























































































































































































73A071A7.tmp





















































































































98722767.tmp



















2012-06-14  
= 12:45 @ 11.9km  
on Beaver Lake  
Road (Public).

Looking into complaint  
of non controlled  
water possibly resulting  
from S.S. Salvage  
Licencee John  
Smit recent  
logging along Beaver  
Lake road.

@ WP #373 there  
is recent clearing  
of F ditch line  
by GABEL  
LANDSCAPING possibly  
hired by MR SMIT



2012-06-14

2012-06-14

See pic 835 of  
LANDSCAPE truck  
See pic 836 looking  
South @ recent  
ditch cleanout @ WP  
#373 @ pic 837  
looking N @ recent  
cleanout.

@ WP#374 is a  
culvert recently  
cleaned out. It is  
about 75+M N  
of WP#373. Water  
from WP#373 flows  
N to this culvert.  
Photo #838 of 48

2012-06-14

Culvert @ WP 374  
pic #839 looking  
South to WP#373  
pic #840 looking N  
@ ditchline & still  
heavy water flow.  
pic #841 of outlet  
side of culvert  
near WP#374.

There is evidence  
of heavy redirect  
flow off road  
@ culvert outlet &  
overland mostly  
to north of culvert  
outlet.

@ WP#375 approx  
15m South of WP#374.



2012-06-14

@ WP 37.5 the  
ditchline is very  
shallow. It appears  
water may have flowed  
over the road surface  
at this point  
see pic 842 of shallow  
ditchline. There  
looks like recent  
debris has been removed  
from ditchline.  
pic #843 is taken  
on NW side of  
road directly across  
from WP#37.5  
It appears water

2012-06-14

likely flowed across  
road from shallow  
ditch & caused  
ravelling of road  
edge & carried  
sediment load  
to main culvert  
crossing flow  
to north & towards  
what I believe  
is Vernon creek  
below.

pic 844 is taken  
just south of culvert  
outlet looking N  
& shows heavy sediment  
& gravel deposits  
from road surface &



2012-06-14  
the road edge.

pic #845 shows  
more heavy road  
edge raveling &  
sediment deposits  
being carried across  
the ROW & into  
the timber. pic  
#845 taken @ WPA376  
pic #846 @ #847

Shows deep gouging  
of water course  
in timber below  
R/O/W & sediment  
flow from road  
above extends<sup>52</sup>  
past here.

2012-06-14.  
@ WPA377 I took  
pic #848 Looking @  
Vernon creek ~ 25m  
below. I can still  
see some sediment  
deposits below WPA  
377 & sediment would  
have entered Vernon  
creek. However the  
vast majority of  
sediment filtered  
out on the beach  
area just above WPA377.  
pic #849 Looking from  
road cut edge back  
up to road where  
sediment flowed  
overland.



2012-06-14

pic #850 @ WP#

378 shows some

recent branches

etc cleaned from

ditch line. Pic 851

looks N from WP#

378 shows still

very heavy ditchline

water flow. Ditch

is deeper & heavily

covered @ this point

with much of the

lines washed down.

pic #852 taken 2

15m south of WP#378

looks up ditchline.

@ water flow 54

on logging debris

2012-06-14

Above ditchline.

From where the

sediment is located

& appears most

covered the road

@ or near WP#378

& went below

road towards Vernon

creek ~ 50m below

the 12 km sign board

Pic #853 & 854

down N of WP#378.

Shows deeply groyed

ditch line & still

heavy water flow.

Recent hoe work

& removal of

branches etc.



2012-06-14

~~pic #850 @ WP#~~  
~~378~~

@ WP# 379 26.1 km  
is a small creek  
entering ditchline &  
no culvert crossing.  
See pic #855 of  
creek at #856 of  
heavy logging debris  
just W of  
creek.

pic #857 shows more  
ravelling of outside  
road edge and  
deposits of sediment  
below road into  
timber.

56

2012-06-14

pic #858 & #859 2  
15m N of WP# 377.  
shows recent log wash  
& removal of mud  
& branches it appears.

@ WP# 380 took  
pic #860 of culvert  
inlet with a @  
small creek cover.  
Culvert must have  
plugged @ evident  
water flowed

overland here 57  
± 5m to ditchline  
below & gassed  
out ditch back to  
WP # 379.



2012-06-14  
pic # 861 of overland  
flow & gaging,  
pic # 862 & #863  
of recent hoe  
work & removal  
of mud & branches.

WP # 381 approx 50m  
N up road from  
WP # 380. There is  
a creek coming  
down with only a  
30cm culvert. Pic's  
# 864 & 865 show  
creek & culvert.  
Pic # 866 shows  
flow overland 50m  
from culvert into

2012-06-14  
to ditchline below.  
Water gushed out  
ditchline deep.  
From this point on  
pic # 867 shows  
some tossing debris.  
Appear to have been  
a slide area from  
above to main  
road. There are  
branches all along  
creek course edge.  
Pic # 868 looking  
up Ditchline North  
from WP # 381.

Pic ~~867~~ # 869 looking  
N to WP # 381  
& culvert & creek



2012-06-14  
WP# 382 @ another  
culvert = 50 m N  
of last one. Looks  
like a 60 cm culvert.  
\* Evidence of water  
having flowed overland  
here so culvert must  
have been overwhelmed  
as there are no  
blockages or logging  
debris evident  
here. See pics  
# 870 - 872.

~ 14.20 Met  
Met John Smit  
~ 12.5 km Bear  
Lake road.

2012-06-14  
Smit said he  
has fixed the hoe  
& started today &  
has progressed well  
covering much of  
the important areas  
of concern. Smit said  
he has tried to get  
TERRE to clean  
ditch lines w no  
luck. Smit said  
he has done some  
hand cleaning ± 2 wks  
ago. Met Patti  
Hansen Water Quality  
Technician from  
Lake Country Municipal  
Hall.



2012-06-14

Hansen said she  
was notified mid  
day Monday she  
believed. Lake

County water shut down  
as turbidity spiked  
to over 300 units  
& should be < 5.

HANSEN DOES NOT  
think Hays did  
any recent culvert  
or ditchline work  
as just had  
grader working  
that she observed.  
HANSEN said  
the worst area<sup>2</sup>

2012-06-14  
is still above me  
& = 13 km.

@ WP# 383 took  
pic of debris pile  
& recent dennot  
of ditchline debris.  
From here down (south)  
to WP# 382 there  
are no real issues.

@ WP# 384 creek  
& culvert with  
no logging debris.  
Took pic 876 of  
culvert & creek<sup>3</sup>  
& 877 of outlet  
at road. Creeks  
COAD have mussels  
but not associated



2012-06-14  
with being plugged  
but just too much  
water flow

Pic # 878 taken 2.5 km  
N of WP# 384.  
& shows losing  
debris & recent hoe  
excavator clean out

WP# 385 @ 13 km  
seen 5000 ft. minor  
ditch clean out  
completed & no  
issues at this  
point.

64

2012-06-14  
There is some  
losing debris in  
the ditch line from  
213.1 - 13.3 km from  
an older block wall  
on main road. Appears  
to be plus 1 year  
old & not sure  
who lost it. No  
blockages or major  
problem @ this point.

Hansen said  
main Highway #5  
contact is

s.22

s.22

ARGO

s.22

s.22



2012-06-14

Smits hired  
hoe was observed  
being loaded &  
sent back down the  
hill. To drive  
past the road  
Fork to the Lodge  
& observed that the  
ditchline cleanup  
event just past  
this on Beaver Lake  
road. Met with  
Smits & Hansen  
@ spawning  
Hatchery station  
& Smits advised

2012-06-16

he sent the  
excavator back  
because CRAIN  
TERRE will finish  
the remainder of  
the cleanup tomorrow  
& Smits said he  
will be there to  
supervise.

Note - ALWS  
should have ramp  
or sediment crib  
@ road intersection  
to Fifth stream /  
egg collection  
AREA. (CRAIN CROOK)



2012-06-16

E 15:50 Took  
PIC # 8792 & 880  
of Logging debris  
& heavily damaged  
ditches ± 75m  
North of Gellio  
creek bridge

68

LAKE COUNTRY  
Life. The Okanagan Way.



lakecountry.bc.ca  
okanaganway.ca

Patti Hansen, B.Sc.  
Water Quality Technician  
Municipal Hall  
10150 Bottom Wood Lake Road  
Lake Country, BC V4V 2M1  
T 250.470.9061  
F 250.766.0116  
Gen. Inquiries 250.766.5650  
phansen@lakecountry.bc.ca

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# MINISTRY OF FORESTS, LANDS & NATURAL RESOURCE OPERATIONS

## COMPLIANCE & ENFORCEMENT CONTINUATION REPORT

<b>OCCURRENCE FILE #:</b> 2012-222		<b>OTHER AGENCY FILE #:</b>	
<b>CIMS REPORT #</b>	<b>ERA REPORT #</b>	<b>REGION</b> Thompson / Okanagan	<b>FIELD UNIT</b> Vernon
<b>GEOGRAPHIC LOCATION</b> Beaver Lake road		<b>ACT/SECTIONS INVOLVED</b>	
<b>DATE</b>	<b>TIME</b>	<b>ACTIONS/MEASURES TAKEN</b>	
2012-06-13	1600	<p>Richard Toperczer and Dale Richter reported to Krywonos that there are some serious issues that have developed off of Beaver Lake road. A small scale licence Mr. John SMIT has done previous salvage along sections of Beaver Lake road. There was debris left in the ditch line and may have caused problems in the last few days. Apparently water has flowed over or past plugged culverts and across the main Beaver Lake road and down the hill towards Vernon creek. Lake country has placed boiled water advisory as sediment is entering the creek and this is the main drinking water system.</p> <p>Lake country has hired Dobson Engineering and I was forwarded an email of their initial findings. Dobson indicates the water flow into Vernon creek is a result of plugged culverts from logging debris. The worry now is that water is being dumped onto areas where water typically does not go in such volumes and this may cause slumps/slides etc.</p> <p>Toperczer advised that the licensee know of all this and is trying to get a machine hired to rectify the situation. Apparently the logged that SMIT hired Calvin Teare to do the initial logging was supposed to clean the ditch lines and failed to do so. Krywonos discussed that it still comes down to SMIT to do whatever it takes as he is the Licence holder.</p> <p>Krywonos contacted Don Lemp as he was involved in some issues with the logging near Beaver Lake Rec site and Doreen Lake. Lemp said he had talked to Smit previously and advised that there was debris in the ditch lines that needed to be cleaned. Lemp said Smit knew about this and intended to do it. At the time of Lemp observing this there was no issues with the water flow.</p> <p>Krywonos met with Beadman and Tobin to discuss this incident. Because the ditch lines etc are on a public road/highway (Beaver Lake Road) it is likely we have no jurisdiction. It was discussed that I would go out and do what I can to photograph the area and we would follow up on who is responsible later.</p> <p>An email was sent to me indicating the Licensee has hired a backhoe and the work should commence on 2012-06-14 I believe.</p>	

**DATE CONCLUDED:**

**INVESTIGATOR:**

**SIGNATURE:**

**DATE:**





# MINISTRY OF FORESTS, LANDS & NATURAL RESOURCE OPERATIONS

## COMPLIANCE & ENFORCEMENT CONTINUATION REPORT

<b>OCCURRENCE FILE #:</b> 2012-222		<b>OTHER AGENCY FILE #:</b>	
<b>CIMS REPORT #</b>	<b>ERA REPORT #</b>	<b>REGION</b> Thompson / Okanagan	<b>FIELD UNIT</b> Vernon
<b>GEOGRAPHIC LOCATION</b> Beaver Lake road		<b>ACT/SECTIONS INVOLVED</b>	
<b>DATE</b>	<b>TIME</b>	<b>ACTIONS/MEASURES TAKEN</b>	
2012-06-14	12:45	<p>Krywonos drove to 11.9 km beaver Lake road and started looking at the water issues and worked my way up the road past the lodge intersection etc. I photographed and GPS ed the areas of concern or interest. See scanned field notes. Met with Patti Hansen from Lake Country water District as well as John SMIT the Small Scale Salvage Licence.</p> <p>From Krywonos inspection he determined that most of the damage and sediment flow over the road and towards the creek was attributable to too much water and shallow ditch lines and small culverts. Krywonos was there after the fact but did not see much logging debris in the areas where the water damage occurred. There was some debris but was from older logging than what Mr. Smit had done. The main plugged ditch lines above this area can be tribute to Mr. Smit but no water damage occurred here. Mr. Smit brought in a small hoe and cleaned out the ditchlines from the Beaver lake lodge turnoff for about 1km to the creek where they collect eggs for fisheries. Smit said the rest of the ditch lines will be cleaned out from here to the north.</p>	
2012-06-25		Krywonos received a CD in the mail from Patti Hansen dated June 12, 2012 of pictures taken on this date.	
		I believe Don Lemp is dealing with Mr. Smit and the plugged ditches North of the Beaver lake lodge turnoff. Here again the ditches may be plugged but no damage resulted in this area. Damage occurred only where grades were steeper South of the lodge and is from excessive water and shallow ditches....not logging debris.	
		FILE CLOSED:	

**DATE CONCLUDED:**

**INVESTIGATOR:**

**SIGNATURE:**

**DATE:**







Pages 95 through 107 redacted for the following reasons:

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Non-Responsive



**From:** Tobin, Patrick J FLNR:EX  
**Sent:** Friday, February 1, 2013 1:27 PM  
**To:** Tobin, Patrick J FLNR:EX  
**Subject:** FW: Beaver Lake Road  
**Attachments:** Central Okanagan-20120612-00712.jpg; Central Okanagan-20120612-00758.jpg; Kelowna-20120612-00749.jpg; Kelowna-20120612-00720.jpg

**Patrick Tobin**  
**Regional Manager Compliance and Enforcement**  
**Thompson Okanagan Region**  
**Ministry of Forests, Lands and Natural Resource Operations**  
**Direct: (250) 558-1780**  
**Cell: (250) 308-9740**  
**Email: Patrick.Tobin@gov.bc.ca**

---

**From:** Toperczer, Richard E FLNR:EX  
**Sent:** Wednesday, June 13, 2012 3:40 PM  
**To:** Krywonos, Dan FLNR:EX  
**Cc:** Beadman, Kyle FLNR:EX; Crampton, Ray W FLNR:EX  
**Subject:** FW: Beaver Lake Road

Hey Dan,  
As discussed.

Below is the synopsis from Don Dobson which describes the issues and the magnitude. Given that this has resulted in a Boil Water Advisory for the District of Lake Country it will likely garner a high profile.

The SSS licensee is John Smit [REDACTED] s.22 and the license number is A89590. He has a hoe lined up for Thurs or Friday to complete his obligations.

The file is on my desk if you need it. Clearly the Salvage Plan contains obligations to inspect and clean ditches and culverts and it is clear that these obligations have not been met as of yet.

If you need any more info, please let me know.

**Richard Toperczer, RPF**  
**Tenures Officer**  
**Okanagan Shuswap District**  
**Ministry of Forests, Lands and**  
**Natural Resource Operations**  
**2501 - 14th Avenue**  
**Vernon, BC V1T 8Z1**  
**Phone: 250-558-1733**  
**Fax: 250-549-5485**  
**Cell: 250-558-8842**

---

**From:** Don Dobson [<mailto:ddobson@urbansystems.ca>]  
**Sent:** Wednesday, June 13, 2012 1:27 PM



**To:** Toperczer, Richard E FLNR:EX  
**Subject:** Beaver Lake Road

Richard;

Here is a series of photos taken by DLC staff yesterday in the 13 Km area on Beaver Lake Road. As you can see from photo 712 the ditchline has not been cleared of debris by the logger. Photo 758 illustrates the build-up of woody debris and subsequent sediment wedges in the ditchline. Photo 749 shows the sediment transport off the road towards Vernon Creek. Photo 720 shows a failure in the road shoulder at a failed cross drain.

The following comments relate to observations by staff in the area yesterday:

- Areas of ditches were close to, or at full capacity (all along Beaver Lk Main with the worst area between 11 – 13 km)
- Areas of ditches contained debris and/or were full with remnants and/or piles of logs from recent logging along Beaver Lake Road (Ministry of Transportation and Infrastructure tree safety clearing/small scale salvage (SSS) operation).
- There have been many complaints and concerns that the SSS operation filled ditches at various locations along these roads with woody debris and had not cleaned them following the danger tree removal/salvage operation and that they had placed logs into the ditches. This was discussed at the watershed meeting and Ministry of Forest Lands and Natural Resource Operations reported that the logger had been advised to clean up these areas. These areas had not been cleaned up and in some locations where they appeared to be clean the ditches were also cleared of all sediment and only large rocks remained.
- The highest impact area was at 13km where a washout occurred and major debris and sediment were washed down the bank towards Vernon Creek.
- Tried to investigate however could not walk too far down towards Vernon Creek as there was undermining of bank (some areas appeared to be 1 – 2m deep).
- Suspect this loading made it to Vernon Creek.
- There was very dirty water in ditch from approximately 13.5 down to this washout.
- Argo was on site with a grader and water truck – they apparently had been there since Sunday following the washout.
- Culverts were damaged and/or not fully functioning due to the obstruction from excessive debris and sedimentation (this was mentioned to Argo workers when I advised them of large dangerous sinkhole on Beaver Lk Rd at approx km 13.5)
- Heavy flow of sedimentation over road and through culverts towards Vernon Creek
- Culverts showed signs of over capacity with heavy sediment accumulation and/or washouts around the culverts on the d/s side
- Argo was working on the road (grading and watering)
- Ditch water was very dirty in the washout area.
- All drainages observed on the high side of road flowing into the ditch were clear.

Based on our conversation this afternoon, this matter involves more than just action from your office. This matter is a major concern to the DLC and requires immediate action by a) the logging contractor, b) MoTI and c) FLNRO to address all the issues that are placing the District's water supply at risk.

Your immediate attention to this issue is required before the situation worsens as a result of the ongoing rainfall. Increased runoff onto unconditioned slopes above Vernon Creek will result in further washouts and slope failures unless the natural drainage patterns are restored. Action is required now.

Please keep me informed of your progress. If necessary I can meet you at the site at any time. My cell number is



250-878-4502.

Thank you,

Don

**Don Dobson, PEng**  
*Senior Water Engineer*

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**From:** Tobin, Patrick J FLNR:EX  
**Sent:** Friday, February 1, 2013 1:28 PM  
**To:** Tobin, Patrick J FLNR:EX  
**Subject:** FW: Beaver Lake/Dee Lake Road

Patrick Tobin  
Regional Manager Compliance and Enforcement  
Thompson Okanagan Region  
Ministry of Forests, Lands and Natural Resource Operations  
Direct: (250) 558-1780  
Cell: (250) 308-9740  
Email: [Patrick.Tobin@gov.bc.ca](mailto:Patrick.Tobin@gov.bc.ca)

**From:** Patti Hansen [<mailto:pmeger@lakecountry.bc.ca>]  
**Sent:** Wednesday, June 20, 2012 8:14 AM  
**To:** Krywonos, Dan FLNR:EX  
**Subject:** Beaver Lake/Dee Lake Road

Good Morning Dan, it was nice to meet you last week in the watershed – that was good timing. You asked that I send you pictures of the washout however so far I only have pictures from June 12<sup>th</sup> following grader work on the road. There are too many to attach however, I've made a CD and will be in Vernon on Friday to drop that off for you. Once your report is finalized, will DLC be cc'd or have access to a copy of it? We are interested as well in any comments that you may have in regards to the conditions of the road and drainage structures. Will Argo/Ministry of Transportation and Infrastructure be provided any comments from you regarding those concerns?

I have been in regular contact with the salvage logger and will be meeting him again today for a field tour of the completed work. Please contact me if you have any questions.

Thank you.

Patti Hansen  
Water Quality  
District of Lake Country



t: 250-766-6677 c: 250-470-9061 f: 250-766-0116 [lakecountry.bc.ca](http://lakecountry.bc.ca)

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immediately and delete all copies of the message from any computer.



Please consider the environment before printing



**From:** Tobin, Patrick J FLNR:EX  
**Sent:** Friday, February 1, 2013 1:25 PM  
**To:** Tobin, Patrick J FLNR:EX  
**Subject:** FW: Help

Patrick Tobin  
Regional Manager Compliance and Enforcement  
Thompson Okanagan Region  
Ministry of Forests, Lands and Natural Resource Operations  
Direct: (250) 558-1780  
Cell: (250) 308-9740  
Email: Patrick.Tobin@gov.bc.ca

---

**From:** Harkema, John FLNR:EX  
**Sent:** Tuesday, June 26, 2012 4:14 PM  
**To:** Krywonos, Dan FLNR:EX  
**Subject:** RE: Help

Hi Dan,

Not being sure how your conversation may be progressing with MTI folks, but they do have some provisions under the Transportation Act, e.g., sections 16, 17 and 18 etc. that they may use (in addition to any that we may use; may need some coordination though)

As well, depending on what the cutting authority document provides, under our normal set of legislation we should arguably be looking at possible contraventions under FRPA, e.g., possible FRPA s. 46 or 52, or under FPPR s. 51 (especially if the ditch is in fact a modified stream), and critical for the water users s. 59 or s. 60.

Depending on where the cutting authority boundary is, we could possibly have a FRPA s. 46 or even a *Land Act* s. 59 issue, or both. Or even a breach of the *Water Act*, as they appear to have been doing works that impacted a stream? In reference to WA s. 9.

Noting that for some old roads the ditch is actually a stream because of the way the stream was moved to accommodate the road. May need some history from MTI folks to understand that part of this type of case.

Call or email to discuss further.

John Harkema, RPF  
Compliance and Enforcement Branch,  
Min. Forests, Lands and Natural Resource Operations  
Phone: 250 356-2069



---

**From:** Krywonos, Dan FLNR:EX  
**Sent:** Wednesday, June 20, 2012 8:53 AM  
**To:** Harkema, John FLNR:EX  
**Subject:** Help

Hi John

We have a situation where a salvage licence was issued with logging of MPB adjacent to a public road. Ditch lines got plugged in some areas and this is now being attributed by the water district and highways as the reason for some blow outs and the closing of a town water system due to high turbidity levels.

The question is even though the logging is our jurisdiction the ditch lines are in the highway/public road right of way. Does are legislation cover this off....i.e. do we have authority on this piece of ground to take action or is it strictly hwys responsibility?

Thanks

Dan Krywonos RFT  
Compliance and Enforcement Technician  
Okanagan Shuswap Field Unit  
Thompson Okanagan Sub Region  
Ministry of Forests and Range  
(250) 558-1762  
[Mailto:Dan.Krywonos@gov.bc.ca](mailto:Dan.Krywonos@gov.bc.ca)



**From:** Tobin, Patrick J FLNR:EX  
**Sent:** Friday, February 1, 2013 1:27 PM  
**To:** Tobin, Patrick J FLNR:EX  
**Subject:** FW: Help

Patrick Tobin  
Regional Manager Compliance and Enforcement  
Thompson Okanagan Region  
Ministry of Forests, Lands and Natural Resource Operations  
Direct: (250) 558-1780  
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Thanks

Dan Krywonos RFT  
Compliance and Enforcement Technician  
Okanagan Shuswap Field Unit  
Thompson Okanagan Sub Region  
Ministry of Forests and Range  
(250) 558-1762  
[Mailto:Dan.Krywonos@gov.bc.ca](mailto:Dan.Krywonos@gov.bc.ca)





The Best Place on Earth

Nov 16<sup>th</sup> 2011

Ministry of Forests, Lands and Natural Resources  
2501 - 14th Avenue  
Vernon, BC  
V1T 8Z1

Mr. Dave Hails

The Ministry of Transportation and Infrastructure (MoTI) and Argo Road Maintenance Inc. located in Kelowna would like to improve the public safety along certain sections of highway and maintained side roads in the Okanagan-Shuswap District. This will be accomplished through the salvage and removal of dead and dying beetle infested timber along with the removal of incidental green timber within a distance of approximately 30m from the edge of the road running surface. This timber removal will achieve the following MoTI objectives in support of public safety:

- remove danger trees within and beyond the legal highway right of way to avoid them from falling on the highway and/or hitting vehicles travelling on the highway
- increase sight lines along the highway, especially on sharp corners and areas that experience high rates of vehicle accidents
- "daylight" sections of paved highway to reduce or eliminate shading by trees in the winter months, which results in dangerous icy sections of the highway leading to accidents

If you have any concerns about this project, please do not hesitate to call me directly at any time.



Thank you

Blake Dixon

Area Manager, Roads, West side -Kelowna  
Ministry of Transportation and Infrastructure.  
Okanagan Shuswap District  
#300-1358 St.Paul Street  
Kelowna, BC V1Y 2E1  
Phone: 250-712-3628  
Cell: s.17  
Fax: 250-712-3669  
Email: [blake.dixon@gov.bc.ca](mailto:blake.dixon@gov.bc.ca)

---

Ministry of  
Transportation

Okanagan Shuswap District  
Southern Interior Region

Mailing Address:  
#300 – 1358 St. Paul Street  
Kelowna, BC V1Y 2E1

Telephone: (250) 712-3660  
Facsimile: (250) 712-3669  
Web Address:  
[www.gov.bc.ca/tran](http://www.gov.bc.ca/tran)





## FORESTRY LICENCE TO CUT

A89590



**THIS LICENCE**, dated for reference **January 20, 2012**.

### **BETWEEN:**

HER MAJESTY THE QUEEN IN RIGHT  
OF THE PROVINCE OF BRITISH COLUMBIA,  
as represented by the DISTRICT MANAGER,

MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS  
2501 – 14 AVENUE  
VERNON, BRITISH COLUMBIA  
V1T 8Z1  
Phone: 250 558-1700 Fax: 250 549-5485  
(the "District Manager")

### **AND:**

HEARTLAND RESOURCE INC.  
5314 PTARMIGAN STREET  
KELOWNA, BRITISH COLUMBIA  
V1W 5A4  
Phone: 250-764-0820 Fax: 250-764-0829  
(the "Licensee")

### **WHEREAS:**

**THE PARTIES** agree as follows:

#### **1.00 GRANT OF RIGHTS AND TERM**

- 1.01 The term of this Licence begins on **January 20, 2012** and expires on the earlier of **August 31, 2012** or when the District Manager gives notice to the Licensee that all contractual and legislative obligations associated with this Licence have been completed.



- 1.02 Subject to the Licence and the forestry legislation, the Licensee is authorized to harvest designated Crown timber from areas of land shown on the attached Exhibit "A" map(s) ("the licence area"). Designated timber is restricted to:
- (a) Douglas-fir trees which have been damaged or infested with insects and in the opinion of a qualified professional are dead or will die within one year; and,
  - (b) Lodgepole pine trees which have been damaged or infested with insects and in the opinion of a qualified professional are dead or will die within one year; and,
  - (c) Spruce trees which have been damaged or infested with insects and in the opinion of a qualified professional are dead or will die within one year; and,
  - (d) Balsam trees which have been damaged or infested with insects and in the opinion of a qualified professional are dead or will die within one year; and,
  - (e) Blowdown, and
  - (f) Other standing dead timber, and
  - (g) Hazard trees as defined by the WCB, and
  - (h) Authorized access timber up to the amount specified in the salvage plan and
  - (i) Any other timber designated in writing by the District Manager.
- 1.03 During the term of this Licence, the maximum volume of timber harvested under this Licence from the licence area is **1300 m<sup>3</sup>**.
- 1.04 The volume of timber harvested under this Licence that exceeds the maximum harvestable volume of timber specified in paragraph 1.03 will be subject to the penalties specified in section 75.21 of the *Forest Act*, section 2 of the Cut Control Regulation, and may also be subject to penalties available under the *Forest and Range Practices Act*.
- 1.05 Subject to this Licence, the Licensee has the right to enter and use Crown land to exercise rights and fulfill obligations under this Licence.
- 1.06 This Licence is not replaceable under the *Forest Act*.
- 1.07 Extensions will not be granted to the term of this Licence

## **2.00 TIMBER HARVEST LIMITATIONS**

- 2.01 Timber harvesting must be conducted in accordance with the forestry legislation and the conditions and requirements specified in Schedule "A".

## **3.00 TIMBER MARK**

- 3.01 The timber mark for timber harvested under this Licence is:



## **7.00 COURT DETERMINED ABORIGINAL RIGHTS AND/OR TITLE**

7.01 Notwithstanding any other provision of this Licence, if a court of competent jurisdiction:

- (a) determines that activities or operations under or associated with this Licence will unjustifiably infringe an aboriginal right and/or title, or treaty right;
- (b) grants an injunction further to a determination referred to in subparagraph 7.01 (a); or
- (c) grants an injunction pending a determination of whether activities or operations under or associated with this Licence will unjustifiably infringe an aboriginal right and/or title, or treaty right,

the District Manager in a notice given to the Licensee, may vary or suspend, this Licence in whole or in part, so as to be consistent with the court determination.

7.02 Subject to this Licence and the forestry legislation, if:

- (a) under paragraph 7.01, the District Manager has varied the Licence issued to the Licensee;
- (b) a court of competent jurisdiction subsequently overturns, sets aside or dissolves the determination or injunction referred to in that paragraph; and
- (c) it is practical to do so;

the District Manager, at the request of the Licensee, will vary the Licence to reflect as closely as possible, for the remainder of its term, the terms and conditions of the Licence prior to the variation under paragraph 7.01.

7.03 Subject to this Licence and the forestry legislation, if:

- (a) under paragraph 7.01, the District Manager has suspended the Licence;
- (b) a court of competent jurisdiction subsequently overturns, sets aside or dissolves the determination or injunction referred to in that paragraph; and
- (c) it is practical to do so;

the District Manager, at the request of the Licensee, will reinstate the Licence for the remainder of its term.



- (d) any other person who on behalf of or with the consent of the Licensee engages in any activity or carries out any operation under or associated with this Licence.
- 9.02 For greater certainty, the Licensee has no obligation to indemnify the Government under paragraph 9.01 in respect of any act or omission of:
  - (a) an employee, agent or contractor of the Government , in the course of carrying out his or her duties as employee, agent or contractor of the Government; or
  - (b) a person, other than the Licensee, to whom the Government has granted the right to use or occupy Crown land, in the course of exercising those rights.
- 9.03 Amounts taken under part 8.00 from the deposit and any payments required under parts 5.00, 6.00 or 8.00, and payments required further to the indemnity referred to in paragraph 9.01 are in addition to and not in substitution for any other remedies available to the Government in respect of a default of the Licensee.
- 9.04 The Government is not liable to the Licensee for injuries, losses, expenses, or costs incurred or suffered by the Licensee as a result, directly or indirectly, of an act or omission of a person who is not a party to this Licence, including but not restricted to an act or omission of a person disrupting, stopping or otherwise interfering with the Licensee's operations under this Licence by road blocks or other means.

## **10.00 TERMINATION**

- 10.01 If this Licence expires or is cancelled or is otherwise terminated:
  - (a) title to all improvements, including roads and bridges, fixed on Crown land in the licence area; and
  - (b) all timber, including logs and special forest products, located on the licence area, will vest in the Crown, without right of compensation to the Licensee.
- 10.02 If the Licensee commits an act of bankruptcy, makes a general assignment for the benefit of its creditors or otherwise acknowledges its insolvency, the Licensee is deemed to have failed to perform an obligation under this Licence.



- 12.06 Either party may, from time to time, advise the other party by notice in writing, of any change of address of the party giving such notice and, from and after the giving of such notice, the address specified will, for purposes of this Licence, be considered to be the address of the party giving such notice.

### 13.00 MISCELLANEOUS

- 13.01 This Licence will inure to the benefit of, and be binding on, the parties and their respective heirs, executors, successors and permitted assigns.
- 13.02 The laws of British Columbia will govern the interpretation of this Licence and the performance of the Licensee's obligations under this Licence.
- 13.03 Any non-statutory power conferred or duty imposed on the District Manager under this Licence may be exercised or fulfilled by any person authorized to do so by the District Manager.
- 13.04 Any Schedules, Exhibit "A" map(s) or attachments referenced in, or attached to this Licence are an integral part of this agreement as if set out in the body of this agreement, and the Licensee will comply with all the terms in the Schedules.
- 13.05 If there is a conflict between the *Workers Compensation Act* or a regulation under that Act, and a provision of this Licence, the *Workers Compensation Act*, or the regulations made under that Act, prevails, and the Licensee must immediately notify the District Manager of the conflict and follow any direction given by the District Manager with respect to the conflict, provided such direction is consistent with the *Workers Compensation Act* and the regulations under that Act.
- 13.06 Nothing in this Licence authorizes the Licensee to in any way restrict the Government's right of access to the Licence areas or a road permit or the right of any other authorized entrant, user or occupier of these areas.
- 13.07 This Licence is the entire agreement between the parties as to the matters set out in this Licence, and all previous promises, representations or agreements between the parties, whether oral or written, are deemed to have been replaced by this Licence.
- 13.08 Unless otherwise defined in this Licence, if a word or phrase used in this Licence is defined in the legislation described in paragraph 13.02, the definition in the legislation applies to this Licence, and where the word or phrase in the legislation is replaced by a new word or phrase, this Licence is deemed to have been amended accordingly.
- 13.09 Time is of the essence in this Licence.
- 13.10 If any provision in this Licence is found to be invalid or unenforceable by a court of law, the remainder of this Licence is separately valid and enforceable to the fullest extent permitted by law.



SIGNED by the )  
District Manager )  
on behalf of Her Majesty )  
the Queen in Right of )  
the Province of )  
British Columbia )  
in the presence of: )

FW Dave Hails, RPF District Manager  
Ministry of Forests, Lands and Natural Resource Operations  
Okanagan Shuswap District

January 23, 2012  
Dated

THE COMMON SEAL of )  
the Licensee was affixed )  
in the presence of: )

Signature

Printed Name

SIGNED, by the Licensee )  
in the presence of: )

Signature

HELENE DOUSSEPT  
Printed Name

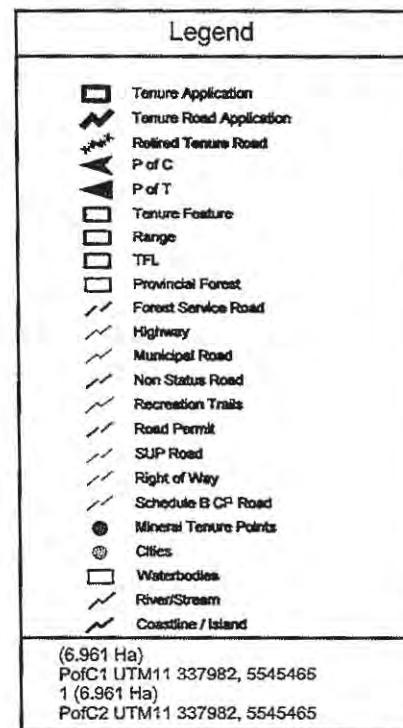
Licensee

John Smith, president,  
Printed Name and Title  
Jan. 24, 2012  
Dated



- (f) Removal of non target Timber (non-Pine) will be limited to a maximum of 20% by volume for this license as determined by HBS. Every effort will be made by the licensee to minimize the removal of non target timber while providing for public safety along the 30m immediately adjacent to the road;









# HEARTLAND RESOURCES INC.

Tel: 250-764-0820 • Cell: 250-801-0132 • Fax: 250-764-0829 • Email: heartlandresources@shaw.ca

December 9, 2011

RECEIVED

DEC - 9 2011 1425

MINISTRY OF FORESTS  
OKANAGAN SHUSWAP FOREST DISTRICT

Ministry of Forests, Lands and Natural Resources  
2501 - 14th Avenue  
Vernon, BC  
V1T 8Z1

**Attention:** Dale Richter, Small Scale Salvage Coordinator

**RE: FLTC A89590 Professional Salvage Application**

Attached is a Professional Salvage Application for FLTC A89590 located west of Beaver (Swalwell) Lake along the Beaver Lake Road. This professional application is accurate and conforms to all relevant Provincial and Federal legislation, Tolko's Forest Stewardship Plan (FSP), the Okanagan Shuswap Land and Resource Management Plan (LRMP) and the applicable Okanagan Shuswap District small scale salvage policies. As part of this application, we request a FLTC issued with a volume of 2,000 m<sup>3</sup>.

This application includes the following:

1. Professional Salvage Plan submission (two copies signed and sealed)
2. RPF certification form
3. Stumpage rate request form
4. ESF submission
5. Shape file submission (as a .zap file)
6. 1:10,000 scale map (three copies)
7. MOT support letter
8. Tolko referral letter and map (Oct. 26, 2011)

This application resulted from discussions with the Ministry of Transportation and Infrastructure (MoTI) and Argo Road Maintenance Inc. located in Kelowna (see attached letter). The objective of the application is to improve public safety along Beaver Lake Road. This will be accomplished through the salvage and removal of dead and dying beetle infested timber along





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with the removal of incidental green timber within a distance of approximately 30m from the edge of the road running surface. This timber removal will achieve the following MoTI objectives in support of public safety:

- removal of danger trees and trees susceptible to blow down within and beyond the road right of way to avoid them from falling on the road and/or hitting vehicles travelling on the road
- increase in sight lines along the road, especially on sharp corners and areas that experience high rates of vehicle accidents

As part of this application, we are requesting an exemption from silviculture responsibilities under Section 46(1) of the FPPR. Since the objective of the timber removal is to improve public safety within the Beaver Lake road right of way, this site will not be reforested or managed for a free growing stand after harvest. The following was considered as part of this request:

- the site will be harvested in order to retain as much mature fir, spruce and balsam, regeneration, advanced regeneration and deciduous species as possible
- the site is narrow (average 30m) along the road side, and therefore will benefit from seed sources from the adjacent stands and mature stems retained within the site
- the site area beyond the 30m road right of way width will be selectively harvested and therefore will be stocked after harvest is complete

This application was referred and discussed with the following:

- Tolko Industries Ltd. s.22 - support the salvage harvest of this site, no concerns. See attached email and map. In regards to harvesting within the retention area, we are doing so to improve public safety which is mentioned as an acceptable rationale in Tolko's referral response comments
- Patti Hansen, District of Lake Country (DLC) - in response to Patti's comments after meeting with her, we are conducting the following mitigating actions:
  - retaining a 20m riparian reserve zone (RRZ) along the default S3 stream, and 5m no-machine zones along all NCD's and S4's in order to protect these watercourses
  - no stream crossings will be conducted
  - retaining all regeneration, advanced regeneration, deciduous species and brush within the site and along the road edge, of which there are significant levels
  - utilizing only existing landings and road access structures
  - not developing any new roads, bladed trails or other access structures, which will minimize soil exposure and disturbance in the site





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- harvesting on frozen soils and snow cover. Again, this action will minimize soil exposure and disturbance, and lower the risk of any sedimentation
- maintaining and recruiting additional coarse woody debris (CWD) on site where possible to discourage cattle movement, and to enhance soil stability, future soil structure and nutrient levels
- ensuring all ditch lines and culverts adjacent to the site along Beaver Lake Road are functioning properly during and after harvest
- cleaning all ditch lines adjacent to the site of logging debris as required to ensure proper drainage function, especially for spring freshet
- in regards to ECA's, this site is located within the lower reaches of the Vernon Creek Community Watershed. According to the "Oyama and Vernon Creek Source Water Assessment" report prepared for DLC and dated June, 2010, an ECA target of below 35-40% (p. 57) is desirable to maintain stream flows within the natural range. The report states that, after accounting for Tolko's existing and proposed blocks, the ECA's for the entire assessment area will be approximately 30%. It also states that this figure is slightly elevated since Tolko made recent retention changes that resulted in 225 ha less in proposed harvest within the watershed. Table 2-6 (p. 65) outlines that the ECA below the snowline (<1400m elevation) where this site is located is **15%** including accounting for future proposed blocks out to 2013. The report also states that the peak flow hazard remains at a low level for the Vernon Creek Watershed as a whole. This report appears to demonstrate that, after taking into account future planned Tolko blocks, ECA's are well within the identified target of below 35-40%.
- the site is located in a moderate vulnerability zone area within the watershed according to figure 1-6b of this report, except the S3 stream which is rated high vulnerability. We will be protecting this stream with a 20m riparian reserve zone where we will not be harvesting, as well as utilizing the additional retention of vegetation outside of the RRZ
- the site is not located within an LMZ
- in summary, based upon this information and the mitigating actions we will be taking during harvest, we anticipate that the harvesting of this site will have very little if any impact on the quantity or timing of flow, or have a measureable impact on water quality within the watershed or downstream in Vernon Creek.

s.22, s.16





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RECEIVED

JAN 17 2012

MINISTRY OF FORESTS

OKANAGAN SHUSWAP FOREST DISTRICT

January 17, 2012

Ministry of Forests, Lands and Natural Resources  
2501 - 14th Avenue  
Vernon, BC  
V1T 8Z1

**Attention:** Bruce Gardner, Small Scale Salvage Coordinator

**RE: FLTC A89590 Professional Salvage Application**

Attached is a Professional Salvage Application for FLTC A89590 located west of Beaver (Swalwell) Lake along the Beaver Lake Road. This professional application is accurate and conforms to all relevant Provincial and Federal legislation, Tolko's Forest Stewardship Plan (FSP), the Okanagan Shuswap Land and Resource Management Plan (LRMP) and the applicable Okanagan Shuswap District small scale salvage policies. As part of this application, we request a FLTC issued with a volume of 2,000 m3.

This application includes the following:

1. Professional Salvage Plan submission (two copies signed and sealed)
2. RPF certification form
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5. Shape file submission (as a .zap file)

This application resulted from discussions with the Ministry of Transportation and Infrastructure (MoTI) and Argo Road Maintenance Inc. located in Kelowna (see attached letter). The objective of the application is to improve public safety along Beaver Lake Road. This will be accomplished through the salvage and removal of dead and dying beetle infested timber along





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with the removal of incidental green timber for access within a distance of approximately 30m from the edge of the road running surface. This timber removal will achieve the following MoTI objectives in support of public safety:

- removal of danger trees and trees susceptible to blow down within and beyond the road right of way to avoid them from falling on the road and/or hitting vehicles travelling on the road
- increase in sight lines along the road, especially on sharp corners and areas that experience high rates of vehicle accidents

As part of this application, we are requesting an exemption from silviculture responsibilities under Section 46(1) of the FPPR for the 30m right-of-way area. Since the objective of the timber removal is to improve public safety within the Beaver Lake road right of way, SU 1 will not be reforested or managed for a free growing stand after harvest. The following was considered as part of this request:

- the site will be harvested in order to retain as much mature fir, spruce and balsam, regeneration, advanced regeneration and deciduous species as practicable
- the site is narrow (average 30m) along the road side, and therefore will benefit from seed sources from the adjacent stands and mature stems retained within the site
- the site area beyond the 30m road right of way width (SU 2) will also involve the retention of as much mature and immature stems and deciduous as practicable and therefore will be partially stocked after harvest is complete

This application was referred and discussed with the following:

- Tolko Industries Ltd. s.22 - support the salvage harvest of this site, no concerns. See attached email and map. In regards to harvesting within the retention area, we are doing so to improve public safety which is mentioned as an acceptable rationale in Tolko's referral response comments
- Patti Hansen, District of Lake Country (DLC) - in response to Patti's comments after meeting with her, we are conducting the following mitigating actions:
  - retaining a 20m riparian reserve zone (RRZ) along the default S3 stream, and 5m no-machine zones along all NCD's and S4's in order to protect these watercourses
  - no stream crossings will be conducted
  - retaining as much mature spruce, fir, balsam, and immature trees, deciduous and brush within the site and along the road edge as practicable, of which there are significant levels





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- utilizing only existing landings and road access structures
- not developing any new roads, bladed trails or other access structures, which will minimize soil exposure and disturbance in the site
- harvesting on frozen soils or suitable snow cover. Again, this action will minimize soil exposure and disturbance, and lower the risk of any sedimentation
- maintaining and recruiting additional coarse woody debris (CWD) on site where possible to discourage cattle movement, and to enhance soil stability, future soil structure and nutrient levels
- ensuring all ditch lines and culverts adjacent to the site along Beaver Lake Road are functioning properly during and after harvest
- cleaning all ditch lines adjacent to the site of logging debris as required to ensure proper drainage function, especially for spring freshet
- in regards to ECA's, this site is located within the lower reaches of the Vernon Creek Community Watershed. According to the "Oyama and Vernon Creek Source Water Assessment" report prepared for DLC and dated June, 2010, an ECA target of below 35-40% (p. 57) is desirable to maintain stream flows within the natural range. The report states that, after accounting for Tolko's existing and proposed blocks, the ECA's for the entire assessment area will be approximately 30%. It also states that this figure is slightly elevated since Tolko made recent retention changes that resulted in 225 ha less in proposed harvest within the watershed. Table 2-6 (p. 65) outlines that the ECA below the snowline (<1400m elevation) where this site is located is **15%** including accounting for future proposed blocks out to 2013. The report also states that the peak flow hazard remains at a low level for the Vernon Creek Watershed as a whole. This report appears to demonstrate that, after taking into account future planned Tolko blocks, ECA's are well within the identified target of below 35-40%.
- the site is located in a moderate vulnerability zone area within the watershed according to figure 1-6b of this report, except the S3 stream which is rated high vulnerability. We will be protecting this stream with a 20m riparian reserve zone where we will not be harvesting, as well as utilizing the additional retention of vegetation outside of the RRZ
- the site is not located within an LMZ
- in summary, based upon this information and the mitigating actions we will be taking during harvest, we anticipate that the harvesting of this site will have very little if any impact on the quantity or timing of flow, or have a measureable impact on water quality within the watershed or downstream in Vernon Creek.

s.22, s.16





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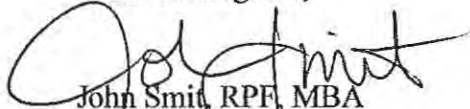
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s.22, s.16

- s.22 representing Balcaen Consolidated Contracting Ltd., and the Coldstream and Eldorado Ranch - supports the salvage harvest of this site, no concerns (see attached email)
- s.22 Okanagan Cottage Owners Association - supports the salvage harvest of this site for the purpose of public safety (see attached email)
- s.22 Beaver Lake Mountain Resort - supports the salvage harvest of this site for the purpose of public safety (see attached letter)
- s.22 Dee Lake Resort - supports the salvage harvest of this site for the purpose of public safety
- s.22 Trapper (trapline # s.22 - spoke November 9, he has no concerns regarding the site

If you have any questions regarding this application, please do not hesitate to contact me.

Warmest Regards,

  
John Smit, RPF, MBA  
Heartland Resources Inc.



## **Shortt, Stacey A FLNR:EX**

---

**From:** Toperczer, Richard E FLNR:EX  
**Sent:** Thursday, February 14, 2013 1:52 PM  
**To:** Shortt, Stacey A FLNR:EX  
**Subject:** FW: Beaver Lake Road  
**Attachments:** Central Okanagan-20120612-00712.jpg; Central Okanagan-20120612-00758.jpg; Kelowna-20120612-00749.jpg; Kelowna-20120612-00720.jpg

I did respond to this one and forward it to the licensee with instruction that he is obliged to deal with these issues as per his license. Unfortunately, I no longer have that email.

**Richard Toperczer, RPF**  
**Tenures Officer**  
**Okanagan Shuswap District**  
**Ministry of Forests, Lands and**  
**Natural Resource Operations**  
**2501 - 14th Avenue**  
**Vernon, BC V1T 8Z1**  
**Phone: 250-558-1733**  
**Fax: 250-549-5485**  
**Cell: 250-558-8842**

**From:** Don Dobson [<mailto:ddobson@urbansystems.ca>]  
**Sent:** Wednesday, June 13, 2012 1:27 PM  
**To:** Toperczer, Richard E FLNR:EX  
**Subject:** Beaver Lake Road

Richard;

Here is a series of photos taken by DLC staff yesterday in the 13 Km area on Beaver Lake Road. As you can see from photo 712 the ditchline has not been cleared of debris by the logger. Photo 758 illustrates the build-up of woody debris and subsequent sediment wedges in the ditchline. Photo 749 shows the sediment transport off the road towards Vernon Creek. Photo 720 shows a failure in the road shoulder at a failed cross drain.

The following comments relate to observations by staff in the area yesterday:

- Areas of ditches were close to, or at full capacity (all along Beaver Lk Main with the worst area between 11 – 13 km)
- Areas of ditches contained debris and/or were full with remnants and/or piles of logs from recent logging along Beaver Lake Road (Ministry of Transportation and Infrastructure tree safety clearing/small scale salvage (SSS) operation).
- There have been many complaints and concerns that the SSS operation filled ditches at various locations along these roads with woody debris and had not cleaned them following the danger tree removal/salvage operation and that they had placed logs into the ditches. This was discussed at the watershed meeting and Ministry of Forest Lands and Natural Resource Operations reported that the logger had been advised to clean up these areas. These area had not been cleaned up and in some locations where they appeared to be clean the ditches were also cleared of all sediment and only large rocks remained.
- The highest impact area was at 13km where a washout occurred and major debris and sediment were washed down the bank towards Vernon Creek.
- Tried to investigate however could not walk too far down towards Vernon Creek as there was undermining of bank (some areas appeared to be 1 – 2m deep).
- Suspect this loading made it to Vernon Creek.



- There was very dirty water in ditch from approximately 13.5 down to this washout.
- Argo was on site with a grader and water truck – they apparently had been there since Sunday following the washout.
- Culverts were damaged and/or not fully functioning due to the obstruction from excessive debris and sedimentation (this was mentioned to Argo workers when I advised them of large dangerous sinkhole on Beaver Lk Rd at approx km 13.5)
- Heavy flow of sedimentation over road and through culverts towards Vernon Creek
- Culverts showed signs of over capacity with heavy sediment accumulation and/or washouts around the culverts on the d/s side
- Argo was working on the road (grading and watering)
- Ditch water was very dirty in the washout area.
- All drainages observed on the high side of road flowing into the ditch were clear.

Based on our conversation this afternoon, this matter involves more than just action from your office. This matter is a major concern to the DLC and requires immediate action by a) the logging contractor, b) MoTI and c) FLNRO to address all the issues that are placing the District's water supply at risk.

Your immediate attention to this issue is required before the situation worsens as a result of the ongoing rainfall. Increased runoff onto unconditioned slopes above Vernon Creek will result in further washouts and slope failures unless the natural drainage patterns are restored. Action is required now.

Please keep me informed of your progress. If necessary I can meet you at the site at any time. My cell number is 250-878-4502.

Thank you,

Don

**Don Dobson, PEng**  
Senior Water Engineer

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, transmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete the material from any computers.



















## Shortt, Stacey A FLNR:EX

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**From:** Toperczer, Richard E FLNR:EX  
**Sent:** Thursday, February 14, 2013 1:50 PM  
**To:** Shortt, Stacey A FLNR:EX  
**Subject:** FW: Small Scale Salvage proposals

**Importance:** High

Richard Toperczer, RPF  
Tenures Officer  
Okanagan Shuswap District  
Ministry of Forests, Lands and  
Natural Resource Operations  
2501 - 14th Avenue  
Vernon, BC V1T 8Z1  
Phone: 250-558-1733  
Fax: 250-549-5485  
Cell: 250-558-8842

**From:** Richter, Dale FLNR:EX  
**Sent:** Monday, January 28, 2013 11:26 AM  
**To:** Toperczer, Richard E FLNR:EX  
**Subject:** FW: Small Scale Salvage proposals  
**Importance:** High

**From:** Patti Hansen [<mailto:pmeger@lakecountry.bc.ca>]  
**Sent:** Monday, November 21, 2011 11:19 AM  
**To:** Smit, John A FOR:IN  
**Cc:** Richter, Dale FLNR:EX; Glaspie, John T FLNR:EX;  
Greg Buchholz; Michael Mercer  
**Subject:** RE: Small Scale Salvage proposals  
**Importance:** High

s.22

Waters, Harold FOR:IN;

Good morning John, thank you for our meeting regarding proposed cut blocks in the Beaver Lake community watershed. As discussed, the District of Lake Country (DLC) completely supports Tolko's position below. The DLC does not support logging in designated vulnerable areas or within any LMZ on our drinking water reservoirs. I provided you with our vulnerability mapping and link to the Oyama and Vernon Creek Watershed Assessment Plan and expressed our concerns in regards to harvesting within sensitive zones. We understand that the logging along Beaver Lake Road is for danger tree removal however, a 25m clear cut on either side of the road is excessive and invasive into the vulnerability zones; specifically drainage into Vernon Creek and our drinking water reservoir Lakes. We understand that logging of danger trees may be necessary within sensitive areas and request that you revise your plans to selectively harvest (danger trees only) within these sensitive zones.

The district is concerned about the ECA in our watersheds. Please address the ECA in your report and provide information on short and long term hydrologic impacts your proposed harvesting will have in our watersheds.



We discussed the impact of current and future access roads in our watersheds and are requesting that no new roads be developed unless they are completely rehabilitated following harvest/Silvopasture activities. We expect that all roads used for industrial traffic will be upgraded to industry standards.

With respect to harvesting within rec sites and around lease lot properties along our drinking water reservoirs, the DLC is opposed to salvage logging within these vulnerability zones. We recognize that danger/fire hazard tree removal may be required in specific areas; however please assure that the Riparian Area Regulations, Fish Regulations Act and pertaining sections of our source water protection plan are carefully followed when preparing site plans and working in these areas. Please contact me to arrange for a block walk of these proposed areas prior to any site plan approval.

When speaking with you over the last couple weeks, you have advised me that some of your plans have already incorporated the above recommendations. You further advised me that you would be applying BMP and specifically soft footprint logging techniques in the high vulnerability zones (i.e. drainage area upstream of our community drinking water intake). We appreciate you recognizing these sensitive areas and the care required to reduce impact to our drinking water source.

Please provide the DLC with updated plans and notice of commencement of work.

Thank you,

**Patti Hansen**  
**Water Quality**  
**District of Lake Country**



**LAKE COUNTRY**  
Life The Okanagan Way

t: 250-766-6677 c: s.17 f: 250-766-0116 lakecountry.bc.ca

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**From:** s.22 @tolko.com]

**Sent:** Wednesday, October 26, 2011 11:17 AM

**To:** heartlandresources@shaw.ca

**Cc:** Richter, Dale FOR:EX (Dale.Richter@gov.bc.ca); john.glaspie@gov.bc.ca; Patti Hansen;

s.22

s.22  
**Subject:** Small Scale Salvage proposals

John, see my attached scans regarding you SSS proposals. I offer the following general recommendations / questions:



- No harvesting within any planned Tolko cutblocks or existing established Tolko Wildlife Tree Patches (as noted on the detailed scans or discussed with you previously)
- If you are harvesting within road right of ways why would you need to harvest on the lower side of the road where most trees would fall away from the road?
- Tolko created a retention plan (landscape level plan) to support our MPB salvage strategy and hydrology reports. This plan consisted of MPB salvage harvest areas, short term retention areas (non pine leading deferred until hydrology recovers as per watershed reports) and long term retention areas (generally OGMA's and other constrained or important to retain areas such as wider reserve corridors on main stem streams and around lakeshore management zones). Many of your proposals fall within long term retention areas that Tolko has committed to leave. We generally don't support SSS in these areas unless they can be demonstrated to improve safety as any forest health issue is more of a salvage than a control issue at this point.
- We have committed to no harvesting within the 210m LMZ of all class A lakes. We do not support harvesting here for the same reasons as noted above under retention plans. You will have to work with the MFLNRO's to gain approval in these areas.
- Regarding your plans in Recreation areas we are not clear what you are proposing within these mapped polygons. The actual used portion of these polygons is generally around a feature such as a lake and the rest of the polygon is not used or accessed by most people. Please explain further as we are not sure of you intentions. In any case most of these areas are within mapped Tolko long term retention plan areas and or class A LMZ's where we will not be harvesting. You should discuss your plans with Patti Meger of the District of Lake Country regarding issues here that pertain to increased access for motorized vehicles and Cows in the LMZ from a drinking water perspective.

Thanks for the opportunity to comment on your plans.

Please ensure you contact either s.22 for rights of first refusal for any timber you generate from these SSS plans within our operating area.

s.22

Tolko Okanagan Regional Woodlands  
4280 Highway 6, Lumby, BC, V0E 2G7

s.22

[@tolko.com](mailto:@tolko.com)

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<b>FLTC Number:</b>	<b>Okanagan Shuswap Forest District SALVAGE PLAN</b>	<b>Reference Number:</b>
<b>A89590</b>		<b>3840</b>

## 1.0 LICENSEE INFORMATION

<b>Legal Name Of Licensee</b>	<b>Address Of Licensee</b>
Heartland Resources Inc.	5314 Ptarmigan Street Kelowna, BC V1W 5A4
<b>Prepared by</b>	<b>Contact Information</b>
John Smit, RPF	Ph. 250-764-0820 Cell s.22 Fax 250-764-0829 Email heartlandresources@shaw.ca

## 2.0 SALVAGE INFORMATION

<b>Location (Attach Map)</b>				
Beaver Lake Road (west of Beaver lake Lodge and Swalwell Lake)				
<b>Latitude</b>	<b>Longitude</b>	<b>UTM Zone</b>	<b>Easting</b>	<b>Northing</b>
50 02' 06" N	119 16' 24" W	11 V	0337200	5545000
<b>Licensee Operating Area:</b> Tolko Industries Ltd. (map sheet #82L004)				
<b>Access Details:</b>				
Travel approximately 22 km north from Kelowna on Highway 97 to Winfield. Turn right at the lights onto the Beaver Lake Road. Travel east on this road for approximately 13.2 km. The site is located along the north (upper) side of the Beaver Lake Road (see map) for a total distance along the road of approximately 1.3 km heading northeast towards the Beaver Lake Lodge and Swalwell Lake area.				

	<b>Block # 1</b>	<b>Block #</b>	<b>Block #</b>	<b>Block #</b>
<b>Salvage reason and species:</b>	IBM (green/red/grey attack), removal of hazard trees for public safety along the road			
<b>Gross Clearcut Area (by block)</b>	7.0 ha			
<b>Gross Partial Cut Area (by block)</b>	0.0 ha			
<b>Total Gross Area</b>	7.0 ha			

<b>Term Requested For Licence</b>	<b>Comments</b>
One Year	N/A



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Timber proposed for removal		Volume (m3)					Total
Species	PI	Fd	Sx	Bl	Other Cw		
Green Attack	50	0	0	0	0		50
Red Attack	380	0	0	0	0		380
Dead standing or down	600	0	0	0	0		600
Damaged by Fire	0	0	0	0	0		0
Wind thrown	0	0	0	0	0		0
Live (interspersed)	0	10	90	20	0		120
Live (access)	0	0	130	20	0		150
Total	Sawlog vol	1030	10	220	40	0	1300
	Other vol	0	0	0	0	0	0

<b>Access To The Harvest Area</b>
<b>Status of Access Road(s) (check all that apply)</b>
FSR <input checked="" type="checkbox"/> Road Permit <input type="checkbox"/> Non-Status <input type="checkbox"/> Public Road Maintained by MoTI <input checked="" type="checkbox"/>
<b>Does the road accessing the harvest area require upgrading or modification?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
If no, the applicant may be eligible for an exemption under Section 22.1 (4) of the Forest and Range Practices Act
If yes, the applicant, in consultation with the Ministry of Forests Representative, may require a road permit to authorise the proposed road modifications.
<b>Does the road accessing the harvest area require reactivation?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
If yes, then the road must be deactivated post-harvest and adequate water and access control established.

### 3.0 AREA UNDER THE PLAN (ha)

Block #	NAR	NPUNNAT (PAS)		NP Natural			NP Other Area			Reserve Area		WTP (%)	Gross Area (TAUP)
		Area	%	Swamp/wetland	Rock	Other	NCBR	Imm	Other	WTP	Other (RRZ)		
1	6.6	0.3	4.3	0	0	0	0	0	0	0	0.1	0	7.0



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#### 4.0 STAND DESCRIPTION

Pre-Harvest						
SU	Species 1 (%)	Species 2 (%)	Classes (age/class/stk)	Site Index	Source	Basal Area (est.)
1	PI (70%)	Sx (30%) (Fd)	8312	17	Forest cover map	35
2	PI (70%)	Sx (30%) (Fd)	8312	17	Forest cover map	35

Post-Harvest						
SU	Species 1 (%)	Species 2 (%)	Classes (age/class/stk)	Site Index	Source	Basal Area (est.)
1	Sx (60%)	Fd (40%)	8312	17	Field review	12
2	Sx (70%)	Fd (30%)	8312	17	Field review	21

#### 5.0 ASSESSMENTS

<b>Visual Impact Assessment</b>	<b>Date Of Assessment:</b> November 2, 2011
<b>Is The Block In A Known Scenic Area:</b> Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/> <b>VQO:</b> N/A	
<b>Comments:</b> The visual impact of the salvage harvest along the Beaver Lake Road will be minimized through the retention, where possible, of mature fir, spruce and balsam, regeneration, advanced regeneration, deciduous species and brush both within the site and along the road edge. The site is not in a known scenic area, and has no VQO associated with it.	

Pest Incidence Survey			Date Of Assessment: November 2, 2011
SU	Pest Code	Incidence (%) Or Rating	Management Strategies To Reduce Forest Health Risk & Comments
1/2	IBM	High 80%	Salvage harvest to eliminate green, red and grey attack
Comments: incidence rate is based on an ocular assessment and is an estimate only			

Archaeological Assessment		Type of Assessment: none required.		Date Of Assessment: N/A	
SU	Consultant		First Nations		Recommendations
1/2					
Comments:		s.16, s.22			







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## 6.0 OTHER RESOURCES

<b>Community Watershed (CWS)</b>	<b>Name of CWS:</b> Vernon Creek Community Watershed
<b>Harvesting within LMZ of Reservoir Lake or RMZ of stream flowing directly to water intake:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
<b>Harvesting within LMZ or RMZ of other lake, stream, wetland in CWS:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<b>Details:</b> There is one S3 stream located within the site (refer to map).	
<b>Measures to protect water, including access mitigation, sediment delivery and other referral concerns (list concerns and describe measures to address):</b> Discussed site with Patti Hansen (District of Lake Country) on November 1, 2011 regarding the Vernon Creek Community Watershed. In order to alleviate any concerns regarding impact to water quality, we will undertake the following: <ul style="list-style-type: none"> <li>• There will be no new road structures created to access this site. We will be using Beaver Lake Road and the existing trail along the north boundary</li> <li>• Existing landings/openings along Beaver Lake Road will be utilized where possible for processing and loading of timber, except where some roadside harvesting may be required. No new landing structures will be constructed.</li> <li>• No bladed trails will be created for the skidding and harvesting, thus reducing the potential for soil disturbance</li> <li>• Wherever possible, CWD retention and recruitment will be conducted on site to discourage cattle access and enhance soil stability</li> <li>• A 5m no-machine buffer will be utilized along all S4's and NCD's</li> <li>• The S3 stream within the site will be protected by identifying and ribboning a 20m RRZ, and retaining all vegetation and trees within the RRZ</li> <li>• There will be no stream crossings within the site</li> <li>• Within the block, mature fir, spruce, and balsam, along with spruce and balsam regeneration and advanced regeneration, aspen and brush will be retained wherever practicable to contribute towards soil stability and ground cover</li> <li>• The block is located above the road, and therefore any potential sedimentation, if it does occur, will be controlled by the ditch line along the Beaver Lake Road system, thereby helping to protect the water quality values in Vernon Creek</li> <li>• Harvesting will occur on frozen soils or suitable snow cover which will again reduce soil disturbance within the site.</li> </ul>	

Range	Applies:	Describe Measures to Address (such as: as loc'n- mapped, dimension of debris barriers, etc):
<b>Mitigate breach of natural range barriers (incl. to riparian features in CWS):</b>	<input type="checkbox"/>	N/A
<b>Prevent the introduction or spread of noxious weeds:</b>	X	Whenever possible, debris and dirt will be washed on a regular basis from the harvesting and hauling machinery to remove potential noxious weed seed source. Harvesting during winter conditions and snow cover will minimize the risk of the spread of seed source.
<b>Other range feature (fences, etc)</b>	X	There is an existing cabin on the upper side of the side road along the north boundary of the site, along with a foundation of a past cabin and a small old corral on the lower side of the side road (see map). These structures will be protected during harvest operations, and there will be no debris piled near the entrance to the corral.
<b>Other referral comments:</b>	X	Discussed with s.22 on November 9, 2011. No issues.



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Other Resources/ Stakeholders:	Applies?	List all referral concerns, other known issues, and management strategies to address:
Water Licenses	X	There is one water license noted in the area directly along Vernon Creek to the south of the site location. However, this application is not anticipated to impact this license in any way.
Fisheries	X	All fish streams will be protected with the legislatively required riparian reserve zones (RRZ) and no-machine buffers.
Recreation	<input type="checkbox"/>	N/A
Private land (adjacent)	<input type="checkbox"/>	N/A
Trappers/ Guide Outfitters	X	Discussed by phone with s.22 on November 9, 2011. Trap line number s.22 He had no concerns.
Mineral Tenures	<input type="checkbox"/>	N/A
Resorts	X	Discussed site with s.22 the Dee Lake, and the Beaver Lake Resorts. They are supportive of the removal of timber from the right of way along Beaver and Dee Lake Road for public safety purposes.
Other Resources/Tenure Holders	X	Discussed site with s.22 the Okanagan Cottage Owners Association. He said they are supportive of the removal of timber from the right of way along Beaver and Dee Lake Road for public safety purposes.

LRMP and other Planning Considerations:	Management Strategies to address:
Biodiversity Emphasis/ L.U. - CWD strategy	Biodiversity Emphasis - Low Landscape Unit - Vernon CWD strategy - Retain basic existing levels of CWD on site. Recruit between 0 to 5 pieces/ha of additional CWD where available, that measure approx. 3-5 m long and a minimum of 8 cm diameter.
Sensitive Areas	N/A
Old Growth Management Area	Not located within a OGMA
Green-Up	There is a recently harvested SSS site (Tolko block LL1142) adjacent to the north eastern boundary (see map). It has not been planted.
WTP (in or adjacent to existing)	Refer to Tolko FSP. Based upon our referral to Tolko and review of their operational maps, this site is not within or adjacent to an existing WTP.
Grizzly Bear Habitat	N/A
Ungulate Winter Range	Within Ungulate Winter Range Unit #12. Manage for moose habitat, including the retention of vegetative cover (regen., advanced regen. and deciduous stems wherever possible).
Wildlife/ Endangered Species (eg WHA)	N/A Not located within a WHA.
Other	N/A



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## 7.0 HARVESTING INFORMATION

Silvicultural Systems & Harvest Methods				
SU	System	Variant/Phase	Harvest Methods	Target Species for Harvest
1/2	Clearcut with reserves	removal	Ground Based System (GBS)	PI, and non-wind firm spruce and balsam
	Describe any limitations on harvest method, equipment type or size, timing of operations, etc due to stand or site conditions:			
1/2	Timing of harvest will be under frozen ground conditions or on suitable snow cover to protect the soils and understory vegetation. There are no limitations to equipment type or size.			

Area ID (as per map)	Hectares (Gross)	Average Slope %	Slopes >40%	Slopes >50%	Site Sensitivity L-M-H	Critical site conditions that may affect the timing of operations and how they affect the timing.
SU 1/2	7.0	15%	<input type="checkbox"/>	<input type="checkbox"/>	L	N/A
Comments						
			<input type="checkbox"/>	<input type="checkbox"/>		
Comments:						

## 8.0 SOIL DISTURBANCE

SU	Max. Allowable Soil Disturbance (%) (MASD)	Max. Amount TAS May Exceed MASD Prior to Rehab (%)	Max. Allowable Soil Disturbance For Roadside Work Areas (%)	Maximum Permanent Access Structures (%)
1/2	10	5	25	0
Rationale for exceeding PAS: N/A				
COMMENTS: N/A				

SU	Erosion Control For Disturbed Areas (e.g. Grass Seeding)
1/2	Where deemed beneficial for soil erosion control purposes, the landing(s) will be grass seeded with a suitable seed mixture. This will be evaluated after harvest operations are complete.



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## 9.0 ACCESS STRUCTURES SUMMARY (all access other than unbladed trails to be shown on map)

Description of Access Structure	S.U.	Measures and Timing for re-activation, de-activation (incl water and access control), rehabilitation	Dimensions (Length x Max Width)	Temporary		Permanent	
				Area (ha)	% of NAR	Area (ha)	% Gross
Existing Roads	1/2	The site is adjacent to the Beaver Lake Road (public road). Upon completion of harvest, all ditch lines located adjacent to the site will be inspected and cleaned of debris as required. Culverts adjacent to site will be inspected to ensure proper function. As well, the road surface will be inspected with MoTI and Argo Road Maintenance, and works completed if necessary to return to the original condition.	N/A	0	0	0	0
Existing Landings	1/2	Two existing landings will be utilized. One is located outside of the site, and one is located within the site. All existing water control structures will be re-established following harvest, and all ditch lines adjacent to the landings will be cleaned of debris. Roadside harvesting may also be utilized on a limited basis where dictated by terrain and skid distance.	50m x 50m	0	0	0.3	4.3%
Proposed Road	1/2	N/A	N/A	0	0	0	0
Proposed Landings	1/2	N/A	N/A	0	0	0	0
Proposed Bladed Trails	1/2	N/A	Min Spacing=	0	0	0	0
Existing Trails	1/2	There is an existing road/trail adjacent to portions of the northern boundary (located outside of the site) which may be used for skidding purposes	400m x 4m (approx.)	0	0	N/A (outside of site boundary)	0
Proposed Non-bladed Trails	1/2	There will be designated skid trails utilized within the site to minimize disturbance to the vegetation along the road way.	Min Spacing= N/A	0.4	6.1%	0	0
Borrow Pit(s)	1/2	N/A	N/A	0	0	0	0
Total Temporary	1/2	Non-bladed skid trails.	N/A	0.4	6.1%	0	0
Total Permanent	1/2	Two landings - one inside and one outside of the site	50 m x 50m	0	0	0.3	4.3%



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## 12.0 LEAVE TREE INFORMATION

Leave Tree Species And Functions					
SU	Species	Layer (diameter if needed)	Reserved		Describe purpose, function, condition, and distribution of leave trees including understory, as well as measures to protect leave trees.
			Stems/ ha or range	BA (m2)	
1/2	Bl, Sx (Pl)	Layer 2, 3 and 4	0 - 200	<1	<p>The understory consists of balsam, spruce and scattered pine regeneration and advanced regeneration which is in fair to good condition, and is approximately 0 - 200 stems/ha, either scattered throughout the site or in clumps. These stems will be retained where possible for the following purposes:</p> <ul style="list-style-type: none"> <li>• to maintain visual quality</li> <li>• to contribute towards wildlife habitat</li> <li>• to discourage entry by cattle</li> <li>• to contribute towards future stocking of the site</li> <li>• to contribute towards soil stability</li> </ul> <p>These stems will be protected by using a designated skid trail away from the main road and avoiding random skidding within the site wherever possible. Bunching will be conducted in such a way as to facilitate this skidding pattern. 0 - 3 snags/ha will be stubbed at approximately 3m height wherever possible for future wildlife habitat and CWD recruitment. Mature aspen if present will be retained wherever practicable.</p> <p>Harvest will be conducted on frozen soils or suitable snow cover to minimize impact to soils and the understory.</p>



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1/2	Sx, Fd, Bl	Layer 1 (mature)	0 - 150	0 - 21	<p>Retention of all mature spruce, fir and balsam, except where removal is required for access or the stems are non-wind firm in areas of higher lodgepole pine concentration where greater volume removal will occur and the remaining stand is more exposed. Due to varying stand composition, this retention will vary in density and composition, with small open voids occurring as well as other areas of higher retention. These stems will be retained where possible for the following purposes:</p> <ul style="list-style-type: none"> <li>• to maintain visual quality</li> <li>• to contribute towards wildlife habitat</li> <li>• to discourage entry by cattle</li> <li>• to contribute towards future stocking of the site</li> <li>• to contribute towards soil stability</li> </ul> <p>It is anticipated that the removal of non-target green spruce, balsam and fir will equal approximately 20% of the total volume removal due to the narrow width of the site, and the requirement to remove non-wind firm spruce and balsam where the stand is predominantly lodgepole pine and volume removal and stand opening will be higher.</p>

**13.0 STOCKING REQUIREMENTS - required for clearcut greater than 1 ha (use "Reference Guide to FDP Stocking Stds" unless exemption requested, including Stds ID #)**

SU	NAR (ha)	Standards ID	Regen Delay (yrs)	Free - Growing Assessment Date (yrs)		Post Spacing Density (sph)		Max Coniferous at Free Growing (sph)
				Early	Late	Min	Max	
1	3.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	3.6	82185	7	12	15	700	2400	10,000

SU	Layer	Preferred Species	Acceptable Species	Well Spaced Trees (sph)			Min Inter Tree Distance (m)	Crop Tree Height Relative to Competition (%)
		Species/Min Height (m)/Footnotes	Species/Min Height (m)/Footnotes	Target Pref & Acc	Min Pref & Acc	Min Pref		
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	N/A	PI (1.4), Sx (0.8)	Bl (0.8), Fd (0.8)	1200	700	600	1.6*	125%



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**Comments :** The objective of timber removal along the 30m road right of way (SU 1) is to remove existing and potential hazard trees and improve public safety. The regeneration, advanced regeneration, and mature fir, spruce and balsam will be retained wherever practicable to contribute to future stocking. It is anticipated that adjacent mature pine, spruce and fir stems will provide for natural ingress by providing additional seed source. SU 1 is not planned for reforestation. SU 2 is planned for a managed stand to free growing.

\*The minimum inter-tree distance for SU 2 has been reduced from 2.0m to 1.6m in order to allow for the utilization of open voids between and within the retained timber and regeneration, and also to allow for obstacle planting due to potential cattle damage.

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#### 14.0 REFORESTATION PRESCRIPTION (required for Clearcuts >1 ha)

Site Preparation		
SU	Net Area	Technique(s) / Limiting Factors/Objectives
1	3.0	N/A
2	3.6	Hand screef or spot hoe prepare sites for planting. The limiting factors are the residual stems that will be retained during harvest in regards to operating a machine between these stems. Being located in a CWS will limit the level of disturbance that is acceptable with the objective being to avoid excessive soil disturbance and potential soil erosion and siltation. The objectives for the site preparation would be to remove brush and/or grass competition and expose mineral soil for warming.

Planting										
SU	Net Area	Regen Method	Class B SPZ	Class A SPZ	Species	Age	Stock Type	Season	Stems/ha (est.)	Total Stems
1	3.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	3.6	plant	TOD	TON	PI, Sx	1+0	PSB	spring	1000	3,600

#### 15.0 PEST MANAGEMENT

Pest Control		
Trap Tree Felling? Yes <input type="checkbox"/> No X Species and Number of trees: N/A		
To Be Felled By (Date): N/A		
To Be Removed From Site By (Date): N/A		
SU	Gross Area	Pest Control Treatment
1/2	7.0	Salvage harvest of pine beetle infested stems.





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## 16.0 DEBRIS MANAGEMENT

<p><b>Debris Management Strategies for Fuel Hazard Abatement and Worker Safety (e.g. full tree yard, top in bush and lop and scatter, pile and burn):</b></p> <p>All timber will be skidded to central landing locations or roadside location(s) for processing. The resulting debris in these designated locations will be piled for burning and disposal at an appropriate time.</p> <p><b>Debris pile locations:</b> debris piles will be located either at the designated landing location, or along the roadside. The piles will be located at a suitable and safe distance away from any standing timber to avoid damage to adjacent timber.</p> <p><b>Timing of Debris disposal (after Residue and Waste assessment):</b> debris will be burnt in the fall/early winter with some snow cover on the ground when the venting index is favourable.</p>
---

## 17.0 ADMINISTRATION

RPF's Signature And Seal	RPF Printed Name & Affiliation
	John Smit, RPF
	Date Signed
	January 17, 2012
	<input type="checkbox"/> I Certify That I Have Reviewed This Document And, While I Did Not Personally Supervise The Work Described, I Have Determined That This Work Has Been Done To Standards Acceptable Of A Registered Professional Forester. <input type="checkbox"/> I Certify That The Work Described Herein Fulfills Standards Expected Of A Registered Professional Forester, And That I Did Personally Supervise The Work. <input checked="" type="checkbox"/> I Certify That This Work Has Been Done To Standards Acceptable Of A Registered Professional Forester.

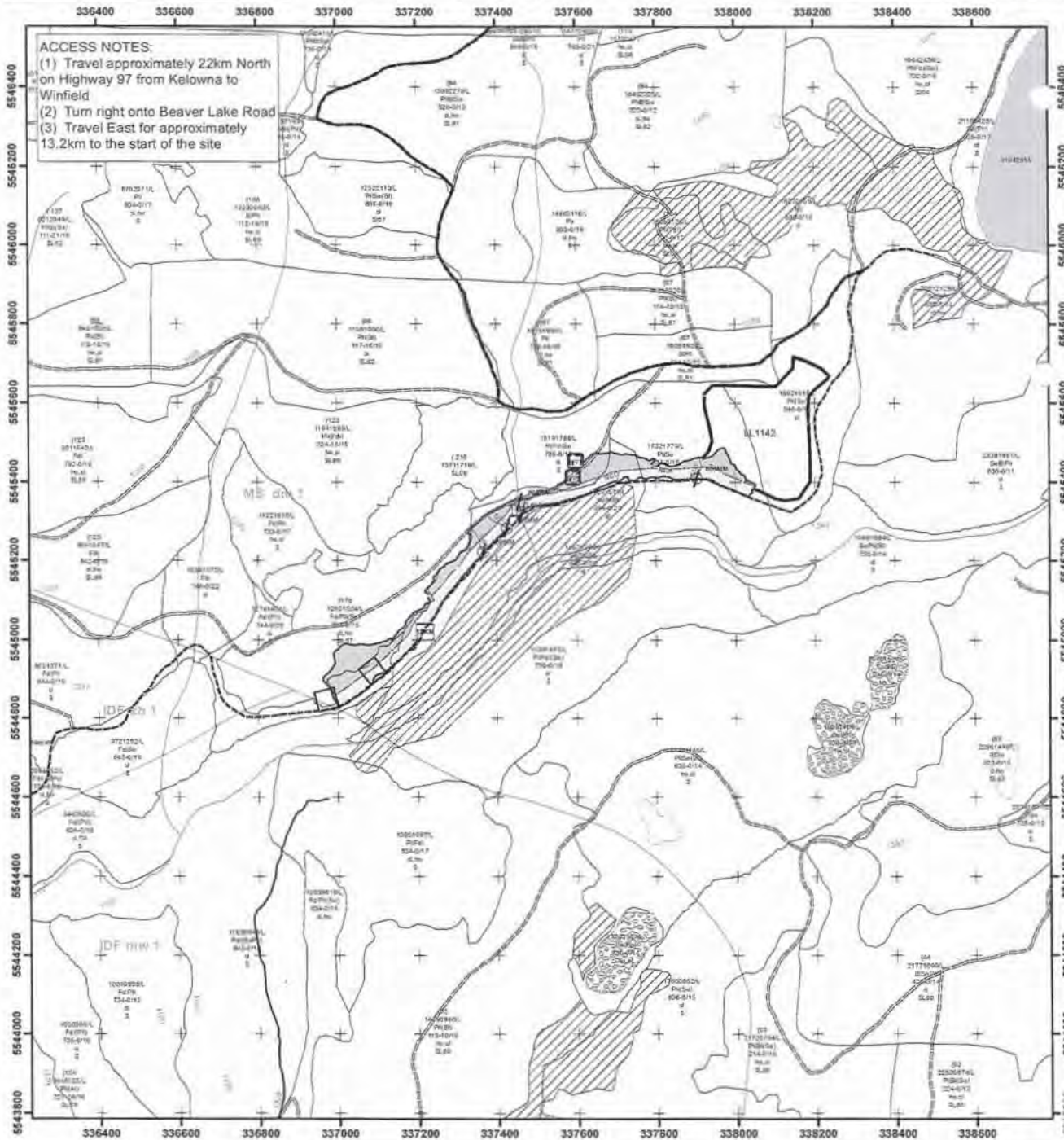
Licensee Signature	Applicant Printed Name
	John Smit, RPF
	Date Signed
	January 17, 2012

Maps attached form an integral part of this document



# Site Plan Map

Forest Region:	Southern Interior	Cutting Permit:	n/a	Gross Area (ha):	7.0
Forest District:	Okanagan-Shuswap	Block No.:	n/a	NAR (ha):	6.6
TSA:	Okanagan	Timbermark:	89590	Map Scale:	1:10,000
Mapsheet/Opening #:	82L004	PSYU:	187	Projection:	UTM-NAD83 Zone 11
Licence:	FLTC A89590	Location:	Beaver Lake Road	Date:	December 9, 2011



SU	BGCZ	Site Series	Average Slope	Treatment Description	Gross Area (ha)	NHZ	WTP	Roads/Landings			
								TAS	PAS	RRZ	NAR
1	MSdm1	01 (05)	15	clearcut with reserve	3.3	0.0	0.0	0.0	0.2	0.1	3.0
2	MSdm1	01 (05)	15	selective harvest	3.7	0.0	0.0	0.0	0.1	0.01	3.6
TOTALS:					7.0	0.0	0.0	0.0	0.3	0.1	6.6

**Legend:**

- Block Boundary
- Forest Tenure Roads
- Existing Landing
- Rock
- OGMA
- Other FDP Blocks
- Forest Service Road
- Existing ROW
- Culvert
- Environmentally Sensitive Areas
- No Harvest Zone
- Highway
- Existing Cable
- Cattleguard
- Mule Deer Winter Range
- Machine Free Zone
- Logging Road
- Existing Temporary Landing
- Skid Crossing
- Ungulate Winter Range
- WTP
- Proposed Road
- Proposed Landing
- Bridge
- Caribou Habitat
- Falling Corner
- Temporary Access
- Proposed ROW
- BEC Zones
- Station
- Pipeline
- Proposed Cable
- NCD Stream
- Parks
- SP Plot
- Transmission Line
- Proposed Temporary Landing
- Riparian Reserves
- TFL
- 100m Contours
- Secondary Rd
- Proposed Skid Direction
- Lakes & Rivers
- Woodlot Boundary
- 20m Contours
- Trail
- Swamp

**Coordinates of Block Center**  
 Easting: 337200  
 Northing: 5545000  
 Latitude: 50° 02' 06" N  
 Longitude: 119° 16' 24" W

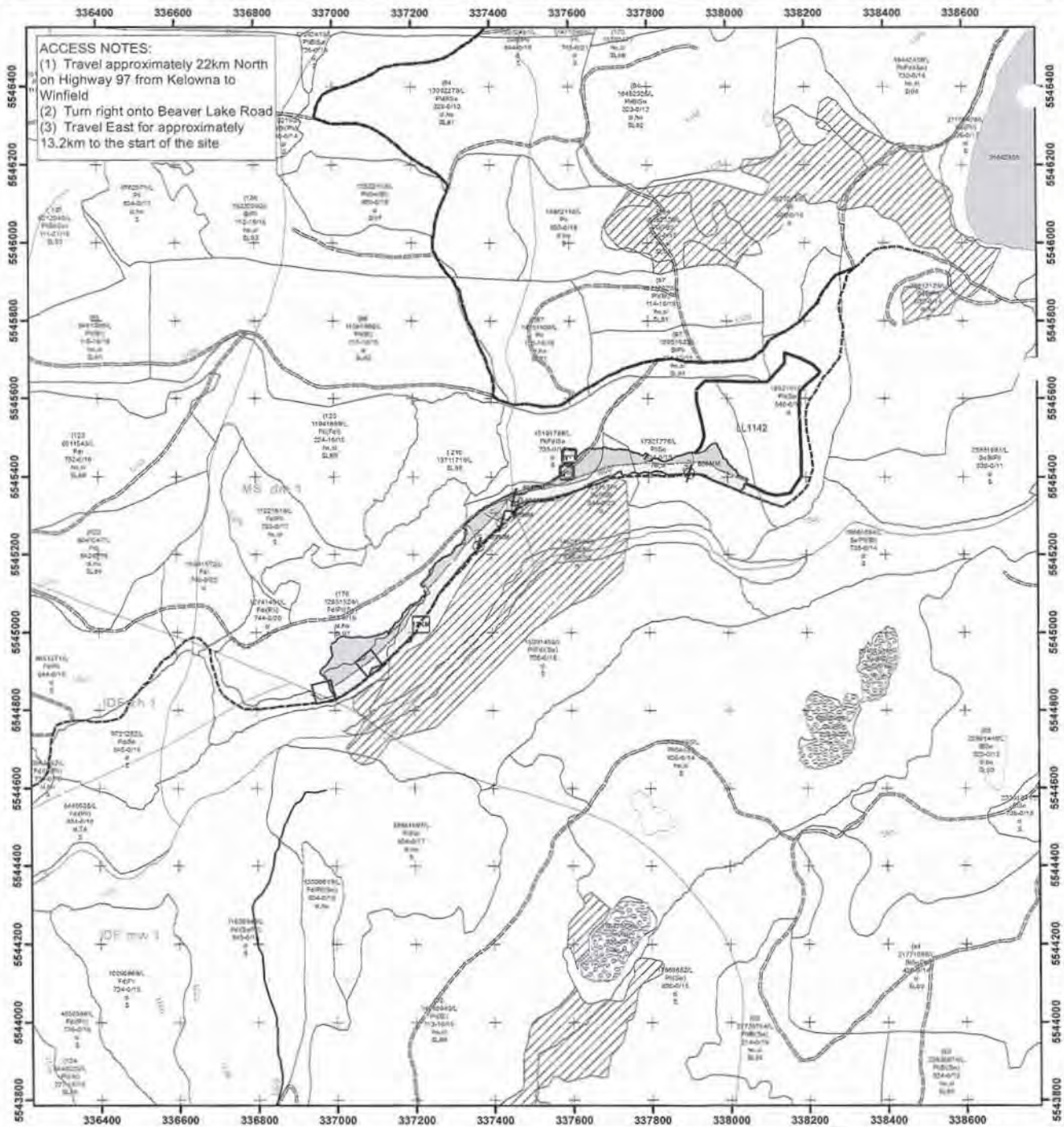
**Scale:**  
 0 100 200 300 400 500 Meters

**Ecota**  
 dan.barton@ecota.ca, ec\_89590, 11x17



# Site Plan Map

Forest Region:	Southern Interior	Cutting Permit:	n/a	Gross Area (ha):	7.0
Forest District:	Okanagan-Shuswap	Block No.:	n/a	NAR (ha):	6.6
TSA:	Okanagan	Timbermark:	89590	Map Scale:	1:10,000
Mapsheet/Opening #:	82L004	PSYU:	187	Projection:	UTM-NAD83 Zone 11
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SU	BGCZ	Site Series	Average Slope	Treatment Description	Gross Area (ha)	NHZ	WTP	Roads/Landings		RRZ	NAR
								TAS	PAS		
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2	MSdm1	01 (05)	15	selective harvest	3.7	0.0	0.0	0.0	0.1	0.01	3.6
TOTALS:					7.0	0.0	0.0	0.0	0.3	0.1	6.6

Block Boundary	Forest Tenure Roads	Existing Landing	Rock	OGMA
Other FDP Blocks	Forest Service Road	Existing ROW	Culvert	Environmentally Sensitive Areas
No Harvest Zone	Highway	Existing Cable	Cattleguard	Mule Deer Winter Range
Machine Free Zone	Logging Road	Existing Temporary Landing	Skid Crossing	Ungulate Winter Range
WTP	Proposed Road	Proposed Landing	Bridge	Caribou Habitat
Felling Corner	Temporary Access	Proposed ROW	Streams	BEC Zones
Station	Pipeline	Proposed Cable	NCD Stream	Parks
SP Plot	Transmission Line	Proposed Temporary Landing	Riparian Reserves	TFL
100m Contours	Secondary Rd	Proposed Skid Direction	Lakes & Rivers	Woodlot Boundary
20m Contours	Trail	25% Slope	Swamp	

Coordinates of Block Center  
Easting: 337200  
Northing: 5545000

Latitude: 50° 02' 06" N  
Longitude: 119° 16' 24" W

Scale: 1:10,000