

# Substantially Started Determination Assessment

## *Kitsault Mine Project*

**Avanti Kitsault Mine Ltd.**

**March 9, 2018**



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## ISSUE

The purpose of this report is to provide information to support a determination on whether the Kitsault Mine Project (Project or Kitsault) has been substantially started pursuant to Section 18(5) of the *Environmental Assessment Act* (Act).

In reviewing the report and the submissions provided, the decision maker should consider whether all the relevant activity, taken as a whole and in the context of this Project, meets the requirement, in his reasonable opinion, that Kitsault was substantially started by March 18, 2018.

In considering the issue, greater emphasis should be placed on the physical works as per the court decision in *Taku River Tlingit First Nation v. British Columbia* (Minister of Environment), 2014 BCSC 1278 (TRTFN v BC).

With respect to non-physical works, such as studies and plans that the Environmental Assessment Certificate (EAC) required be undertaken before construction could commence, and licenses and permits required after the EAC is issued, the decision maker needs also to consider what weight, if any, is appropriate in the circumstances.

In evaluating the activity outlined above, the decision maker should consider whether the activity would have been undertaken regardless of the Project and whether that activity amounts to a significant or important step to develop the overall Project, or is simply ancillary, secondary, or temporary to the Project.

## BACKGROUND

### PROJECT DESCRIPTION

Kitsault is located approximately 140 kilometres (km) north of Prince Rupert at the head of Alice Arm, BC. Kitsault is a planned open pit molybdenum mine with an ore extraction rate of between 40,000 and 50,000 tonnes per day over an expected 16 years of operation. In addition to the open pit, Kitsault would include the following on-site facilities and activities: ore processing system and facilities, ore and topsoil stockpiles, waste rock management facility, tailings management facility (TMF), water management infrastructure, a new electrical substation and on-site transmission line system and camps and buildings to accommodate the workforce (Figure 1). Off-site facilities and activities would include the use of an existing 70 km overhead transmission line, existing Forest Service Roads (FSR) and truck transport of molybdenum concentrate from the mine site to the Port of Vancouver via the FSR and the

public highway system. Kitsault is on the site of a historic molybdenum mine, which operated from 1968-1972 and 1981-1982 and has since been reclaimed, although some infrastructure from this historic mine remains in place, including the above mentioned transmission line and FSR. Further details are available in the [Certified Project Description](#) (CPD; Schedule A of the EAC).

Kitsault is situated within the Nass Area and the Nass Wildlife Area (which is included in the Nass Area) but outside of the Nisga'a Lands, all as defined in the Nisga'a Final Agreement. The mine site is currently accessed from Highway (Hwy) 16 via approximately 96 km along Hwy 13 and 83 km of FSRs, or via an alternate route, which joins the FSR system from Hwy 37. The transportation corridors between Kitsault and Hwy 16 pass through the Nisga'a Lands, the Nass Area and the traditional territories of Metlakatla First Nation, Kitsumkalum First Nation, Kitselas First Nation, several wilps of the Gitxsan Nation and a number of wilps of the Gitanyow Nation.

## PROJECT HISTORY

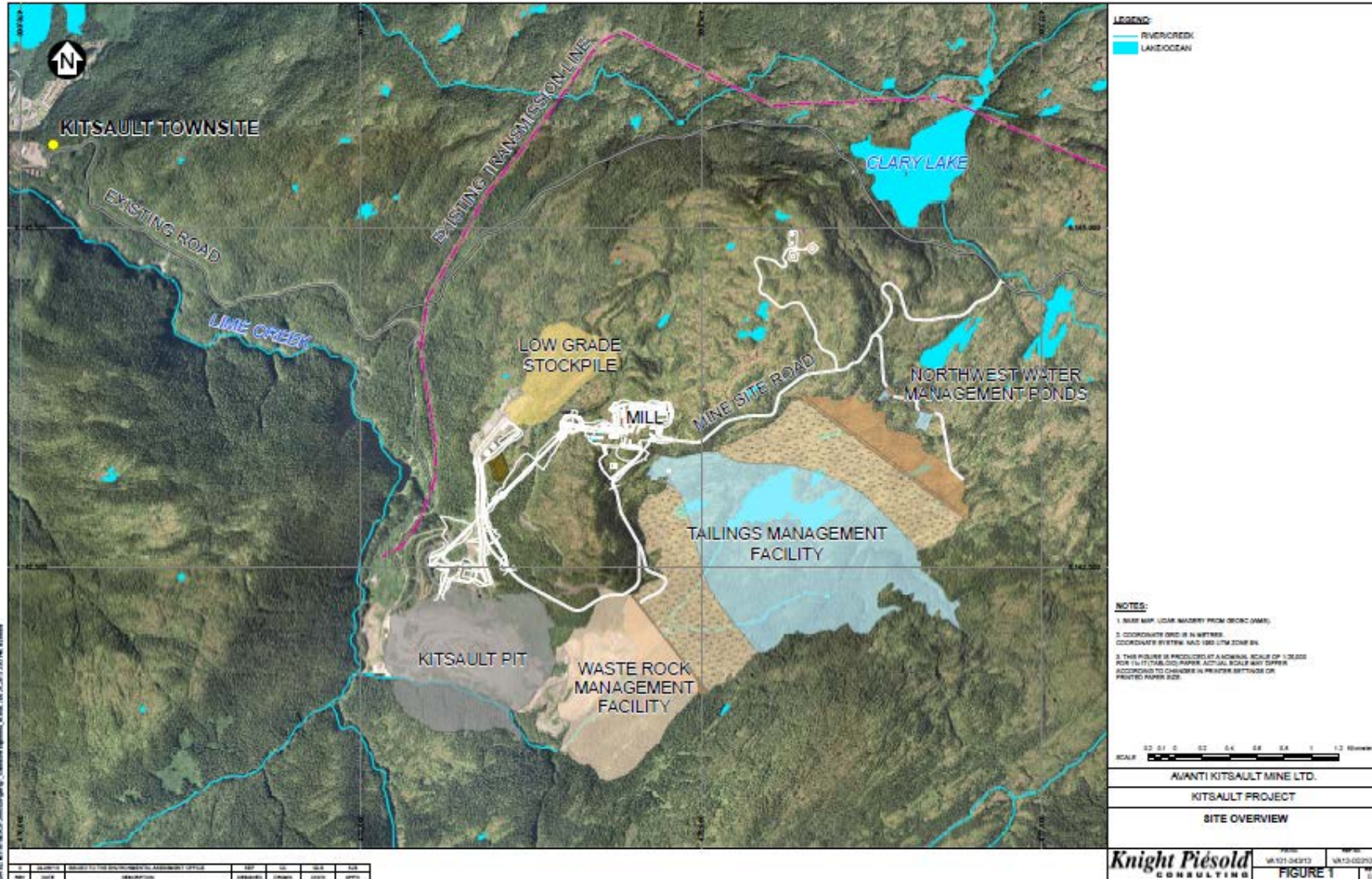
The Kitsault environmental assessment (EA) commenced in June 2010, under section 10(1)(c) of the Act. On March 18, 2013, ministers issued EAC #M13-01 to Avanti Kitsault Mine Ltd. (Avanti) for Kitsault, and required the Certificate Holder to substantially start the Project by March 18, 2018. Avanti is a subsidiary of Alloycorp Mining Inc. (Alloycorp).

In April 2017, the EAO notified Avanti that, according to the Kitsault EAC, the Certificate Holder is required to have substantially started Kitsault within five years from the date of issuing the EAC, in the reasonable opinion of the minister. The EAO informed Avanti that the EAO will be seeking to understand if Kitsault has started by March 18, 2018. The EAO also noted that in the event Kitsault has not substantially started, Section 18 of the Act provides the Certificate Holder the opportunity to apply in writing to the Executive Director for a one time five-year extension to the deadline to the EAC.

On July 24, 2017, Avanti wrote to the EAO ([see letter here](#)) requesting a substantially started determination.

On October 25, 2017, Avanti applied for an extension to the deadline for substantially starting Kitsault ([see letter here](#)). Following review by appropriate government agencies and Aboriginal groups, the EAO will refer the extension assessment to either the Executive Director or the Minister for a decision. Based on the information provided, the Executive Director or Minister will determine whether to grant a certificate extension and, if so, whether additional or revised conditions are required. The extension would not be required if the project is determined to be substantially started.

Figure 1: Main Mine Site Components



## INFORMATION GATHERING PROCESS

On August 15, 2017, the EAO wrote to Avanti ([see letter here](#)) in response to Avanti's July 24, 2017 request for a substantially started determination for Kitsault and to describe the process that it intended to follow to determine if the Project has been "substantially started" within Section 18 of the Act. In this letter, the EAO invited Avanti to provide any information Avanti deemed relevant to the making of the substantially started determination. The EAO also requested clarification on whether Avanti intended to apply for an extension and offered an opportunity to meet with the EAO. Avanti did not request a formal meeting with the EAO, although the EAO and Avanti attended the site inspection together (described below).

On August 15, 2017, the EAO also wrote to the Nisga'a Lisims Government (NLG) to advise them of Avanti's request that the EAO make a determination if Kitsault has been substantially started. The EAO explained the process it intended to follow to make a determination and invited the NLG to provide any relevant information to the EAO for consideration. NLG provided a response on January 19, 2018, which is described below in the section on First Nations' views.

On October 12, 2017, EAO Compliance and Enforcement (C&E) staff inspected the Project to inform the determination of whether Kitsault has been substantially started, as per Section 18 of the Act. Two Avanti representatives attended the inspection and were provided the opportunity to identify to C&E staff all project-related works that Avanti wished to be considered by the EAO as a component of the substantially started determination. C&E staff verbally debriefed the representatives of Avanti on the EAO's inspection observations at this time. A representative of NLG also attended the site inspection. C&E staff explained the activities undertaken during the inspection, and provided an overview of the Project infrastructure and mine site layout.

Avanti and Alloycorp provided additional written submissions regarding the substantial start on October 20, 2017 ([see letter here](#)) and December 13, 2017 ([see letter here](#)), respectively.

C&E staff provided Avanti and the NLG with a draft of the C&E Inspection Record on November 7, 2017, for their opportunity to identify any factual errors or omissions in the report by November 14, 2017. Avanti provided written comments and no response was received from NLG. The final [Inspection Record](#) is available on the EAO Project Information (EPIC) site.

The EAO also wrote to Metlakatla First Nation, Kitsumkalum First Nation, Kitselas First Nation, Gitksan Nation and Gitanyow Nation on December 22, 2017, to provide them with notification of the substantial start determination and offered them the opportunity to review a draft of this report. The EAO is of the view that the duty to consult these Indigenous Groups applies in connection with the portion of the transportation route that traverses their asserted territory. The status of this transportation route is not in question under the substantial started determination; however, the EAO invited these Indigenous Groups to provide their views or any evidence they have on whether any aspect of Kitsault has been substantially started. The comments received are described below in the section on First Nations' views.

A draft of this report was provided to Avanti, NLG, Metlakatla First Nation, Kitsumkalum First Nation, Kitselas First Nation, Gitxsan Nation and Gitanyow Nation on January 22, 2018, for review. Kitsumkalum First Nation, Kitselas First Nation and Metlakatla First Nation responded indicating they have no comments on the report. Avanti provided comments, which the EAO considered and reflected in the report, as appropriate.

## DISCUSSION

### GENERAL CONSIDERATIONS FOR SUBSTANTIALLY STARTED DECISIONS

Under Section 18 of the Act, an EAC must set a deadline of not more than five years after the issue date by which time the project, in the reasonable opinion of the minister, must have been substantially started.

The Act allows for a one-time-only extension of that deadline of not more than five years. If, in the reasonable opinion of the minister, the project is deemed to have been substantially started, that certificate remains in effect for the life of the project. If the project is deemed not to have been substantially started, the certificate expires.

If EACs were not subject to a predetermined time limit, the adverse environmental, economic, social, heritage or health effects that may be caused by the project may have changed by the time a certificate holder decided to start the project. Some reasonable term is required to allow the certificate holder to start its project recognizing not only that there are further regulatory processes to complete, but also depending on the complexity, it might take considerable time to plan the project and meet the conditions required by the EAC. Economic conditions may also play a role in the timing of a project.

The Act specifies that the holder of the certificate must have “substantially started the project”. The Act does not define “substantially started” but defines “project” as follows.

“Project means any:

- (a) Activity that has or may have adverse effects, or
- (b) Construction, operation, modification, dismantling or abandonment of a physical work”

The Act does not require that the project be operational nor does it require the project to be substantially “completed” or “constructed”. There is also no specific formula to determine if a project is substantially started.

The practice of the EAO is to consider each project on a case-by-case basis in the context of the particular project. This case-by-case approach makes sense given the wide range of projects that are required to be reviewed under the Act.

The court in *TRTFN v. BC* provided the following assistance as to how “substantially started” should be interpreted. The court was dealing with a case related to the substantially started determination

for a mining project. The court stated that:

- The decision maker should focus less on the permits which have been granted and the money expended, and more on what has taken place physically at the site.
- Temporary structures at the site, if they will soon be removed, followed by remediation, are less important to consider than structures that will be in place for the duration of the project.
- To have been substantially started, the project needs to be started in its essentials in a real and tangible way.

Finally, to be considered, activity must occur after the EAC was issued, in this case March 18, 2013, and before the end of day March 18, 2018.

In addition, the EAO User Guide provides the following questions as guidance:

- Has there been a significant investment of time, effort and resources to physically develop one or more main project elements?
- Does the activity amount to a significant or important step to develop the overall project, or is the activity considered ancillary, secondary or temporary?
- Would the Certificate Holder have undertaken the activity regardless of the project?

## **APPLICATION OF GENERAL CONSIDERATIONS TO THIS PROJECT**

This report focuses first on what has physically taken place at the Project site. This is informed by the information in Avanti's submissions to the EAO, as well as the EAO's inspection.

This report also considers other activity such as pre-construction activities and the obtaining of various permits related to the physical activity that has occurred on site.

Further, the report considers other activity that has been undertaken to advance the project but has not to date resulted in the construction of any physical works. Such activity could include subsequent permits and tenuring, as well as engineering and design work.

Finally, and while the Court in TRTFN v. BC clearly stated that "the decision maker should focus less on...the money expended...and more on what has taken place physically at the site", it did not expressly preclude consideration of financial information in substantially started determinations. The financial information from the Avanti submission is provided to give a rough indication of the scope of the construction and may assist in validating the physical works identified in the photographs. For the purposes of this determination, the EAO did not verify or seek verification of the amounts Avanti indicates it expended.

## **REVIEW OF PHYSICAL WORKS UNDERTAKEN BY AVANTI**

Avanti undertook construction activities between June 2014 and March 2015 associated with clearing and developing the plant site access road, laydown area, plant site area, and coarse ore stockpile area (Figure 2). Overall, Avanti reports it has developed 30.4 hectares (ha) of surface area to date. In addition to areas of surface development, Avanti reports it has cleared (tree felled) another 34 ha of

area to prepare areas for surface development activities. C&E staff assessed the status of Project development and determined that the key infrastructure in place includes a new bridge, haul and access roads, topsoil stockpiles, cleared areas and a wastewater treatment plant. Further details on the activities undertaken by Avanti and C & E's observations are provided in the subsequent sections below.

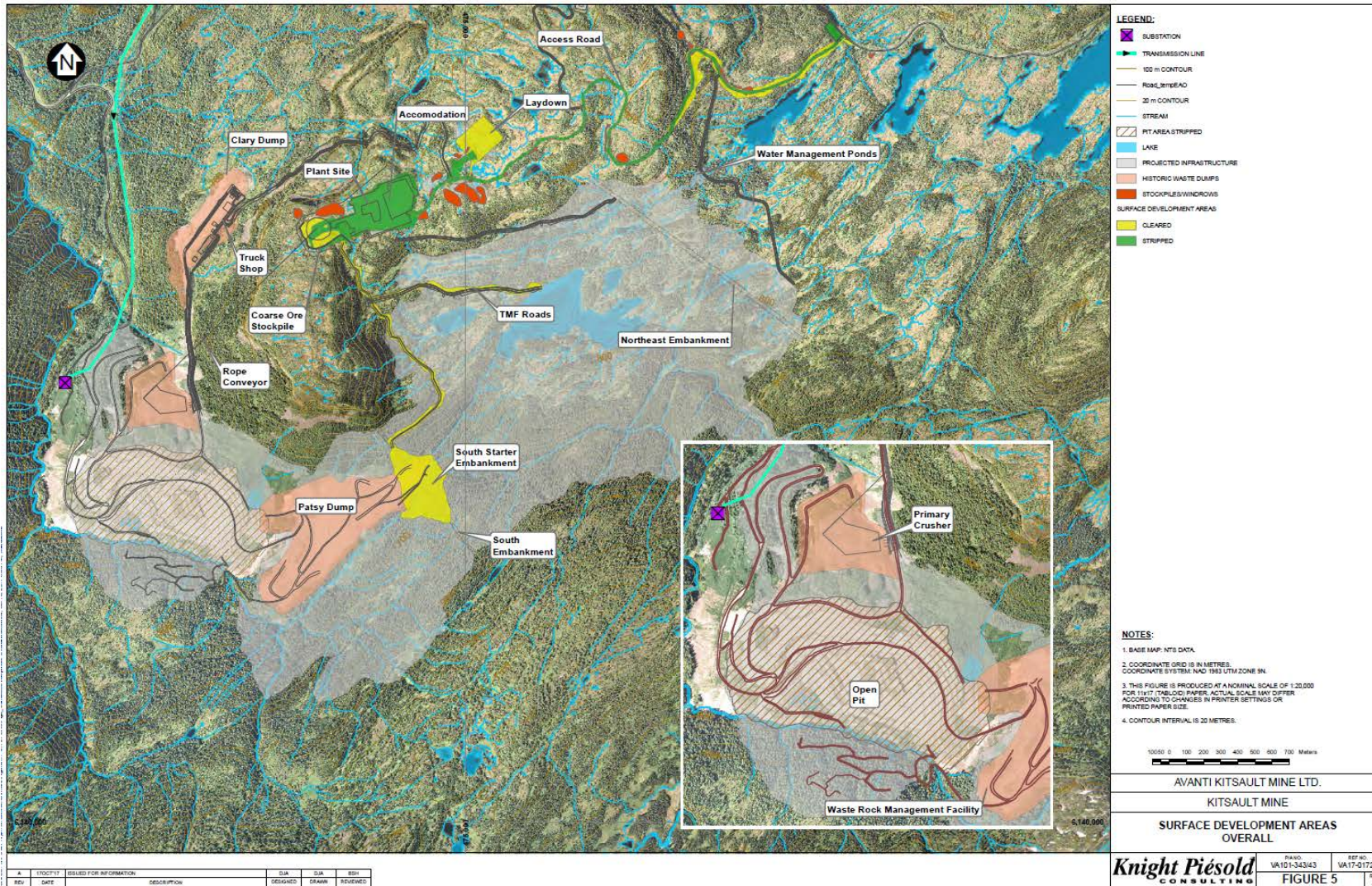
Physical evidence for the works undertaken by Avanti can be seen in the photographs below provided by C&E; additional photographs are available in Avanti's [submissions](#) and the C&E [Inspection Record](#).

The EAO notes that Avanti also provided details on works completed prior to the issuance of the EAC, including the following:

- Stripping and previous development of the projected area of the open pit;
- Development of existing resource road and transmission line infrastructure to Kitsault Mine;
- Development of existing mine site roads during exploration and previous mining operations; and
- Stockpiling of material from existing Patsy Dump within the waste rock management facility that is readily available to build the south embankment starter dam.

The court in TRTFN v. BC provided guidance that any activity counting towards the substantial start must have occurred after the issuing of the EAC; therefore, this work falls outside the scope of works that may be counted towards a substantial start. Nevertheless, Avanti was of the view that the context of the previous mine operations in terms of surface development already undertaken, particularly for the pit, is important to understanding the relative amount of additional surface development still required for the mine. Avanti, therefore, requested that the EAO include this information in this report.

Figure 2: On-site past, current and projected surface development associated with Kitsault



## Mine Site Roads

Avanti indicates that it constructed a new 4.3 km long access road linking the Kwinathal Resource Road to the Plant Site in 2014 and 2015. Construction of the road involved clearing, stripping, grubbing, blasting, and excavation earthworks in an area of eight hectares. An approximate volume of 164,000 cubic metres (m<sup>3</sup>) of material was excavated (stripping, rock, and blast rock) and an additional 106,000 m<sup>3</sup> of material (excavation rock and borrow soil or rock) was used as fill, according to Avanti.

Avanti reports that it stripped and stockpiled (placed in four separate stockpiles) and windrowed (placed in 10 separate windrows) topsoil along the road right-of-way. Avanti cleared an additional 7.3 ha of trees along the right-of-way, which will be a permanent road for the life of the mine and post-closure monitoring access.

Avanti also reports that, as part of road construction activities, it installed 12 new culverts, established sediment and control measures including water management ditches, construction of sediment traps and basins and stabilized disturbed land surfaces.

As indicated in its Inspection Record, C&E staff confirmed that the mine site roads were constructed. These extended from the mine gate (Figure 3) to the proposed ore stockpiles and processing area (Figure 4) in the upper historic site, and from the gate intersection along Alice Arm Road past the Exploration Camp, Clary Dump and through to the historic open pit and Patsy Dump. Roads and neighboring slopes appeared stable and roads could accommodate two-way traffic. No traffic signage was observed.

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Kitsault Project - Access Road



**Figure 3: Mine Gate, on the access road to the Plant Site Area. Access road constructed to accommodate two way light vehicle traffic to and from main Mine site area and concentrate haulage from the process plant to market.**



**Figure 4: On site Mine access road to the Plant Site Area. Constructed to accommodate two way light vehicle traffic and concentrate haulage to and from main Mine site area.**

The EAO is also aware of a non-compliance issue that may be relevant to the construction status of certain mine site roads. On January 3, 2018, the Ministry of Energy, Mines and Petroleum Resources (EMPR) informed Avanti that it is non-compliant with the *Mines Act* M-10 permit due to the use of potentially acid-generating (PAG) rock in the construction of the mine site access road to the plant site area, evidence of acidification of these PAG materials and observed water quality guideline exceedances attributed to these construction materials. EMPR issued an order requiring Avanti to develop a detailed Mitigation Plan for all PAG materials used for construction of the access road with implementation of the plan in the 2018 construction season. Avanti indicates that it plans to remove any PAG rock confirmed to be acid-generating from the access road and replace it with Non-PAG rock. Acid-generating rock would be stored appropriately.

## Ore Stockpiles

Avanti reports that physical works completed on the coarse ore stockpile including the clearing, stripping and excavation of a 1.5 ha area. Avanti indicates that, overall, 77 percent of the stripping has been completed to date, which includes movement of approximately 36,900 m<sup>3</sup> of material. Additional construction activities in this zone included the development of sediment ponds and a French drainage ditch to divert non-contact water around the coarse ore stockpile area.

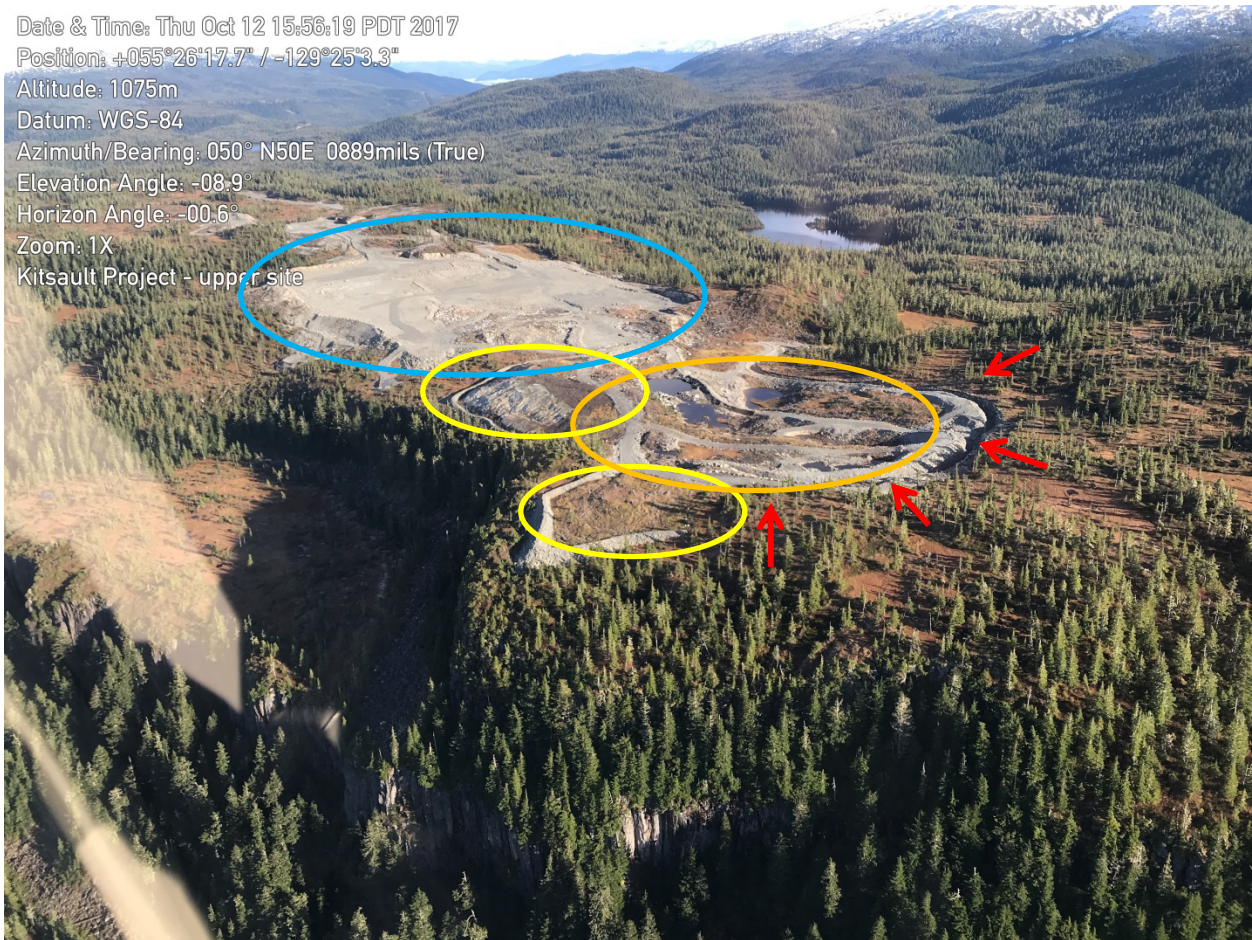
C&E staff confirmed that regrading had been done in the area of the coarse ore stockpile and that topsoil and overburden has been cleared from the low grade stockpile. C&E staff also observed the presence of the water diversion ditch constructed on the southern upslope of the coarse ore stockpile to prevent non-contact water from entering the stockpile.

## Processing Facilities

The processing facilities include the plant site area as well as the permanent accommodations area and laydown area due to their close proximity. Avanti reports that physical works completed included clearing, stripping, excavation and blasting for foundation preparations over an area of 13.4 ha in the plant site and accommodations area and 1.3 ha in the laydown area. Avanti indicates that approximately 539,700 m<sup>3</sup> of material was moved to complete 100 percent of the stripping, 86 percent of the blasting, and 94 percent of the fill within the plant site and accommodations area. Additional construction activities involved construction of sediment ponds, ditches, and drain around the plant site area for sediment and erosion control and tree clearing of an additional 1.9 ha of area in the plant site and accommodation area and 4.0 ha in the laydown area (Figure 5). Approximately 190,000 m<sup>3</sup> of material was salvaged and stockpiled within five stockpiles. Avanti also stockpiled approximately 2,250 m<sup>3</sup> of 22 mm minus and 5,000 m<sup>3</sup> of 75 mm minus crushed rock from borrow sources and plant site blasting in the laydown area. This material is ready and available for construction.

C&E staff confirmed that Avanti had undertaken foundation preparation activities.

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Zoom: 1X  
Kitsault Project - upper site



**Figure 5: Plant Site Area looking northeast. Topsoil stockpile areas (yellow circles) and Coarse Ore Stockpile area (orange circle). Water diversion ditch installed to south (west to east) of the COS area (red arrows). Processing Plant and Accommodations Complex area to the north (Blue circle).**

### **Tailings Management Facility**

Avanti reports that during winter 2015, it completed clearing (tree felling) of the south starter embankment area in an area of 10.5 ha to prepare the area for surface development activities and to avoid tree felling activities within the breeding bird nesting window (Figure 5). C&E staff confirmed that trees had been felled in this area.

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 Klitsault Project - Tailings facility Patsy lake WRD



**Figure 6: TMF, facing North. South Embankment footprint tree-felling. Historic Pasty Dump in bottom left to centre.**

## Infrastructure and ancillary facilities

Avanti reports that construction of several infrastructure and ancillary facilities have been undertaken to date in support of providing camp services to construction crews. By the end of September 2014, Avanti indicated it had completed construction of a 150-person camp to service the construction personnel of the process plant and permanent accommodations building. The expanded camp upgrades included installation of new kitchen and dining modules, 150 dorm rooms, and new recreation area. In support of the camp expansion, a new wastewater treatment plant was installed and commissioned and a potable water supply pumping system was commissioned, both with the capacity to service a 150-person camp. Additional activities included upgrading the primary electrical service with new transformers.

C&E staff confirmed that an exploration camp was constructed on the Clary Dump site to the west and downslope of the historic upper site and north of the historic pit. A BC Hydro transmission line was observed, terminating just north of the camp. The lines have not been extended to the upper Mine site or the pit, Waste Rock Management Facility or TMF. C&E staff also noted an operational wastewater/sewage treatment plant was installed to the southeast of camp. C&E staff indicated that a construction camp had been developed adjacent to the exploration camp; however the infrastructure in this camp was decommissioned and removed from the site prior to inspection. C&E staff also indicated that a construction camp located at this site was not specified in the CPD, EA Application or the *Mines Act* Permit M-10. In the EA Application, Avanti had indicated that the construction camp would be constructed northeast of the proposed processing plant and then expanded to the full size camp by the time mining operations commenced.



**Figure 7: Exploration camp (orange circle) at the historic Clary Dump site, looking south. Transmission line terminates at the exploration camp (yellow circle). Vacant pad (location of temporary construction camp, blue circle). Wastewater/Sewage treatment plant southeast of camp (red circle). Proposed Low Grade Stockpile (LGS) area (purple circle).**

Avanti reports that soil salvage activities undertaken to date include stripping and stockpiling of organic soils from the plant site access road, plant site area, laydown area, and coarse ore stockpile area. According to Avanti, nine soil stockpiles (194,715 m<sup>3</sup> salvaged soil) and 12 windrows (6.2 ha in total for stockpiles and windrows) have been developed.

C&E staff observed nine soil stockpiles along the alignment of the Mine Road from the gate to the historic upper Mine site and two soil stockpiles next to the ore stockpiles in the historic upper Mine site. The soil stockpile surfaces were treated with geosynthetic mesh and hydro-seeded. There was no evidence of erosion or other instability.

### **Off-site access roads**

Avanti indicates that the Nass River Bridge, (Figure 5) at kilometre 14.7 of the Kinskuch FSR, was replaced between October 2014 and March 2015. This bridge replacement was necessary to provide sufficient load rating for the delivery of the construction and permanent camp modules and other mine equipment. The replacement involved removing the old 137 metre long creosote wooden bridge and replacing it with a new three span steel plate girder steel bridge with a composite precast concrete deck and new concrete abutments.

The bridge replacement required review and approval from the Canadian Environmental Assessment Agency pursuant to the *Canadian Environmental Assessment Act*, review by the Department of Fisheries and Oceans and Transport Canada, and review and approval by the BC Ministry of Forests, Lands and Natural Resource Operations. An assessment of the effects of the bridge replacement was also required and completed pursuant to the Nisga'a Final Agreement, Chapter 10, sections 8(e) and 8(f). Approvals and authorizations were also granted by the NLG on the work plan and pursuant to the *Nisga'a Forest Act*.

C&E staff observed the upgraded bridge and noted that the slopes appeared stable and were revegetated with short grasses and smaller woody plants.

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 Kitsault Project - Nass Bridge



**Figure 8: Nass Bridge, looking east. Vegetation and silt fence in foreground.**

Road access to the Kitsault Mine is along approximately 95 km of three resources roads, Nass FSR, Kinskuch FSR, and the Kwinatahl FSR. Avanti indicates that during 2014 and 2015, maintenance works were undertaken and included right-of-way brushing, grading, ditching, and snow removal. In support of resource road maintenance works and development of tender packages the following activities were undertaken, according to Avanti: engineering studies for road realignment and upgrades, stream and culvert assessments, terrain, stability and hazard assessments, borrow source assessments and testing, and wildlife habitat surveys. In addition and as per EAC Conditions 15, 17 and 18, Avanti developed and implemented road use safety measures, a Geographic Response Plan and a Barrier Protection Plan.

## **Expenditures**

Avanti indicates that as of April 30, 2015, the expended costs for Kitsault Mine totaled \$67.8 million. Another \$46.8 million of costs were committed for the process facility, utilities,

accommodation complex and construction camp, which were not yet delivered to the site. Of the \$67.8 million of expended costs, the major expenditures were plant site road development, site preparation and process facility, ancillary buildings and facilities, Nass River Bridge replacement, and construction indirects (i.e., construction management, construction equipment, engineering procurement, construction camp and expansion), and environment support. Avanti reports that the total cost of physical construction up to April 2015 (not including environment support) was \$59.7 million.

Additionally, Avanti posted a security bond of \$1.4 million for the reclamation of the approved *Mines Act* permit and, on December 14, 2015, provided \$100,000 to a Contribution Agreement for the Ministry of Forests, Lands and Natural Resource Operations for 2015 as per EAC Condition 20. This condition requires the certificate holder to contribute \$100,000 to the Province of British Columbia, from construction through closure, to support recovery efforts of the Nass moose population and management and mitigation of cumulative effects to aquatic and wildlife populations along Highway 37.

## **VIEWS OF FIRST NATIONS**

### ***NLG***

In their submission of January 19, 2018 (see letter [here](#)), NLG indicated that they agreed with the characterization of the Nisga'a Nation in Alloycorp's letter of December 13, 2017. In this letter, Alloycorp indicated that NLG would support Avanti's application to have the project declared substantially started. NLG further indicated in their letter that having to re-open the conditions in the EAC or restart the process would be unnecessary and potentially counterproductive. NLG stated that the Nisga'a Nation does not object to BC making a determination that the Project has been substantially started.

### ***Metlakatla First Nation***

Metlakatla did not provide any views on whether Kitsault was substantially started.

### ***Kitsumkalum First Nation***

In their comments submitted on January 15, 2018 (see letter [here](#)), Kitsumkalum First Nation first acknowledged that the mine site was not located in Kitsumkalum Territory therefore it was difficult to comment. Kitsumkalum wished to recognize those that own the territory. They respectfully submitted the following comment: although activities have occurred and significant money has been spent, in the view of Kitsumkalum, it did not appear that substantial steps had been taken to complete and operate the mine. Kitsumkalum further expressed the concern that Kitsault could become a legacy project that is never completed, resulting in impacts to the

north without any long-term benefits to local communities. Kitsumkalum indicated that forward movement of the project is required and would require further discussion if the mine began construction again to ensure commitments are upheld and concerns are adequately addressed.

### ***Kitselas First Nation***

Kitselas First Nation did not provide any views on whether Kitsault was substantially started.

### ***Gitxsan First Nation***

Gitxsan did not provide any views on whether Kitsault was substantially started.

### ***Gitanyow Nation***

Gitanyow Hereditary Chiefs submitted comments indicating that, due to the mine site being located outside of Gitanyow Lax'yip, they cannot comment on whether Kitsault is substantially started or not. Gitanyow Hereditary Chiefs provided comments on the aspects of the project relating to the transportation corridor. Gitanyow Hereditary Chiefs indicated they have not been involved with or updated on progress on works to improve the transportation corridor, spill response plan or wildlife corridor.

The Kitsault EAC requires that the Certificate Holder consult Gitanyow Nation on the following plans:

- Geographic Response Plan (which addresses spill response approaches for the transportation route);
- Plan for barrier protection along the transportation route;
- Transportation Safety Plan; and
- Wildlife Corridor Management Plan.

Avanti indicated in its Self-Assessment Status of Compliance 2016 Annual Report (see report [here](#)) that draft plans were provided to Gitanyow Nation for review in 2013-2014. In response to Gitanyow's concerns about a lack of recent engagement, Avanti indicated that it is committed to continuing a cooperative and meaningful relationship with the Gitanyow Nation over the long term. Avanti stated that because Kitsault is currently in care and maintenance, activities are limited to continuation of site-based environmental monitoring. Once market conditions allow the project to advance, Avanti stated that they looked forward to re-initiating discussion and negotiation with Gitanyow regarding access and benefits based on Gitanyow Nation's Interests and involvement in the development of the mine moving forward.

## REVIEW OF STATUS OF PERMITS AND OTHER APPROVALS

Avanti received a positive federal EA decision statement from the Minister of the Environment on June 27, 2014. In addition, Avanti has also received the following permits and approvals to date from NLG and provincial and federal regulatory authorities:

- *Mines Act* Permit M-10 (amended in 2014 to allow the current Project)
- *Mines Act* Permit – Explosives Storage and Use (active until November 10, 2019)
- *Mines Act* Permit – Sand and Gravel Quarry (amended November 23, 2015; active until November 23, 2020)
- *Mineral Tenure Act* - Mining Lease
- *Environmental Management Act* construction effluent discharge permit (EMA 107129; amended to reflect the Project being in care and maintenance)
- *Environmental Management Act* – Air Discharge Permit (150 person camp)
- *Environmental Management Act* – Municipal Wastewater Registration (150 person camp)
- *Forest Act* - Occupant Licence to Cut (L49633; valid from June 17, 2014 to June 16, 2016)
- *Forest and Range Practices Act* - Road Use Permits (Nass, Kinskuch, Kwinatahl)
- *Forest and Range Practices Act* - Special Use Permit (Kwinatahl)
- *Nisga'a Forest Act* - Special Use Permit
- Nisga'a Approval of the Nass River Bridge Replacement Work Plan
- *Water Act* - Water License (remains valid as long as the mineral tenure is in good standing) and Short Term Water Use approvals (expired)
- *Drinking Water Protection Act*- permits for Avanti Kitsault Mine drinking water system and hauling non-potable water (150 population served)
- *Wildlife Act* – amphibian salvage permit (valid from August 15, 2014 to October 31, 2015).

In its December 13, 2017 letter, Alloycorp provided additional details explaining why it views Kitsault is substantially started. Alloycorp indicated that Avanti has undertaken substantial work with regard to project management and environmental assessment, including the development of supporting surveys, engineering studies, marine and aquatic studies, and numerous environmental management and monitoring plans. Overall, Avanti indicated that as of April 30, 2015, it had completed:

- 61 percent of the overall engineering and procurement services (\$20,362,062);
- 40 percent of the engineering of the TMF and ancillary facilities (\$2,325,915); and
- 29 distinct environmental management plans to support construction phase 1 activities.

## CONCLUSIONS

The EAO User Guide directs that when making a substantially started determination, the decision maker consider the following questions:

- Has Avanti made a significant investment of time, effort and resources to physically develop one or more main Project elements?
- Does the activity amount to a significant or important step to develop the overall Project, or is the activity considered ancillary, secondary, or temporary?
- Would Avanti have undertaken the activity regardless of the Project?

In addressing the overall question of whether Kitsault has been substantially started, the EAO evaluated the activities undertaken to date against the full build out of the key project components, identified in the CPD. These components and their key features and associated activities appear in Table 1 along with the work completed by Avanti during construction of Kitsault in 2014 and 2015.

The EAO notes that EMPR has issued an order to Avanti to prepare a mitigation plan to address the use of PAG material in the construction of the access road, which will likely necessitate Avanti to complete additional work on the roads to remove any material confirmed to be acid-generating.

The EAO also notes that the construction camp described above was decommissioned and removed from site before the C&E inspection. Further, neither this camp nor the existing exploration camp were specified in the CPD. Components not described in the CPD are not part of the authorized project and would therefore fall outside the scope of works that may be counted towards a substantial start. The Court in TRTFN v. BC indicated that temporary structures at the site, if they will soon be removed, followed by remediation, are less important to consider than structures that will be in place for the duration of the project.

The EAO's view is that all of the work completed by Avanti described in Table 1 is for the current Project and would not have occurred otherwise.

The EAO acknowledges the importance of completing engineering studies and management plans to the overall project but notes that the court in TRTFN v. BC provided the interpretation that the decision maker should focus less on the permits which have been granted and the money expended, and more on what has taken place physically at the site. Therefore, the EAO considers the percentage of engineering studies and procurement completed to be of secondary importance to the review of physical works.

**Table 1: Kitsault project components as identified in the CPD, features of each component and the work completed by Avanti to date for the current Project.**

Project Component	Key Features and/or Construction Activities Required (from CPD)	Work Completed during Kitsault Construction <sup>1</sup>
Open pit	<ul style="list-style-type: none"> <li>Core of rock left in the middle of existing Kitsault Pit to be removed and crushed for use in latter stage of construction</li> </ul>	<ul style="list-style-type: none"> <li>Nothing noted</li> <li>0% of a total of 76 ha of projected surface disturbance completed for this component</li> </ul>
Mine site roads	<ul style="list-style-type: none"> <li>A network of general vehicle roads around facilities, service roads to remote structures and haul roads</li> <li>All roads must be two-way and have mandatory and advisory traffic and speed limit signs</li> </ul>	<ul style="list-style-type: none"> <li>4.3 km of new access roads</li> <li>7.3 ha of trees cleared in an additional area, which will be a permanent road</li> <li>96% of a total of 16 ha projected surface disturbance completed for this component</li> <li>Installation of water management infrastructure and stabilization of disturbed land surfaces associated with roads</li> </ul>
Waste rock management facility	<ul style="list-style-type: none"> <li>The area where waste rock mined from the Kitsault pit will be deposited</li> </ul>	<ul style="list-style-type: none"> <li>Nothing noted</li> <li>0% out of a total of 65.5 ha of projected surface disturbance completed for this component</li> </ul>
Processing facilities	<ul style="list-style-type: none"> <li>Overland conveyor to transport ore up to 1500 m</li> <li>Processing plant with mills, flotation cells and capacity for water treatment and process systems</li> </ul>	<ul style="list-style-type: none"> <li>Foundation preparations including stripping (14.7 ha), excavation and blasting</li> <li>Construction of sediment ponds, ditches and drain around the plant site</li> <li>Additional 5.9 ha area cleared of trees</li> <li>79% of a total of 26 ha of projected surface disturbance completed for this component</li> </ul>
Ore stockpiles	<ul style="list-style-type: none"> <li>Short-term stockpile to store quantities of ore before it is sent to processing</li> <li>Long-term stockpile to store low grade ore mined during operations</li> <li>Coarse Ore stockpile will store crushed ore during processing</li> </ul>	<ul style="list-style-type: none"> <li>Clearing, stripping and excavation of 1.5 ha in the area of the Coarse Ore stockpile</li> <li>Development of sediment ponds and drainage ditch in the area of the Coarse Ore stockpile</li> <li>8% of a total of 20 ha of projected surface disturbance completed for this component</li> </ul>

<sup>1</sup> Areas were provided by Avanti. Disturbance percentages include areas that have been cleared of trees and/or stripped of soil.

<p>Tailings Management Facility</p>	<ul style="list-style-type: none"> <li>• Tailings impoundment and supernatant pond</li> <li>• South embankment</li> <li>• Northeast embankment</li> <li>• Cyclone sand towers</li> <li>• Tailings distribution systems</li> <li>• Seepage collections system</li> <li>• Reclaim system to recycle water to the process plant</li> <li>• Surplus water system</li> </ul>	<ul style="list-style-type: none"> <li>• 10.5 ha of trees cleared in the south embankment</li> <li>• 8.3 ha cleared associated with TMF roads</li> <li>• 10% of a total of 179.5 ha of projected surface disturbance completed for this component</li> </ul>
<p>Water management facilities</p>	<ul style="list-style-type: none"> <li>• Freshwater runoff diversion systems including diverting Patsy Creek around the Kitsault Pit toward Lime Creek</li> <li>• Kitsault pit water collection system</li> <li>• Low grade stockpile water collection system</li> <li>• WRMF water collection system</li> <li>• TMF south embankment water collection system</li> <li>• TMF northeast embankment water collection system</li> <li>• Freshwater supply system</li> </ul>	<ul style="list-style-type: none"> <li>• Nothing noted</li> <li>• 0% of a total of 8 ha of projected surface disturbance completed for this component</li> </ul>
<p>Infrastructure and ancillary facilities</p>	<ul style="list-style-type: none"> <li>• Truckshop</li> <li>• Fuel storage tanks</li> <li>• Accommodations for up to 700 personnel</li> <li>• Administration and change room facility</li> <li>• Wastewater treatment plan for camp</li> <li>• On-site incinerators or landfill for camp solid waste</li> <li>• Explosives manufacturing facility and related explosives magazines</li> </ul>	<ul style="list-style-type: none"> <li>• 150 person construction camp constructed</li> <li>• Potable water pumping system and wastewater treatment plant for camp installed to service 150 person camp</li> <li>• Upgraded primary electrical service with new transformers</li> <li>• 43% of a total of 19 ha of projected surface disturbance completed for this component</li> </ul>
<p>Off-site access roads</p>	<ul style="list-style-type: none"> <li>• Necessary road and bridge modifications, vegetation brushing, dust suppression and snow removal along the Nass, Nass-Kwinatahl, Nass-Kinskuch and Kitsault FSRs, as directed by the Ministry of Forests, Lands and Natural Resource Operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Nass River Bridge replaced</li> <li>• Brushing, grading, ditching and snow removal of 95 km of FSR roads during 2014 and 2015</li> </ul>
<p>Power supply and distribution</p>	<ul style="list-style-type: none"> <li>• New substation to link the existing BC Hydro transmission line from the New Aiyansh substation, approximately 70 km away</li> </ul>	<ul style="list-style-type: none"> <li>• Nothing noted</li> </ul>

## Final Issues for Decision Maker's Consideration

- **Considering all of the above and submissions provided, was the activity undertaken by the Certificate Holders taken as a whole and in the context of this Project, giving greater emphasis to the physical works, meet the requirement, in reasonable opinion of the decision maker, that the Project was substantially started by March 18, 2018?**

In evaluating the activity outlined above,

- **Have the Certificate Holders made a significant investment of time, effort and resources to physically develop one or more main Project elements?**
- **Does the activity amount to a significant or important step to develop the overall Project, or is the activity considered ancillary, secondary, or temporary?**
- **Would the Certificate Holder have undertaken the activity regardless of the Project?**