

From: [Bohay, Trevor FLNR:EX](#)
To: [Densmore-McCulloch, Justine FLNR:EX](#); [Meldrum, Tracy FLNR:EX](#)
Subject: FW: RES 132925-601-040620 cherry creek 5096 Lazy Acres - hydrologist report
Date: April 22, 2020 3:48:00 PM
Attachments: [image003.png](#)
[TNRD 2020_04_01 - EAF 5096 Lazy Acres Cherry Crk.pdf](#)
[Letter to R Storie re Cherry Creek Flood Preparation 2020 - Apr 22 - Streamworks.pdf](#)
[EAF 1 Res-132925-601-040620 Hydrologist.pdf](#)
Importance: High

I didn't promise anything, but Ron Storie is wondering if the Notification for Cherry Creek is still in force and if the **s.22** can clean up the debris jam and oil drum under that authority? See Al Bates' report

T

From: Ron Storie <rstorie@tnrd.ca>
Sent: April 22, 2020 3:32 PM
To: EMBC CTL PREOC Planning 1 EMBC:EX <preoc3.pln1@gov.bc.ca>
Cc: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Subject: RES 132925-601-040620 cherry creek 5096 Lazy Acres - hydrologist report
Importance: High

Hi folks, here is the hydrologist report at 5096 Lazy acres rd for your records.
As a spin off to this there is a debris jam and fuel drum (that may contain diluted fuel) that should be actioned. I will follow up on this separately. Cheers

Ron Storie
Director of Community Services
300-465 Victoria Street
Kamloops, BC V2C 2A9
Ph: (250) 377-7078 Fax: (250) 372-5048 E-mail: rstorie@tnrd.ca



From: Ron Storie
Sent: Wednesday, April 1, 2020 2:13 PM
To: EMBC Sylvia Chow <Sylvia.Chow@gov.bc.ca>
Subject: cherry creek 5096 Lazy Acres request for a hydrologist
Importance: High

Hi Sylvia, further to my phone conversation with you today

- We are requesting max \$1000 for a hydrologist to review the property
- I have attached some pictures that MOT provided me a couple of weeks ago

- These folks were impacted by flooding in 2017 and 2018
- Our hydrologist did a stream reach assessment in 2019 but this sloughing has just occurred recently
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- Our hydrologist can determine what the best response plan is

Cheers rws

From: Ron Storie

Sent: Wednesday, April 1, 2020 12:09 PM

To: Ron Storie

Subject: s1

Sent from my Samsung Galaxy smartphone.

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EOC 530

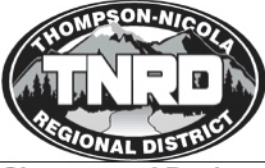
EOC Form 530 – Expenditure Authorization Form

Event: sloughing cherry creek	Date: April	EAF #: 2020 04 01
PEP Task No.:	Time:	

Requesting Authorized Person / Agency:	Ron Storie TNRD
Location / Tel / Fax:	250 318 2274
Incident Description: (include date, time, location and nature of response activity or service being provided)	<ul style="list-style-type: none">• We are requesting max \$1000 for a hydrologist to review the property• I have attached some pictures that MOT provided me a couple of weeks ago• These folks were impacted by flooding in 2017 and 2018• Our hydrologist did a stream reach assessment in 2019 but this sloughing has just occurred recently• We have just dropped sand and bags for them to move forward with protection but they are concerned about where this should be done because this raveling will push the water toward their house• Our hydrologist can determine what the best response plan is
Amount Requested:	\$1,000 max
Expenditure Authorized "Not to Exceed"	\$1,000

Expenditure Request Approved by EOC Finance / Admin Section Chief:	Expenditure Request Approved by EOC Director:
<hr/> <i>Name and Signature</i>	<hr/> <i>Ron Storie</i> <i>Name and Signature</i>
<hr/> <i>Time and Date</i>	<hr/> April 1 2020 <i>Time and Date</i>

<hr/>	Tel: 250 318 2274
-------	----------------------



Signature of Designated Authorizing Person (PREOC Director or designated principal PREOC staff)	_____ Date Approved	Fax:
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Distribute Completed Form To:	
<input type="checkbox"/> EOC Director	<input type="checkbox"/> Finance / Admin Section
<input type="checkbox"/> Planning Section	<input type="checkbox"/> Originator of Request
<input type="checkbox"/> PREOC Director	
<input type="checkbox"/> Other _____	

April 22, 2020

Thompson-Nicola Regional District
300 - 465 Victoria Street
Kamloops, BC
V2C 2A9

Attention: Ron Storie

Re: Cherry Creek Flood Preparations 2020

Dear Mr. Storie:

At your request, I visited 5096 Lazy Acres Road on April 16 to review flood preparations and identify potential issues associated with the upcoming high water season for Cherry Creek. The TNRD had recently delivered sand and sand bags to the property and the landowners requested advice on effective placement.

A sandbag wall (three bags high) had been built along the upstream property line and continued down along the creek side of the property. I suggested that the upstream end be tied into higher ground to ensure that any overbank flows occurring on the property upstream would not get in behind the sandbag wall. I also suggested that if flows were sustained against the sandbags during an event, a layer of poly plastic on the outside of the wall would help to reduce seepage. The landowners have been present for previous floods on the creek, so they have a good idea of what to expect.

The currently completed sandbag wall may still be extended further downstream to help protect the residence. Some sand-bagging may also be undertaken downstream to protect two farm buildings close to the creek.



A major concern for the landowners is a dry-raveling slope failure across the creek near the upstream boundary of the property. The failure was activated in 2017/18 by erosion of the toe by creek. The slope has continued to recede since that time, even when dry and not being actively undermined. Gravel materials could be seen falling down the face during the brief time of inspection. Coarse gravel and finer material deposited in the creek by the failure are pushing the creek toward the right bank and the occupied portion of the property. The failure is also contributing bedload to the channel, which may have already caused some aggradation (build-up) downstream in the creek, in turn increasing flood levels.



s.22

There is not much that can be done in the short term (i.e. before freshet) to address the slope failure and its potential

impacts. The entire steep valley-wall across the creek from the property has some indication of creep and/or instability. A terrain stability specialist should be consulted on the risk/potential for catastrophic failure and/or possible mitigation options.

Slightly downstream of the residence, a debris jam in the creek is causing a gradient step and constriction of the channel. The jam has forced flows against the left bank (away from the residence), possibly undermining



the unstable slope (as seen upstream). Encapsulated within the debris forming the jam is a fuel drum, potentially containing deleterious fluids. It is recommended that this jam, including the drum, be removed from the channel. This will help to reduce flood levels through the property by reducing backwater and mobilizing accreted materials in the channel upstream. Removal of the fuel drum should be done carefully to prevent any damage to the integrity of the container resulting to spillage. The landowners were in agreement with the recommendation and with permission, willing to contract a small machine to undertake the channel clearing.

In general, the occupied area of the property would be considered a floodplain area, and will always be at risk of

inundation during severe high water events along Cherry Creek. The unstable slope across the creek adds further risks to the safety of residents. Forcing the creek away from the residence increases pressure on the toe of the broad, potentially unstable slope. Ideally the residence would have been built on higher ground away from the creek.

Please feel free to contact me if you have any questions regarding the contents of this letter.

Sincerely,



Alan Bates, P.Eng.
Water Resources Engineer
Streamworks Consulting Inc.

Resource Request

*Red Label: indicates a required field.

Priority

Orange--Priority

*Status

Red--Approved Request

EMBC Resource Request Number (Do not change)

Res-132925-601-040620

EMBC Task Number

210057

Requestor Number

EAF 1 - Hydrologist

Resource Identifier (PECC Use Only)

WHO IS MAKING THE REQUEST?

*Requesting Organization

Thompson Nicola Regional District (TNRD)

*Requestor's Contact Info

Ron Storie
rstorie@tnrd.ca
250-377-7078

Related Event/Incident/Activity

I - TNRD Cherry Creek 200001-210057 Flood

Display All resource requests related to

I - TNRD Cherry Creek 200001-210057 Flood

WHAT IS BEING REQUESTED?

Resource Category

Expenditure Authorization

*Quantity

1

*Resource Type/Kind

Consulting Services (See MISSION for details)

Qty Unit Of Measure

each

When Needed

04/03/2020 at 16:30 PDT

Mission

-We are requesting max \$1000 for a hydrologist to review the property
-I have attached some pictures that MOT provided me a couple of weeks ago
-These folks were impacted by flooding in 2017 and 2018
-Our hydrologist did a stream reach assessment in 2019 but this sloughing has just occurred recently
-We have just dropped sand and bags for them to move forward with protection but they are concerned about where this should be done because this raveling will push the water toward their house
-Our hydrologist can determine what the best response plan is
Expenditure Not to Exceed: \$1000

Other

Resource must come with

SPECIAL INSTRUCTIONS (E.G. SAFETY MESSAGE, INGRESS/EGRESS ROUTES, ETC.)

Special Instructions

FORWARD REQUEST TO:

FORWARD REQUEST TO:

- ☒ **Uncheck to send Targeted Alert ONLY to the individual selected. When checked a Targeted Alert is sent to all users whose Personal Profile matches the Org/Location and Position selected.**

Individual:**Organization/Location:**

CTL PREOC

Position:**Agency:**

Operational Area Coordinator - Alpha

CTL - Central PREOC

Vendor**Summary of actions taken**

04/06/2020 at 13:36 PDT tpratt-CTL PREOC

As per RDM Syliva Chow on April 1, 2020 at 1532, this EAF is approved for a Hydrologist.

04/06/2020 at 13:35 PDT tpratt-CTL PREOC

Entering into eteams. As per email sent by Sylvia Chow, RDM, on April 1, 2020 at 1532, this EAF is approved.

Estimated Resource Cost

1000.00

Request History

04/06/2020 at 13:37 PDT - Trevor Pratt at CTL PREOC as Operational Area Coordinator - Alpha changed status to Red--Approved Request

04/06/2020 at 13:35 PDT - Trevor Pratt at CTL PREOC as Operational Area Coordinator - Alpha changed status to Black--New Request

NOTIFICATION

Send Notification N**Message****Individuals****Groups****Other Email Addresses**

GEO LOCATION & MAPPING

Site Name

Cherry Creek

Site Type

Site

Street Address

5096 Lazy Acres

Apt or Lot No.:**City**

Cherry Creek

State

BC

Zip**Intersection - Street 1****Intersection - Street 2*****County/Municipality**Thompson Nicola Regional
District (TNRD)**Geographic Area**

(Region, District, Campus, etc).

CTL - Central PREOC Region

Country

Canada

Additional Location Information**Show
on
Map?**

Yes

**Geo
Located
By**

byMap

**USNG
Coordinate**10U FB
71258
16588**Latitude**

50.675901151824384

Longitude

-120.57606953372955

[Display on
Map](#)

ATTACHMENTS

ACCESS CONTROL

You are not authorized to edit this section!!!

DATA SHARING

You are not authorized to edit this section!!!

Document Created by: **s.15** on 04/06/2020 at 13:35 PDT LastModified by: **s.15** on 04/06/2020 at 13:39 PDT
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From: [Alan Bates](#)
To: [Ron Storie](#)
Cc: [Bohay, Trevor FLNR:EX](#); [Densmore-McCulloch, Justine FLNR:EX](#)
Subject: Re: RES 132925-601-040620 cherry creek 5096 Lazy Acres - hydrologist report
Date: April 22, 2020 5:08:15 PM

Hi Folks;

Here are more pictures of the jam. It is constricting the right bank, although there is a small step in the creek gradient. It is mostly above water at the moment. One photo shows the drum deep in the jam.

Cheers;

Alan Bates, P.Eng.

Streamworks Consulting Inc

streamworks@telus.net

On Wed, Apr 22, 2020 at 4:56 PM Ron Storie <rstorie@tnrd.ca> wrote:

Thanks guys, we will talk tomorrow. Alan can you provide us with more pics if you have them? Cheers rws

-----Original Message-----

From: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>

Sent: Wednesday, April 22, 2020 4:50 PM

To: Ron Storie <rstorie@tnrd.ca>

Subject: FW: RES 132925-601-040620 cherry creek 5096 Lazy Acres - hydrologist report

[EXTERNAL EMAIL] Do not click links or open attachments from unknown senders.

You're in luck

Sent from my Samsung Galaxy smartphone.

----- Original message -----

From: "Densmore-McCulloch, Justine FLNR:EX"

<Justine.DensmoreMcCulloch@gov.bc.ca>

Date: 2020-04-22 16:26 (GMT-08:00)

To: "Bohay, Trevor FLNR:EX" <Trevor.Bohay@gov.bc.ca>, "Meldrum, Tracy FLNR:EX" <Tracy.Meldrum@gov.bc.ca>

Subject: RE: RES 132925-601-040620 cherry creek 5096 Lazy Acres - hydrologist report

Hi Trevor,

Yes the notification is still in force until December 31, 2022. I'm okay with this idea in principle, but I can't get a sense of how big this debris jam is by the description or photos. Could you/Ron/Alan get a firm description of the size of regular debris? Photos would also be helpful.

It is also past the co-issued variance end date, so I will need to issue another one if this work is necessary. I agree that an oil drum of unknown history is an easy choice on whether it should be removed.

I'll be able to address this first thing in the morning.

Justine

From: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Sent: April 22, 2020 4:07 PM
To: Densmore-McCulloch, Justine FLNR:EX <Justine.DensmoreMcCulloch@gov.bc.ca>; Meldrum, Tracy FLNR:EX <Tracy.Meldrum@gov.bc.ca>
Subject: FW: RES 132925-601-040620 cherry creek 5096 Lazy Acres - hydrologist report
Importance: High

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To: EMBC CTL PREOC Planning 1 EMBC:EX
<preoc3.pln1@gov.bc.ca<<mailto:preoc3.pln1@gov.bc.ca>>>
Cc: Bohay, Trevor FLNR:EX
<Trevor.Bohay@gov.bc.ca<<mailto:Trevor.Bohay@gov.bc.ca>>>
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Ph: (250) 377-7078 Fax: (250) 372-5048 E-mail:
rstorye@tnrd.ca<<mailto:rstorye@tnrd.ca>>

[newtnrdlogo_edited-1]<<http://www.tnrd.bc.ca/>>[facebook-icon]
<<http://www.facebook.com/thompson.nicola.regional.district>>[Twitter-icon]
<<http://www.twitter.com/TNRD>>

From: Ron Storie
Sent: Wednesday, April 1, 2020 2:13 PM
To: EMBC Sylvia Chow <Sylvia.Chow@gov.bc.ca<<mailto:Sylvia.Chow@gov.bc.ca>>>
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Importance: High

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Cheers rws

From: Ron Storie

Sent: Wednesday, April 1, 2020 12:09 PM

To: Ron Storie

Subject: s1

Sent from my Samsung Galaxy smartphone.

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From: [Ron Storie](#)
To: [Bohay, Trevor FLNR:EX](#); [Densmore-McCulloch, Justine FLNR:EX](#); streamworks@telus.net
Subject: drum / root wad - stand down
Date: April 22, 2020 5:20:14 PM

Just got a couple of calls from **s.22** No need to proceed. Water is running now, the folks think it might create more of an issue than not ... thanks though. Cheers rws

-----Original Message-----

From: Ron Storie
Sent: Wednesday, April 22, 2020 4:56 PM
To: 'Bohay, Trevor FLNR:EX' <Trevor.Bohay@gov.bc.ca>; 'Justine.DensmoreMcCulloch@gov.bc.ca' <Justine.DensmoreMcCulloch@gov.bc.ca>; 'streamworks@telus.net' <streamworks@telus.net>
Subject: RE: RES 132925-601-040620 cherry creek 5096 Lazy Acres - hydrologist report

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Sent: Wednesday, April 22, 2020 4:50 PM
To: Ron Storie <rstorye@tnrd.ca>
Subject: FW: RES 132925-601-040620 cherry creek 5096 Lazy Acres - hydrologist report

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Sent: April 22, 2020 3:32 PM

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Cc: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca<<mailto:Trevor.Bohay@gov.bc.ca>>>

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Director of Community Services

300-465 Victoria Street

Kamloops, BC V2C 2A9

Ph: (250) 377-7078 Fax: (250) 372-5048 E-mail: rstorie@tnrd.ca<<mailto:rstorie@tnrd.ca>>

[newtnrdlogo_edited-1]<<http://www.tnrd.bc.ca/>>[facebook-icon]

<<http://www.facebook.com/thompson.nicola.regional.district>>[Twitter-icon]<<http://www.twitter.com/TNRD>>

From: Ron Storie

Sent: Wednesday, April 1, 2020 2:13 PM

To: EMBC Sylvia Chow <Sylvia.Chow@gov.bc.ca<<mailto:Sylvia.Chow@gov.bc.ca>>>

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From: s.22
To: [Bohay, Trevor FLNR:EX](#)
Subject: Re: Investigation-Lazy Acres Road
Date: May 7, 2020 11:51:11 AM

Hi Trevor

I am just inquiring about this investigation. I am also interested in what, if anything, FLNR is doing or going to do with regards to the instability of the south bank of the property ahead of me. I have survived the freshett this year but the damage being caused to my property on the east end from the movement of the water through the adjacent property continues to grow. I am forced to try to mitigate that damage to my property for the last 4 years while there is no mitigating action occurring on the adjacent property. The hillside on the south end of the property is seriously eroding forcing the water into my property and undermining my land. The hillside is very unstable and will continue to shift and slough further diverting the creek.

You mentioned to me earlier that it is necessary to put waterways back to where they were initially when they have been diverted without permit. I am wondering if there is any plan to have that occur in the property adjacent to me on the East to reduce the damage it has continued to cause for 4 years.

Thanks
s.22

5096 Lazy Acres Road

From: "Bohay, Trevor FLNR:EX" <Trevor.Bohay@gov.bc.ca>
To: s.22
Sent: Tuesday, July 16, 2019 9:07:55 AM
Subject: Investigation-Lazy Acres Road

Good Morning s.22

Gerry MacDougall asked me to respond to your email, as it is our office that is looking into your concerns.

As for the investigation, we haven't concluded it, but I can share that thus far, a review of aerial imagery from 1959 to 2017 doesn't show any significant changes to the alignment of Cherry Creek at the property upstream from your home.

As you may be aware, your upstream neighbours would like to use their property. They are dealing with the TNRD regarding the dwelling and its location. They just submitted an application in to this office for a Section 11 Change Approval for a bridge. The turnaround time for these applications is typically 140 days and is currently greater due to the backlog caused by 2 years of province-wide flooding, so we will not make a decision on the file until the early winter at the earliest. The Ministry is aware of your concerns, and thus you will be given opportunity to review the final plan and provide written comment to this Ministry well in advance of any decision made. I have asked those folks to come in and explain their plans to us and I have expressed concern with the house at its

current location. There is no point in sending you their plan now as it will need to change after we meet them and their engineer. We will send you the final plan when we obtain it from them.

Please call me at the number below with any questions.

Regards,

Trevor Bohay M.Sc., P.Geo.

Resource Manager - Authorizations

Thompson-Okanagan Region

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

1259 Dalhousie Street

Kamloops, BC

Phone: 250 371-6284



From: s.22
To: [Bohay, Trevor FLNR:EX](#)
Subject: Re: Cherry Creek
Date: May 12, 2020 11:01:01 AM

Okay we are sending them now.

----- Original Message -----

From: "Trevor FLNR Bohay" <Trevor.Bohay@gov.bc.ca>
To: s.22
Sent: Tuesday, May 12, 2020 10:58:42 AM
Subject: RE: Cherry Creek

In the meantime if you can send 2 or 3 photos showing the change you observed, that would help.

-----Original Message-----

From: s.22
Sent: May 12, 2020 10:56 AM
To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Cc: MacDougall, Gerry L FLNR:EX <Gerry.MacDougall@gov.bc.ca>
Subject: Cherry Creek

Hi Trevor

I sent you an email last week about the instability of the bank on the property next door. Nobody is looking after that property and the slope on the southwest side of 5080 Lazy Acres road is deteriorating quickly and shifting. The potential for the whole bank to give way and block the creek is quite high. Al Baker, hydrologist for TNRD, was here middle of April and said it was an issue. I have photos to show you the change that has occurred in 3 weeks. The diversion of the creek that initiated in 2017 has never been rectified leaving us at the mercy of the results.

Please let me know if you have any plans. You can contact me at s.22

Thanks

s.22
5096 Lazy Acres Road

From: [Ron Storie](#)
To: [Bohay, Trevor FLNR:EX](#); [Kevin Skrepnek](#)
Subject: FW: Lazy Acres Road-geotech
Date: May 13, 2020 7:19:18 AM
Attachments: [image005.png](#)
[.msg](#)

Thanks Kevin. Trevor here you go. Cheers

Ron Storie
Director of Community Services
300-465 Victoria Street
Kamloops, BC V2C 2A9
Ph: (250) 377-7078 Fax: (250) 372-5048 E-mail: rstorye@tnrd.ca



From: Kevin Skrepnek
Sent: Tuesday, May 12, 2020 11:24 PM
To: Ron Storie <rstorye@tnrd.ca>
Subject: RE: Lazy Acres Road-geotech

Attached, from 2018 – doesn't look like we received a formal report beyond what was in this email from **s.22** From what I can glean from the EOC folder, he was not at Cherry in 2017.

Pertinent section regarding **s.22** property:

- **5096:** Two locations on the opposite side of the creek (relative to the house) were found with on-going ravelling and shallow slope failure, both due to the erosion of the slope toe by the fast flowing creek. At this point, no indication of imminent large-scale failures were noted, but on-going creep and ravelling will deliver slide debris (soil, wood, roots etc) towards the creek. Especially the failure closer to the house could result in a partial blockage of the creek and overtopping. If this occurs, further assessment is recommended to assess channel shifting and risk to the house. Failure zones should be monitored closely to detect any changes, for example new tension cracks above the current head scarps. Heavy and extended rainfalls would likely increase the landslide activity, and in this case, re-assessment of the situation is recommended. EA recommended.



Kevin Skrepnek
Emergency Program Coordinator
Thompson-Nicola Regional District
300 - 465 Victoria Street | Kamloops, BC | V2C 2A9
Direct: 250 377-6302 | Cell: 250 319-0921
Email: kskrepnek@tnrd.ca

From: Ron Storie <rstorye@tnrd.ca>
Sent: May 12, 2020 4:10 PM
To: Kevin Skrepnek <kskrepnek@tnrd.ca>
Subject: FW: Lazy Acres Road-geotech

From: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Sent: Tuesday, May 12, 2020 3:14 PM
To: Ron Storie <rstorye@tnrd.ca>
Subject: Lazy Acres Road-geotech

[EXTERNAL EMAIL] Do not click links or open attachments from unknown senders.

Hi Ron,
I was at the **s.22** property today and ran into **s.22**

Of note, the slope on the left bank of the river is losing sediment into the stream adjacent to **s.22** They tell me that Simon Gautschi of Westrek had assessed the slopes in question on behalf of TNRD in either 2017 or 18. Can you confirm? If so, what did the report, if any, conclude?

Thanks!

Trevor Bohay M.Sc., P.Geo.
Resource Manager - Authorizations
Thompson-Okanagan Region
Ministry of Forests, Lands, Natural Resource Operations and Rural Development
1259 Dalhousie Street
Kamloops, BC

Phone: 250 371-6284



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From: Jason Tomlin [Jtomlin@tnrd.ca]
To: EOC [emergency@tnrd.ca]
Subject:
Date: Tuesday, May 15, 2018 08:08:09
Attachment 1: image002.jpg
Attachment 2: image004.jpg
Attachment 3: image006.png

From: Simon Gautschi [mailto:sgautschi@westrekgeotech.com]
Sent: May-04-18 10:25 PM
To: Jason Tomlin
Cc: Kevin Turner
Subject: Cherry Creek - May 4 Geotechnical Review

Hi Jason,

Here is a brief summary of today's observations and recommendations (EA for Evacuation Alert; EO for Evacuation Order). The focus was on inhabited structures and the potential risk to the local residents:

- 1490: The house should be safe for now, but the vehicle access was washed out. A possible concern is that the **s.22** might put himself at risk by trying to protect the property. EA recommended.
- Greenstone Mtn Road crossing: The riprap and fill below the new bridge have partly eroded; the bridge and foundations are still unaffected, and there is sufficient freeboard.
- Below the first bend of Greenstone Mtn Road, about 130m upwards from the bridge, the bank towards Cherry Creek is very steep and was already stabilized with riprap in one location. Immediately upstream of the riprap, the erosion has now resulted in a near-vertical bank several meters high, and this may lead to a bank failure. Although Greenstone Mtn Road does not seem to be at risk at this point, it should be considered to place a temporary barrier along the road shoulder, to keep people and vehicles away from the potentially unstable bank.
- 5032: The banks were still not overtopped. EA/EO not required for now.
- 5080: The concrete/gabion retaining wall was completely washed out and erosion is retrogressing towards the house, which is not occupied. The erosional bank is about 2 m away from the house foundations, and it will soon reach the foundations of the posts of the sun roof.
- 5096: Two locations on the opposite side of the creek (relative to the house) were found with on-going ravelling and shallow slope failure, both due to the erosion of the slope toe by the fast flowing creek. At this point, no indication of imminent large-scale failures were noted, but on-going creep and ravelling will deliver slide debris (soil, wood, roots etc) towards the creek. Especially the failure closer to the house could result in a partial blockage of the creek and overtopping. If this occurs, further assessment is recommended to assess channel shifting and risk to the house. Failure zones should be monitored closely to detect any changes, for example new tension cracks above the current head scarps. Heavy and extended

rainfalls would likely increase the landslide activity, and in this case, re-assessment of the situation is recommended. EA recommended.

- 5108: The house is safe, but the vehicle access was washed out. A temporary footbridge was installed. EA/EO not required for now.
- 5160, 5168: Already under EO. Residents were still seen on the property this afternoon.
- 5420, 5524, 5552, 5556: The inhabited structures should be safe for now. The residents are well organized and prepared. ^{s.22} (5420) was wondering if the TNRD would be able to supply additional sandbags and 2 loads of sand. EA/EO not required for now.

General: The stream flow has increased significantly in volume and in velocity, and boulders can be heard rolling along the channel bottom in many places. This would obviously be a very dangerous situation if someone would fall into the water. Although this is an obvious concern, the TNRD may consider issuing a warning to the residents encouraging to use extreme caution around the unstable banks or stay away from them, as property owners usually work around the creek banks trying to protect their properties.

The situation should be re-assessed in case of a significant and sustained increase in water levels of about 0.3 m or more, or if significant changes in the creek flow or other related observations are reported by residents.

We hope that this provides the information you need for now. Please contact us for any further questions.

Best regards,

Simon Gautschi, MSc, PGeo
Engineering Geologist

Westrek Geotechnical Services Ltd.
100 - 1383 McGill Road, Kamloops, BC V2C 6K7

Office: (778) 765-9525 | Cell: (778) 538-3252

Email: sgautschi@westrekgeotech.com

www.westrekgeotech.com

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thereto unless otherwise specified by contract. No design changes or decisions made by e-mail shall be considered part of the contract documents unless otherwise specified, and all design changes and/or decisions made by e-mail must be submitted as a Request For Information or a submittal unless otherwise specified.

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From: [Bohay, Trevor FLNR:EX](#)
To: [Meldrum, Tracy FLNR:EX](#)
Subject: RE: My whereabouts
Date: May 13, 2020 9:19:00 AM

s.22 was there, so useful...

Tracy, have you found that the Public Trustee submitted Notification to replace the culvert/bridge in 2012?

s.22 alleges that the prior deceased owner had a bridge/culverts (she was unsure which) and that structure dropped in the creek in 2012 due to high water. They had Public Trustee remove it as it was causing erosion. Trustee replaced it with a single culvert (about 36" (I should have measured it but didn't)). The question I have is; was Notification submitted. s.22 says that Trustee had an environmental report done (they put their mind to fish salvage), and submitted that to MoE. She has a copy. I'd like to know if there was notification. Under what authority was the culvert replaced?

Thanks!

From: Meldrum, Tracy FLNR:EX <Tracy.Meldrum@gov.bc.ca>
Sent: May 13, 2020 9:15 AM
To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Subject: RE: My whereabouts

Hope your meeting was successful.

I have a very draft version of the summary memo here:

I:\Regional Water Management\Projects\s.22 Property-Cherry Ck

I need a few things from the office and a couple of hours to finish it.

Tracy

From: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Sent: May 12, 2020 12:14 PM
To: Meldrum, Tracy FLNR:EX <Tracy.Meldrum@gov.bc.ca>
Subject: My whereabouts

I'm off to s.22 on Lazy Acres road to meet her and her husband. I'll let you know how it goes.

T

Sent from my Samsung Galaxy smartphone.

From: [EMBC CTL PREOC Operations 1 EMBC:EX](#)
To: [Giles, Tim R FLNR:EX](#)
Cc: [Bohay, Trevor FLNR:EX](#)
Subject: FW: Resource request for Geotech 5096 Lazy Acres Rd
Date: May 13, 2020 2:46:12 PM
Attachments: [image003.png](#)

Sorry, I did not reply all....

Please see my note back to Trevor.

Terry Olsen

Operations Chief | Central Region PREOC (PREOC #3)

[Emergency Management BC](#)

PH: (250) 371-5221 Fax: (250) 371-5246

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*Acknowledging that we are conducting our operations on the traditional territory of the Tkemlúps
te Secwépemc people*

From: EMBC CTL PREOC Operations 1 EMBC:EX
Sent: May 13, 2020 2:43 PM
To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Subject: RE: Resource request for Geotech 5096 Lazy Acres Rd

Thanks, Tim's review of the site tomorrow is expected. Ron has notified the residents.

Terry Olsen

Operations Chief | Central Region PREOC (PREOC #3)

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*Acknowledging that we are conducting our operations on the traditional territory of the Tkemlúps
te Secwépemc people*

From: Bohay, Trevor FLNR:EX
Sent: May 13, 2020 1:57 PM
To: EMBC CTL PREOC Operations 1 EMBC:EX <preoc3.ops1@gov.bc.ca>
Cc: Giles, Tim R FLNR:EX <Tim.Giles@gov.bc.ca>
Subject: FW: Resource request for Geotech 5096 Lazy Acres Rd

Hi Terry,

FLNRO approves the request.

As we've chatted a few times, while Tim Giles is a landslide expert and a geomorphologist, he isn't a Geotech engineer, which is what TNRD asked for. However, Tim Giles is available and will visit the site tomorrow and inform PREOC what he sees. It may be that TNRD will still need a Geotech engineer in the end, but if you can wait a day, we'll provide a more informed opinion Thursday afternoon. If you'd rather just go ahead and approve a Geotech engineer (suggest West trek as they looked at it in 2018), then let us know and I'll save Tim a trip.

Tim, attached is Simon's interpretation from 2018.

Trevor

From: EMBC CTL PREOC Operations 1 EMBC:EX <preoc3.ops1@gov.bc.ca>
Sent: May 13, 2020 11:35 AM
To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Subject: FW: Resource request for Geotech 5096 Lazy Acres Rd

Good morning Trevor,

Please find attached a Resource Request from the TNRD for a geo tech for your assessment.

Thanks,

Terry Olsen

Operations Chief | Central Region PREOC (PREOC #3)

[Emergency Management BC](#)

PH: (250) 371-5221 Fax: (250) 371-5246

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*Acknowledging that we are conducting our operations on the traditional territory of the Tkemlúps
te Secwépemc people*

From: Ron Storie <rstorie@tnrd.ca>
Sent: May 13, 2020 11:25 AM
To: EMBC CTL PREOC Operations 1 EMBC:EX <preoc3.ops1@gov.bc.ca>
Cc: Kevin Skrepnek <kskrepnek@tnrd.ca>; Randy Diehl <rdiehl@tnrd.ca>; Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Subject: Resource request for Geotech 5096 Lazy Acres Rd

Hi Folks

Please find enclosed our resource request for a geotechnical engineer.

Residents in Cherry Creek may be ***adversely*** impacted should this slope fail.

The SPOC was out there yesterday and has engaged us in more information.

As you can see, a previous assessment took place in 2018.

Please peruse and approve at your earliest convenience.

Cheers,

Ron Storie
Director of Community Services
300-465 Victoria Street
Kamloops, BC V2C 2A9
Ph: (250) 377-7078 Fax: (250) 372-5048 E-mail: rstorie@tnrd.ca



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From: [Bohay, Trevor FLNR:EX](#)
To: [Meldrum, Tracy FLNR:EX](#)
Subject: RE: Cherry Creek S11: Status Update
Date: May 20, 2020 8:47:00 AM

Good to know, we'll have to make sure **s.22** are notified as affected parties and that the proposed works don't destabilise that slope. I'll send you Tim's lengthy write-up.

T

From: Meldrum, Tracy FLNR:EX <Tracy.Meldrum@gov.bc.ca>
Sent: May 20, 2020 8:36 AM
To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Subject: FW: Cherry Creek S11: Status Update

FYI

From: Meldrum, Tracy FLNR:EX
Sent: May 19, 2020 4:28 PM
To: **s.22**
Cc: Densmore-McCulloch, Justine FLNR:EX <Justine.DensmoreMcCulloch@gov.bc.ca>
Subject: RE: Cherry Creek S11: Status Update

Great. I appreciate the quick response.
Tracy

From: **s.22**
Sent: May 19, 2020 4:20 PM
To: Meldrum, Tracy FLNR:EX <Tracy.Meldrum@gov.bc.ca>; **s.22**
Subject: Re: Cherry Creek S11: Status Update

Thanks Tracy
We are moving ahead with our project.
I will be meeting with Engineers soon.

I will keep you posted.

Regards, **s.22**

On Tue., 19 May 2020 at 4:09 p.m., Meldrum, Tracy FLNR:EX
<Tracy.Meldrum@gov.bc.ca> wrote:

Good Afternoon **s.22**

I have an active Section 11 "Change in and About a Stream" Application for you Cherry Creek

property. When we last spoke **s.22** you were optimistic about a bridge design happening over the winter. Has there been any progress made on a solution for that crossing? If you have decided to abandon your application, I can send you a cancellation letter for your records.

Please let me know what direction this project is taking.

Thanks in advance,

Tracy

Tracy Meldrum, M.Sc., P.Geo.

Regional Hydrologist and Assistant Water Manager

Regional Water Management

Thompson-Okanagan Region

Ministry of Forests, Lands, Natural Resource Operations and Rural Development, 1259 Dalhousie Drive, Kamloops, BC

NEW VOIP Phone: 250 312-7417

From: [Stickhorse Legal Deliveries](#)
To: [Bohay, Trevor FLNR:EX](#)
Cc: [Boivin, Janis FLNR:EX](#); [Richard L. Garner](#); [MacDougall, Gerry L FLNR:EX](#); [Ron Storie](#)
Subject: Fwd: 5096 Lazy Acres Road Site Visit May 12
Date: June 3, 2020 7:10:18 AM

Good morning Trevor.

Further to the email of May 28, 2020 I realize you have a full schedule but I am still awaiting/looking for answers to the original questions in the attached emails. The issues I have outlined for you below continue to progress in a negative manner. I understand that these matters take time to resolve however I have been patient for over 4 years. Your department has been investigating these concerns for over 1 year and my understanding is that investigation is on going. That being said I would be extremely interested in learning the content of the interim report as well as Mr. Giles report upon completion.

It appears there is a plan in the works for the owner of 5080 Lazy Acres Road to obtain permission/approval to restore a temporary crossing to the property. The crossing will not address the issues listed below but may in fact further complicate the current situation.

I look forward to your timely response.

s.22

Begin forwarded message:

From: Stickhorse Legal <s.22>
Date: May 28, 2020 7:29:45 PM PDT
To: "Bohay, Trevor FLNR:EX" <Trevor.Bohay@gov.bc.ca>
Cc: s.22
Subject: Re: 5096 Lazy Acres Road Site Visit May 12

Thank you for your response Trevor.

I am not sure why s.22 application is relevant to our discussion on May 12, 2020. You clearly informed me prior to your visit that FLNRO is responsible to insure that waterways that have been diverted from their natural path are returned to that natural path in a timely manner.

The failure of that to occur on the property of 5080 Lazy Acres Road which sits adjacent to my property to the East has led directly to further complications and issues directly impacting the stability and integrity of my property for the last 4 years. Two of these complications are highly visible whereas the third cannot be found in obligatory emergency response protocol or practises.

The first being the slope instability to the South East of my property where the diversion of the creek has progressively eroded and undermined the hillside in such a manner it is continually shifting and deteriorating. This has put my property and assets at an extremely high state of peril for the last 4 years.

The second complication stems from the freshet of 2018 that directly impacted the West Trans Canada Highway East bound lane to the North of the same property 5080 Lazy Acres Road. This resulted in the need for MOTI to enact an emergency repair that lasted over four weeks. The finished reconstruction that forced permanent narrowing of the creek channel using materials that could not be disengaged by any volume of natural freshet above the diversion created in the freshet of 2017. The aforementioned reconstruction has further exacerbated the immanent destruction and loss of my property, and, as mentioned, it continues daily.

The third issue is the lack of proactive planning on the part of the governing body that is responsible for preparing viable flood plans and emergency response protocol necessary to affectively protect or mitigate damage in the years 2017 and 2018.

Not one of these issues, and other connected issues, are the result or the fault of s.22 the current property owner. Therefore, his application to your ministry is of no concern of mine nor does it resolve the complications as mentioned above. With that in mind, I again am enquiring as to what your plans are to resolve this ongoing matter.

Regards,

s.22

On 2020-05-28, at 9:38 AM, Bohay, Trevor FLNR:EX wrote:

Good Morning s.22

I have asked Tim about the status of his report and am waiting to hear back.

s.22 have restarted their application and evidently reached out to Al Bates.

As discussed with you and s.22 it is our contention that the work done on the s.22 property should address some of the legacy issues from 2017 flooding (on their land).

Regards,

Trevor

-----Original Message-----

From: Stickhorse Legal s.22

Sent: May 28, 2020 7:38 AM

To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>

Cc: Richard L. Garner <RGarner@gillespieco.ca>

Subject: Re: 5096 Lazy Acres Road Site Visit May 12

Good morning Trevor I hope this finds you well.

We are enquiring as to progress of plans to address the instability of the slope and continuing creek issues originating from 2017, 2018 and continuing to today's date of which you are now aware of.

On May 12, 2020 you and Al Bates attended the site and discussed the present and future issues.

On May 14, 2020 Tim Giles attended the site to address the aforementioned issues and discussed the magnitude of the work required to facilitate a resolution to this continuing problem. Mr. Giles questioned the fluctuation and volume of water in the creek at the time due to the freshet being completed. It may be beneficial to have you and Mr. Giles re-attend to view the creek and the progressive deterioration of the slope caused by its direction and flow. Mr. Giles indicated he would be putting a report together on the matter. We are enquiring about the report and the progress of the plans to an amicable and acceptable resolution.

We look forward to your timely response.

Regards,

s.22

From: [Bohay, Trevor FLNR:EX](#)
To: [Oetter, Andy FLNR:EX](#)
Subject: FW: 5096 Lazy Acres Road Site Visit May 12
Date: June 3, 2020 8:59:00 AM

Missed copying you

From: Bohay, Trevor FLNR:EX
Sent: June 3, 2020 8:41 AM
To: Peleshytyk, Rick FLNR:EX <Rick.Peleshytyk@gov.bc.ca>
Cc: Meldrum, Tracy FLNR:EX <Tracy.Meldrum@gov.bc.ca>; MacDougall, Gerry L FLNR:EX <Gerry.MacDougall@gov.bc.ca>; Valdal, Eric FLNR:EX <Eric.Valdal@gov.bc.ca>; Giles, Tim R FLNR:EX <Tim.Giles@gov.bc.ca>; Bennett, Darren J FLNR:EX <Darren.Bennett@gov.bc.ca>
Subject: FW: 5096 Lazy Acres Road Site Visit May 12

Hi Rick,

We'll have to work together to formulate a thoughtful response to these enquiries. Tracy is adjudicating the upstream S11. She also worked with me and Daniel Werkman to understand through an air photo review if the historic owner of the **s.22** property had diverted Cherry Creek. That review did not provide evidence of a diversion.

s.22 is suing the public trustee with regard to a Notification they submitted in 2011, to which we responded in 2012.

I'm copying Gerry so that he knows we aren't ignoring this lady (who is emailing him), and Eric because Tim will write a short factual memo based on his findings the other day with regard to a slope stability problem. Eric and I will review the memo before it is finalized.

Thanks,

Trevor

From: Stickhorse Legal Deliveries **s.22**
Sent: June 3, 2020 7:10 AM
To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Cc: Boivin, Janis FLNR:EX <Janis.Boivin@gov.bc.ca>; Richard L. Garner <RGarner@gillespieco.ca>; MacDougall, Gerry L FLNR:EX <Gerry.MacDougall@gov.bc.ca>; Ron Storie <rstorie@tnrd.ca>
Subject: Fwd: 5096 Lazy Acres Road Site Visit May 12

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s.22

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Regards,

Trevor

-----Original Message-----

From: Stickhorse Legal s.22

Sent: May 28, 2020 7:38 AM

To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>

Cc: s.22

Subject: Re: 5096 Lazy Acres Road Site Visit May 12

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We are enquiring as to progress of plans to address the instability of the slope and continuing creek issues originating from 2017, 2018 and continuing to today's date of which you are now aware of.

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We look forward to your timely response.

Regards,

s.22

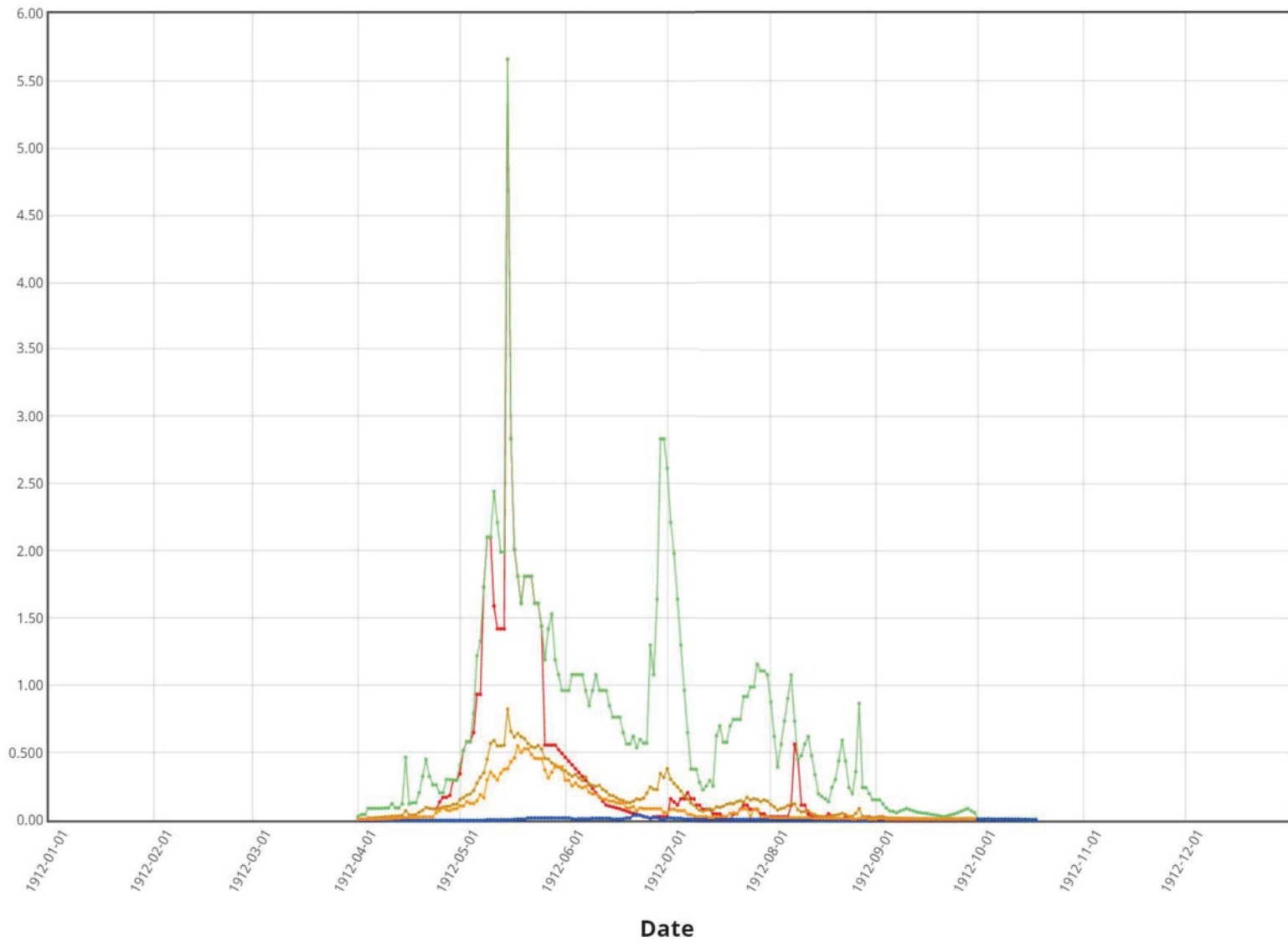
Station: 08LF005 ▾ **Data Type:** Daily ▾ **Parameter Type:** Flow ▾ for 1912 ▾

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▼ **Legend**

1912 Data	Maximum	Minimum
Mean	Median	

Discharge (m³/s)



Station: 08LF086 ▾

Data Type: Daily ▾

Apply

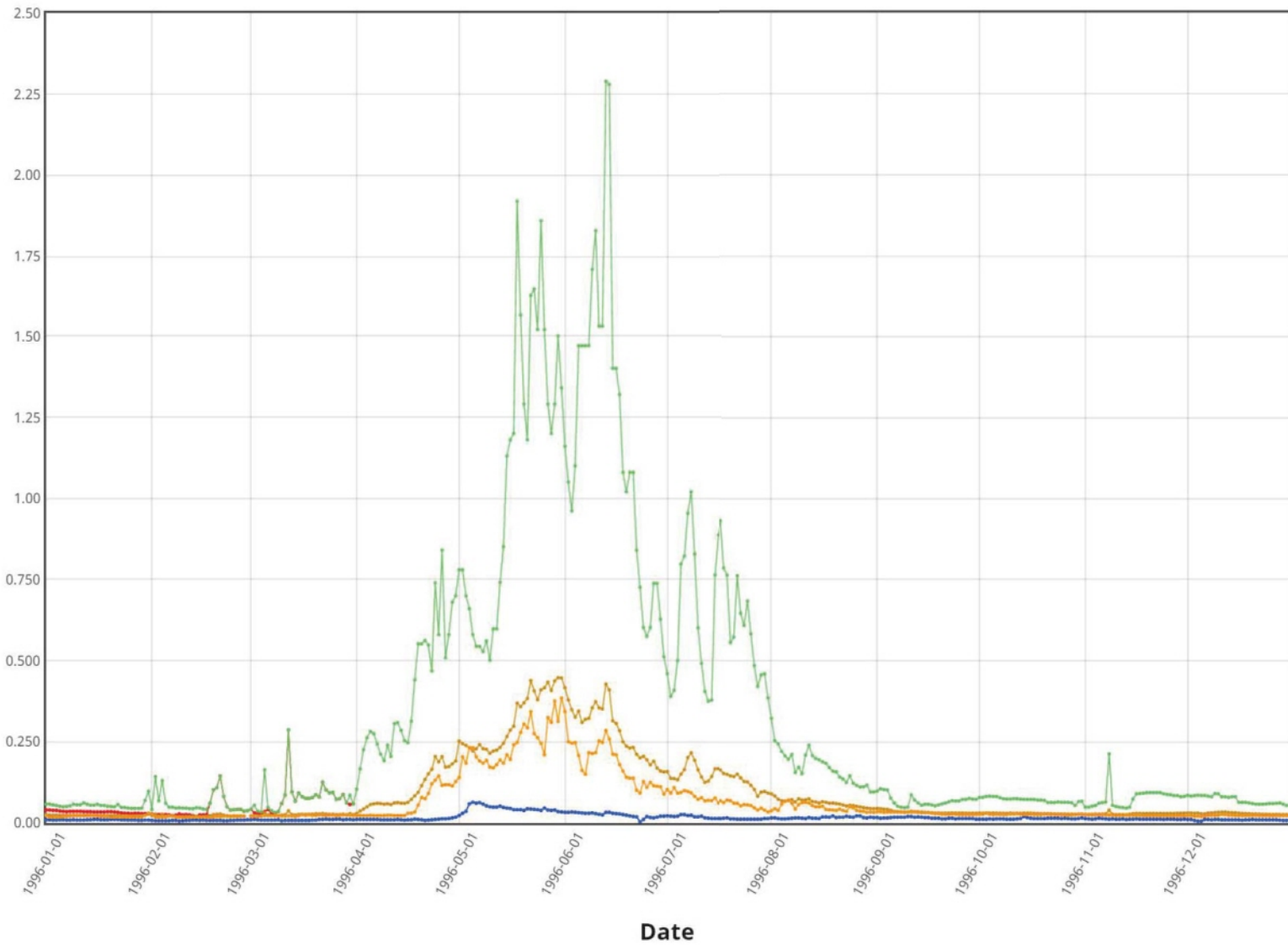
Parameter Type: Flow ▾ for 1996 ▾

Download?

▼ Legend

1996 Data
Mean
Maximum
Median
Minimum

Discharge (m^3/s)





MEMORANDUM

To: Trevor Bohay, Resource Manager;
Rick Peleshytyk, Section Head, Regional Water
Management

File: RWM/Projects

Date: May 12, 2020

From: Tracy Meldrum, Regional Hydrologist

RE: HISTORICAL RECORDS SEARCH NEAR LAZY ACRES ROAD, CHERRY CREEK

On April 7, 2019, Ministry of Forests Lands Natural Resource Operations and Rural Development (MFLNRORD) Regional Director received a complaint from s.22 of 5096 Lazy Acres Road which asserted that a portion of Cherry Creek has been diverted at 5080 Lazy Acres Road in such a way to cause damage to their downstream property. This memo summarizes the relevant historic records searches and an airphoto review of the stream location within a 1 km distance of the subject properties.

Land Ownership and Water Licence Chronologic Summary

1954 – Water licence (F015553) granted for diversion and storage on Pendleton Creek south of Cherry Creek.

- This water licence is on Pendleton Creek and allows for the storage of 5 acre-feet per annum for stock watering purposes and allows for works consisting of a ditch and dam. It is registered to s.22 and is current.

1958 – Land Area established from Crown Grant CG9974-970 (attached).

- The Crown Grant was issued to s.22
- A provision of that crown grant is stated as follows and is initialed by the Grant Holder.
- “ – Provided also that this Grant is issued and accepted on the understanding that the holder of same shall have no right nor claim for compensation by reason of the land or any portion thereof being submerged or damaged by erosion or otherwise affected by the rising of the waters of Cherry Creek or any waters tributary thereto.”

1958 – Property subdivided by KAP9050. Five properties south of Beaton Road were subdivided from the parent parcel over the period of 1958 to 1973. The following drawing indicates the subdivision date and the information that follows includes ownership details.



1958 – Property #5 was the first property subdivided by KAP9050:

History of Ownership for Lot A (009-753-427)

1988-02-05 to 2011-05-19	s.22
2011-05-19 to 2018-08-28	Administrator of the Estate of s.22
2018-08-28 to present	s.22

1959 – Property #3 was the second property created by KAP9050. Plan KAP10087 was created by this subdivision:

History of ownership for KAP10087 (009-631-488)

1975-08-26 to 1989-10-27	s.22
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s.22

1989-10-27 to 1990-07-30

1990-07-31 to 2017-03-15

2017-03-15 to 2018-02-20

2018-02-20 to present

1962 – Property #1 was the third legal parcel subdivided along Cherry Creek. Another portion of KAP9050 was subdivided to create KAP13078:

History of ownership for KAP13078 (009-262-091)

1988-01-05 to Present

s.22

1963 – A domestic water licence (F018230) for 500 gallons per day was issued to the owners at Lot 1 of Section 4, Township 30 Range 19, West 6th Meridian, KAP10087 (Property #3). The works include a point of diversion, pump and pipe. The licence is appurtenant to the land and is current to s.22

1971 – Property #4 was subdivided from KAP9050 to create KAP21698:

History of ownership for KAP21698 (007-329-083).

1984-07-16 to 1992-08-26

s.22

1992-08-26 to 1993-11-10

1993-11-10 to 1999-05-27

1999-05-27 to present

1973 – Property #2 was subdivided from a portion of KAP13078 was subdivided to create KAP24626:

History of ownership for KAP24626 (004-461-614)

1986-07-23 to 1988-11-09

s.22

1988-11-09 to 1989-04-28

1989-04-28 to 1996-03-06

1996-03-06 to 1997-08-15

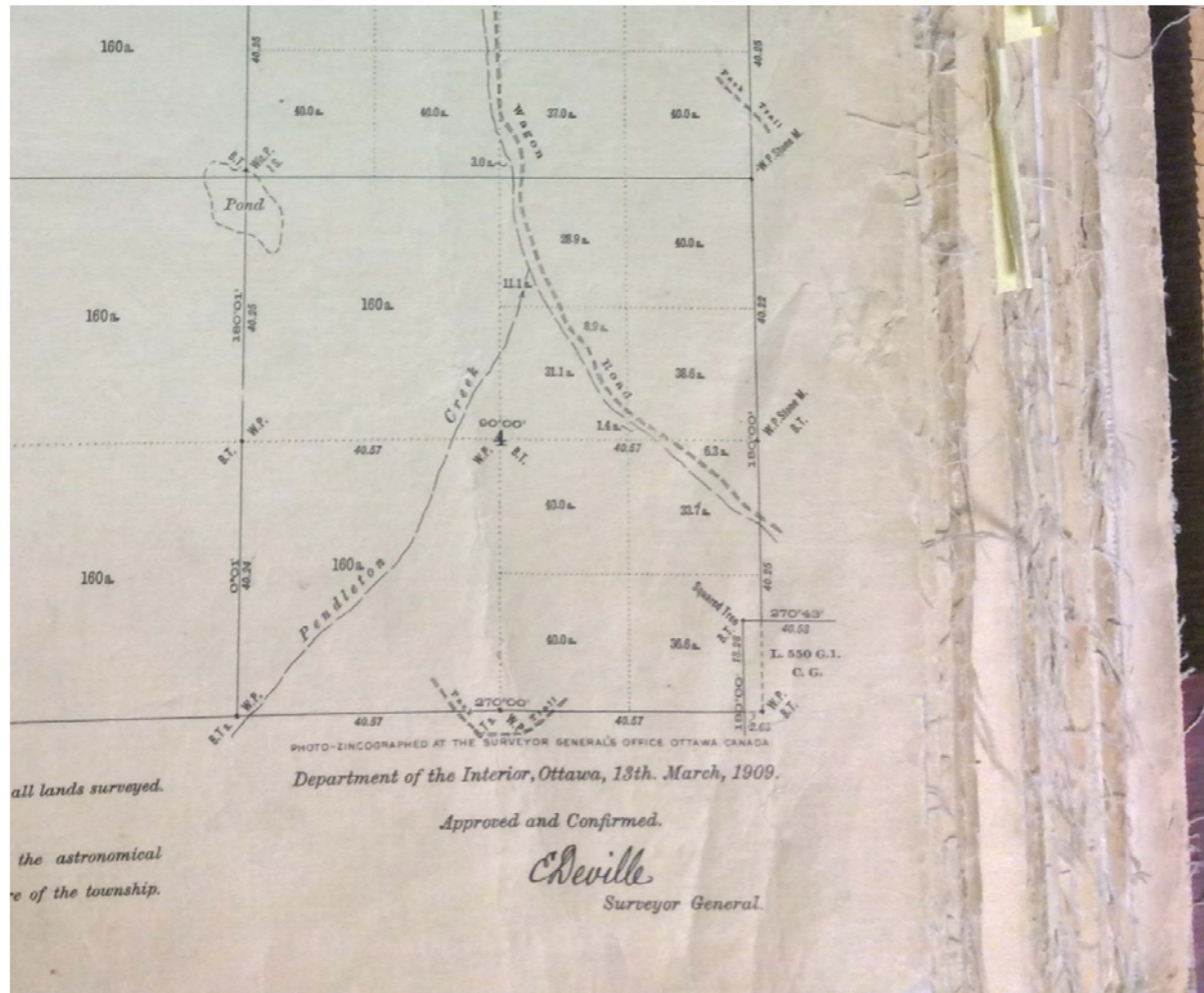
1997-08-15 to 2005-07-16

2005-07-16 to present

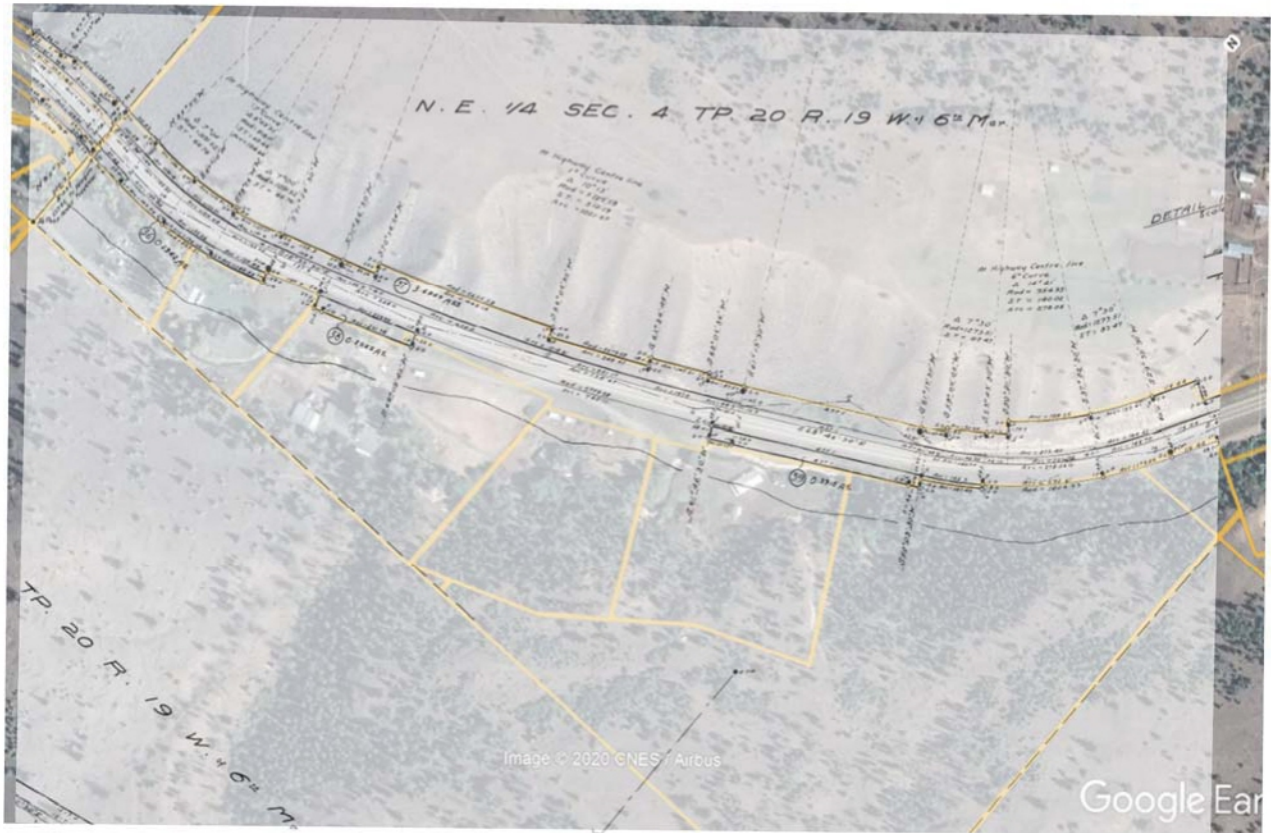
Cherry Creek Location: Historic Surveys

The following historic information was collected from the Railway Belt Survey Plats, Water Rights Maps, and the Transport Canada Highway Survey.

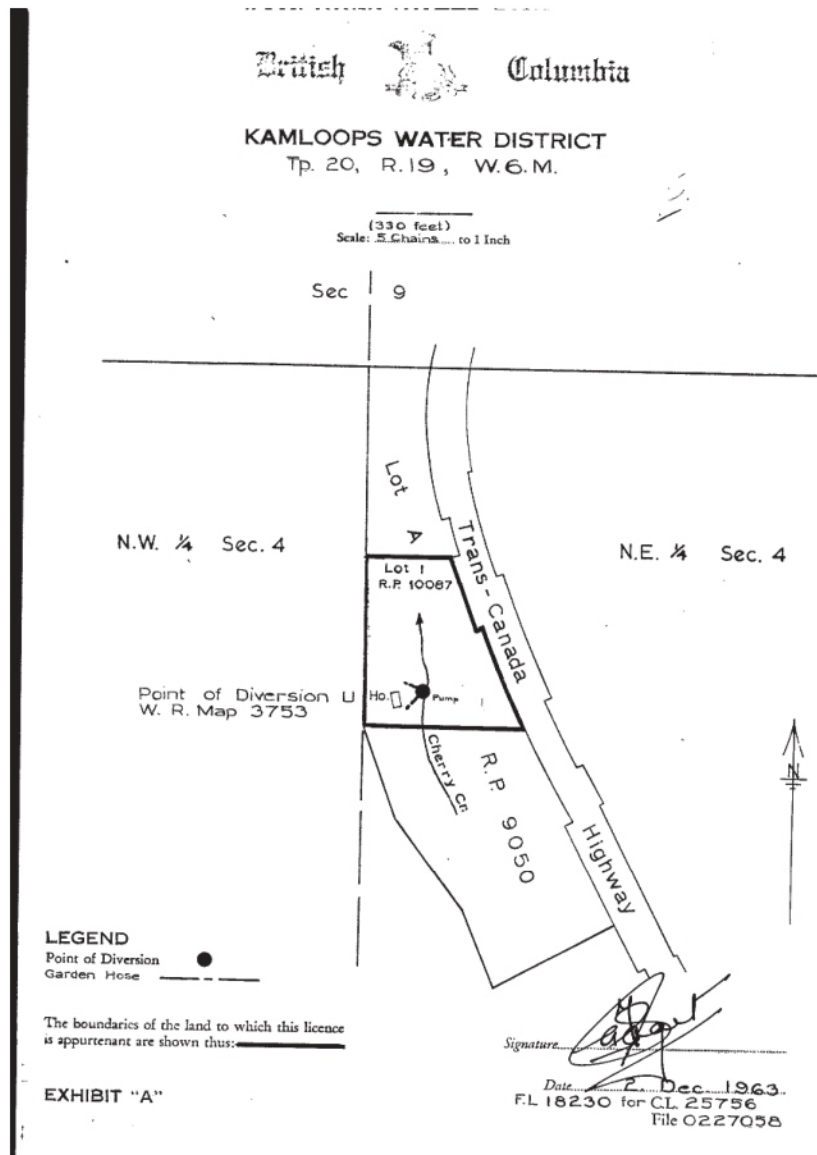
1909 – Railway Belt Survey shows Cherry Creek west and adjacent to Kamloops Wagon Road. Cherry Creek appears to flow in a linear direction from southeast to northwest parallel to the Wagon Road.



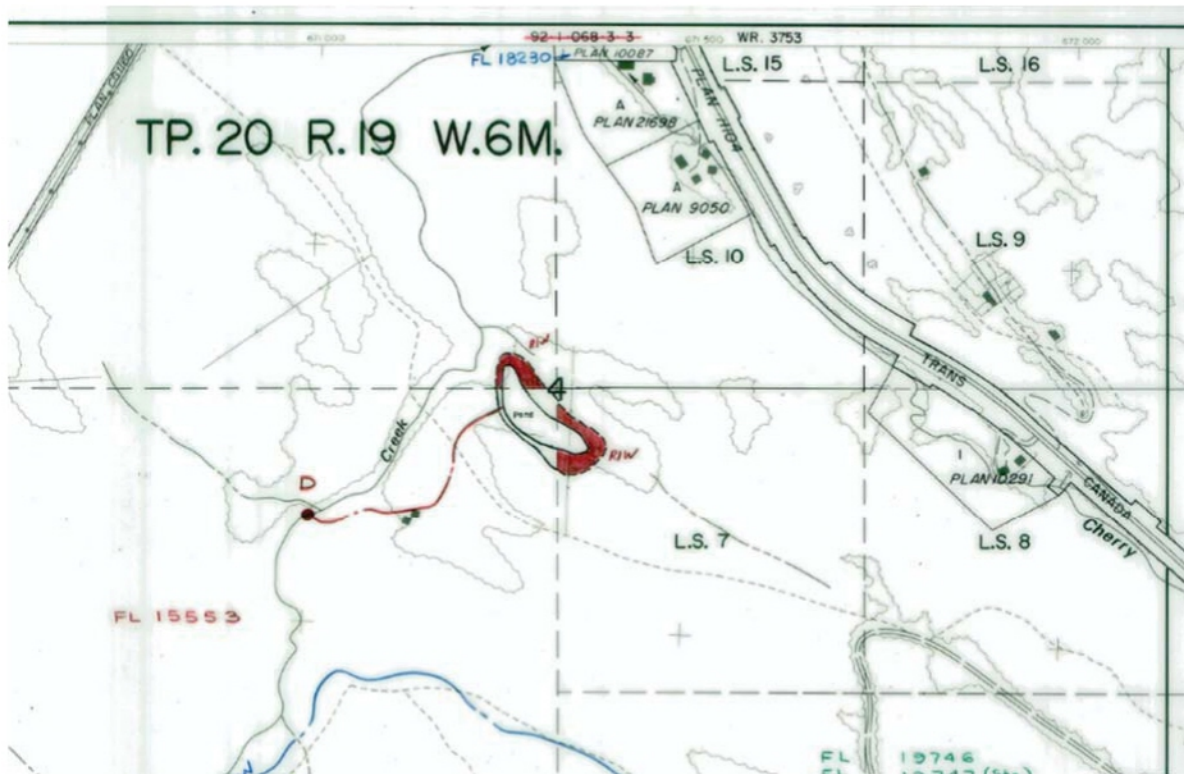
1951 – Ministry of Transportation Highway survey for the proposed Trans-Canada Highway and associated Right of Way. At the time of the highway survey, it is important to note that the surrounding property was crown land which was not granted until 1958 (with the subsequent creation of KAP9050 and Property #5 being first subdivided). The underlain imagery with the 2019 airphoto indicates present day property lines. This 1951 document shows the approximate depiction of Cherry Creek flowing in a linear direction from south to north parallel to the highway



1963 – The domestic water licence (F018230) for 500 gallons per day was issued to the owners at Property #3. The works include a point of diversion, pump and pipe. In the Plat below, the location of the creek is noted. The northern half of what is depicted below as R.P. 9050 is what will become Property #4 in 1971 when it is subdivided from KAP9050 (8 years after this plat was generated). This 1963 document depicts the stream as a linear feature located in the approximate middle of the subject property.



1989 – Water Rights maps show the location with both the current day subject properties developed. The TRIM base map is dated as 1983 with shaded areas representing structures. The water rights information is superimposed on this base map. Creek appears to be more or less in its present-day location with the general location being the east valley wall of Property #5 and crossing westward to flow along the west valley wall of Property #4.



Cherry Creek Location – Air photo Interpretation

Air photo analysis of the properties near Lazy Acres Road along Cherry Creek was completed in June 2019 by Daniel Werkman. The analysis, including photos is attached to this technical memorandum.

Topics of interest to attempt to identify or gather data on were:

- when development first occurred in the area,
- when the larger property along Lazy Acres Road was subdivided and structures were constructed,
- when creek crossings were constructed, and,
- the identification of any influence on the natural course of Cherry Creek any development may have had.

A small range of air photos of appropriate scale and resolution were available. The following imagery was used in this interpretation:

- 1959;
- 1966;
- 1986;
- 1995;
- 2011; and,
- 2017 (Google Earth)

Water Sustainability Act (Water Act) Authority

A historic records search for Section 11 (or Section 9) applications for Changes in and About a Stream were searched for an area of 0.5 km and downstream of the subject properties for a period from 1998 to 2016.

In 1997, **s.22** applied and was granted approval for 80 ft (25m) lineal length of gabion bank protection on each side of Cherry Creek (A3-2863). **s.22** received permission to do additional work to protect the toe of the gabion walls in July 1998.

Other than these approved changes at Property #5 and the works associated with final water licence (F018230) on Property #3, no other *Water Sustainability Act* (or former *Water Act*) Authorizations (Water Licenses) or Changes Approvals were found for this section of Cherry Creek.

Water Sustainability Regulation

In 2012, The Public Guardian and Trustee of BC applied and received a *Water Sustainability Regulation* Authorized Change (Notification) for the installation of a culvert (3' diameter) and associated structural fill (R3-6988).

In response to the 2018 freshet, the Thompson-Nicola Regional District, holds a *WSR* Notification to do limited stream channel restoration. This was employed as a tool for property owners to do limited in stream works under the authority of the local government with a consistent approach. The TNRD provided home owners access to an engineer (Streamworks Consulting Inc.) to develop prescriptions for affected properties.

Summary

Land Ownership and Historic Surveys

- The historic surveys from 1909, 1951 and 1963 indicate that the location of Cherry Creek was generally trending through the center of the valley bottom. It is unknown as to the level of detail employed for each of these surveys or if they were only ever intended to be general approximations.
- Prior to 1963 only Properties #5, #3 and #1 had been subdivided, in that order. The last depiction of the Creek in the Licence plat indicates that up until 1963 the creek was generally in the middle of the valley.
- Between 1963 and 1983 Properties #4 and #2 were subdivided and developed. This period of time saw the development and densification of the addition of built up properties within this area.

Air photo review

- Analysis of historical air photos does not indicate any distinguishable influence on the natural course of Cherry Creek with subsequent development along the banks of the creek. Any noticeable changes in course could be attributed to difficulty interpreting photos or different aspect ratios of air photos.

Water Act Authority

- As described above, only the placement of erosion protection measures at Property #5 in 1997 were approved in stream works by the Province (under the *Water Sustainability Act*, then *Water Act*).
- The water licence on Property #3 has works associated with the licence that may require instream works to maintain the works in order to make beneficial use of the water.
- A culvert was placed Cherry Creek between Property #4 and #5 in 2012. This type of activity is governed by the *Water Sustainability Regulation*.

Conclusion

Multiple lines of evidence and sources of information were gathered in the preparation of this memorandum.

- Historic maps and surveys indicate that prior to 1963 Cherry Creek flowed in a south to north direction trending in the middle of the valley. It is unknown as to the level of detail employed for each of these surveys or if they were only ever intended to be general approximations.
- Historic airphoto interpretation does not indicate any sudden or distinguishable influence of development on the stream location; however, there was a gap in airphotos spanning 1966 to 1988 when properties #2 and #4 were subdivided and developed along the valley bottom.
- Recent airphotos and map records since 1986 indicate the creek to be in the same location and orientation as present day conditions in the vicinity of Properties #4 and #5.

- Increased subdivision and development of the valley may have caused some shifting of the stream channel through incremental encroachment and the hardening of surfaces; however, there is insufficient evidence to support the assertion that the intentional or unintentional diversion the stream and/or stream channel has occurred.



No. 9974

970

LAND ACT

 Compared.
 PROVINCE OF
 BRITISH COLUMBIA }

Deputy Minister of Lands.

 ELIZABETH THE SECOND, by the Grace of God, of the United Kingdom, Canada
 and Her other Realms and Territories, Queen, Head of the Commonwealth,
 Defender of the Faith.

To all to whom these presents shall come, Greeting:

 Know ye that We do by these presents, for Us, Our heirs and successors, in consideration of the sum of
 Four hundred and seventy Dollars to Us paid, give and grant unto

s.22

 her heirs and assigns
 All that Parcel or Lot of Land ~~XXXXXX~~
 said to contain One hundred and fifteen acres, more or

 less, ~~notwithstanding that the said parcel of land is situated in the Township of ... and numbered all that part of Section~~
 Four (4) in Township Twenty (20), Range Nineteen (19), West of the Sixth (6th) Meridian, more particularly
 described as:- Legal Subdivision Seven (7) and those portions of Legal Subdivisions Eight (8), Nine (9),
 Ten (10) and Fifteen (15), which lie to the West of the Trans Canada Highway as shown on Plan R-104 on file
 in the Land Registry Office, Kamloops

 in the Province of British Columbia, to have and to hold the said Parcel or Lot of Land, and all and singular the premises hereby
 granted, with their appurtenances, unto the said

s.22

her heirs and assigns for ever:

 PROVIDED NEVERTHELESS that it shall at all times be lawful for Us, Our heirs and successors, or for any person or persons acting in that behalf by Our
 or their authority, to resume any part of the said lands which it may be deemed necessary to resume for making roads, canals, bridges, towing-paths, or other works of
 public utility or convenience; so, nevertheless, that the lands so to be resumed shall not exceed one-twentieth part of the whole of the lands aforesaid, and that no
 such resumption shall be made of any lands on which any buildings may have been erected, or which may be in use as gardens or otherwise for the more convenient
 occupation of any such buildings:

 PROVIDED also that it shall at all times be lawful for Us, Our heirs and successors, or for any person or persons acting under Our or their authority, to enter
 into and upon any part of the said lands, and to raise and to get thereout any minerals, precious or base, including coal, petroleum, and any gas or gases, which may
 be thereupon or thereunder situate, and to use and enjoy any and every part of the same land, and of the easements and privileges thereto belonging, for the purpose
 of such raising and getting, and every other purpose connected therewith, paying in respect of such raising, getting, and use reasonable compensation:

 PROVIDED also that it shall be lawful for any person duly authorized in that behalf by Us, Our heirs and successors, to take and occupy such water
 privileges, and to have and enjoy such rights of carrying water over, through, or under any parts of the hereditaments hereby granted, as may be reasonably required
 for mining or agricultural purposes in the vicinity of the said hereditaments, paying therefor a reasonable compensation to the aforesaid

s.22

her heirs and assigns:

 PROVIDED also that it shall be at all times lawful for any person duly authorized in that behalf by Us, Our heirs and successors, to take from or upon any
 part of the hereditaments hereby granted, without compensation, any gravel, sand, stone, lime, timber, or other material which may be required in the construction,
 maintenance, or repair of any roads, ferries, bridges, or other public works:

 PROVIDED also that all highways, within the meaning of the "Highway Act," existing over or through said lands at the date hereof shall be exempted from
 this grant.

 — Provided also that this Grant is issued and accepted on the understanding that the grantee, her heirs
 and assigns, shall not interfere with the free and unrestricted use of and passage by the public over any
 roads existing through the said lands, and it is further provided that this condition shall remain in force
 for so long as may be deemed necessary by the Minister of Lands and Forests for and in the Right of the
 Province of British Columbia.—

—For further provisos refer to back hereof.

 In testimony whereof, We have caused these Our Letters to be made Patent, and the Great Seal of OUR PROVINCE OF BRITISH
 COLUMBIA to be hereunto affixed: WITNESS, His Honour FRANK MACKENZIE ROSS

 Lieutenant-Governor of Our said Province, at Our Government House, in Our City of Victoria, this Twenty-sixth
 day of February, in the year of our Lord one thousand nine hundred and Fifty-eight
 and in the Seventh year of Our Reign.

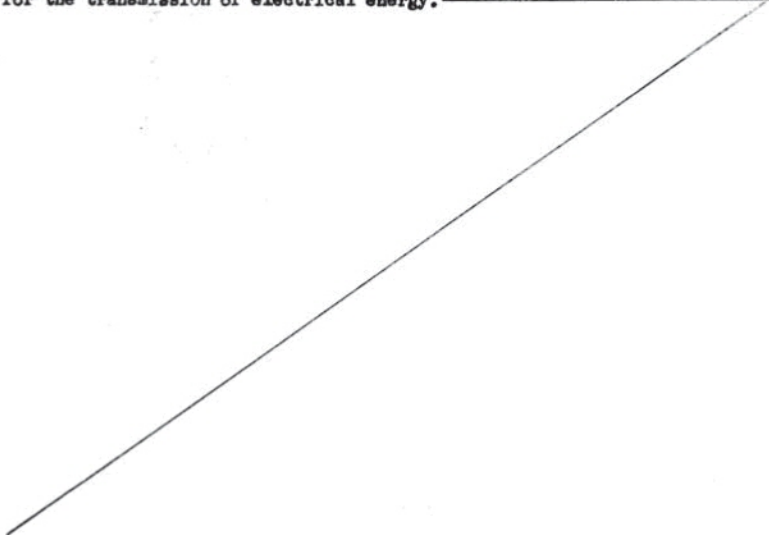
By Command.

9974 / 970

OK — Provided also that this Grant is issued and accepted on the understanding that the holder of same shall have no right nor claim for compensation by reason of the land or any portion thereof being submerged or damaged by erosion or otherwise affected by the rising of the waters of Cherry Creek or any waters tributary thereto. —

OK — Provided also that it shall be lawful at all times during the currency of Final Water Licence No. 15553, dated the 2nd day of August, 1954 or of any other Water Licence hereafter issued in substitution thereof for the licensee under such Final or other substituted Water Licence, to enter upon Legal Subdivision 7, Section 4, Township 20, Range 19, West of the 6th Meridian, hereby granted and to maintain, repair and operate thereon and therein the works authorized at the date of this Grant under the said Final Water Licence. —

OK — Provided also that it shall be at all times lawful for any person duly authorized in that behalf by Us, Our heirs and successors to enter into, upon and use part of the lands hereby granted for the purpose of constructing, operating and maintaining a line or lines for the transmission of electrical energy. —





Lazy Acres Air Photo Analysis

MINISTRY OF FORESTS, LANDS, NATURAL
RESOURCE OPERATIONS & RURAL
DEVELOPMENT

Daniel Werkman
Dam Safety Co-op Student
Thompson Okanagan Region
1259 Dalhousie Drive, Kamloops, BC, V2C 5Z5
Phone: (250)371-6313

6/13/2019

Lazy Acres Air Photo Analysis

Air photo analysis of the property off of Lazy Acres Road along Cherry Creek was completed. Topics of interest to attempt to identify or gather data on were: when development first occurred in the area, when the larger property along Lazy Acres Road was subdivided and structures were constructed, when creek crossings were constructed, and the identification of any influence on the natural course of Cherry Creek any development may have had.

A small range of air photos of appropriate scale and resolution were available. These air photos were taken in 1959, 1966, 1986, 1995, 2011, and Google Earth imagery from 2017 was used.

The air photo imagery from 1959 (Figure 1) shows that no development of, or along Lazy Acres Road. To the north, Beaton Road is constructed which crosses Cherry Creek along with an unnamed road branching off to the north and south near where Beaton Road meets with Highway #1.

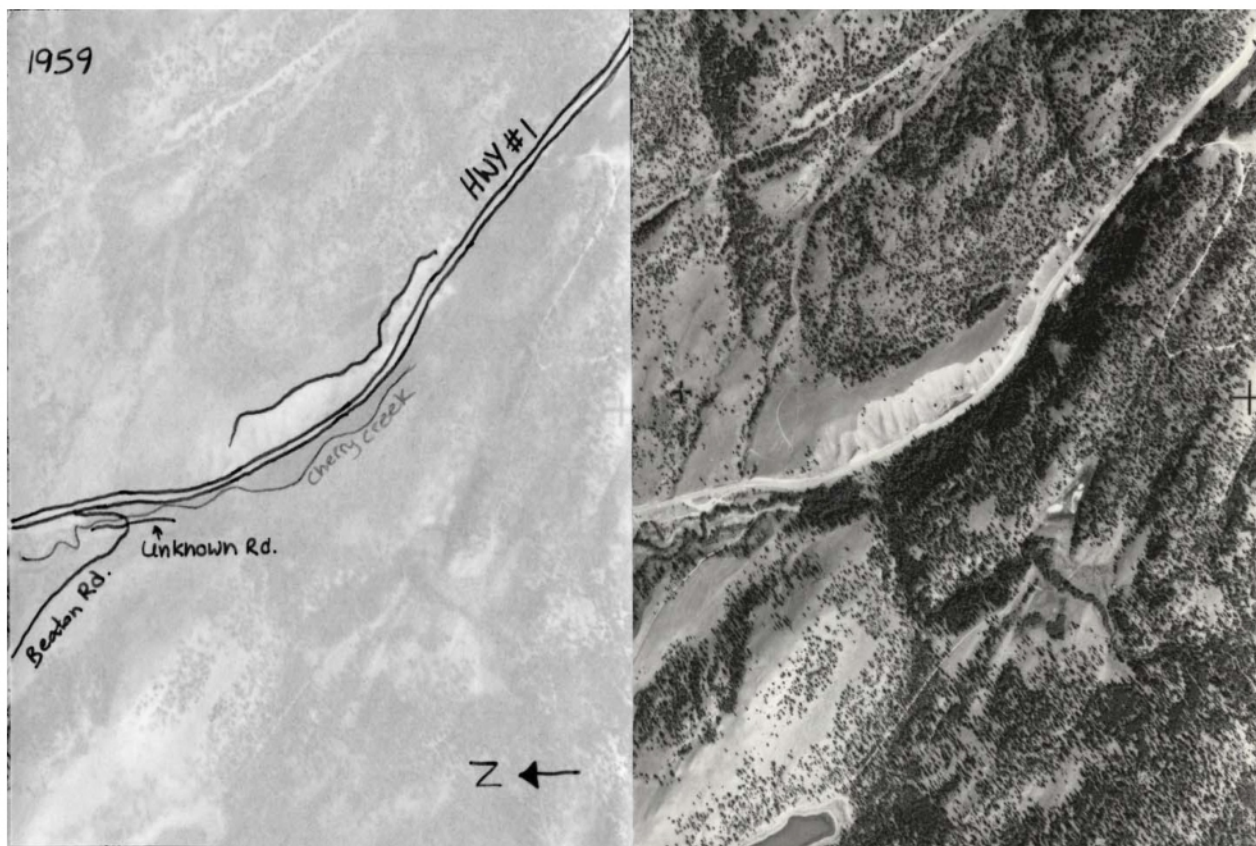


Figure 1. 1959 Air Photo Composition. The image on the left shows an overlay with road and creek interpretation, the image on the right shows the original imagery.

The air photo imagery from 1966 (Figure 2) shows land development (indicated by signs of land disturbance) with a structure on Lazy Acres Road that crosses Cherry Creek. The unnamed road off of Beaton Road to the south shows a small structure at the end where it meets but does not cross Cherry Creek. Due to vegetation cover it is not possible to determine the course along the upstream portion of Cherry Creek.



Figure 2. 1966 Air Photo Composition. The image on the left shows an overlay with road and creek interpretation, the image on the right shows the original imagery.

The air photo imagery from 1986 (Figure 3) shows significant land development along Lazy Acres Road, as well as on the south end of the unnamed road off of Beaton Road. Unfortunately, due to the twenty-year gap in air photo imagery, it is not possible to determine when the development first occurred. Lazy Acres Road shows three possible properties with structures, two of which cross Cherry Creek. The unnamed road has been extended to cross Cherry Creek and has structures at the end.

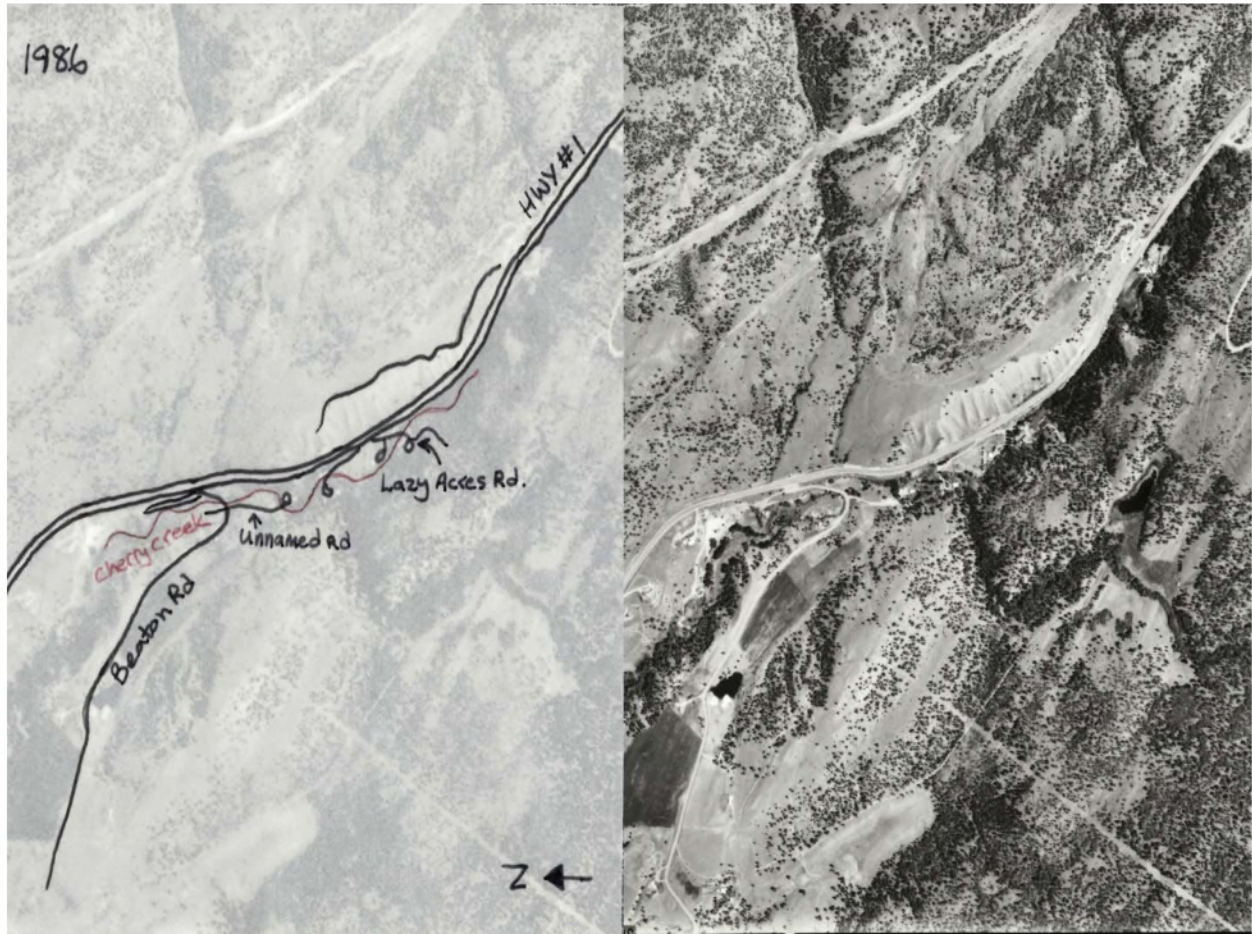


Figure 3. 1986 Air Photo Composition. The image on the left shows an overlay with road and creek interpretation, the image on the right shows the original imagery.

The air photo imagery from 1995 (Figure 4) shows no significant changes from the previous air photo taken in 1986. A reduction in vegetation surrounding the property at the south end of Lazy Acres Road is visible.

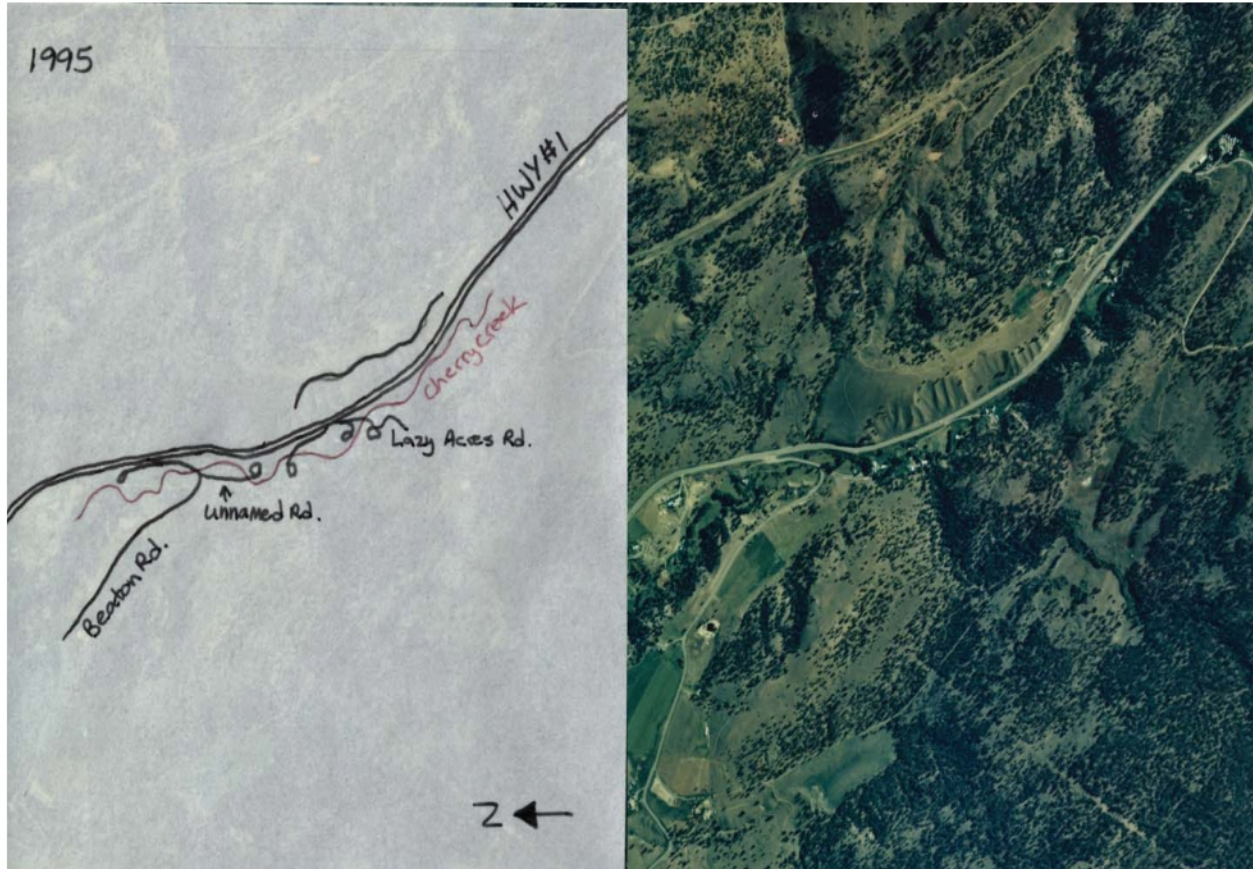


Figure 4. 1995 Air Photo Composition. The image on the left shows an overlay with road and creek interpretation, the image on the right shows the original imagery.

The air photo imagery from 1998 (Figure 5) shows minimal change from the air photo from 1995. A slight increase to removed vegetation is visible and a large structure at the south end of Lazy Acres Road is visible.



Figure 5. 1998 Air Photo Composition. The image on the left shows an overlay with road and creek interpretation, the image on the right shows the original imagery.

The air photo imagery from 2011 (Figure 6) shows increased areas of cleared vegetation around the properties along Lazy Acres Road. As well, along the unnamed road off of Beaton Road structures are visible in a small cleared area before and after the road crosses Cherry Creek.

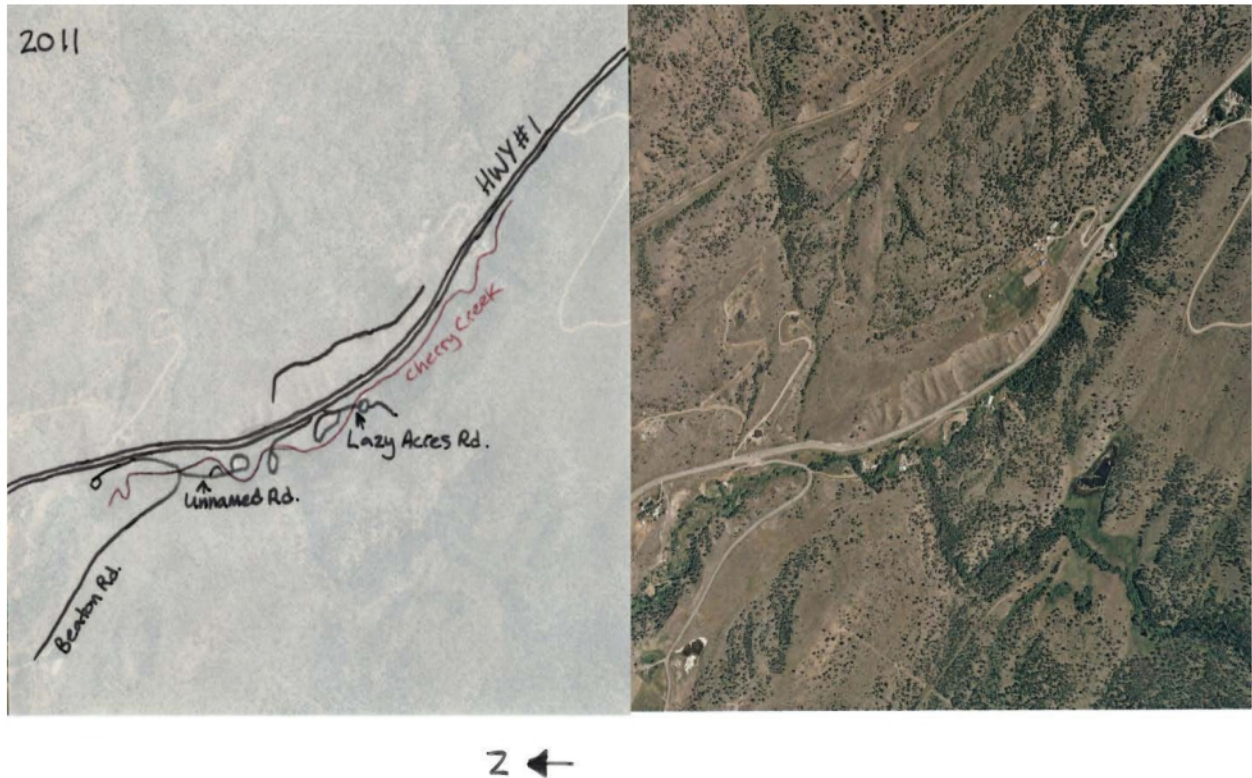


Figure 6. 2011 Air Photo Composition. The image on the left shows an overlay with road and creek interpretation, the image on the right shows the original imagery.

The Google Earth imagery from 2017 (Figure 7) shows a general expansion of properties along Lazy Acres Road with a possible minor increase in cleared vegetation. The unnamed road off of Beaton Road now connects to Lazy Acres Road but does not show an increase in developed area.



Figure 7. 2017 Air Photo Composition. The image on the left shows an overlay with road and creek interpretation, the image on the right shows the original imagery.

Due to the large gaps of time between historical air photo imagery, it is not possible to pin point when the properties along Lazy Acres Road were first developed or when any subdivision of properties occurred.

Analysis of historical air photos does not indicate any distinguishable influence on the natural course of Cherry Creek with subsequent development along the banks of the creek. Any noticeable changes in course could be attributed to difficulty interpreting photos or different aspect ratios of air photos.

Balsom, Tami FLNR:EX

From: Bohay, Trevor FLNR:EX
Sent: Wednesday, May 20, 2020 8:49 AM
To: Meldrum, Tracy FLNR:EX
Subject: FW: Cherry Creek bigger issues?
Attachments: 08LF005 Cherry Creek above Greenstone.png; 08LF086 Cherry Creek below Pendleton.png

From: Giles, Tim R FLNR:EX <Tim.Giles@gov.bc.ca>
Sent: May 15, 2020 4:44 PM
To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Subject: Cherry Creek bigger issues?

Trevor,

s.22

s.22

Looks like MOTI did some works under authority of the Public Trustee, but neglected to finish the job by not tying their work on 5080 onto the end of the work on 5096. Especially that huge culvert which ripped out of the 5080 bridge and seems to have blocked the channel diverting it into the slope at the upstream corner of 5096. If ownership of 5080 is still private then we need their permission to do work. Too bad the RD sold that piece of land, would have been better to remove it from the available land base and make it a riparian floodplain.

One of my biggest concerns is the consistently elevated flows that Cherry Creek is experiencing. Without good recent streamflow data, we are left with old WSC data from:

08LF005, active 1911-1927 (way upstream, past the Greenstone fire), 53 km² watershed (Upper Cherry, elevation around 800 masl).

08LF086, active 1980-1996 (very close to or on the 5096 property), 143 km² watershed (Mid-Cherry, elevation 550-560 masl).

08LF079, active 1977-1980 (at mouth of Cherry on Kamloops Lake), 190 km² watershed (Cherry Creek at mouth, elevation 335-350 masl).

The watershed is described as “natural” for 1911-1927 and “regulated” for 1977-1980 and 1980-1996. Don’t even get any overlap to see if they correlate between each other. They do provide a snapshot of conditions and some guidance on what a “big” flow on Cherry Creek looks like.

The biggest flow is from the Upper Cherry gauge with a reading of 5.66 on May 15, 1912; also a 2.83 on June 29/30, 1917. Biblical deluges or errors? One freshet, one rainstorm? The moderate length of record does give us a feel for the hydrograph of the natural state of Cherry Creek. I attach the cumulative hydrograph from 1911-1927 with max, min, mean, median overlaid on the 1912 season. This is the upper gauging site, so could be offset a few days from either of two lower sites, but the freshet begins in early May and is done by mid-late May with a long tail through June (You can use max, mean or median, they show roughly the same thing).

The more recent gauging at Kamloops Lake has a high of 3.85 on May 21-22, 1978, but the record is so short it’s tough to say whether this is well calibrated etc. The three years of record are dominated by the 1978 season, but it suggests that freshet could occur later in May. Climate records for May 1978 around Kamloops show little to support a major rain event, but between May 18 and 21 temperatures were 24-30C in Kamloops (elevation 345 masl) and 22-27C at the Kamloops Afton climate station (700 masl). This supports the idea of a late freshet, with consideration for the Cherry Creek watershed being more fully treed and the watershed being regulated.

The third gauge is labelled as “08LF086: Cherry Creek below Pendleton Creek”, the [s.22](#) thought this was on their property but if it’s below Pendleton which comes in on the 5108 property then I think the site was probably just in the reach above the Beaton bridge. Means that the flows include Pendleton Creek which is a small watershed (maybe 10 km²) which will raise the flows slightly above what we would expect at 5096, I’ll call it Mid-Cherry Creek for simplicity. Flows at the Mid-Cherry Creek were measured between 1981 and 1995 with the peak flow being 2.29 and 2.28 on June 13 and 14, respectively, 1990. Next three highest flows are 1.92 (May 18, 1982), 1.86 (May 25, 1982) and 1.83 (June 10, 1984). This site is mid-watershed, over 200 m below the upper site and 200 m above the site at the mouth into Kamloops Lake. These flows are mixed, not clearly freshet or rain storm and likely reflects the regulated nature. The 1990 season has no early freshet, flows rise in late May to a peak at 1.5, then drop and climb back to 2.29 and 2.28 in mid June before a final peak in early July. The 1982 hydrograph has a strong freshet from mid May through mid June and a short peak in mid July, again suggests regulated flows. The 1984 hydrograph rises in late May and peaks in early June with some odd flat spots in the record, again regulation indicated. I attach the cumulative hydrograph from 1982-1996 with max, min, mean, median overlaid on the foreshortened 1996 season.

My summary of the streamflow on Cherry Creek is that natural freshet was early to mid May and regulated freshet is what the regulators want it to be between mid May and early July. Flows from all three sites are difficult to interpret, but I think a typical freshet flow might be around 2 m³, a big flow would be 3 m³, and an extreme flow would be 4-5 m³. We might be able to find a relatively natural site to see if the original bank structure still exists and can provide us an idea of pre-regulated channel size which could help us with pre-regulated flow sizes, but I doubt it as the regulation of flows has now likely over-printed on the pre-regulated channel.

The contention of the landowners is that the Afton Mine is dumping water into Cherry Creek. This augments the flow all season, elevating it in spring above typical freshet levels and stressing the channel, and providing welcome late season water for downstream users. My estimation of the flow was around 1 m³/sec during my site visit but without proper measurement it’s a crude estimate. A longer term measurement plan could be put in place to determine if the flows are more elevated than they were pre-mine, or more directly point to the fact that the mine is releasing water into the Cherry Creek system. I am not opposed to the mine releasing water into Cherry Creek, but I think it needs to be understood that if flows are elevated for long periods at much higher levels that the channel will adjust itself by whatever means it needs including lateral migration, incision or aggradation. This will require the property owners to also adjust their channel stabilization structures which could cost lots of money. From my discussions with the owners of 5096, they believe that the mine knows that they know and that the mine is covering up. They also suggest that there is some collusion between gov’t and the mine to allow this without due compensation to the downstream residents affected by the activity. All very messy and lots of names thrown about, but no conclusive evidence provided. Court cases abound. It would be interesting to know what data MOTI used to design their bridge crossings, they are pretty skookum and much bigger than the washed out 5080 culvert indicates would be required for flow. Also begs the question why the H1 crossing is the smallest opening of the lot. We should talk about this and see if there is any appetite for further investigation.

Tim

Gravity: it's not just a good idea, it's the law

Tim Giles M.Sc., P. Geo | Research Geomorphologist

Ministry of Forests, Lands and Natural Resource Operations

441 Columbia St. Kamloops, BC V2C 2T3

mobile: +1 (250) 320-5490

tim.giles@gov.bc.ca

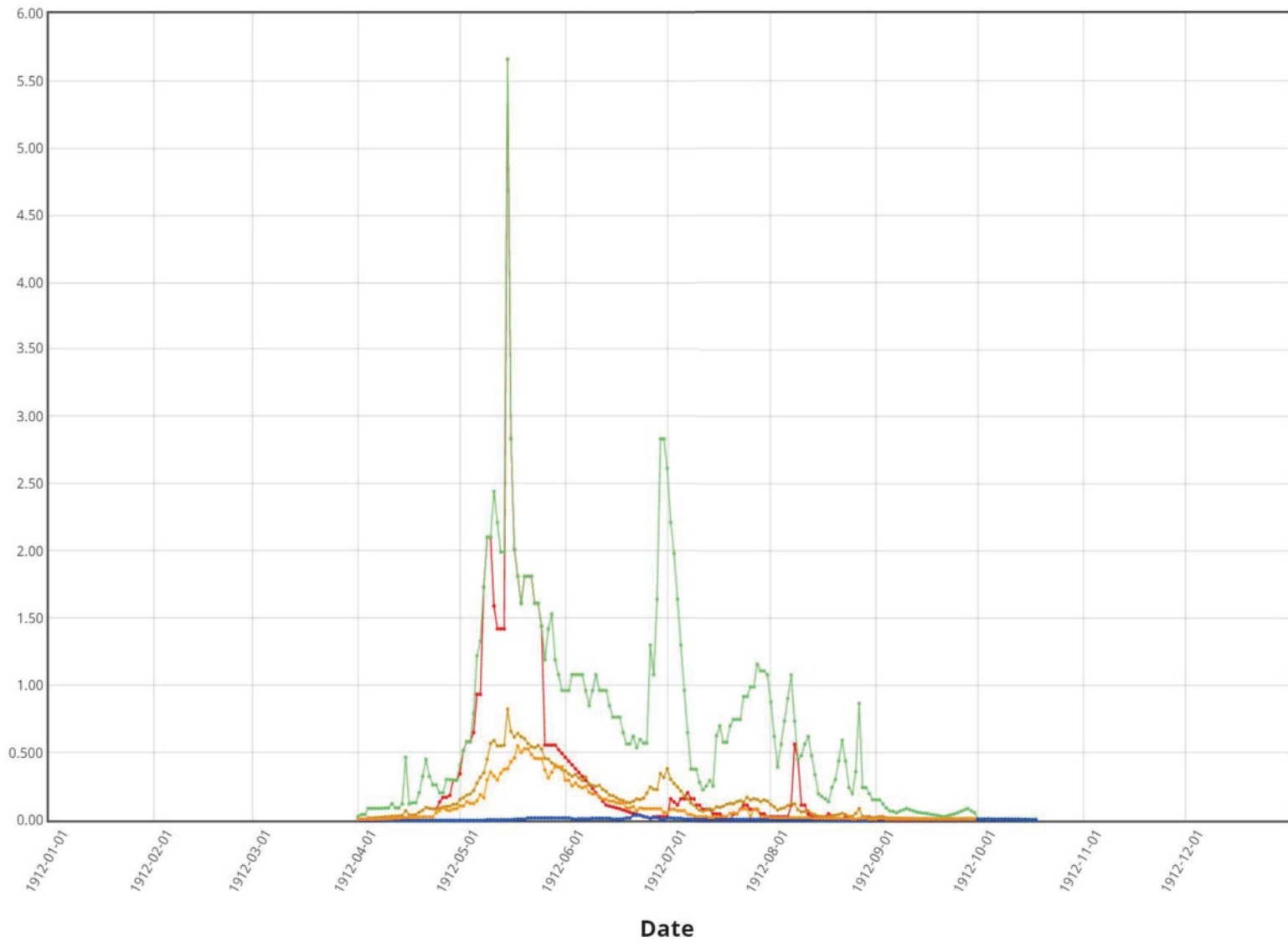
Station: 08LF005 ▾ **Data Type:** Daily ▾ **Parameter Type:** Flow ▾ for 1912 ▾

[Apply](#) [Download?](#)

▼ **Legend**

1912 Data	Maximum	Minimum
Mean	Median	

Discharge (m³/s)



Station: 08LF086 ▾

Data Type: Daily ▾

Apply

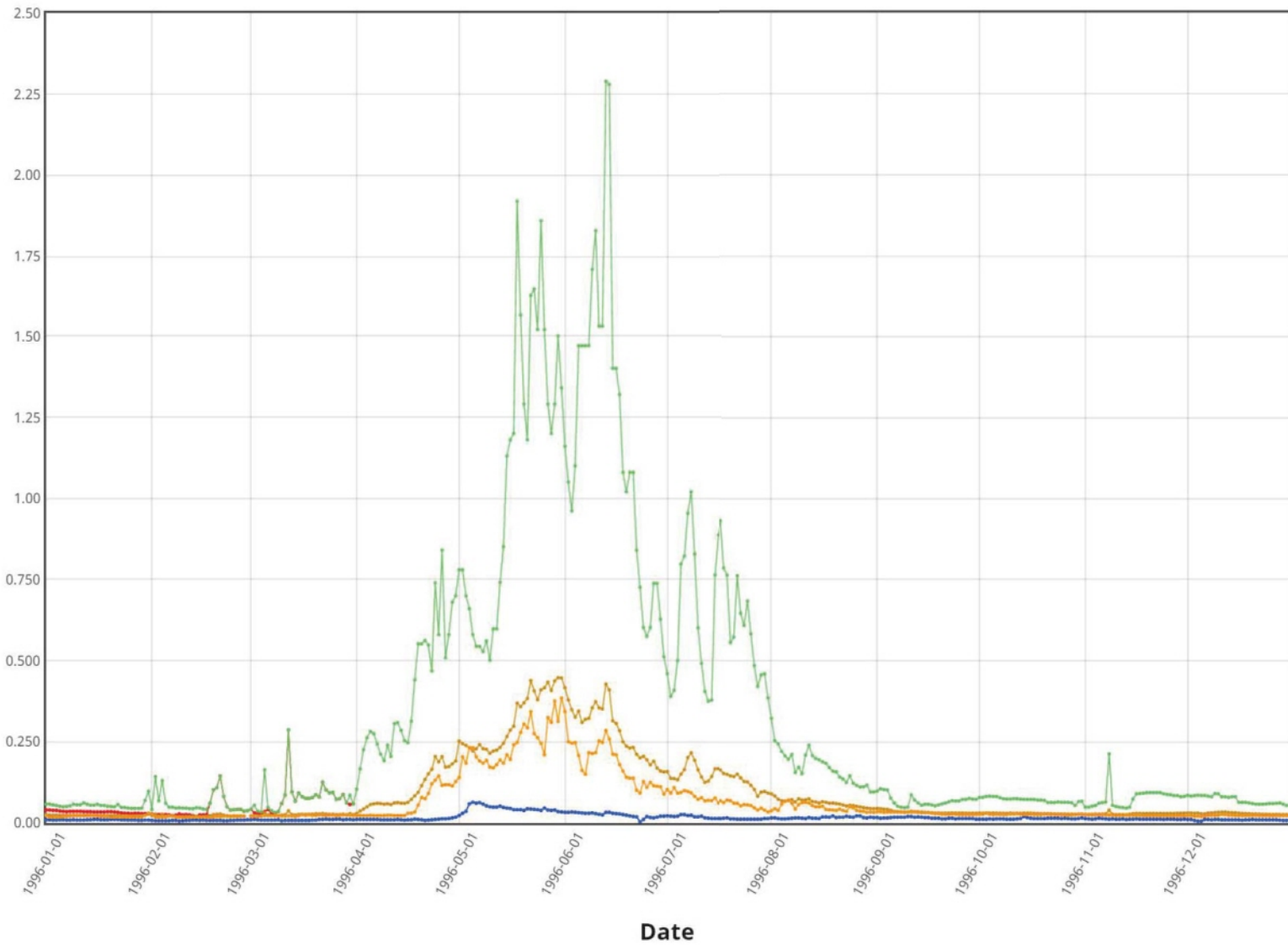
Parameter Type: Flow ▾ for 1996 ▾

Download?

▼ Legend

1996 Data
Mean
Maximum
Median
Minimum

Discharge (m^3/s)



Balsom, Tami FLNR:EX

From: Bohay, Trevor FLNR:EX
Sent: Wednesday, May 20, 2020 8:48 AM
To: Meldrum, Tracy FLNR:EX
Subject: FW: Cherry Creek

From: Giles, Tim R FLNR:EX <Tim.Giles@gov.bc.ca>
Sent: May 15, 2020 2:16 PM
To: Bohay, Trevor FLNR:EX <Trevor.Bohay@gov.bc.ca>
Subject: Cherry Creek

Trevor,

Interesting site with more complexities with land ownership and external issues than the problems at hand. The Westrek report (Gautschi 2018) and the Streamworks report (Bates 2020) were reviewed prior to fieldwork. Reference to a previous review by Bob Costerton (2012?) was made but I have not seen any report nor do I know what he looked at or who he was working for. Might be interesting to find this report?

Slope issues:

Some quite easy fixes to stop the slope ravelling, just \$ and ownership/access issues. At the upstream site on the neighbors land (5080), large boulders or wood placed at the base of the south slope will stop undercutting. This will require cooperation of the owners of 5080. Undercutting the slope has been occurring for 2-3 years as the channel has migrated into the base of the slope. Headward erosion is not immediate, the slope takes time to lose stability upward, mostly by removal of the support lower on the slope. Eventually this will retreat to a stable position, but that point has not been reached. As well as moving upslope, the erosion is moving downstream (and will also extend upslope in time) as the channel adjusts to the sediment input from the ravelling. Stabilizing the base of the slope should stop the removal of the loose ravel material and prevent further erosion. The lower site (on 5096) is similar, stabilize the base of the south slope and you should stop sediment input and erosion from the slope. On the downstream neighbours property (5108), it appears that they did extensive riparian removal which has destabilized the sidewalls and will continue to impact the creek channel for a while. Stabilization of open sediment sources on the south slope requires placement of much larger rocks and tree pieces. All three sites require adjustment to the channel at the same time to allow for proper flow.

Creek issues:

Again, relatively easy to decide what needs to be done, but \$ and ownership/access issues. I would treat the entire stretch of channel from the end of the MOTI works in the upstream property (5080), through the subject property (5096) and into the downstream property (5108) as one reach with one unified design. The MOTI works set stage at the upstream end and their rockwork berm on 5080 needs to be extended downstream on the north bank to join the upstream end of the 5096r rock/sandbag berm. The channel needs to be widened, the large culvert removed and likely the back shed on 5096 to be removed to allow for a more gentle bend to the channel into the restricted reach through 5096. The rock/sandbag berm through 5096 somewhat limits the width of the channel, but making the channel wider requires land from 5096 which restricts their access, so staying with the approximate footprint of the channel through the upper half of 5096 will have to suffice. The rock/sandbag berm was insufficient to contain the 2018 flooding and indicates that another layer of sandbags (30-60 cm?) is needed. Several large cottonwoods remain standing within the creek channel inside the berm, these add roughness to the channel and help anchor the berm but could impede LWD passage and also provide a focus for sedimentation to accumulate. Trees within or on top of the berm would be better to help stabilize the berm and not cause potential damming, infilling and over-topping. I would not remove them at this

time, preferring to wait until a new crop of tree is established in better locations to help support and stabilize the berm. The lower half of the north-side channel containment structure through 5096 is less structured, concrete no posts, rocks, sand bags and large cottonwoods are all involved in bank formation and stabilization. This portion of the channel becomes quite narrow (Bates notes a debris jam causing a gradient step and channel constriction) and has lead to the lower slope instability and undermining of the bank on the south side. Extension of the rock/sandbag berm is recommended, with widening of the channel past the slope instability. Slightly further downstream, an old shed is almost overhanging the creek at one corner, removal of the shed will allow proper (and wide enough) alignment of the channel and berm to the downstream end of the property. Downstream from the property line the channel bends and to the northwest and has eroded a large open sediment face which is presently poorly sandbagged. I would continue the works from upstream on 5096 onto 5108 which will require further fieldwork to assess and cooperation of the residents of 5108. I would not do any channel containment work on the south side channel except at the three ravelling sites. Allow the channel the freedom to move on the south side (as long as it doesn't undercut the slope) while restricting the channel on the north side. Planting of any and all types of trees and shrubs along the riparian zone is encouraged (cottonwood, douglas fir, cedar, willows, roses, maples etc.).

A cohesive plan for slope stabilization and channel protection is relatively easy but requires cooperation of all three property owners, funding (lots of funding) and a Section 11. The owners of 5096 indicated that, along with the channel works, they were advised to elevate the ground on their property to allow the land to slope into the creek and also to raise their buildings to prevent further damage. They also indicated that their house is presently condemned (?), there is no well water and no septic system.

Tim

Gravity: it's not just a good idea, it's the law

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