

# Upper Lillooet Hydro Project

## Weekly Environmental Monitoring Report #17

**Reporting Period: April 13<sup>th</sup> – April 19<sup>th</sup>, 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*


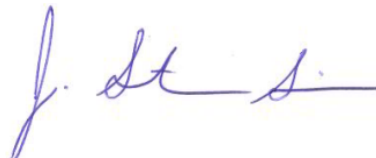
*Licence of Occupation (ULRHEF #232384) File No. 2409871  
Licence of Occupation (BDRHEF #232386) File No. 2409998  
Licence of Occupation (TX Line #2423386) File No. 2410654*

*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*

Distribution List		Prepared By
Name	Organization	
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James Davies	MFLNRO – Water Allocation	
Nathan Braun	BC Environmental Assessment Office	
George Steeves	True North Energy – Independent Engineer	
Jennifer McCash	True North Energy – Independent Engineer	
Thomas Hicks	Sartori Environmental Services	
Krys Muniak	Innergex Renewable Energy Inc.	
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Harriet VanWart	Lil'wat Nation	
		<b>Date Prepared:</b> April 23, 2014 <b>Date Submitted:</b> April 25, 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
VC	Valued Component
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 13	-	-	<b>38km Laydown</b> <ul style="list-style-type: none"> <li>Grading and benching continued at the 38km laydown</li> </ul>
Monday	Apr 14	-	-	<b>38km Laydown</b> <ul style="list-style-type: none"> <li>Grading and benching continued at the 38km laydown</li> </ul> <b>Construction Camp</b> <ul style="list-style-type: none"> <li>Hand falling of the Construction Camp area continued</li> </ul>
Tuesday	Apr 15	TH, MS, KR	Sun and Cloud	<b>Snow Removal</b> <ul style="list-style-type: none"> <li>Snow removal completed along Lillooet River FSR from 39.5km – ULRHEF Powerhouse</li> </ul> <b>38km Laydown</b> <ul style="list-style-type: none"> <li>Grading and benching continued at the 38km laydown</li> </ul> <b>Construction Camp</b> <ul style="list-style-type: none"> <li>Hand falling of the Construction Camp area continued</li> </ul>
Wednesday	Apr 16	MS	Overcast/light rain	<b>Snow Removal</b> <ul style="list-style-type: none"> <li>Snow removal completed along Lillooet River FSR from ULRHEF Powerhouse – Truckwash Creek</li> </ul> <b>38km Laydown</b> <ul style="list-style-type: none"> <li>Grading and benching began at the 38km laydown</li> </ul> <b>Construction Camp</b> <ul style="list-style-type: none"> <li>Hand falling of the Construction Camp area continued</li> </ul>
Thursday	Apr 17	TH	Overcast/light rain	<b>Snow Removal</b> <ul style="list-style-type: none"> <li>Snow removal completed along Lillooet River FSR from Truckwash Creek – 45.5km</li> </ul> <b>38km Laydown</b> <ul style="list-style-type: none"> <li>Grading and benching continued at the 38km laydown</li> </ul> <b>Construction Camp</b> <ul style="list-style-type: none"> <li>Hand falling of the Construction Camp area continued</li> </ul>
Friday	Apr 18	VD	Sun and Cloud	<b>Snow Removal</b> <ul style="list-style-type: none"> <li>Snow removal completed along Lillooet River FSR from 45.5km – 48.5km</li> </ul> <b>38km Laydown</b> <ul style="list-style-type: none"> <li>Grading and benching continued at the 38km laydown</li> </ul>
Saturday	Apr 19	VD	Overcast/light rain	<b>Snow Removal</b> <ul style="list-style-type: none"> <li>Snow removal completed along new Truckwash Creek bypass road at east and west headings</li> </ul> <b>38km Laydown</b> <ul style="list-style-type: none"> <li>Grading and benching continued at the 38km laydown</li> </ul>

**IEM Team Personnel:** KR – Kirstie Rendall; MS – Mandala Smulders; TH – Tom Hicks; VD – Vanessa Dan

## 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 14	<i>Email and Phone Calls</i>	CRT- ebc, SES, Innergex, Ecofish	<ul style="list-style-type: none"> <li>Reviewed snow clearing plan and schedule, reviewed and approved additional mitigation measures, environmental constraints, noise monitoring equipment installation, and Mountain Goat monitoring</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:

<b>Component</b>	<b>Location</b>	<b>Wildlife/Archeology Concern</b>	<b>Construction/Timing Restrictions &amp; Mitigations</b>
<i>Lillooet River FSR</i>	<i>Within identified Mule Deer and Moose UWR</i>	<i>Mule Deer &amp; 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>
<i>Lillooet River FSR; ULRHEF intake access; FSR realignment at Truckwash Creek</i>	<i>Access roads above ULRHEF Powerhouse to the ULRHEF intake; including FSR realignment at Truckwash Creek</i>	<i>Mountain Goat UWR and Wolverine den emergence period</i>	<p><i>All construction-related activities above the Upper Lillooet River HEF powerhouse must be suspended from March 1 – April 30 (the period associated with wolverine den emergence). Additional mitigations were proposed by Ecofish Research Ltd. and conditionally approved by the IEM to protect VCs during preliminary snow removal activities (April 15<sup>th</sup> – April 19<sup>th</sup>). Additional information is provided in <a href="#">Section 7.0</a>.</i></p> <p><i>Construction noise must be minimized within 500 m of legally established UWR during winter (November 1 – April 30) to the satisfaction of the IEM or designate.</i></p> <p><i>If a goat is observed within 500 m 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.</i></p>

## 4.0 Upper Lillooet River Hydroelectric Facilities

### 4.1 Monitoring Results

#### 4.1.1 Preliminary Snow Removal

##### Snow Removal Activities

- CRT-ebc began snow removal activities by snow blower and front-end loader above the ULRHEF powerhouse (41km) on April 16<sup>th</sup>. All snow removal work along the Lillooet River FSR (to 47km); the intake access road (to 48.5km); and, the Truckwash Creek FSR realignment, was completed by April 19<sup>th</sup>. Snow removal was completed by snow blower and front-end loader to prevent the creation of continuous snow berms within the Mountain Goat Migration corridor.

##### Environmental Summary:

- Monitoring and snow depth recording was performed by the IEM team during active snow removal works, as outlined in the Mountain Goat Management Plan and as outline below in [Section 7](#).
- 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. No continuous snow berms were created within the Mountain Goat Migration Corridor.

##### Photos:



Photo 1. Overview of the snow removal works at 45km of the Lillooet River FSR. (April 17, 2013).



Photo 2. Snow removal within the Mountain Goat Migration corridor at Truckwash Creek. (April 17, 2013).

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded during this reporting period.					

**5.0 Boulder Creek Hydroelectric Facilities**

**5.1 Monitoring Results**

**5.1.1 38km Laydown Area and Construction Camp**

38km Laydown Area

- CRT-ebc continued grading of the laydown area 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*) continued throughout the week. Boundary flagging was visible and all hand falling remained within the clearing limits.

Environmental Summary:

- No environmental concerns were noted.

Photos:



Photo 3. Overview of the grading works at the 38km laydown area. (April 16, 2013).



Photo 4. Hand falling at the future Construction Camp (middle) location. (April 17, 2013).

Water Quality Results

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

**5.2 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.

**5.3 Upcoming Works**

CRT-ebc has finished snow removal activities above the ULRHEF powerhouse and no additional work is planned in this area for next week. Snow depth monitoring will continue regularly until threshold levels are recorded. Clearing activity is scheduled to begin along the BDRHEF intake access road to 3.8km once clearing at the Construction Camp is complete. Stripping and grubbing at both the Construction Camp location and the BDRHEF powerhouse is scheduled to begin next week.

**6.0 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

**7.0 Wolverine Den Emergence Period & Mountain Goat Monitoring Program**

Ecofish was consulted in early March 2014 regarding the potential for CRT-ebc to begin snow removal activities above the ULRHEF powerhouse between March 1<sup>st</sup> and April 30<sup>th</sup>, the period associated with wolverine den emergence. A bulleted list summarizing the rational provided by Ecofish and approved by the IEM for proceeding with



preliminary snow removal prior to May 1<sup>st</sup> is provided below. A copy of the Ecofish email and table presenting additional mitigation measures is appended to the end of this report.

- Snow plowing was not deemed to result in material disturbance similar to construction activities and thus was considered acceptable, based on the duration, location and scale of disturbance.
- Wolverine habitat use has been negatively associated with human activity, including roads, infrastructure, and recreation (Lofroth and Krebs 2007). Thus, it is highly unlikely that wolverines would be denning near the Upper Lillooet FSR.
- The home range of an adult Wolverine extends from an average of 310 km<sup>2</sup> for females to over 1,005 km<sup>2</sup> for males (Krebs and Lewis 2000). The temporary nature (i.e. 4 - 6 days) of the activity is unlikely to affect a denning wolverine from accessing food resources.
- The timing of the activity was restricted to the later portion of the denning emergence period (after April 15<sup>th</sup>) to coincide with the time when young of the year are older and winter conditions less severe.

From April 15<sup>th</sup> – 19<sup>th</sup>, the IEM reinitiated a Mountain Goat Monitoring program as snow removal activities occurred within 500m of Mountain Goat Winter Range habitats. The IEM or designate was on site to monitor Mountain Goat activity and document any response to snow removal activities. Mountain Goats were monitored from the following locations subject to safe access:

- Truckwash Creek viewing river right of the Migration Corridor– MG-OBS01 (10U 467955 5612773);
- Keyhole Falls viewing the south side u-2-002 UL11 – MG-OBS02 (10U 466593 5613988); and
- Garibaldi Pumice mine site viewing u-2-002 UL 19 – MG-OBS03 (10U 467388 561408).

On April 15<sup>th</sup> and April 17<sup>th</sup>, monitoring stations were accessed by snow mobile. Monitoring was performed from MG-OBS01 only on April 16<sup>th</sup> and April 18<sup>th</sup>. On April 19<sup>th</sup>, access beyond 39.5km was not safe due to falling rocks blocking portions of the FSR, therefore Mountain Goat monitoring was not possible. No goats were observed within 500m line of sight of snow removal activities and no work stoppages were required.

Snow depths measured during this reporting period did not result in the implementation of the 2 week spring shutdown as detailed in the Mountain Goat Management Plan.

Noise levels were recorded during snow plowing activities within 500 m of legally established UWR. Elevated noise levels resulting from snow removal activities were not audible from the Mountain Goat monitoring stations. An analysis of the recorded noise level data will be provided in the next weekly monitoring report.

*Please refer to the attached Mountain Goat Monitoring Daily Observation Forms and snow depth monitoring forms for a summary of observations from this reporting period.*

## 8.0 Environmental Issues Tracking Matrix (ITM)

### 8.1 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>							

### 8.2 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>							



Tom Hicks &lt;tom@sartorienv.com&gt;

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## Preliminary snow clearing upstream of ULR powerhouse

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**Deborah Lacroix** <dlacroix@ecofishresearch.com>

Wed, Apr 9, 2014 at 9:04 AM

To: Julia Mancinelli &lt;JMancinelli@innnergex.com&gt;, Jordan Gagné &lt;jgagne@crtconstruction.ca&gt;, "Tom Hicks (tom@sartorienv.com)" &lt;tom@sartorienv.com&gt;

Cc: Steve Sims &lt;steve@sartorienv.com&gt;, Éric Ayotte &lt;eyotte@crtconstruction.ca&gt;

Hello Julia,

Condition #13 of the Upper Lillooet Hydro Project (Project) Environmental Assessment Certificate states "*All construction-related activities at the Boulder Creek HEF intake and above the Upper Lillooet River HEF powerhouse must be*

*suspended from March 1 – April 30 (the period associated with den emergence).*" In early March, CRT-ebc inquired if the Lillooet River FSR could be plowed during time period to prepare access to this portion of the Project area to allow for easier construction access starting on May 1<sup>st</sup>. Based on the following rationale, CRT-ebc has been providing conditional approval to snow plow, using a snow blower, upstream of the Upper Lillooet River (ULR) HEF powerhouse to access the ULR HEF intake starting April 15<sup>th</sup>. Approval is provided upon the condition that that all mitigations presented in this email and accompanying table are adhered to.

The intent of the EAC condition #13 is to reduce disturbance to Wolverines, which may be denning in the Project area. Snow plowing was not deemed to result in material disturbance similar to construction activities and thus was considered acceptable, based on the duration, location and scale of disturbance. It is estimated that snow plowing the Upper Lillooet FSR, from the Upper Lillooet River HEF powerhouse, will take no more than three to four days, with an additional two days to plow the new access road to the Truckwash Creek bridge. Thus, the snow plowing equipment will not remain in one area for an extended period of time (i.e. less than a few hours). The activity is also restricted to road alignments. During the winter the Lillooet River FSR is used by recreationalist especially snowmobilers. Wolverine habitat use has been negatively associated with human activity, including roads, infrastructure, and recreation (Lofroth and Krebs 2007). Thus, it is highly unlikely that wolverines would be denning near the Upper Lillooet FSR. In addition, wolverines are wide ranging. The home range of an adult Wolverine extends from an average of 310 km<sup>2</sup> for females to over 1,005 km<sup>2</sup> for males (Krebs and Lewis 2000). The temporary nature (i.e. 4 – 6 days) of the activity is unlikely to affect a denning wolverine from accessing food resources. Furthermore, the timing of the activity was also restricted to the later portion of the denning emergence period to coincide with the time when young of the year are older and winter conditions less severe.

The table attached prescribes mitigation associated with the proposed activity for each key valued component. Snow plowing is not anticipated to interact with any of the avian, amphibian or reptile valued components selected for the Project.

If you have any further questions or concerns, please do not hesitate to contact me direction.

Kind Regards,

Deb Lacroix, M.Sc., R.P. Bio

Project Manager, Wildlife Biologist

**Ecofish Research Ltd.**



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**ULHP Snow Plowing Conditions\_ERL\_2014Apr7.xlsx**

12K

Mitigation	Valued Component				
	Grizzly Bear	Moose	Mountain Goat	Mule Deer	Wolverine
No construction-related activities will occur during this time period (April 15 - 30) above the Upper Lillooet River HEF powerhouse.	-	-	X	-	X
The amount of time plowing within the Mountain Goat migration corridor will be minimized, near Truckwash Creek.	-	-	X	-	X
Snow plowing will not exceed six days above the ULR HEF powerhouse.	X	X	X	X	X
Snow plowing will occur once for each section of the road during this time period (i.e. the area will not be continually re-visited).	X	X	X	X	X
Snow plowing will be completed first along the Upper Lillooet FSR from the ULR HEF powerhouse to the intake. The new access road to the Truckwash Creek bridge will be conducted at the end.	-	-	X	-	X
Vehicles and heavy machinery will not be stored/kept within the Mountain Goat migration corridor between (April 15 -30).	-	-	X	-	-
Mountain Goats will be monitored from observation sites. The IEM may cease activities if Mountain Goats appear to be disturbed or are accessing the migration corridor.	-	-	X	-	-
The IEM and crew will monitor snow conditions at specified snow monitoring sites. All activities will cease once snow levels have begun to recede to the threshold detailed in the Mountain Goat Management Plan.	-	-	X	-	-
Noise levels will be monitored near the downstream portal at monitoring stations within the Truckwash Creek migration route. If noise is deemed to exceed 75 dBA at the edge of UWR u-2-002 UL 11 or the migration corridor during the critical winter (Nov 1 - Apr 30) and kidding (May 1 - Jun 15) periods , additional mitigation measures will be implemented to minimize noise levels.	-	-	X	-	-
Escape gaps in snow berms (defined as > 50 cm) will be created every 100 m along roadsides and avoided around blind corners in areas adjacent to or within 500 m of UWR.	-	-	X	-	-
If a Wolverine den is suspected by the IEM or qualified professional, construction noise disturbance must be avoided within 1 km of the suspected den during the denning period, or until the suspected den is confirmed to not be occupied by a Wolverine. If construction activities could destroy the den site, those construction activities must cease until appropriate mitigation or design changes can be developed and approved by FLNR. FLNR must be contacted within 24 hours of den discovery as detailed in the Human-wildlife Interaction Management Plan.	-	-	-	-	X
The IEM may cease all snow plowing, if deemed disturbing or destructive to any of the Valued Components	X	X	X	X	X

# MOUNTAIN GOAT DAILY OBSERVATION FORM

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s):

Date (YYYY-MM-DD):

Weather (cloud cover, precipitation and temperature):



106-185 forester street, north vancouver, bc v7h 2m9  
office tel 987.5588 fax 987.7740

Please submit **Mountain Goat Daily Observation Form** in person to a representative of Sartori Environmental Services (**Tom Hicks** or **Stephen Sims**) or by email to [steve@sartorienv.com](mailto:steve@sartorienv.com) following each day of monitoring.

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates (approximate center of observation area)	Daily Start Time (24hr clock)	Daily End Time (24hr clock)
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	11:54	12:30
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	15:15	16:00
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	13:00	14:35

Daily form #	1	of	1
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If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

Observation Site <i>(indicate if location other than OBS site)</i>	Time <i>(use 24hr clock)</i>	UTM Coordinates or Waypoint <i>(10U)</i>	Species Observed <i>(indicate Mountain Goat or other species)</i>	Observations <i>(be specific - visual sign, track, other sign)</i>	# of Animals	Age <i>(if known - refer to attached info sheet)</i>	Sex <i>(if known - refer to attached info sheet)</i>	Description of Activities <i>(feeding, moving, etc.)</i>	Comments <i>(habitat, snow conditions, etc.)</i>	Photo #s
MG-OBS01 & 02	12:46 & 15:40		None						No goat activity	
Trail to MG-OBS01/2	12:50 & 15:30		MG Tracks	Track					Tracks spotted on trail to MG-OBS01 & MG-OBS02	
MG-OBS03	13:45		MG	Sitting alone on exposed rock. No dist	1	Adult	M	Sitting, undisturbed		
MG-OBS03	14:15		MG	No disturbance.	2	Adult	M & F	Foraging, standing, salt licking	Exposed rock	











# Two-Week Mountain Goat Shutdown Form (Spring)

## UPPER LILLOOET HYDRO PROJECT

Monitor's Name(s):

Date (YYYY-MM-DD):  Time (24hr Clock):

106-185 forester street, north vancouver, bc v7h 2m9  
office tel 987.5588 fax 987.7740

Weather (cloud cover, precipitation and temperature):

### **Spring Shutdown**

**Trigger** – All drilling and drilling associated activities at the Upper Lillooet River HEF downstream portal near Truckwash Creek will cease for a minimum of two consecutive week periods when the snow begins to recede to 250 m above the portal drill site in spring.

**Criteria** – An average snow depth of <20 cm at the 5 road transects located above the new Truckwash Creek bridge (n=15, i.e. 3 per transect) and/or an average snow depth <10 cm at the 5 road transects located near the lower Truckwash Creek crossing (n=15, i.e. 3 per transect).

**Upstream work at ULR HEF** – Construction works at the Upper Lillooet River HEF intake will cease

Please fill-out and complete calculations of **Two-Week Mountain Goat Shutdown Form** on a daily basis (ideally between the hours of **14:00 to 17:00**). If the above criteria are exceeded, please contact a representative of Sartori Environmental Services (**Tom Hicks** or **Stephen Sims**) by radio, satellite phone or in person **AS SOON AS POSSIBLE**. In the event you are unable to contact a representative of Sartori Environmental Services, please contact the INNERGEX office by satellite phone at 604.894.6862 or Liz Scroggins on her mobile phone at 604.966.4594.

<b>Upper Road Sites</b> (5 transects, each site 10m apart - 3 samples per site across road)			
Snow Level Transects	Sample 1 Depth (cm)	Sample 2 Depth (cm)	Sample 3 Depth (cm)
Upper-ROAD01	103	111	115
Upper-ROAD02	123	118	122
Upper-ROAD03	130	120	123
Upper-ROAD04	129	128	124
Upper-ROAD05	121	120	140
<b>Total of All Measurements (cm)</b>			1827
<b>Average Snow Depth (cm)</b>			121.8
* If average snow level depth is < 20cm at upper road sites, please contact a representative of Sartori Environmental Services <b>ASAP</b> .			

<b>Lower Road Sites</b> (5 transects, each site 10m apart - 3 samples per site across road)			
Snow Level Transects	Sample 1 Depth (cm)	Sample 2 Depth (cm)	Sample 3 Depth (cm)
Lower-ROAD01	110	90	112
Lower-ROAD02	115	84	83
Lower-ROAD03	107	88	118
Lower-ROAD04	121	83	120
Lower-ROAD05	130	109	95
<b>Total of All Measurements (cm)</b>			1565
<b>Average Snow Depth (cm)</b>			104.3
* If average snow level depth is < 10cm at lower road sites, please contact a representative of Sartori Environmental Services <b>ASAP</b> .			

*In the event snow levels along the road cannot be measured due to recent traffic or snow plowing, a nearby spur road or clearing at similar elevation should be located and used for measurements.*

*Please indicate the approximate location of road monitoring sites:*

As indicated in criteria section