

WMIOV Comments on the Draft Assessment Information Requirements (dAIR)

These are Comments submitted by the Bulkley Valley community group What Matters In Our Valley (WMIOV) to the BC Environmental Assessment Office in response to the draft Application Information Requirements (dAIR) submitted by Telkwa Coal as part of its application for approval of an open pit coal mine situated near Telkwa, B.C.

I. Size Matters - Should be reviewed at 1.35 Million tonnes per year

When Telkwa Coal first proposed this project, it stated that its plan was to develop an open-pit coal mine producing 240,000 tonnes of coal per annum (tcpa) of product. This production level happened to be just under the then existing Provincial Environmental Assessment threshold of 250,000 tcpa. WMIOV and others in the Valley complained to the relevant Ministry that this description seemed to be a transparent attempt to escape review under the Environmental Assessment Act. As a result, we asked the Minister to exercise his discretion to order an Environmental Assessment notwithstanding the stated size of the project in view of the highly sensitive nature of the proposed mine site as it sits adjacent to the Telkwa River. The Telkwa River is a major tributary to the Bulkley/Wetzinkwa River and the entire Skeena system, as well as an important salmon bearing stream in its own right. Consequently, the mine proposal poses risks to the entire Skeena system and the salmon runs that depend on it.

We understand that this request was receiving favourable consideration. So, Telkwa Coal then abandoned its initial position and filed its first formal Project Description identifying its objective to be a mine producing 750,000 tcpa. However, in its public statements to the business community contained in its Corporate Reports, Telkwa Coal has repeatedly stated that its true objective is to “ramp up” to 1.35 million tonnes per year. (See, e.g. Allegiance Coal (Telkwa Coal’s Corporate parent) Corporate Presentation, May 2020, p. 8.) Despite this, the Environmental Assessment office continues to review this proposal as if it were for a mine producing at the 750,000 tcpa level.

So which is it? If 1.35 million tonnes, it simply does not make sense for the Environmental Assessment to take place based on misinformation about the scope of the project.

Size matters because it affects all of the potential environmental and social impacts. Just as one example, while Telkwa Coal currently describes its proposed water usage for cleaning coal as 15,000 litres per hour, under the 1.35 million tonne scenario, usage would have to be almost twice that. What effect will this have on toxins, water runoff, water sources, capacity to control ARD and cumulative effects?

Water quality and water demand from all sources (See water section below), as well the prospects for successful containment of ARD and heavy metal leaching form some of the main challenges for this project. A meaningful review requires that the true size of the project be taken into account.

RECOMMENDATION: The EAO require Telkwa Coal to amend its application to reflect its true plan which is to mine at least 1.35 million tonnes per annum and that the dAIR be revised accordingly.

2. Water as Valued Component

WMIOV has reviewed the draft Application Information Requirements (dAIR) and four components of water (surface water quantity, surface water quality, ground water quantity, ground water quality) have been selected as Intermediate Components (IC), rather than Valued Components (VC). We disagree.

We contend that water has both high societal value and high ecological value and therefore should be selected as Valued Components, as part of this Environmental Assessment, and not just as an Intermediate Component.

Reason One: The dAIR focuses the EA Conclusions on Valued Components when environmental assessments are undertaken. It is our view that Valued Components are the ultimate guide for the assessment AND management of “What Matters” with respect to the impacts and effects of a project.

This is evident in this dAIR in Part F, Section 15.0 Conclusions, which states that the application will, “Provide the Proponent’s conclusions regarding the potential for significant adverse effects on the VC’s from the Project.”

And in, Part F, 15.1 Summary of Residual Effects states, The Application will summarize all potential residual effects, including cumulative residual effects, in a table format that depicts the potential effect, project phases, project activity or physical work linked to the effect, proposed mitigation and significance of effect on VCs.

Furthermore, on page 21 of the dAIR it is stated,
Because an assessment is completed for a VC, the receptor for the effects, an assessment of an IC is not completed to avoid redundancy in the assessments.

So, if Water is not treated as a VC standing on its own, any deleterious effects that do not impact VCs will not receive any attention. Consequently, there is no inclusion of Intermediate Components in the Conclusions. Water needs to be fully addressed in the Review and not treated as less significant component of another value.

Reason Two: Water as a Component Meets the EAO Guidelines for Valued Component Selection when a Component is an Effect-Pathway

WMIOV reviewed the “Guidelines for the Selection of Valued Components and Assessment of Potential Effects”, Environmental Assessment Office, 2013. (EAO, 2013) In the dAIR, the four components of water have been selected as an Intermediate Component in an “effect pathway”. In our view this is an inappropriate interpretation of the guidelines.

For example, water quality is being used to evaluate the effects of the project on Fish and Fish habitat because the four water components are effect pathways on fish habitat and fish. (Table 3: Proposed Valued Components (VC) and Intermediate Components (IC) for the Tenas Project and Selection Rationale, Tenas Project – Final Draft – Valued Component Scoping Document, Sept 2019). And a result, the four water components have not been selected as Valued Components.

In doing so, the dAIR has ignored additional guidelines offered by EAO, 2013. Page 12 of the Guidelines States... However, in some cases, for some kinds of projects, it may be appropriate to select an intermediate component as a stand-alone VC, particularly if there is potential for significant adverse effects on the intermediate component and/or the intermediate component is of particular concern. An intermediate component may also be selected as a VC when the intermediate component is more amenable to measurement and monitoring than the receptor component.

WMIOV contends the following to be true: a) there is potential for significant adverse effects on the four components of water; b) water is in of itself of particular concern to many stakeholders, and; c) the components of water are much more amenable to measurement (i.e. fast) and monitoring (i.e. responsive) than receptor components (ex. fish and fish habitat). Therefore, based on a comprehensive reading of the EAO guidelines, the four components of water should be selected as Valued Components.

Reason Three: The Magnitude of the Effects on Water are Significant. The magnitude of the issues related to water are significant and as result require the full application of rigour and follow through that Valued Component receive.

We know from previous assessment work on the site that a major concern is the potential for acid rock drainage and/or metal leaching, the potential effects on the receiving environment and the operator's ability to prevent its occurrence or mitigate its impacts. We also know that water is impacted by natural variations in climatic conditions. Given the possibility of climate variability in the Bulkley/Wetzinkwa Watershed, the historical records for climate variability for the study area will be less reliable and this will introduce more uncertainty.

Regarding time scales, the impacts on water and watershed health are significantly different than other components. Impacts and effects on water and watershed health can be impacted in perpetuity from mining projects. One just needs to look upstream in the Bulkley River Watershed to the Equity Mine for an example of the legacy impacts on water.

Regarding mitigation remedies (i.e. costs) once something goes wrong, the remediation and mitigation of effects on water and watershed health can be orders of magnitude larger than many other effects from a mining project. If water is not considered a valued component, there will be a gaping hole in the assessment and the conclusions of the EA. Therefore, the EA will be less likely to give the community certainty on this valuable resource.

Reason Four: The Devil is in the Details – Let's See the Detailed Design of Project Components in The EA and not the Permitting Stage

Page 14, EAO, 2013 states...

If an important component of the natural or human environment is expected to be affected by the project but has been excluded as a VC because it is well-protected through other government legal requirements and additional assessment is not considered necessary, the specific legal requirements must be clearly noted in the rationale for exclusion.

In the dAIR, Table 3: Proposed Valued Components (VC) and Intermediate Components (IC) for the Tenas Project and Selection Rationale, Tenas Project – Final Draft – Valued Component Scoping Document, Sept 2019) states that the four components of water are protected under additional legislation. - Surface water quantity is protected under the Water Sustainability Act. - Surface water

quality is protected under the Environmental Management Act and screened against the BC Approved Water Quality Guidelines. - Groundwater quantity is protected under the BC Water Sustainability Act. Finally, groundwater quality is protected under the BC Environmental Management Act and screened against the BC Contaminated Sites Regulation Groundwater Standards.

Given the way this information is presented we are apparently supposed to conclude that the selection of the four components of water as Intermediate Components and not Valued Components took place because these components are protected under additional legislation. Given that water has such high societal and ecological values, it would be prudent and wise for the community, the company and investors to figure out if the project activities will have significant impacts on water during the EA process and not wait until the permitting or compliance stages. By selecting the four components of water as Valued Component the assessment would garner more detailed design of the project components. For example, detailed engineering drawings and not just conceptual plans should be required, so that the effects on the four components of water can be more thoroughly assessed and understood before the project approval or denial takes place. This would give greater confidence in the EA certificate, if granted. This more detailed design and assessment could then be utilized in the permitting stage of the project.

RECOMMENDATIONS:

- That water be treated as a Valued Component and not just an Intermediate component. That, due to the highly vulnerable state of our rivers and fish populations, as well as the great uncertainties connected due to climate change, the precautionary principle be applied to insure against alterations in water quality, flow, temperature and other key factors affecting the river, the fish, water sources and the watershed in general.
- Boundaries- Study areas for components that could affect fish, such as Water Quality and Vegetation (i.e., wetlands), include portions of Bulkley River that are not then included in the Fish and Fish Habitat impact assessment. We request that spatial assessment boundaries be revised such that all possible effect pathways are fully encapsulated. Additionally, we request that spatial boundaries generally include a more significant portion of the Bulkley River, which is omitted in relation to many aquatic components despite it being an important waterway to local communities and tributary to the Skeena River, and that impacts be predicted to Helps Creek, which is also mostly omitted in the dAIR despite Project infrastructure being built across it.
- Fish - Science-based effect thresholds are used – fish are highly susceptible to adverse chronic effects of elevated metals in the surrounding environment and in their tissues. Provincial guidelines related to water quality, sediment quality, and fish tissue metals content do not cover all potentially harmful contaminants (especially regarding tissue metals), and may not always be stringent enough to protect the most sensitive species from sublethal effects; effect thresholds to fill these gaps can often be found in the scientific literature. We request that the impact assessment involve a comprehensive literature review to select conservative effect thresholds that ensure potential impacts to valuable aquatic resources are not missed.

3. Water Usage - Rivers, Creeks and Underground Sources

A coal mine of this nature requires the use of large volumes of water for washing the product (as noted above, according to Telkwa Coal 15,000 litres per hour at the 750,000 tonne per year production rate). This will take place alongside the mine site. Telkwa Coal claims that it hopes to obtain enough water

from the neighbouring creeks, runoff and underground sources to meet its needs in this regards. If not, it will draw from other sources in the Regional District. We assume this means the Telkwa River because what other sources are there?

Run-off is highly seasonal and quite variable. Underground sources both feed neighbours' wells and flow into the Telkwa where they contribute to water flow and water temperature conditions. Flow and temperature are critical to salmon survival and the conditions in the past few years have been very unfavorable to the fish due to low snowpack/ rainfall and high summer temperatures. Telkwa Coal will probably rely on historical numbers from the past 50 years or so, but, given climate change and the recent trends, these numbers may not be relevant.

Neighbours are also concerned that the use of underground sources will deplete the wells they rely on for their household water supply.

RECOMMENDATION: The dAIR must require sufficient information to determine if the water budget for the mine project will account for the project impacting a wider water system. In practical terms, the water budget that Telkwa Coal provides for and how the characteristics of the water (quantity, intensity and quality) are managed to balance it, must be done in such a way as to satisfy all of the constraints on all water issues including fish survival, simultaneously.

4. ARD and Heavy Metals Leaching

a. Tailings Impoundment - Separation of Materials

According to the records of an Environmental Review occurring in the mid-1990's performed for the very similar project proposed by Manalta Coal, mining coal in this location poses a substantial risk of causing Acid Rock Drainage (ARD) and leaching of heavy metals (Cadmium, Aluminum, Copper, Manganese Iron, Nickel and Zinc and, perhaps selenium). Telkwa Coal does not dispute that there is a risk of producing significant quantities of Potential Acid Generating (PAG) material. PAG causes ARD when the PAG material is exposed to the elements. ARD and leaching of heavy metals are known to be highly toxic to fish. To prevent ARD and leaching, all such materials must be protected from exposure to water and air indefinitely.

Telkwa Coal's current plan is to create a containment pond or ponds alongside the mine and place the PAG material and other toxic sources into this containment area and cover it with water. The resulting tailings impoundment(s) will be about 1/2 the size of Tyhee Lake and about 40 metres deep. At the most recent Open House sponsored by the Environmental Assessment Office, Telkwa Coal's engineering consultant made the comment that the most current plan is to build the impoundment so that it sits mostly on the surface. We are not sure what this means or how this can be done. We have requested that Telkwa Coal provide us with what they describe as their comprehensive PAG Management Plan, but they have refused to do so.

Telkwa Coal's plan is to separate the PAG material and the non-PAG material. The PAG material would be submerged in the containment areas and the non-PAG material would be piled alongside the mine pit and impoundment areas. Obviously for this to work, there must be a practical way to segregate these materials and to protect the PAG material from generating ARD while this segregation takes place.

However, according to one of the reviewers during the Manalta project, it is highly unlikely that such a separation process could work. Furthermore, even if the separation could occur, it would take a considerable amount of time for this to take place. What happens to the acid generating material in the meantime since, as soon as the material is exposed to the environment it starts acidifying and, thus, creating polluted runoff?

b. Tailings Impoundment - Containment Plan

Once the PAG material is submerged in a containment lake, it must be preserved there essentially forever. Another of the reviewers during the Manalta process thought that, given the topography and underlying geology of the area, including the faults and fractures that exist there, it is unlikely that the impoundment would successfully retain the ARD material/and/or heavy metals.

The mine and the impoundment are on the banks of three streams: Goathorn, Tenas and Four Creeks. Each of these waterways are subject to extreme and rapid fluctuations in water level and can carry tremendous volumes of water during spring runoff and after heavy rain events. Goathorn Creek has repeatedly flooded and caused damage like destroying the bridge that has crossed it in the past. Conversely, during dry periods, very little water runs through the creeks.

If the containment lake dries, it exposes the ARD which will then leach out. If it floods, it then discharges the ARD and other toxins in its overflow. We have repeatedly experienced such failures to contain toxic material in mines in B.C and even in our area in the recent past (Mt. Polley, Huckleberry and Equity for example).

On page 50, under Section) 4.3.3 Potential Effects) the following information is required:

“The Application will describe the analysis, methodology and standards used to determine the potential effects on the Surface Water IC resulting from project activities within each phase of the Project.

Interactions between Project components and activities and the Surface Water IC will be summarized.

The following potential effects will be assessed for all mine phases:

- Annual runoff;
- Seasonal distribution of flow;
- Timing and magnitude of peak and low flow events;
- Changes to groundwater-surface water interactions;
- Evaluation of the metal leaching and acid rock drainage (ML/ARD) potential of mined materials (e.g., mined rock and processed rock) and influence of ML/ARD on surface water quality; and
- Changes to surface water quality.

Requiring the evaluation of the metal leaching and acid rock drainage (ML/ARD) potential of mined materials and influence of ML/ARD on surface water quality is too bare of a requirement as it allows for use of poor methodologies for characterizing ML/ARD, such as use of static testing rather than kinetic testing of the acid-generating potential of mined materials. Static testing omits information about the potential for ML/ARD as it excludes the effects of weathering on the character of mined materials over the lifetime of the mine.

RECOMMENDATION:

- The methodology for describing the impact of metal leaching and acid rock drainage must be specified.

- The AIR should include direct reference to best practices for characterizing ML/ARD, such as those included in guidance prepared in 2009 for the British Columbia Ministry of Energy, Mines and Petroleum Resources.
- There must be a detailed geotechnical analysis of the rock formations and likelihood of fractures, faults and other causes of possible loss of stability leading to failure of containment.

5. Water Treatment - Heavy Metals and other Toxins

As noted above, the mine area contains heavy metals which are toxic to fish. In addition to Cadmium, Aluminum, Copper, Manganese Iron, Nickel and Zinc, there is an open question about the amount of selenium that will be produced. During the Manalta process, the reviewers concluded that the amount of selenium would be below Provincial threshold levels. However, since that time, the thresholds have been lowered due to findings about fish toxicity.

The release of selenium from coal mining has proven to be a significant issue and has been a large driver of water treatment and management requirements at coal projects around the Province. We know from the experience in Elk Valley that even the most advanced and expensive technology for removing selenium does not work.

The project description for the Tenas Coal project simply states that “most” of the rock units in the project contain lower levels of selenium than other western Canadian coal projects. However, this does not mean that selenium is not a potential issue for the site, as even small amounts of selenium can have a significant environmental impact. Based on precedent at other sites in BC, the cost and complexity of selenium management can be significant and so should be accounted for at the early stages of project planning.

In any event, even if selenium does not end up being a factor, the other potential toxins and contaminants are. Telkwa Coal proposes to treat water runoff from its operations by cleaning it to a point where it supposedly does not pose a risk to the river and the fish and then to pipe it to the Telkwa River for discharge. Will it be possible to successfully treat and clean the runoff?

Even if Telkwa Coal could successfully clean the runoff, how will dumping it into the Telkwa affect water temperature, water flow and other factors critical to water quality and the fish?

a. Discharge to Telkwa River

The proposed project would discharge mine impacted water directly to the Telkwa River rather than to smaller watercourses closer to the site such as Goathorn Creek, Tenas Creek or Four Creek. Larger rivers generally have more dilutive capacity than smaller creeks. However, sampling of the Telkwa River indicates that it has levels of cadmium, zinc and lead that are already above BC Water Quality Guidelines (BC WQGs). Any additional loading of these metals would cause further exceedance of BC WQGs in the Telkwa River and may have a deleterious effect on fish and other aquatic life.

Further, guidance from BC Ministry of Environment (ENV) states that dilution alone is not an acceptable method of managing mine contact water.

b. Limited Water Treatment

The proposed project involves very limited treatment of mine impacted water prior to discharge to the Telkwa River. The project description states that potentially acid generating (PAG) mine waste will be stored in saturated pits to prevent acid generation and reduce treatment requirements. However, even mine waste handled in this manner can release significant levels of contaminants. The proposed treatment method (sedimentation) would only remove suspended solids and would not have any impact on dissolved materials that are present. There are many industrially proven methods for treating mine contact water of this nature to remove dissolved species.

RECOMMENDATIONS:

- Selenium - That a detailed assessment of selenium release potential and management methods (i.e. selenium treatment, other waste handling methods) be conducted and integrated into the project plan.
- Mine Water Discharge - That an Alternatives Assessment be conducted to evaluate a location for discharge of mine water and that Ministry of Environment guidance on the use of initial dilution zones be incorporated into the mine plan.
- Water Treatment - That a Best Available Technology assessment for water treatment be conducted in accordance with BC ENV guidance. This should be conducted in conjunction with the aforementioned discharge Alternatives Assessment.

6. Allowance for Care and Maintenance:

A common issue in mining projects is that projects are designed with the expectation that they will go from start-up to operations to closure in one continuous span. In actuality, many mines have periods of care and maintenance when the mine is taken offline for a significant period of time without initiating reclamation and closure activities. It is important to design a mine with allowance for care and maintenance periods and to have a detailed care and maintenance plan that is distinct from the closure and reclamation plan. One area where this may be relevant for the Tenas project is in PAG material handling. Pit capacity must be available at the same time as PAG material is generated in order to avoid temporary surface storage.

RECOMMENDATION: Care and Maintenance be included in the dAIR as a project phase that is evaluated similar to the way that Construction, Operations, Closure and Post-Closure are included as project phases.

7. Caribou

Regarding Telkwa Caribou, there lacks specific direction with respect to proponent having to address potential effects to: a) alteration and/or loss of habitat; b) change in mortality and c) change in movement patterns.

Obviously, the footprint of the mine will result in direct habitat loss (existing unlogged forests) and recovering habitat loss (young forests), plus any habitat displacement impact associated with mine activity related disturbance. Caribou preferentially select habitat for avoidance, so any disturbance impact radius should be identified and considered to become unoccupied by caribou.

Regarding change in mortality, that will be a useless estimate given the current low caribou

population count; it may be different if the herd was fully recovered with the mortality estimate likely being statistically supported.

The same applies to change in movement patterns given the fact that surviving caribou are no longer using the Goathorn Creek corridor to the Telkwa River as much as they have done in the past for a few reasons:

- 1) The caribou that used the Goathorn Creek corridor suffered high mortality due to landscape alterations (forestry and roads) which facilitated predator access.
- 2) Movement patterns, in part, are attributed to learned behaviour from mothers, and when the continuity of maternal knowledge is disrupted (think of elephants in Africa), there is no way to pass the knowledge along. In this case, the likelihood of caribou using the Goathorn Ck. corridor would be by default only.

Points 1 & 2 above are illustrated by the minimal telemetry locations in the area in recent years. There is no mention of the risk of acoustic displacement due to blasting, notably the potential impact to the post calving congregation area of the Camel Humps. The proponent and government know about this concern, so why is it not reflected in the dAIR?

Regarding “conduct a cumulative effects assessment” there is a fundamental reason why the Telkwa caribou are at risk of imminent extirpation as declared by Catherine McKenna, Federal Minister of Environment and Climate Change on May 4, 2018: habitat fragmentation from historic adjacent areas due to Kemano project dams and resulting flooding, logging, mining, rural & urban development; habitat fragmentation within the Telkwa Caribou recovery area; current habitat fragmentation within the Telkwa Caribou recovery area due to Coastal Gaslink. Further adverse impacts are likely not to be tolerated and pose a grave threat to the herd.?

The impacts of the haul road on Caribou must also be considered. The road mostly is inside the Telkwa Caribou Wildlife Management area. One of the objectives of the Telkwa Caribou recovery plan was to Prevent such additional linear disturbances since they create paths for predation and provide lines of sight allowing predators to easily identify caribou locations. The road will also destroy a considerable Amount of the low elevation habitat which, as previously noted is critical for herd long term survival.

Lastly, the disturbance created by the coal carrying trucks will be significant. At 750,000 tons per year Production level , Telkwa Coal estimates that one truck will pass every 10 minutes. At the 1.35 million tonnes that Telkwa Coal now says is its target, this rate will nearly double to one truck every 5 minutes. How would this allow caribou unobstructed access to the forests outside the road?

RECOMMENDATION: The AIR should require an assessment of the likely impact on the success of the recovery program’s objective of restoring the herd to a healthy population, not just on one that is so reduced in numbers that it is at this time at imminent threat of extirpation.

8. GHG Emissions – Full cycle including methane and alternatives.

a. Life Cycle GHGs

Will there be a greenhouse gas (GHG) emission assessment and will it take into account the full cycle of emissions including development, mining (including methane release – coal mining is a

significant contributor to the recent rapid rise in human caused methane release and, we know that the Telkwa Coal site sits on significant amounts of coalbed methane), production, transportation and emissions from product use? While Telkwa Coal touts its project as producing metallurgical coal and that, supposedly this makes it more benign than thermal coal from an environmental standpoint, one needs to keep in mind that approximately 90% of the CO₂ contained in metallurgical coal is released into the atmosphere during the steelmaking process and that steelmaking is responsible for 5-10% of all GHG emissions worldwide. In the dAIR, Telkwa Coal states it is not aware of an alternative to using coke for steel production. However, such alternative technology is now well known and includes ghg emission free methods and reduced ghg technologies (see: e.g. <https://wildsight.ca/blog/2020/06/01/do-wereally-need-steelmaking-coal/>).

b. Metallurgical v. Thermal Coal

During the Manalta process, the highest percentage of potential metallurgical coal that was found was 50%. Manalta and the BC government always considered this area as a thermal coal site. So, how much of the coal is suitable for metallurgical use and how much is not? What happens to the coal that is not? If the coal that is not fit for steelmaking is sold, then this is not really a metallurgical coal project and will make a substantial additional contribution to greenhouse gas production.

If it is not sold, but is left as waste, then this will significantly increase the problem of preventing ARD and other runoff. The non-metallurgical coal contains a great deal of sulphur and this is the source of ARD.

c. Methane

One of our local geologists suggests that releases from the coal bed methane sources associated with the Telkwa Coal locations may be substantial during the coal mining process. So, how much methane will be released during mine operations? Given the potency of methane as a greenhouse gas, the government's plans to reduce such emissions and Telkwa Coal's promotion of its plan as not posing a likelihood of substantial emissions, this subject should be addressed.

RECOMMENDATION: That the AIR include sufficient information to allow an analysis of the full ghg effects of the project, including by its use in steelmaking and/or thermal coal operations, as well as the likely amount of methane release. That the AIR also require information identifying also consider whether there are alternatives to using coal in steelmaking that will produce less of a harmful effect on the environment.

9. Air – Dust

So far, air quality issues have not been addressed in any significant way. As news from Sparwood, B.C. establishes, running a coal mine can produce a significant amount of coal dust:

<http://www.cbc.ca/news/canada/british-columbia/sparwood-teck-coal-mine-1.4696904>
<https://www.thefreepress.ca/news/teck-to-compensate-sparwood-residents-for-dust/>

There's blasting, as well as dust blown off waste piles and trucks and while loading and operating railroad cars. So far, we have not heard any significant discussion about how the dust would be controlled at the Telkwa mine site itself. In regards to transportation from the mine to the loadout by

truck and from the loadout to the port by train, Telkwa Coal has referred to covering the product with some form of latex material, but there are no details. Even with such a system, coal dust from rail cars can still be a problem:

<https://www.columbiavalleypioneer.com/news/coal-dust-escaping-rail-cars-spurs-b-c-petition/>

The Bulkley Valley already suffers from poor air quality. Our average PM ≤ 2.5 levels almost always exceed the annual Provincial targets. PM ≥ 10 is also a problem, mostly from road dust in the spring. How will the blasting, processing, transportation and storage of the coal impact our air quality, especially given that the mine site is generally upwind from Smithers?

RECOMMENDATION: Air Quality should be treated as a Valued Component and the AIR must require an assessment of how dust from the mine and associated transportation will affect air quality in the Bulkley Valley. Given the challenges that already affect air quality in this area, that the review take place with the objective of preventing any further degradation of air quality.

10. Noise - Amount/Distance

Obviously, between blasting and heavy truck traffic, the mine and loading operations will produce a significant amount of noise. So far, it appears that the only studies about how much noise will be produced are based on computer simulations. Together with the environment, the quality of life issues valued most by area residents focus on our quiet rural lifestyle (see Regional District Rural OfficialCommunity Plan Survey results, 2012).

RECOMMENDATION: As with air quality, noise should be treated as a Valued Component with the objective of preventing sound disturbance. Testing should be performed under conditions that reasonably reflect conditions that occur in the Bulkley Valley.

11. Load Out – Flood Plain/ Haul Road impact

According to the Regional District map, the proposed loadout facility site is on a Bulkley River floodplain. From personal experience, we know that this site is subject to flooding from the River. So, the potential is there for flood waters to wash stored coal into the Bulkley.

Tenas Coal's plan is to remove the land for the coal loadout from the ALR. This site is valley bottom, river side rich soil and we do not need to lose any of this vital farmland in the Bulkley Valley. As Tenas Coal intends to store the wash coal on the ground, this land will be polluted for years and the only way to clean it will be to remove the soil.

The haul road's planned path crosses the Helps Creek wetlands watershed for 7 km. We think this wetland and creek should be getting the same consideration as Tenas, Four and Goathorn Creeks. Our concerns here, in addition to the impact on caribou, are impacts to the watershed from road dust and the use of chemicals for dust suppression and these chemicals leaching into Helps Creek.

As noted in the Caribou section, the haul road is also directly inconsistent with one of the main objectives of the Caribou recovery plan, which is to eliminate and not expand linear disturbances and to

allow the herd to use the lower elevation forests in an undisturbed fashion.

RECOMMENDATION: There will need to be a comprehensive assessment of the potential impacts on the Bulkley River from flooding of the loadout site, on the ALR by removal of valuable agricultural land and on wildlife and aquatic environments along the haul road route.

12. Recreation/Life Style impact

Recreation is mentioned under the VC for land and resources. Outdoors recreation is one of the main features of the quality of life which Bulkley Valley residents value. The Hunters Basin/Hankin Plateau area are important to horseback riding and hiking enthusiasts. The mine site sits on top of the only access road into these areas. Will access be protected?

RECOMMENDATION: The dAIR include a study of recreational interests in areas impacted by the proposed mine development with a description of how those interests can be protected.

13. Telkwa Coal Finances and Bond

a. Reclamation and Closure Plan

Allegiance Coal, the company behind the Tenas Project, is a thinly capitalized company with a weak financial position. The following publicly available as of 2020-6-23 shows that Allegiance Coal, trading at a price of 7 cents per share, has a market capitalization of only 40.28 million ASD, cash on hand of only 1.43 million ASD, with a debt of 2.32 million ASD, and a negative cash flow of 1.86 million ASD over the twelve trailing months.

If there were an accident or malfunction at the mine, or if the mine entered its reclamation and post-closure phase, then a reasonable question is: what resources are available to minimize the environmental and social impacts of the possibility of the company's inability to pay?

RECOMMENDATION:

- That the dAIR include an analysis of financial resources available for reclamation and long-term maintenance, as well as potential failure of the waste containment systems.
- All sources of funding for remediation of unpredicted impacts and implementation of the closure plan should be specified.

14. Jobs and Economic Opportunities

The dAIR refers to the jobs that would be created through the coal mine project. However, much of the economic opportunities that have arisen in the Bulkley Valley during the last few years have come from such sources as tourism, recreation, amenity migration, home construction and real estate. All of these sectors depend in whole or in part on the preservation of a lifestyle connected to nature and natural beauty. The introduction of an open pit coal mining operation with its associated noise, dust and effects on the natural world will obviously have some negative effects on these economic sectors. For instance,

what impact will it have on property values, air and noise pollution and the fishing based tourism economy?

RECOMMENDATION: The AIR should include a full spectrum economic impact analysis that includes a review of the possible negative economic consequences of the project.

15. UNDRIP

BC has adopted the principles of the UN Declaration on the Rights of Indigenous People. Those principles are applicable here since the mine site sits on the territory of the Wet'suwet'en people.

RECOMMENDATION: All aspects of this process must comply with the obligations contained in the United Nations Declaration on the Rights of Indigenous People.