of habituation: a) sighting or sign b) normal behaviour - avoids people c) reacts defensively after surprise or provocation d) tolerates but ignores people e) shows repeated interest in people f) habituated to people and their food g) displays aggressive behaviour, threat to humans h) unknown

Repeat offender: Yes No

If yes, provide background information (i.e., complaint/occurrence report)

Photographs: Yes  No

Aspect Diagram Notes: Daniel was driving on the FSR & saw the 3 bears on the road. He followed them slowly until they got in the woods. They (the young) seemed curious & kept looking @ him, but the mom disappeared quickly. The young followed her shortly after.



Slope: \_\_\_\_\_%

N.B. Ensure complaint / occurrence report and BC problem wildlife form (if required) are completed, if there was property damage or if further action required in dealing with bear sighting, i.e., destroy, relocation or aversive conditioning.

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