

2017



*"Take Care Of The Land,
And The Land Will Take Care Of You."*

SUMMARY OF PUBLIC CONCERNS: LOWER GLADE AND UPPER MCPHEE- CUTTING PERMIT 66

March 29, 2017: Response supporting Lower Glade and Upper McPhee – cutting permit 66.

Contents

Introduction:.....	2
Summary of General Concerns:.....	2
Concerns Related to Water Quality and Fish Habitat.....	2
Concerns Related to Recreation Use	8
Concerns with Industrial traffic on the Glade Ferry Road and Glade Road.....	9
Concern Related to the Term “Watershed Reserve”	9
Concerns Related to Visual Quality.....	10
Wildland Urban Interface	10
Closure	11
Literature Cited	12

Introduction:

Kalesnikoff Lumber Company Ltd., under Forest License A20194 is proposing cutting permit 66 (CP-66) within the Glade Operating area. The cutting permit is made up of five blocks that are located in areas described as Lower Glade and Upper McPhee. Lower Glade contains two blocks 66-3 and 66-4, where 66-4 is within and 66-3 is partially within the Glade Community Watershed. Upper McPhee is made up of three blocks 66-1, 66-2 and 66-5. Both 66-1 and 66-5 are outside of the Glade Community Watershed, where 66-2 is partially within the watershed. Lower Glade is accessed from the South end of Glade Road and the Upper McPhee is accessed from Munson Road off the Bombi summit.

Kalesnikoff hosted two community meetings, the first on September 30, 2015 and the second on February 17, 2016. These meetings were held to introduce our Forest Stewardship Plan, inform the Glade residents of plans to carry out timber development and to review Dr. Green's Hydrogeomorphic Assessment of the Glade watershed. During both meetings Kalesnikoff asked the community if they would form a working group to facilitate information sharing and provide input throughout the timber development process. The majority of Glade residents attending the meetings were not interested in forming a working group and voiced strong opposition to logging near their community and within the Glade watershed. Subsequent to these meetings, numerous letters, notices, and e-mails were sent to Kalesnikoff detailing concerns residents have in regards to any logging proposals. Concerns made known have served as a surrogate to a working group and have been given consideration during the development of CP-66.

The following is a summary of concerns received to date with an objective to provide a Kalesnikoff response and how planned activities associated with CP-66 proposal will accommodate identified concerns where practicable. This summary addresses concerns that are not specific to any particular block, as no block specific information has been made known to the public or stakeholders to date.

Each proposed block and the specifics related to that particular harvest area will be advertised through a referral period from April 1 to May 31, 2017. The objective of the referral is to provide the public and stakeholders with the opportunity to identify block specific concerns to ensure that concerns are addressed to the extent practicable prior to logging.

Summary of General Concerns:

Concerns Related to Water Quality and Fish Habitat

- 1) *"Logging will cause the destruction and/or contamination of our only community water source, and the water source of other Glade residents on creeks."*
- 2) *"Logging will result in the destruction of fish habitat."*
- 3) *"Residents of Glade oppose all logging in the Glade watershed and on the hillside above north Glade where most of the residents of upper Glade have points of diversion sources of surface drinking water."*

Opposition to logging in the Glade area is a public policy matter, which is outside the jurisdiction of Kalesnikoff. Kalesnikoff has the responsibility to take public concerns into account where the concerns are related to operational issues, whereas decisions concerning land use designation are the responsibility of the provincial government. Kalesnikoff endeavors to foster public confidence in its management of important resources and is committed to minimizing the risks to fish habitat, water quality and quantity in all watersheds in which we operate. Kalesnikoff's forest activities are carefully planned by registered forest professionals, in which the recommendations of qualified geotechnical, hydrological and other professionals are followed to minimize potential negative impacts to important resources and community values such as drinking water and fish habitat.

So how does Kalesnikoff intend to mitigate the concern that logging will cause the destruction and/or contamination of the community's current water source?

Kalesnikoff will:

- a) adhere to government regulation¹ and guidelines when planning and conducting forest harvesting activities,
- b) adhere to the results and strategies described within its approved Forest Stewardship Plan,
- c) carefully consider all harvest activities and will seek the advice of a Qualified Registered Professional before proceeding with activities that cause concern,
- d) utilize the most up-to-date imagery and technology available to draft operational plans²,
- e) prepare detailed drainage plans where warranted,
- f) use modern road building practices with attention to drainage control,
- g) use environmentally sound timber harvesting practices,
- h) carry out monitoring and maintenance of roads and structures on an on-going basis as to avoid any drainage issues that may be caused by improperly functioning drainage structures, and
- i) carry out reforestation of all harvested areas within the legislated reforestation framework specified by the Chief Forester of British Columbia.

¹ Forest Planning and Practices Regulation 14/2004 Sec 8.2, objective set by government for water in community watersheds. Part 4: Division 3 Riparian Areas. Sec 57. Protection of fish and fish habitat.

² Kalesnikoff has LiDAR and 2015 photo imagery for the Glade operating area.

So what has Kalesnikoff done so far in this regard?

Kalesnikoff and Atco Wood Products Ltd. retained Kim Green, PGeo., PhD. of Apex Geoscience Consultants Ltd. to conduct a hydrogeomorphic assessment of the Glade Creek watershed to provide forest management guidance at a watershed level. Green's (2016) assessment provided comprehensive analysis into the hydrologic state of the watershed and how forest harvesting in the different sub-basins could affect the flow regime. The flow regime is derived from the hydrologic state of recovery within a watershed, and the resulting timing and quantity of flow during the spring freshet. Forest harvesting can affect the hydrologic response and flow regime of a watershed because it can alter the amount of snow that accumulates on the ground and the rate and timing of snowmelt during the spring freshet (Winkler et al., 2010). Green (2016) provided recommendations as to how forest management can be carried out while maintaining a low likelihood of altering the flow regime and a low likelihood of increasing the risk of a damaging flood. In following Green's recommendations during the development of CP-66 Kalesnikoff will not impact the quality and quantity of water.

Kalesnikoff's CP-66 proposal within the Glade watershed is situated in the upper south fork and below the north-south fork confluence and represents a low likelihood of altering the current flow regime or the risk of a damaging flood event. The equivalent clear cut area³ (ECA) of the harvest proposal within the catchment area of the Glade community water intake is 15.6ha, which will increase the south fork unrecovered area from 85.4ha to 89ha and the entire watershed unrecovered area from 449ha to 464.6ha⁴. The harvest proposal results in an ECA increase from 6.6% to 6.9% in the south fork and 15.1% to 15.6% in the entire watershed. Green recommends ECA levels of less than 20% and 25%, when balanced over a range of elevations and aspects, represents a low likelihood of altering the flow regime in the south fork and entire watershed respectively (Green, 2016).

Carver Consulting completed a Glade Watershed Analysis in 2001, which the Interior Watershed Assessment Procedure was followed as a reconnaissance for the installation of transmission line power poles. The analysis included sediment sources, riparian areas and historic road hazards assessments that were referenced during the development of CP-66. At the lowest point of convergence within the Glade watershed Carver identified road segments 1 and 3 as an ongoing concern due to a perpetual source of sedimentation (Carver et al., 2001). Both these road segments were assessed for potential sedimentation sources due to their proximity to blocks 66-3 and 66-4. Substantial forest revegetation was noted except for the running surfaces that are still bare soil due to ongoing use. Road segment 1 was observed to have infrequent motorized vehicle traffic as it is an access point to the transmission lines and road segment 3 was observed to be primarily used as a hiking trail. The road segments appeared to be in a stable condition, but still pose a hazard for sedimentation and mass wasting. Blocks 66-3 and 66-4 will not increase the current hazard on these road segments nor will the proposed road location for access to the blocks. Carver recommended a coordinated drainage plan to avoid additional problems in relation to the two road segments. Kalesnikoff is unaware if such a plan was ever completed or acted upon. Nevertheless, Kalesnikoff designed its road layout consistent with the natural

³ The hydrologic state of recovery is measured by equivalent clear cut area defined as the area that is in a clearcut state with a reduction factor to account for hydrologic recovery of varying levels of forest regeneration.

⁴ Includes Atco Wood Products harvest proposal of 29.7ha.

drainage patterns found on the hillside as to avoid concentrating flows onto areas of concern associated with the two road segments. Kalesnikoff plans to improve the drainage on the transmission line access road and mitigate sedimentation.

In addition to referencing both Green and Carver assessments, Kalesnikoff retained Will Halleran, P.Geo, L.Eng. of Apex Geoscience Consultants Ltd. to conduct a Detailed Terrain Stability / Road Drainage Site Review / Powerline Road Deactivation Assessment in order to:

- a) *“provide recommendation to remedy drainage issues along the road that accesses the power lines⁵,*
- b) *review and comment on the new proposed road that crosses the existing road,*
- c) *review roads that are in proximity to the existing failures on the power line road⁶.”*

In figure #3 of Halleran’s assessment a deactivation and drainage plan for the transmission line access road was provided to mitigate the on-going sedimentation. Halleran stated, *“...the risk of the debris slides will be reduced, but not eliminated due to the pre-existing development related slope instability within the powerline right-of-way (ROW).”* Kalesnikoff plans to follow Halleran’s drainage plan and deactivate the access road except for the last segment onto the ROW as BC Hydro’s access should be maintained. This last segment of road will remain the responsibility of BC Hydro as it is outside of Kalesnikoff’s road and block proposals. This spring Kalesnikoff will be attending a field review with BC Hydro to reach agreement on the deactivation plan and what they would like done with the last road segment on the ROW. Originally Kalesnikoff layout crews were proposing to utilize this last segment of road to access block 66-4 (proposed road 1700). This option was abandoned due to the proximity to the existing failures on the transmission line ROW and potential instability of the slope break on the top of the inner gorge above Glade Creek.

Halleran assessed the proposed lower Glade roads finding further assessment of a flat over steep hazard was not warranted. Halleran found no evidence of terrain instability with where the proposed roads are located. Halleran maintained the construction of the lower Glade roads will not increase the likelihood of landslide initiation assuming proper road construction and timber harvesting standards are maintained. In addition, Halleran found block 66-3 boundary does not pose a risk located on the slope break above Glade Creek. The slope within the block either drains away from this boundary (slope break) or is captured in sub-parallel draws that discharge onto rocky slopes. No access structures are proposed within the vicinity of the slope break above Glade Creek which could inadvertently divert water.

- 4) *“Glade Creek already experiences very high turbidity and there is a concern that logging will increase it.”*

The new road proposed will not increase the turbidity in Glade Creek as the road design does not divert drainage and potential sediment sources will be controlled. Culvert installations will be constructed to ensure inlets and outflows moderate potential sediment transport. Ditch lines and culverts have been designed to concentrate flows where culvert outflows are directly located in the natural drainage. The majority of new road drainage follows natural drainage patterns that

⁵ Carver (2001) identified as segments 1 and 2.

⁶ Carver (2001) identified as segment 1.

flow away from Glade Creek except for the road segment that crosses the transmission line ROW.

Where road drainage is linked to Glade Creek the water flow is ephemeral and may experience overland flow during the freshet or during periods of heavy rain. Any overland flow would be flowing over forest floor within natural drainage patterns for a slope distance of greater than 400meters. The drainage patterns identified in Halleran's drainage plan would result in flows that typically go subsurface prior to entering the Glade stream channel⁷. Any sediment that may be transported from the road would be captured by the forest floor and fall out of suspension well before reaching Glade Creek.

The very high turbidity currently experienced in Glade Creek is mainly attributed to the creeks main stem above the confluence of the north and south fork. Carver described the upper main stem of Glade Creek (north fork) containing a distributed series of sediment wedges that are partly responsible for a cycle of instability persisting in the channel (Carver et al., 2001). Carver goes on to describe reduced channel stability due to historic riparian harvesting creating a deficit of coarse woody debris resulting in avulsion channels causing bank cutting that directly contribute to turbidity (Carver et al., 2001). Carver identified other significant ongoing and potential sediment sources and made recommendations to prevent further deterioration of the Glade Creek channel and water quality. Kalesnikoff is unaware if any of Carver's recommendations to mitigate the turbidity in Glade Creek have been followed through, but believes this is where the Glade Irrigation District and Glade Watershed Protection Committee should focus their efforts to improve the drinking water source. Kalesnikoff is willing to contribute in-kind service where the expertise of a forest professional is required.

5) *“What happens if Kalesnikoff causes damage to the watershed: who is responsible?”*

If Kalesnikoff is found to have caused damage to the watershed Kalesnikoff is responsible. In the event environmental impacts occur Kalesnikoff will follow our “Emergency Preparedness and Response Manual.” Emergency preparedness and response is a component of Kalesnikoff's Environmental Management System. The Emergency Preparedness and Response Manual outlines procedures for emergency awareness, preparation, and response with the purpose of preventing and/or mitigating environmental impacts. Kalesnikoff conducts training in the procedures for potential emergencies, as well as provides a framework for proper response to emergency situations that do occur. The manual also contains Emergency Response Plans pertaining to personal injuries and catastrophic events relating to Kalesnikoff's Occupational Health and Safety Management System.

6) *“Request to exceed legislated buffer distances from creeks and small streams.”*

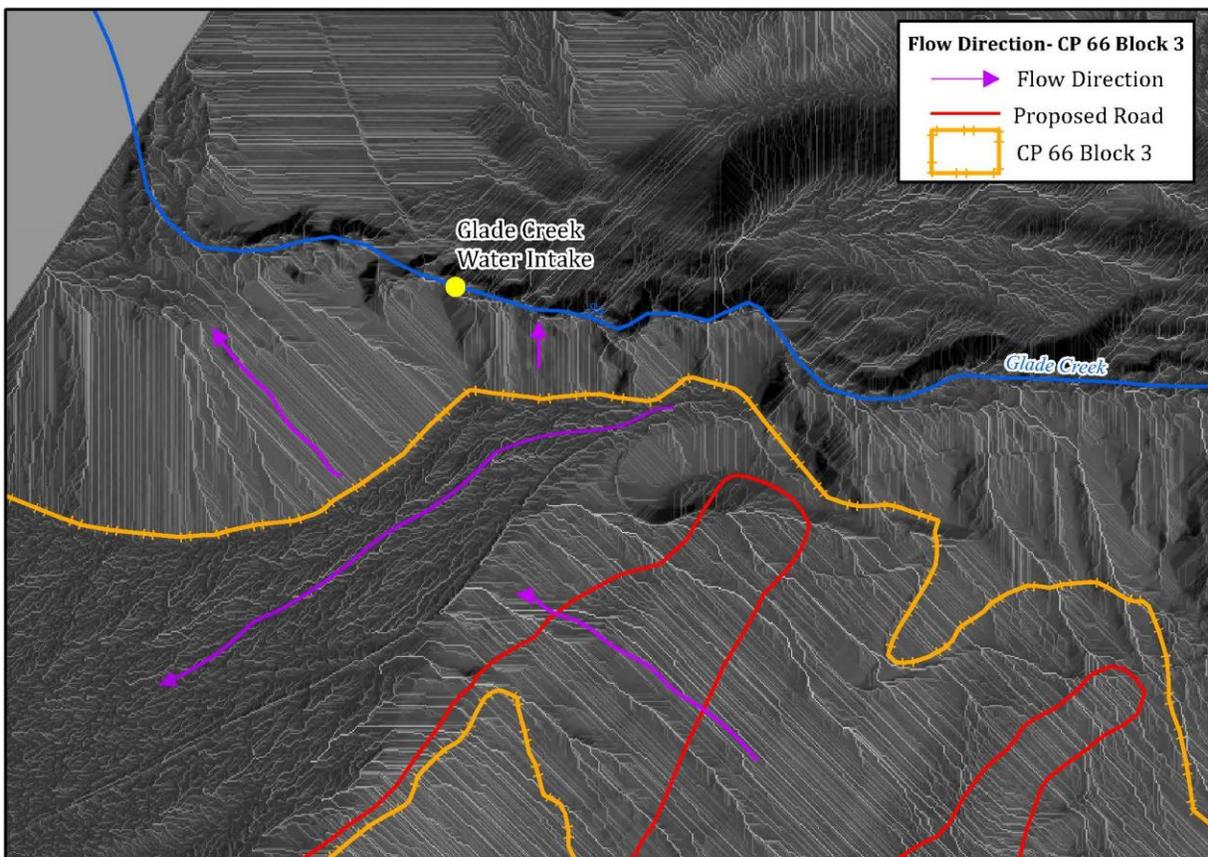
Typically Kalesnikoff will not exceed legislated buffer distances from creeks or small streams unless there are circumstances that warrant such a management strategy. The logging currently proposed meets the legislated buffer distances from all creeks and small streams. The closest

⁷ There is a low gradient zone adjacent to Glade Creek that is 25m wide directly below the transmission line ROW and up to 140m wide below block 66-4. This low gradient zone is typically less than 15% slope, where overland flows would lose velocity and percolate into the forest soils, resulting in subsurface flow.

logging gets to Glade Creek is on the boundary of 66-3. This boundary is appropriately located on the slope break above Glade Creek as it follows the top of the inner gorge. The boundary is outside of the riparian management zone and in this case exceeds the legislated buffer distance. Halleran assessed this boundary as to whether a flat over step assessment should be completed⁸. Halleran found the slope within the block drains away from this boundary (slope break) and the drainage plan for the proposed road will follow natural drainage, therefore a flat over steep assessment was not required.

7) *“Proposed block boundaries are too close to the community water intake.”*

The closest point in which timber harvest will occur near the community intake is along the boundary of 66-3. This boundary is appropriately laid out, as previously discussed, providing an upslope buffer of greater than 100 meters. The closest point in which road construction will occur is greater than 250 meters upslope of the intake. The construction of the proposed road and the logging of block 66-3 within proximity of the community water intake will not interfere with the surface or subsurface flow path of the drainage area that contributes to the intake as the harvest area and roads drainage follows the natural drainage patterns that flow away from the intake.



⁸ Flat over steep situation is when you have areas that are located on generally stable terrain upslope of steeper terrain. Flat over steep assessments and management is generally directed at minimizing alterations to slope drainage flowing onto the steep terrain.

Concerns Related to Recreation Use

- 1) *“Logging will cause the destruction of the sign posted hiking trails through the woods of Glade.”*

The existing road from the Glade Creek Bridge to the Pala Farming Co-op will be upgraded to an industrial standard. This upgrade will not affect either the Glade waterfall hiking trail, which starts at the first switch back of the existing road, or the Skattebo Reach Hiking trail where the trailhead is approximately a kilometer away. There are no authorized recreation trails within the harvest area of CP-66.

- 2) *“New roads will increase access to the watershed: concerned with both motorized vehicles and hunters causing environmental damage.”*

The transmission line access roads currently access the same amount of watershed area that the new roads of CP-66 will access. Upper McPhee will increase access to areas outside of the watershed.

- 3) *“Any timber development will open the forest up to more motorized sports and public alike, thereby, increasing environmental damage and contaminants to Glade Creek.”*

Kalesnikoff submitted request to the Ministry of Forests, Lands and Natural Resource Operations to control motorized vehicle access with the installation of a gate. The Ministry would grant approval to construct a gate if the use of the road would meet the conditions of the Forest and Range Practices Act section 22.2(2)(c) *“endanger property, public health or public safety”* or that the presence of a vehicle on the road would likely cause damage to the road or environment. Kalesnikoff was unsuccessful with the request as the statutory decision maker’s decision must be based on sound science where one of the above concerns must be rationalized.

In other watersheds Kalesnikoff has used signage to educate the public and recreation users that they are in a community watershed, which is a valued source of drinking water. Upon request Kalesnikoff can post signage at key locations in collaboration with the Glade Irrigation District.

Concerns with Industrial traffic on the Glade Ferry Road and Glade Road

- 1) *“Logging truck traffic: speed concern (community is posted as 50km/hr request to travel at 30km/hr).”*

Kalesnikoff will direct logging truck traffic to adhere to a speed of 30km/hr when travelling through the Glade community.

- 2) *“Concerns with logging trucks meeting school bus.”*

Kalesnikoff will direct logging trucks to not travel through the Glade community when school bus route number 5 is on its scheduled pick and drop-off times.

- 3) *“Concern with the stresses and potential damage logging truck traffic will have on the Glade Ferry and Glade roads.”*

Kalesnikoff has contacted the local Ministry of Highways staff making them aware of the planned logging for lower Glade. Both the provincial highways and public roads are designed and constructed to accommodate legal loads. As such, Kalesnikoff logging contractors will adhere to weight restrictions and/or seasonal load restrictions, which are in place during the spring breakup season. Local Ministry staff has informed Kalesnikoff they will continue to monitor these roads to ensure that they remain in a stable and safe condition for all road users.

Concern Related to the Term “Watershed Reserve”

- 1) *“Watershed Reserve status what does it mean?”*

The following is a response that was provided by Kootenay Boundary Regional Authorizations staff.

“The term watershed reserve is a Lands Act term which is clear from the following explanation.

To my knowledge, the term ‘Watershed Reserve’ would only apply to historical Land Act Reserves that were established over Watershed areas.

“Reserves” that are established under the Land Act can be established for several reasons: to stop any Land Act dispositions from being accepted within the Reserve area; to only allow specific types of Land Act dispositions (or stop specific types of Land Act dispositions) within the Reserve area; to ensure that any Land Act applications are referred to a specific government agency during the adjudication process of a Land Act application, or as merely a notation to ensure that specific attributes within the Reserve area are taken into consideration during the adjudication of a Land Act disposition.

Land Act Reserves include Section 15 Order-in-Council Reserves, Section 16 Map Reserves (which are supposed to be a complete withdrawal, but historically have not been established as conditional withdrawals or notations), Section 17 Map Reserves for conditional withdrawals, and Notations of Interest.

These Reserve areas are captured in any 'status' for Land Act purposes, but are also captured by other agencies during the status or clearance process.

We have some historical Reserves established over some Watershed areas in the region that act as a Notation of Interest for Land Officers to consider the Watershed in their adjudication of Land Act applications. Usually when considering impacts of an activity in a Watershed area the Land Officer will refer to Section 14 of the Watershed

Guidebook: <http://www.for.gov.bc.ca/TASB/LEGSREGS/FPC/FPCGUIDE/WATRSHED/water9.htm#part14>

Reserves are generally not established over Watershed areas anymore as they are now a layer available in the data warehouse and show-up on all Status reports regardless of whether a Land Act Reserve is established or not.”

Concerns Related to Visual Quality

Blocks 66-3, 4 and 5 fall within Partial Retention units with respect to established Visual Quality Objectives. Under Partial Retention, alterations to the landscape may be easy to see, small to medium in scale, and natural and not rectilinear in shape. In perspective view, up to 7% of the ground on a given landform may be visibly altered (VIA, 2001)⁹.

Visual quality is an important feature for many people living in Glade and surrounding areas as well as it is to Kalesnikoff. Large modifications to the landscape may result in a less enjoyable experience for both travellers and residents alike. Kalesnikoff has undertaken rigorous visual landscape planning and modelling in the layout and design of the CP-66 blocks. Draft visual simulations have been prepared for the Glade Ferry and Thrums viewpoints. This spring Kalesnikoff still has to work out plans with BC Hydro in regards conducting operations in close proximity to the transmission lines. Through this planning phase the visual simulations may change resulting in updated visual simulations which will be made available as soon as possible upon the completion of this field work.

Wildland Urban Interface

With an increased public awareness of the threat of wildfire to local communities and public infrastructure, there is concern that forest managers must take into consideration the effects of their activities on the wildfire threat. Recently, there have been studies completed looking at the Wildland Urban Interface for wildfire hazard and risk within our region. Subsequently, areas of interest and high risk treatment areas have been identified, where further work is required to develop Community Wildfire Protection Plans to an operational level guiding wildfire threat mitigation. In this regard, collaborative efforts to reduce fire risk have begun between public stakeholders, forest license holders, and the Regional District Central Kootenay. The collaborative approach is still in its infancy as the roles and responsibilities for organizations and agencies involved with wildfire risk reduction work on crown land is still to be defined.

⁹ The transmission line ROW is not included in the percent alteration and presents a major eyesore that also poses visual design challenges.

Closure

Kalesnikoff continues to encourage all potentially affected stakeholders and public to submit their comments by email to: Tyler Hodgkinson at tylerh@kalesnikoff.com should new resource issues become apparent during the referral period from April 1 to May 31, 2017. Additionally, if people are interested in attending a field trip to review the proposed development please contact the undersigned by April 28, 2017, so arrangements can be made.

Sincerely,

Tyler Hodgkinson, Woodlands Manager
Kalesnikoff Lumber Co. Ltd.

Literature Cited

Carver, M., Putt, D., Utzig, G. Carver Consulting. (January, 001) Interior Watershed Assessment Procedure & Reconnaissance Stability Assessment of Structure Locations. Glade Creek. <http://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=8767>

Green, Kim. Apex Geoscience Consultants Ltd. (January, 2016) Glade Creek Hydrogeomorphic Assessment. <http://www.apexgeoconsultants.com/wp-content/uploads/2014/01/Glade-Hydrogeomorphic-assessment-January-20-2016.pdf>

Halleran, Will. Apex Geoscience Consultants Ltd. (November, 2016) Terrain Stability / Road Drainage Site Review / Powerline Road Deactivation. Glade Creek Area. CP 66 Glade Mainline, GL 1200, 1700, 2050. Powerline access road.

Visual Impact Assessment Guidebook (2nd edition). Forest Practices Code of British Columbia. Ministry of Forests Lands and Natural Resource Operations. January 2001.

http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/visual-resource-mgmt/vrm_a_guide_to_visual_quality_objectives.pdf

Winkler R.D., Moore R.D., Redding T.E., Spittlehouse D.L., Carlyle-Moses D.E., and B.D. Smerdon (2010). Hydrological Processes and Watershed Response. Chapter 6. In Pike, R.G., T.E. Redding, R.D. Moore, R.D. Winker and K.D. Bladon (editors). 2010. Compendium of forest hydrology and geomorphology in British Columbia. B.C. Min. For. Range, For. Sci. Prog., Victoria, B.C. and FORREX Forum for Research and Extension in Natural Resources, Kamloops, B.C. Land Manag. Handb. 66. www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh66.htm Forest Hydrology Compendium, Forrex