

Upper Lillooet Hydro Project

Weekly Environmental Monitoring Report #16

Reporting Period: April 6th – April 12th, 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)



*Environmental Assessment Certificate No. E13-01 (Amendment 3)
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 (BDRHEF – km 38 laydown) No. L49698*

*Occupant Licence to Cut (BDRHEF& Construction Camp Amendment 1) No. L49816
Occupant Licence to Cut (TX Line S.1-S5, Heli Pads) No. L49697 (Amendment 1)*

*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*

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		Date Prepared: April 16, 2014 Date Submitted: April 17, 2014

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	Apr 6	-	-	Snow Removal <ul style="list-style-type: none"> Snow removal completed to approximately 40km of the FSR, and continued at 38km laydown
Monday	Apr 7	-	-	Snow Removal <ul style="list-style-type: none"> Snow removal continued at 38km laydown and began at the BDRHEF Powerhouse
Tuesday	Apr 8	TH	Sun and Cloud	Snow Removal <ul style="list-style-type: none"> Snow removal completed at 38km laydown and the BDRHEF Powerhouse
Wednesday	Apr 9	-	-	Snow Removal <ul style="list-style-type: none"> Snow removal completed to the BDRHEF Powerhouse 38km Laydown <ul style="list-style-type: none"> Grading and benching began at the 38km laydown Construction Camp <ul style="list-style-type: none"> Hand falling of the Construction Camp area began
Thursday	Apr 10	-	-	Snow Removal <ul style="list-style-type: none"> Snow removal suspended due to snow blower breakdown 38km Laydown <ul style="list-style-type: none"> Grading and benching continued at the 38km laydown Construction Camp <ul style="list-style-type: none"> Hand falling of the Construction Camp area continued
Friday	Apr 11	TH	Sun and Cloud	38km Laydown <ul style="list-style-type: none"> Grading and benching continued at the 38km laydown Construction Camp <ul style="list-style-type: none"> Hand falling of the Construction Camp area continued
Saturday	Apr 12	-	-	38km Laydown <ul style="list-style-type: none"> Grading and benching continued at the 38km laydown

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.
April 8	<i>Pre-work meeting for Construction Camp & access road to BDR HEF intake clearing</i>	CRT-ebc, SES, Innergex, Lizzie Bay	<ul style="list-style-type: none"> Reviewed clearing work plan, environmental constraints, identified hold points for BDRHEF intake access road clearing 	N/A

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
April 11	<i>Joint Site Inspection</i>	CRT-ebc, SES	<ul style="list-style-type: none"> Inspected all open areas for ESC concerns and status of plowing activities 	N/A
April 11	<i>Verbal</i>	SES, Wildlife Conservation Officer	<ul style="list-style-type: none"> Current work activities, public presence in the area, mountain goat and wildlife observations, hunting and fishing activity along the Lillooet FSR and North Creek FSR 	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>Lillooet River FSR</i>	<i>Within identified Mule Deer and Moose UWR</i>	<i>Mule Deer & Moose</i>	<i>When snow or earth berms exceed 50 cm in height, wildlife escape gaps will be created every 100m along both sides of roads utilized during winter construction.</i>
<i>BDRHEF intake access road</i>	<i>At 3.8km of BDRHEF intake access road</i>	<i>Mountain Goat UWR and Wolverine den emergence period</i>	<i>Access to BDRHEF intake must be gated at least 500 m from the original UWR u-2-002 UL 12 to restrict motorized use within the UWR, unless otherwise directed by FLNR. A no-entry zone will be created and managed within 500 m of GWR adjacent to construction areas during winter months (November 1 – April 30). Construction activities will be suspended at the BDRHEF intake from March 1 – April 30 (Wolverine den emergence period).</i>

4.0 Upper Lillooet River and Boulder Creek Hydroelectric Facilities

4.1 Monitoring Results

4.1.1 Snow removal, 38km Laydown Grading, Construction Camp Clearing

Snow Removal and Laydown Grading Activities

- CRT-ebc completed snow removal activities to approximately 40km of the Lillooet River FSR during this reporting period. Snow removal was completed by snow blower to minimize the creation of snow berms between 19km and 40km.
- CRT-ebc completed snow removal at the 38km laydown area on April 8th and began grading the laydown area. Snow was pushed to the perimeter of the laydown area and grading was completed to provide a flat surface for staging equipment and materials. No water quality concerns were noted.

Construction Camp Clearing

- Hand-falling trees within the Construction Camp (middle) location (*EAC amendment #3*) began on April 9th and continued throughout the week. Boundary flagging was visible and all hand falling remained within the clearing limits.

Environmental Summary:

- Minimal snow berms were created along the FSR during snow blowing activities. Escape gaps were installed in areas where snow berms exceeded 50cm above natural snow level.
- On April 8th, a pre-work meeting was held to discuss the upcoming clearing activities, applicable environmental timing constraints, and to review the clearing work plan.

Photos:



Photo 1. Overview of the grading works at the 38km laydown area. (April 11, 2013).



Photo 2. Hand falling at the future Construction Camp (middle) location. (April 11th, 2013).

Water Quality Results

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

4.2 Recommendations

Surface water management on the FSR should continue throughout the spring melt period to protect water quality in adjacent watercourses by directing sediment laden water to adjacent vegetated areas and/or road side ditches.

4.3 Upcoming Works

CRT-ebc will continue snow removal activities next week once the snow blower is repaired. Mountain Goat Monitoring and Noise Monitoring will begin once snow removal

activities proceed beyond the ULRHEF Powerhouse. Snow removal and clearing activities is scheduled to begin along the BDRHEF intake access road to 3.8km.

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

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>							