

# Upper Lillooet Hydro Project

## Weekly Environmental Monitoring Report #14

**Reporting Period: December 15<sup>th</sup> – December 21<sup>st</sup>, 2013**

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)

*Environmental Assessment Certificate No. E13-01 (Amendment 2)*  
*Fisheries Act Subsection 35(2)(b) Authorization No. 09-HPAC-PA2-00303*  
*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*

*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) No. L49717*  
*Occupant Licence to Cut (TX Line S.1-S5, Heli Pads) No. L49697 (Amendment 1)*  
*Occupant Licence to Cut (Construction Camp) No. L49698*

*Occupant Licence to Cut (BDRHEF - Intake, Powerhouse, Roads and Infrastructure) No. L49816*

*General Wildlife Measure Exemption Approval Letter (TX Line) File No. 78700-35/06 UWR and 39585-20 WHA*  
*Road Use Permit No. 6123-13-02*

Distribution List		Prepared By
Name	Organization	
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**ACRONYMS:**

BCEAO	British Columbia Environmental Assessment Office
BCWQG	British Columbia Water Quality Guidelines
BDRHEF	Boulder Creek Hydroelectric Facility
BG	Background
BKL	BKL Consultants Ltd.
CRT-EBC	CRT-EBC Construction Inc.
DFO	Fisheries and Oceans Canada
DS	Downstream
Ecofish	Ecofish Research Ltd.
Ecologic	Ecologic Consulting
ESC	Erosion and Sediment Control
FSR	Forest Service Road
GWR	Mountain Goat Winter Range
Hedberg	Hedberg and Associates Ltd.
IEM	Independent Environmental Monitor
Innergex	Innergex Renewable Energy Inc.
ITM	Issue Tracking Matrix
LTC	Leave to Construct
MFLNRO	Ministry of Forests, Lands and Natural Resource Operations
MOE	Ministry of Environment
RVMA	Riparian Vegetation Management Area
SES	Sartori Environmental Services
TX Line	Transmission Line
ULRHEF	Upper Lillooet River Hydroelectric Facility
UWR	Ungulate Winter Range
WQ	Water Quality
WEL	Westpark Electric Ltd.
WEMR	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:

Day	Date	IEM Team Personnel	Weather Conditions	Monitoring Locations & Key On-site Environmental Information
Sunday	Dec 15	-	-	<b>ULRHEF &amp; BDRHEF Construction Camp</b> <ul style="list-style-type: none"> <li>Grubbing and grading continued</li> <li>Construction of a noise barrier berm continued</li> </ul>
Monday	Dec 16	-	-	<b>ULRHEF &amp; BDRHEF Construction Camp</b> <ul style="list-style-type: none"> <li>Grubbing and grading continued</li> <li>Construction of a noise barrier berm continued</li> </ul>
Tuesday	Dec 17	-	-	<b>ULRHEF &amp; BDRHEF Construction Camp</b> <ul style="list-style-type: none"> <li>Grubbing and grading continued</li> <li>Construction of a noise barrier berm continued</li> </ul>
Wednesday	Dec 18	TH	Clear skies	<b>ULRHEF &amp; BDRHEF Construction Camp</b> <ul style="list-style-type: none"> <li>Grubbing and grading continued</li> <li>Construction of a noise barrier berm continued</li> <li>Demobilization of equipment began</li> </ul>
Thursday	Dec 19	-	-	<b>ULRHEF &amp; BDRHEF Construction Camp</b> <ul style="list-style-type: none"> <li>No construction activities</li> <li>Demobilization of equipment completed for winter shutdown</li> </ul>
Friday	Dec 20	-	-	<b>Winter shutdown of all activities in effect</b>
Saturday	Dec 21	-	-	<b>Winter shutdown of all activities in effect</b>

*IEM Team Personnel: TH – Tom Hicks*

## 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.
Dec. 18	Site meeting	CRT-EBC, SES	<ul style="list-style-type: none"> <li>Reviewed site conditions at the potential construction camp to confirm that site was ESC stabilized prior to demobilization of all construction equipment from site for the winter shutdown.</li> </ul>	N/A

### 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
<i>No work restrictions or timing windows were applicable to active construction works during this reporting period.</i>			

## 4.0 Upper Lillooet River Hydroelectric Facility

### 4.1 Monitoring Results

#### 4.1.1 Potential Construction Camp Location

##### Clearing Activities

- Slash and fallen trees at the potential construction camp location were piled at the southwest corner of the clearing boundary this week. All works were conducted within the clearing boundaries.
- Grubbing and grading of the construction camp continued during this monitoring period ([Photo 1](#)).
- Organic soils stripped during the grubbing works were temporarily piled in rows, and once the organic material was sorted from large rocks, it was used to construct a visual/auditory berm. The berm was compacted in lifts of material with a dozer and by running over the surface with rock trucks. This berm will separate the potential future camp location from the works yard/laydown location ([Photo 2](#)).
- The area west of the berm has been graded and a number of level laydown pads have been created.
- Demobilization of all construction equipment began on December 18<sup>th</sup>, 2013 and was completed on December 19<sup>th</sup>, 2013. All construction activities have been temporarily suspended and will resume in 2014 once weather conditions permit.

##### Environmental Summary:

- The material encountered beneath the organic soil horizon is dominated by coarse material, mostly in the form of rock and sand. This material is well-draining and is unlikely to convey overland flow during the spring melt. Therefore, ditching and catch basins originally proposed for the site were not installed. During the site inspection on December 18<sup>th</sup>, 2013, the IEM inspected the work area and found no significant erosion risks or potential for offsite discharge of sediment laden water. The site will be reassessed during spring melt period to confirm that no surface water quality risks are present.

- There is a 10m buffer that has not been grubbed surrounding the entire site. The buffer represents the required distance between standing trees and the electric fence to be installed at a future date.
- A perimeter ditch has been created along the northwest edge of the potential camp location to direct water away from the site.

Photos:



**Photo 1. Overview of grubbing activities completed at the future construction camp location (Dec 18, 2013).**

**Photo 2. Construction of the visual/auditory berm at the future construction camp location. (Dec 18, 2013).**

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded during this reporting period. Grubbing, grading and berm construction activities had no visual effect on WQ.					

**4.2 Recommendations**

No recommendations are provided for this reporting period.

**4.3 Upcoming Works**

CRT-EBC has demobilized all construction equipment from site and suspended works for the winter. Work will resume in 2014 once weather conditions permit.

**5.0 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 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

Please refer to the *Wildlife Observation Form* below for a summary of **December 2013** wildlife sightings.

**Upper Lillooet Hydro Project - Wildlife Observation Form**

Required Data					
Date	Time	Observer (Company)	Species or Description	Location	Comments
2-Dec-13	10:00:00 AM	Tom Hicks (Sartori)	Bald Eagle	Alena Creek	soaring
6-Dec-13	8:35:00 AM	Anne Sutherland (Sartori)	Bald Eagle	Lillooet FSR 35.5km	perched on trees
7-Dec-13	8:30:00 AM	Jordan Gagné/Fanny Seminaro	Moose	Lillooet FSR @13km	Crossed the road
7-Dec-13	9:50:00 AM	Anne Sutherland (Sartori)	Bald Eagle	Keyhole Falls	soaring
9-Dec-13	2:30:00 PM	Tom Hicks (Sartori)	Bald Eagle	Lillooet FSR @41km	feeding on coho
10-Dec-13	8:30:00 AM	Tom Hicks (Sartori)	Moose	Lillooet FSR @47km	Crossed the road
11-Dec-13	4:30:00 PM	Tom Hicks (Sartori)	Moose	Lillooet FSR @46km	Crossed the road
12-Dec-13	4:45:00 PM	Bradley Norman	Moose	Lillooet FSR @15km	Crossed the road
13-Dec-13	10:30:00 AM	Éric Ayotte / Simon Munneke	Bald Eagle	Lillooet FSR @ 35km	Perched on trees

## 6.0 Environmental Issues Tracking Matrix (ITM)

### 6.1 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/Completion Date	Date Completed
<i>No outstanding environmental issues.</i>							

### 6.2 Transmission Line

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 Completion Date	Date Completed
<i>No outstanding environmental issues.</i>							