

**APPENDIX 3-N**  
**FIRST NATIONS ISSUES AND RESPONSES**

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## Appendix N. First Nations Issues and Interests

Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage

No.	Issue	Seabridge Response	Raised By
<b>Consultation and EA Process</b>			
1	Input on annual baseline studies	Proposed baseline study work plans were presented at working group meetings on June 17, 2008 (2008 baseline study work plan); May 27, 2009 (2008 baseline study results and 2009 baseline study work plan); and June 3, 2009 (2008 fisheries baseline study results and 2009 fisheries baseline study work plan). At other working group meetings, baseline study results were discussed with respect to specific topics. The BC EAO/CEA Agency made the reports available to the working group on a FTP site.	Gitanyow First Nation, Tahltan Nation
2	Take conservative approach to cumulative effects assessment	The cumulative effects assessment reported in the Application/EIS follows the approach set out in the Application Information Requirements (January 31, 2011). Reasonably foreseeable projects (those that are permitted or in the EA process) are assessed, but not speculative future-development scenarios. The cumulative effects assessment follows established methodologies as prescribed by the CEA Agency, including ' <i>Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects</i> ' (CEA Agency 1994) and ' <i>Cumulative Effects Assessment Practitioner's Guide</i> ' (CEA Agency 1999). It also follows BC EAO requirements.	Gitanyow First Nation, Gitksan Nation
3	Incorporate historical sites, trap lines, and territory data	Information provided by First Nations has been incorporated into the Application/EIS, including historic sites, trap lines and territory data.	Skii km Lax Ha
4	Be kept informed about the progress of Project and potential impacts on wilp Wii'litsxw and other huwilp downstream	Seabridge is consulting the First Nations listed in the Section 11 Order, issued on November 6, 2009, and the Section 13 Order, issued on September 29, 2011, by the BC EAO.	Gitanyow First Nation
5	Concern over infringement of constitutionally protected rights/accommodation of Aboriginal rights and title	The Application/EIS assesses potential effects of the Project on social, economic, health and heritage values, current use of lands and resources for traditional purposes, and customs and practices important to First Nations and other interests raised by First Nations during the EA. This assessment has been informed by provincial and federal guidelines related to Aboriginal consultation.	Gitanyow First Nation Gitksan Nation Skii km Lax Ha

(continued)

**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Consultation and EA Process (cont'd)</b>			
6	Request for funding to participate in EA/interest in negotiating revenue sharing and impact and benefit agreements	Seabridge concluded capacity funding agreements with the Gitksan, Gitanyow, and Tahltan. Seabridge made several attempts to reach a capacity funding agreement with the Skii km Lax Ha. Although an agreement was not reached, Seabridge provided the Skii km Lax Ha with limited funding to facilitate their participation in the EA. The Province is responsible for negotiating revenue sharing agreements with Aboriginal groups, and to date has negotiated three Economic and Community Development agreements with Aboriginal groups to share mineral tax revenue from the New Afton and Mt. Milligan mine projects (two separate groups).	Gitanyow First Nation Gitksan Nation Tahltan Nation Skii km Lax Ha wilp Wii'litsxw - Txawokw
7	Recognition of claim; assertion that Skii km Lax Ha holds the only Aboriginal claim in Project area	The Crown is responsible for reconciling Aboriginal claims.	Skii km Lax Ha
8	Concern that Gitksan wilp Djogaslee/Axtii Tsex has not been consulted	Seabridge is consulting the First Nations identified by the BC EAO in the Section 11 Order issued on November 6, 2009 and the Section 13 Order issued on September 29, 2011. These Orders require Seabridge to consult the wilp of the Gitksan Nation (as identified by the Gitksan Hereditary Chiefs). Seabridge requested input from the GCO regarding potential effects on any Gitksan wilp and was directed to directly engage with Skii km Lax Ha.	wilp Djogaslee/ Axtii Tsex (Gitksan)
9	Implications of change in Project ownership	If a certified project is transferred or sold to another owner, the holder of the Environmental Assessment (EA) certificate must apply to the British Columbia Environmental Assessment Office (BC EAO) to amend the Certificate (see Section 19 of the British Columbia Environmental Assessment Act) (2002). EA Certificate amendments require BC EAO approval. Commitments contained in an EA Certificate are binding on future owners.  Pursuant to the <i>Fisheries Act</i> (1985), Fisheries and Oceans Canada (DFO) may require a financial security or letter of credit to cover costs associated with Fish Habitat Compensation Plan works. A letter of credit would cover more than the estimated costs of the compensation plan to account for incidental expenses incurred by DFO in the event that Seabridge fails to comply with DFO authorization (if received).	Gitanyow First Nation, Tahltan Nation
10	Lack of dispute resolution mechanism to address EA process issues	EA procedural issues are the responsibility of the BC EAO and CEA Agency. Throughout the EA review process, Seabridge has been willing to discuss concerns raised by First Nations related to the review of the Project with the Crown and First Nations.	Tahltan Nation

(continued)

**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Project Design and Operation</b>			
11	Design of Tailing Management Facility (TMF) dam and surface diversions	Both the North Spillway and the Southeast Spillway are designed to route the Probable Maximum Flood (PMF) for the entire Tailings Management Facility (TMF). In this way, if either spillway is blocked the PMF can still be routed. Surface diversion channels have been designed to meet provincial and federal engineering requirements as prescribed under the Canadian Dam Safety guidelines (Canadian Dam Association 2007) and have been designed to accommodate a 1:200 year return period.	Gitanyow First Nation
12	Controlling total suspended solids (TSS)	During construction, a system of diversions and engineered settling ponds will control erosion, sediment transport, and treat water to remove suspended solids. Settling ponds with floating decant pipes and automated flocculant addition plants have been included in the design of the Project. Perimeter diversions and seepage control dams will be constructed first. Temporary pipelines will be provided during construction to route water around construction zones and borrow areas. The maintenance flow pipeline from the east catchment has energy dissipation structures at the outlet where the non-contact water is released into a tributary of Teigen Creek. Water quality monitoring will be undertaken to ensure receiving environment criteria are met, including for TSS and turbidity. An Erosion Control Plan will be implemented, particularly along access roads, to minimize sediment transport (see Chapter 26 of the Application/EIS).	Tahltan Nation
13	Need for companies to contribute to monitoring and enforcement costs	The EA Certificate will include conditions that Seabridge must abide by. BC EAO may conduct compliance and enforcement activities on these conditions. Seabridge will also be subject to regulatory permitting conditions, which will include monitoring programs, and financial security mechanisms.	Gitanyow First Nation
14	Participation in monitoring of Project	Seabridge expects there will be an opportunity for First Nations to participate in Project monitoring.	wilp Wii'litsxw
15	Confirm power requirements	Electrical power (171 MW) will be provided from the provincial grid (Northwest Transmission Line or NTL), supplemented by small-scale on-site hydroelectric power generation (5.5 MW) from turbines installed at the Mitchell Diversion Tunnel, McTagg Diversion Tunnel, and Mine Site Water Treatment Plant (WTP). These turbines will continue to operate after closure to provide electricity to power the long term operation of the WTP. Diesel generators will be used initially to supply construction power for tunnel driving and other initial construction activities.	Gitanyow First Nation
16	Permit requirements for Frank Mackie Glacier access	Use of the Frank Mackie Glacier is temporary and will be used in the initial years of construction to mobilize water treatment plant and construction supplies and equipment. Use of the glacier will be permitted as required by the Province.	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Project Design and Operation (cont'd)</b>			
17	Concern about size, mine life, and short time frame for assessment	The KSM Project is a low grade porphyry deposit. Development of low grade mineral deposits requires high production volumes to achieve the necessary economies of scale to be viable and to pay back the significant capital investment that is required to ensure that the Project is built and managed responsibly.	Gitanyow First Nation
18	Quantity of lime to be stockpiled at Project site	During peak operations, the amount of lime stockpiled at the site will be approximately 1,000 tonnes, which is about a 7-day supply.	Gitanyow First Nation
19	Status of Mitchell Glacier; effects of roads, dust on melt ice	The Mitchell Glacier is actively retreating, although rates of retreat were slower in 2011-2012 than in the period 2004-2010. A comparison of current areal extent to pre-early-1990s data suggests that glacier size has remained relatively unchanged in upper elevations, but has been shrinking in lower elevations. Project component design at the Mine Site is based on continuing glacial retreat. Glacial advance is considered highly unlikely, but if it occurred, it could affect Mine Site components, although not personnel safety. Potential effects associated with dust emissions from roads, will be localized within 100 m of access roads and will not significantly affect ice melt.	Gitanyow First Nation
20	Camp operations/sustainability	At camps, sewage treatment facilities or holding tanks will be installed, as well as incinerators, to dispose of kitchen wastes. Strict waste management practices will be enforced, including use of secure waste management facilities to avoid creating wildlife attractants. Employees and contractors will be prohibited from possessing firearms or other weapons for hunting. Fishing will not be permitted. Siting of camps will consider wildlife and vegetation effects. Electric fencing may be installed to deter wildlife interactions.	Gitxsan Nation
21	Concern about design and associated risks of Project	The Project has been designed pursuant to BC, federal, and international standards, and by accredited Qualified Professionals. Mitigation measures and environmental management plans have been developed to minimize adverse effects and to ensure that the mine can be constructed, operated, and closed in a safe and environmentally responsible manner.	Tahltan Nation
22	Consider storing CIL tailing within pits, and then look at paste backfill	The CIL pond (also referred to as “cell” in the Application/EIS) is required from the start-up of the Process Plant. The use of paste backfill and mined-out pits for storage of the high sulphide cyanide containing CIL tailing was evaluated early in the engineering design feasibility study and abandoned because of timing conflicts (i.e., storage was needed earlier than the excavated pits became available), and because these disposal methods did not meet standard safety requirements as prescribed under the “International Cyanide Management Code for the Manufacture, Transport, and Use of Cyanide in the Production of Gold” (ICMI n.d.). The CIL pond as proposed is located between the North and South TMF ponds and is fully lined to control seepage of leachate. The pond will be operated and closed with a continuous water cover to prevent ARD of the high sulphide tailing.	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Project Design and Operation (cont'd)</b>			
23	TMF location and long-term risks	To mitigate for long-term risks, TMF design will meet or exceed strict criteria for static and seismic stability (e.g., set under the BC <i>Mines Act</i> and in the 2007 Canadian Dam Safety guidelines). TMF management, including long term monitoring, maintenance and safety inspections, will continue after mine closure. Instrumentation will be installed in the main dams to monitor phreatic levels and surface settlement. Management procedures will be detailed in an Operation, Maintenance, and Surveillance Manual that will be required by MEMNG prior to operation of the TMF and will be updated during the mine life and for closure.	Gitanyow First Nation wilp Wii'litsxw
24	Concern that Meziadin landfill will be used for waste disposal	Waste materials transported off-site will be disposed of in a safe manner in accordance with federal and provincial legislation and regulations, and in consultation with local governments.	wilp Wii'litsxw
25	TMF lifespan	The TMF will operate for the mine life (51.5 years). After mining finishes, the TMF will be closed, and reclaimed to restore the productive use of land to forest and wildlife habitat. A detailed Reclamation and Closure Plan (which includes requirements for closing and reclaiming the TMF area) is provided in Chapter 27 of the Application/EIS.	Gitanyow First Nation
26	Effects of transmission line on McTagg and Mitchell creeks	The transmission line will parallel (i.e., be within the right-of-way) of the Treaty Creek access corridor to the Process Plant. The transmission line will then be routed through the Mitchell-Treaty tunnels to the Mine Site. McTagg and Mitchell creeks will not be affected by the transmission line.	Tahltan Nation
27	Storage and tonnage of potentially acid generating (PAG) waste rock in Treaty Creek area	Waste rock will not be stored in the Treaty Creek Valley. Minor volumes of waste rock resulting from tunnel construction may be stored in the TMF along with tailing from the Process Plant. The TMF is located within upper south Teigen and north Treaty creeks. The TMF is designed to store 2.3 billion tonnes of tailing, a proportion of which will be classified as PAG requiring permanent saturated storage to control oxidation and minimize the potential for acid rock drainage. This material will be placed in the CIL lined facility (the middle cell of the TMF), which was a design change incorporated into the Project to accommodate concerns raised by Nisga'a First Nations.	Tahltan Nation, Gitanyow First Nation
28	Confirm analysis undertaken to assess economic and environmental feasibility of tunnel infrastructure and plant site	Seabridge has assessed the economic and environmental feasibility of the planned tunnel system for the Project. Tunnels are engineered structures that are commonly constructed and used for projects and infrastructure around the world. The Project occurs in two valleys with a mountain in between. To connect the two components of the Project, the proposed tunnel system is considered to carry the least environmental risk and impact. The cost of developing the tunnel has been included in the cost analysis of the Project. The PTMA and the alignment of the proposed tunnel connecting the Mine Site and PTMA have been investigated to confirm that the locations are suitable for infrastructure development.	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Project Design and Operation (cont'd)</b>			
29	Reduce waste rock to create space for tailing in Sulphurets Valley	The Project has been designed to handle and manage the volume of waste rock to be produced over the 51.5 year mine life. There is not enough space in the Sulphurets Valley to store this volume of tailing. In 2012, Seabridge optimized its mine plan to incorporate an underground block cave operation at the Mitchell and Iron Cap deposits to minimize surface disturbance and reduce the overall volume of waste rock. Because of this change, the overall strip ratio for the proposed mine has been reduced from approximately 2.5:1 to 1.2:1, a reduction of approximately 2.5 billion tonnes of waste rock.	Tahltan Nation
30	Concern about proposed access road and transmission line from Highway 37 along Teigen Creek Valley	The access road and transmission line from Highway 37 is now proposed to follow the Treaty Creek Valley. This change was made as a result of comments from the KSM Project Working Group, including Tahltan members. Refer to response #33.	Tahltan Nation
<b>Alternatives Assessment</b>			
31	Option of keeping all Project infrastructure in one valley	TMF siting alternatives were evaluated in accordance with Environment Canada's (2011) Guidelines for the Assessment of Alternatives for Mine Waste Disposal that apply when tailing storage in natural water bodies frequented by fish is proposed. All TMF options that were confined within the Sulphurets and Unuk drainages were eliminated through fatal flaw analysis except for the Unuk Valley TMF alternative. However, following multiple accounts analysis, the Upper Teigen/Treaty TMF was preferred over the Unuk Valley/West Teigen Lake TMF alternative.	Skii km Lax Ha
32	Consider alternate access to Project (e.g., tunnel access from Granduc mine area, constructing road from south side of Bowser Lake and possible winter road)	A very large-dimension tunnel from the Granduc mine area would need to be constructed to accommodate Project equipment (large mining and milling equipment as well as pipelines and utilities). The Granduc area has significant challenges with respect to snow fall levels and high avalanche risks. This option was not considered technically or economically feasible. Two temporary winter access routes have been considered but were rejected for economic, technical, socio-economic and environmental reasons. The preferred winter route is over the Frank Mackie Glacier. This route is temporary as it would be used until the Coulter Creek and Treaty Creek access roads are constructed.	Tahltan Nation
33	Consider using pipeline to transport concentrate to Port of Stewart	Seabridge has considered the concept of a slurry pipeline to Stewart from the Project site. Although a slurry pipeline would reduce traffic on Highway 37, there is a greater risk of spills which could potentially affect fish populations along the route. Another significant issue is the length of the pipeline and potential effects during construction (wildlife, fisheries, Aboriginal interests) and operation (discharge of concentrate water into the Portland Canal).	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Alternatives Assessment (cont'd)</b>			
34	Assess cyanide alternatives	Nine different gold recovery methods were considered for the Project: pre-treatment, gravity extraction, mercury amalgamation, cyanidation, thiourea, thiosulphate, thiocyanate, bromine (acidic and alkaline), and chlorine. A comparison of the methods against environmental, technical, economic, and social criteria identified cyanidation to be the preferred method. All of these techniques are described in a report appended to Chapter 4 of the Application/EIS.	Tahltan Nation
35	Explore combining four TMF sites in mine area in conjunction with West Teigen Lake TMF alternative	This option was considered, but due to insufficient capacity and foundation stability issues, was deemed unfeasible. The area is influenced by glaciers, which makes building dams difficult.	Tahltan Nation
36	Option of combining West Teigen Lake/Unuk Valley TMF alternatives	Subsequent to a March 2012 Working Group meeting and an April 2012 meeting with NLG, both to discuss the February 2012 Assessment of Alternatives for the KSM Project Tailing Management Facility report, Seabridge assessed two additional TMF alternatives: 1) combining the original Unuk Valley and West Teigen Lake TMF options; and 2) the original Unuk Valley TMF and West Teigen Lake options, combined with a new dam upstream of the Unuk Valley TMF option. Under both options, there was insufficient storage capacity available in the Unuk River watershed to store all life-of-mine tailing, and both options would affect both the Unuk River and Teigen Creek watersheds.	Tahltan Nation, Gitanyow First Nation
37	TMF alternatives assessment should consider potential impacts on fisheries since Gitanyow eat salmon that spawn directly below proposed TMF location	Fourteen alternative sites for tailing storage were evaluated pursuant to Environment Canada 'Guidelines for the Assessment of Alternatives for Mine Waste Disposal', (Environment Canada 2011). The KSM Project TMF Alternatives Assessment report (included appendix to Chapter 33 of the Application/EIS) assessed the effects of alternatives to fish and fish habitat and ranked them from worst to best. The preferred Upper Teigen /Treaty alternative was found to be the preferred option, particularly with respect to ensuring a reduced impact on local salmon species.	Gitanyow First Nation
38	Consider fish genetics due to isolating populations as part of the TMF alternatives assessment	A 2009 genetics study (Taylor 2010) determined that Dolly Varden in the South Teigen/North Treaty TMF alternative are not genetically isolated nor genetically different than downstream fish populations. None of the fish populations are entirely isolated, although partial isolation is present in South Teigen Creek due to a barrier to upstream fish movement. The genetics of isolated fish populations were consequently not scoped into the TMF alternatives assessment.	Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Alternatives Assessment (cont'd)</b>			
39	Lack of involvement of First Nations and stakeholders in developing the multiple accounts for the TMF alternatives assessment	<p>The EA process provides for consultation with Aboriginal groups. This includes consultation on studies such as the TMF alternatives assessment. Seabridge met with the KSM Project Working Group, including First Nations participants in September 2011, to discuss options for locating the TMF and received feedback from meeting participants. Based on feedback from Nisga'a and First Nations, an additional three alternative locations were evaluated including: 1) Ted Morris and Sulphurets Valleys, 2) Unuk Valley; and 3) Upper Treaty Creek. Additionally, Seabridge evaluated another TMF discharge location at Treaty Creek and an alternative access road along the Treaty Creek Valley. Design changes to the TMF were also incorporated to address concerns with water quality, which include lining the centre 1.2 km of the TMF with a 60 ml High Density Polyethylene (HDPE) liner to reduce seepage of leachate from the CIL pond. A report of this work was produced and distributed to the working group in late February 2012.</p> <p>A second EA working group meeting was held to discuss the TMF Alternatives Assessment on March 29 and 30, 2012 in Smithers. The meeting included a review of 14 TMF alternative locations, discharge and access road locations, and design changes (e.g. installation of the CIL liner) to the TMF engineering approach. Comments and suggestions from this March meeting were also incorporated into the report. Additional consultation will be held by the Crown to support the federal Metal Mining Effluent Regulations (2002c) regulatory amendment process, and Seabridge will participate in these consultations as required.</p>	Gitanyow First Nation
<b>Air Quality and Climate</b>			
40	Effects of windblown dust in PTMA	<p>Since 2008, baseline dustfall measurements have been collected during the summer months (driest period) throughout the Project area. The majority of baseline measurements for the 98th average percentile indicate no measurements above the BC ambient air control objective of 1.7 mg/dm<sup>2</sup>/day (only two dustfall exceedances were observed in 2010). Dustfall will be monitored annually during construction and during the first two years of operation. If guidelines are exceeded, fugitive dust emission control measures will be implemented (e.g., wetting down dry surface areas with water). The transfer point from the Mitchell-Treaty tunnels ore conveyor to the Process Plant will be covered to reduce fugitive emissions in the PTMA. Vehicles will travel at reduced speeds in the PTMA to minimize dust.</p> <p>Modeling results show that infrequent, short-term, marginal exceedances of some criteria air contaminants during the construction and operation phases of the Project are predicted. However, these effects are not expected to be significant. A detailed comparison of results against the Canada Wide Standards (CCME 2011) and BC ambient air quality objectives (BC 2009) is will included in the Application/EIS (Chapter 7).</p>	Gitanyow First Nation, wilp Wii'litsxw

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Air Quality and Climate (cont'd)</b>			
41	Effects on air quality downwind of KSM Project area	<p>The terrain and meteorology of the Project area is complex, but in general the prevailing wind direction trends from the southeast. An emission inventory of the Project area was compiled to support air quality dispersion modeling. Emission sources that were inventoried include mobile vehicle emissions associated with on-road heavy duty equipment (e.g., graders, backhoes, excavators, crushers, forklifts, cranes etc.); and stationary point sources (e.g., camp generators and incinerators, crusher baghouses, and exhaust from tunnel adits). Estimates for fugitive dust emissions from blasting and crushing activities, overburden stockpiles and dust from paved and non-paved road surfaces were also included. US AP-42 emission factors were applied to most area-based sources.</p> <p>Air quality in the Project area was modelled using CALMET/CALPUFF (following BC Air Quality Dispersion Modelling Guidelines (BC MOE 2008)) to predict maximum and annual average concentrations of Total Suspended Particulate (TSP), PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and CO. The modelling results were compared against Canada Wide Standards (CCME 2011) and BC ambient air quality objectives (BC 2009) and discussed in Chapter 7 of the Application/EIS. Infrequent, short-term, marginal exceedances of some criteria air contaminants during both the construction and operation phases of the Project are predicted. However, these effects are not expected to be significant.</p>	Gitanyow First Nation
42	Effects of climate change, total atmospheric carbon production from KSM Project, and measures to offset and reduce carbon production from mine development and operations	<p>The most significant climate change risk is linked to precipitation, potentially affecting mine water management. For this reason, major water storage structures (e.g. WSD and TMF dams) are designed to meet Canadian Dam Association guidelines (2007), based on the PMF (1:200-year event). To minimize the Project's contribution to climate change, Seabridge has assessed the Project's estimated GHG emissions, identified mitigation measures, and developed a Greenhouse Gas (GHG) Management Plan to reduce the Project's carbon footprint. The Project will be subject to the reporting requirements under the Greenhouse Gas Reduction Cap and Trade Act (2008). Key mitigation measures to reduce GHG emissions from the Project include: using gravity-assisted water management diversion structures to reduce energy use; supplementing energy requirements through renewable run-of-river plants to provide back-up power to the Project, reducing the need to rely on diesel generators; reducing vehicle speeds and minimizing idling on the Mine Site; locally sourcing equipment, materials, and supplies to reduce vehicle emissions; and considering use of high-efficiency technologies (e.g., hybrid vehicles) as part of the procurement process.</p>	Gitanyow Hereditary Chiefs Office
43	Potential for mercury and associated concerns related air emissions from the carbon regeneration process	<p>If mercury occurs in the gold recovery circuits, it will be recovered and not vented into the atmosphere. There are no air emission sources containing mercury.</p>	Tahltan Nation, Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Air Quality and Climate (cont'd)</b>			
44	Effects of road dust control on ice melt	Surface run-off from roads in the Mine Site will report to the Water Storage Dam (WSD). The water will be stored and treated prior to discharge. Surface run-off from roads in the PTMA will report to the TMF for storage until water quality is suitable for discharge. Source water for road dust control has been included in the construction camp effluent permit applications. Other dust control measures will be used as necessary and will meet the regulatory requirements of the <i>Forest and Range Practices Act</i> (2002b) and conditions of the access road special use permits. Roads will be sprayed with water (if required) to control dust during the summer.	Tahltan Nation
<b>Water Quality and Quantity</b>			
45	Whether baseline work relating to prediction of risks from metal leaching and acid rock drainage (ML/ARD) will be completed to accepted BC and Canadian standards	The ML/ARD prediction program is consistent with the provincial “Guidelines For Metal Leaching and Acid Rock Drainage at Minesites in British Columbia” (MEMNG 1998). The ML/ARD program and results have also been reviewed by an external ML/ARD specialist with considerable experience related to the prediction of ML/ARD for similar BC and North American mine projects. Mining experts from both the provincial (BC Ministry of Energy, Mines and Natural Gas [BC MEMNG]) and federal (Natural Resources Canada) governments are members of the KSM Project Working Group. They have reviewed and commented on the proposed geochemistry program and have also been provided with the results of this program as it has progressed. For example in April 2010, the BC MEMNG provided detailed comments on tests being proposed to assess/predict water quality.	Gitanyow First Nation, Tahltan Nation
46	Concern about uncertainty of hydrology site data in estimating TMF dilution potential downstream of the Project	Hydrological baseline data was collected from 2008 to 2012 for streams, rivers, and lakes in the local and regional area of the Project. Nine hydrometric stations were established in the Teigen and Treaty Creek drainage basins. The KSM hydrometric program was designed to collect sufficient on-site hydrological baseline data to allow a description of the hydrological regime of the Project area, and to provide data that can be compared to hydrological parameters (e.g., annual runoff) derived from regional stream flow datasets. This data is supplemented by a Water Survey of Canada hydrometric station on the Bell-Irving River which provides regional information about long-term runoff patterns within the Bell-Irving Watershed. Estimates for potential dilution can be made with confidence using this information. An assessment of “uncertainty” is a component of the significance determination of all residual effects, discussed in the Application/EIS.	Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Water Quality and Quantity (cont'd)</b>			
47	Downstream effects of TMF	<p>The TMF Carbon-In-Leach (CIL) middle cell (also referred to as pond) of the TMF will be lined to minimize seepage of effluent to groundwater. Additionally, seepage collection ponds will be located in areas where the hydraulic gradient encourages an inflow to the seepage pond, thereby further reducing any potential losses. Based on the results of the localized groundwater modelling, impacts on downstream water quality due to TMF seepage will be negligible. A detailed description of the TMF, including its design features during operation, closure and post closure will be provided in the Application/EIS (Chapter 4).</p> <p>Water quality effects due to surface discharge from the TMF will be mitigated by: 1) diverting clean water around the TMF; 2) cyanide destruction and metal recovery water treatment processes in the process plant; and 3) staging discharge from the TMF to Treaty Creek to match the natural hydrograph. No adverse effects on water quality are predicted for the PTMA.</p> <p>A number of Environmental Management Plans (e.g., Spill Prevention and Emergency Response Plan; Dangerous Goods and Hazardous Materials Management Plan; and an Explosives Management Plan) have been developed to anticipate and mitigate any potential environmental effects related to accidents and spills. These plans will be implemented for all phases of the Project.</p>	
48	Concern about proposed TMF location and risks to water and fish values in Teigen and Treaty creeks, Bell-Irving and Nass rivers	<p>There are naturally-occurring exceedances of BC MOE guidelines for the protection of freshwater aquatic life for total cadmium, total chromium, total copper, total iron, and total zinc observed in Treaty Creek. Water quality effects due to discharge from the TMF will be mitigated by: 1) diverting clean water around the TMF; 2) cyanide destruction and metal recovery water treatment processes in the process plant; and 3) staging discharge from the TMF to Treaty Creek to match the natural hydrograph. Regular monitoring of the Treaty and Teigen Creek drainages will be undertaken at selected monitoring stations downstream of the tailing dams to confirm water quality during all phases of the mining operation.</p> <p>TMF seepage will be controlled with a low permeability core in the tailing dams and dam foundation treatment. Seepage and runoff water will be collected downstream in seepage recovery ponds, and pumped back to the TMF. The ponds will also be used to settle solids eroded from the dam faces and fines from cyclone sand construction drain-down water. Seepage recovery dams will be constructed of compacted till. To restrict seepage, an inclined till core will be installed on the upstream face, along with cut-off trenches into overburden and grout curtains in bedrock, where required. Water quality impacts are not predicted downstream of the WSD or TMF.</p>	Gitanyow First Nation, Gitxsan Nation, Skii km Lax Ha, Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Water Quality and Quantity (cont'd)</b>			
49	Mitigation of ML/ARD	<p>The Application/EIS will include a ML/ARD Management Plan to monitor, mitigate, and adaptively manage the potential effects of ML/ARD on surface water quality, groundwater quality, fish and fish habitat, wildlife, and human health during construction, operation, closure, and post-closure phases. The ML/ARD prediction program includes an assessment of the ML/ARD potential of waste rock, ore, pit walls, tailing, and non-deposit material including material associated with proposed access roads. Actions to avoid and mitigate adverse effects of ML/ARD include:</p> <ul style="list-style-type: none"> <li>• permanently storing Mine Site waste rock in two engineered RSFs or backfilled into the Sulphurets Pit</li> <li>• routing contact water from RSFs and ore stockpile to the WSF</li> <li>• maintaining a geochemical inventory of waste rock and ore stored at the Mine Site to validate ML/ARD predictions</li> <li>• establishing an on-site laboratory to allow for timely ARD characterization and management of waste rock</li> </ul>	Gitanyow First Nation
50	TMF water quality; effects on water quality in Nass watershed	<p>Water treatment at the TMF is focused on controlling identified key parameters such as cyanide, dissolved metals, and suspended solids through various treatment methods. Recovering cyanide and copper in the CIL process is accomplished with the introduction of the SART/AVR process. Low cyanide and copper levels are controlled through a SO<sub>2</sub>/air process to destroy residual concentrations of cyanide. The target cyanide and copper treatment is set at 0.5 mg/L respectively. A polishing step, using activated carbon, will be used to effectively reduce dissolved copper and other trace metals down to less than 0.5 mg/L. As a result, water going to the CIL lined tailing containment cell will be treated. As an added safety measure, the water decanted from the CIL cell to the main flotation tailing pond will go through a final polishing water treatment step using hydrogen peroxide. The hydrogen peroxide step will control any residual cyanide and any potential thiosalts from the CIL process. The only discharge to the receiving environment will be routed from the large flotation tailing pond through a pipeline then diffused into Treaty Creek. Discharge will be from May 15 to October 15 of each year to ensure proper mixing in the receiving environment. Each spring after ice break-up a floating clarifier will be installed in the pond to skim surface water into the clarifier where flocculants could be added to control total suspended solids. Federal Metal Mining Effluent Regulations (MMER) (2002) discharge criteria for suspended solids is 15 mg/L. Suspended solids contribute to total metals and as such will have to be controlled below 15 mg/L. Federal MMER and provincial discharge criteria will be achieved to protect aquatic life.</p>	Gitanyow First Nation, Gitxsan Nation, Tahltan Nation

(continued)

**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Water Quality and Quantity (cont'd)</b>			
51	Whether there is any naturally occurring metal leaching within the Teigen Valley	Baseline water quality in the Teigen watershed indicates there is metal leaching. Exceedances of the BC MOE guidelines for the protection of freshwater aquatic life (BC MOE 2010) in the Snowbank/Teigen Watershed were most commonly observed for total and dissolved aluminum, total cadmium, and total chromium.	Gitanyow First Nation
52	Effects on Treaty and Teigen creeks flows	<p>Hydrological baseline data was collected from 2008 to 2011. Nine hydrometric stations were established in the Teigen and Treaty Creek drainage basins. The KSM hydrometric program was designed to collect sufficient on-site hydrological baseline data to allow a description of the hydrological regime of the Project area, and to provide data that can be compared to hydrological parameters (e.g., annual runoff) derived from regional stream flow datasets. This data is supplemented by a Water Survey of Canada hydrometric station on the Bell-Irving River which provides regional information about long-term runoff patterns within the Bell-Irving watershed.</p> <p>Although the Project can affect annual flow volumes by altering the sub-catchment areas and flow pathways and by inter-catchment water transfers, it is anticipated that Project-related flow effects will be minimal as Treaty and Teigen creeks represent a small proportion of the total flow in the Bell-Irving River. Minimizing Project related flow effects at the TMF has been a primary design criterion in the TMF water balance. Estimates for potential dilution can be made with confidence using this information.</p>	Gitanyow First Nation
53	Standards that will be used to determine levels of pollutants that can be discharged into surface and groundwater	The BC MOE uses both permit limits (based on Pollution Control Objectives) for discharge concentrations and receiving environment water quality standards to ensure mining discharges are protective of the receiving environment. Schedule 4 of the federal Metal Mining Effluent Regulation (2002c) also prescribes authorized limits of deleterious substances for metal mining operations. Baseline water quality as well as federal and provincial water quality standards will be used as references in establishing limits.	Gitanyow First Nation
54	Effects on Oweege and Bowser lakes, the Bell-Irving River and Hanna and Titian watersheds, and Meziadin River as they are high priorities for water quality, habitat, and fisheries	The Oweege watershed is outside of the fisheries baseline study area and is not impacted by Project infrastructure. The Bowser watershed is within the fisheries baseline study area. The Frank Mackie Glacier access falls in this watershed; however, there no fish-bearing stream crossings along this route, and therefore no potential effects. Fieldwork was conducted in the Oweege and Bowser watersheds to identify potential fish compensation projects. While the Meziadin River, Meziadin Lake, and watershed are outside of the fisheries baseline study area, the importance of the Meziadin and Nass River confluence for Gitanyow fishing activities is recognized in the Gitanyow Desk-based TK/TU report (appended to Chapter 30 of the Application/EIS).	Gitanyow First Nation, wilp Wii'litsxw, Skii km Lax Ha

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Water Quality and Quantity (cont'd)</b>			
55	Potential drainage from TMF into Skeena River	The TMF does not drain into the Skeena River watershed so there will be no effects on the Skeena River.	Gitxsan Nation
56	Inclusion of Mehan Lake, Awiigi Lake, and Awiigi Creek in downstream effects studies (importance to salmon)	Both Awiigii and Mehan Lakes are located on the northern to eastern side of the Bell-Irving River system and are therefore outside the direct downstream influence of the KSM Project. Awiigii Lake is outside of the fisheries study area and thus was not assessed as part of the EA. 2009 and 2010 fisheries baseline studies included sampling in the Bell-Irving River and other locations to provide the information necessary to determine whether there is a potential to affect fish and aquatic habitat. Project-related fish and aquatic habitat downstream effects are included in Chapter 15 of the Application/EIS.	Skii km Lax Ha
57	Water quality studies for TMF	Approximately 25 water quality baseline sampling stations were established on Treaty, Teigen, and Snowbank creeks and on the Bell Irving River. Monthly samples (nutrients, metals, sediments, fish tissue, periphyton, and benthos) were taken at sites directly downstream of the TMF on South Treaty Creek, with additional quarterly sampling taken at sites further downstream on Treaty Creek and the Bell Irving River. Baseline results and the effects assessment for water quality and fish and aquatic habitat are included in the Application/EIS (see appendices to Chapter 15).	Tahltan Nation
58	Seep testing if effluent will be pumped for treatment	Geotechnical work has been undertaken to characterize the terrain, soil, hydraulic conductivity, and geological conditions at dam locations to estimate seepage rates. These rates were included in the regional hydrogeology model which has informed TMF and WSF design. Seepage recovery ponds will be established downstream of the TMF and WSD to collect leachate. No surface discharge of effluent will occur to the receiving environment without meeting regulatory requirements.	Tahltan Nation
59	Testing of borrow material for WSD for ARD	Samples were collected from potential borrow sites to test material for ML/ARD potential (Prior to ground disturbance and construction, geochemistry of all borrow materials will be evaluated (see ML/ARD Management Plan in Chapter 26).	Tahltan Nation
60	Geology of tunnel area	The geology in the area of the MTT is described in Chapter 4 of the Application/EIS. The western section of the proposed MTT alignment consists of Hazelton and Stuhini Group rocks. Hazelton Group rocks will also be encountered in the central portion of the tunnel, from east of the Brucejack Fault to the contact with the Bowser Lake Group sediments. Bowser Lake Group sediments will be encountered in the area of the Saddle portals and will continue along the eastern section of the tunnel to the MTT process plant portal.	Tahltan Nation
61	Toxicology testing	Three sampling sites, one reference site, and four study organisms were used, all of which are located downstream of the ore deposits and the TMF.	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Water Quality and Quantity (cont'd)</b>			
62	Effects on Frank Mackie Glacier access	Measures to avoid or mitigate potential effects related to use of the Frank Mackie Glacier, are identified in the Traffic and Access Management Plan (see Chapter 26 of the Application/EIS).	Tahltan Nation
63	Diversion of water from Mitchell Glacier	Water will be diverted around the Project site near the toe of Mitchell Glacier. The inlet of the Mitchell Diversion Tunnels is designed to be above the Mitchell thrust fault to capture non-impacted better quality water. The tunnel diversions are described in Chapter 4 of the Application/EIS.	Tahltan Nation
64	Water quality of glacier icecaps	The quality of water draining from the toe of the Mitchell Glacier reflects the influence of the underlying rocks rather than the quality of the ice. The toe of the glacier is naturally acidic and has high concentrations of metals such as copper and iron. The upper reaches of Mitchell Creek indicate acidic and poorly buffered conditions as a result of naturally occurring ARD from the highly mineralized deposit area. There are increased sediment loads during spring freshet, summer glacial melt, and the fall period. During the high flow season, TSS concentrations in Mitchell Creek were frequently above 200 mg/L. Total metal concentrations were typically higher in the high flow season (May to October) reflecting increased TSS concentrations, while dissolved metal concentrations were typically lower in the high flow season reflecting increased dilution. Background metal concentrations generally decreased downstream from Mitchell Creek to Sulphurets Creek to the Unuk River.	Tahltan Nation
65	ARD effects on Treaty Creek and Teigen Creek drainages	There are sulphide bearing mineral deposits in the Treaty Glacier area. As a result, Treaty Creek has naturally elevated concentrations of certain metals. The TMF has been designed to meet required engineering standards with the intention of protecting downstream water and fish resources. Regular monitoring of the Treaty Creek and Teigen Creek drainages will be undertaken at selected monitoring stations downstream of the tailing dams to confirm water quality during all phases of the mining operation.	Tahltan Nation
66	ML/ARD effects of access road construction	ML/ARD potential of the Coulter Creek and Treaty Creek access corridors was assessed based on available design information (see Appendix 10-B). ML/ARD potential rankings of the Coulter Creek access road are relatively evenly distributed among possible, low, and none. Road segments of the CCAR with a high ML/ARD potential (3% of the alignment) are frequently associated with fault zones and geological contacts, as well as those sections where cut dominates fill. The ML/ARD potential of the northern 20 km of the alignment along Coulter Creek is possible to high and the majority of the south-eastern sections along Sulphurets Creek have an ML/ARD potential of none. The ML/ARD potential ranking of the TCAR is predominantly low to none with a few segments of high or possible ML/ARD potential. This ranking reflects the alignment on alluvial and colluvial sediments.	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Water Quality and Quantity (cont'd)</b>			
67	Locating potentially acid generating (PAG) rock and tunnel rock in the Treaty Creek area	Waste rock will not be stored in the Treaty Creek Valley. Minor volumes of waste rock resulting from tunnel construction may be stored in the TMF along with tailing from the Processing Plant. The TMF is located within upper South Teigen and North Treaty creeks. Material excavated during tunnel construction classified as not potentially acid generating will be removed for use as construction material. PAG material will be transported to temporary lined storage pads located near the portal sites. Treatment ponds will be constructed to collect tunnel drainage and seepage from the temporary rock storage areas. These settlement ponds will include lime dosing reactor tanks to treat metals, suspended solids, and residual ammonia. PAG tunnel muck will be hauled to permanent disposal sites when roads are open.	Tahltan Nation
68	Pit acidity	Water within the Mitchell Pit will be acidic given there is naturally occurring acid rock generation. Predictions of pit water quality post-mining are provided in Chapter 14 of the Application/EIS. The Mitchell Pit will be flooded upon closure to reduce the potential for acid generation. Acidic pit water will be treated prior to release to the receiving environment.	Tahltan Nation
69	Storage of tailing in Mitchell or Sulphurets Creek valleys rather than Bell-Irving watershed	The headwaters of the Mitchell and Sulphurets Creek valleys are all occupied by glaciers. Many of the lower elevation areas in these valleys have poor foundation geology, making dam construction unacceptable. Because the valleys are deeply incised, the dam heights required to achieve the necessary volumes are very high, again increasing risks.	Tahltan Nation
70	Management of total suspended solids (TSS) and scope of TSS-related mitigation	TSS in discharge from the Mine Site and the TMF will meet the MMER (2002c) requirements, which is 15 mg/L. An Erosion Control Plan is provided in Chapter 26 of the Application/EIS.	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Water Quality and Quantity (cont'd)</b>			
71	Water treatment facilities at Mine Site and PTMA	<p>Mine Site water treatment infrastructure will include a water treatment plant (WTP) building with clarifiers, large lime silos, a sludge winter storage building, and a secure landfill area. The area will also include two polishing ponds for final pH adjustment to provide additional solids settling capacity or retention of required. The WTP will use conventional, high-density sludge lime water treatment process. A specialized selenium ion exchange plant will be built in later years to treat water from the Kerr deposit. Also, the Kerr waste rock will be backfilled into the mined Sulphurets Pit and lined to control selenium dissolution.</p> <p>Water treatment at the TMF is focused on controlling identified key parameters such as cyanide, dissolved metals, and suspended solids through various treatment methods. Recovering cyanide and copper in the CIL process will be accomplished with the introduction of the SART/AVR process. Low cyanide and copper levels will be controlled through a SO<sub>2</sub>/air process to reduce residual concentrations of cyanide. The target cyanide and copper treatment is set at 0.5 mg/L respectively. A polishing step, using activated carbon, will be used to effectively reduce dissolved copper and other trace metals down to less than 0.5 mg/L. As a result, water going to the CIL lined tailing containment cell will be treated. As an added safety measure, the water decanted from the CIL cell to the main flotation tailing pond will go through a final polishing water treatment step using hydrogen peroxide. The hydrogen peroxide step will control any residual cyanide and any potential thiosalts from the CIL process.</p>	Tahltan Nation
72	Methods for preventing rock from leaching acid such as capping waste rock or introducing limestone to waste rock storage area	Chapter 26 of the Application/EIS includes a Water Management Plan to manage contact and non-contact water within Mine Site. Water that has been affected by ML/ARD will be treated prior to release to the environment.	Tahltan Nation
73	Effects on Strohn River	The Strohn River, near Meziadin Lake, will not be affected by the Project and has not been scoped into the EA.	wilp Wii'litsxw
<b>Fish and Aquatic Habitat</b>			
74	Fish density surveys at Todedada Creek to support Fish Habitat Compensation Plan	Fish density/population abundance surveys were conducted in the Todedada Creek Watershed in 2011. Seabridge is not proposing Todedada Creek as a fish habitat compensation project, as more suitable sites are currently proposed (Treaty, Teigen, Taft and Glacier creeks).	Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Fish and Aquatic Habitat (cont'd)</b>			
75	Reliability of fish survey methodologies as total (absolute) population estimates cannot be made for salmonids because the survey methodologies do not count every fish	The objectives of the fisheries baseline studies were to determine the relative abundance of migratory salmonid fish species. This was done by conducting spawning and redds surveys in 2010. Relative abundance and age class distribution was determined for resident and migratory salmonid juveniles in the fisheries baseline study area. These are provincially and federally accepted methods for collecting baseline data. These methods follow RISC (1997) standards and are acceptable for monitoring population abundance.	Gitanyow First Nation
76	Methodology for determining the amount of fish habitat impacted by TMF footprint	Bank full width was used to calculate the area of fish habitat lost within the PTMA. Baseline data was collected in 2009 pursuant to sensitive habitat inventory methodology (Mason and Knight 2001; RISC 2001). The methods used to calculate the area of impacted fish habitat are provided in the fish habitat compensation report appended to Chapter 15 of the Application/EIS.	Gitanyow First Nation
77	Locations of fish DNA analysis	A genetic study of Dolly Varden within and downstream of the PTMA was conducted. Samples were taken from South Teigen Creek within the TMF, Teigen Creek downstream of the falls, South Teigen Creek, North Treaty Creek within the proposed PTMA, and Treaty Creek. The results (Taylor 2010) indicate that Dolly Varden within the TMF are not a unique sub-species. In addition, DNA samples were collected from Dolly Varden throughout the fisheries baseline study area to confirm species identity.	Gitanyow First Nation
78	Potential for water quality changes to affect the ability of salmon to use chemical receptors to find their home streams for spawning	The Application/EIS considers potential effects of water quality changes on salmon's chemoreceptors and migration (see Chapter 15 of the Application/EIS).	Gitanyow First Nation
79	Effects on Hanna-Tintina spawning grounds in the Northwest Transmission Line Project	The Hanna-Tintina Watershed drains to the Bell-Irving/Nass system, located approximately 120 km downstream of the Project site. Potential effects on this area were not assessed given its distance from the Project site.	Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Fish and Aquatic Habitat (cont'd)</b>			
80	Fish Habitat Compensation, including scale of compensation; focus on chinook and coho for compensation outside of Project footprint; and assessment of water quality in the proposed compensation sites	Fish habitat compensation studies in 2009, 2010, and 2011 identified limits to productive capacity of compensation sites based upon fieldwork and literature review. At potential sites, water quality limitations (e.g., nutrient availability) were taken into consideration; however, water quality limitations were not identified for any sites. In mainstem, complexing sites, fish were present in moderate densities therefore water quality (e.g., nutrient availability, heavy metals) will not affect compensation success. In off-channel sites, entirely new habitat will be created with the primary water source directed from mainstem creeks. For all primary water sources, fish are present in moderate densities; therefore water quality will not affect compensation success. During the winter, dissolved oxygen will be sampled from existing off-channel ponds to determine limits to existing productive capacity conditions. The scale and scope of fish habitat loss due to the Project is provided in Chapter 15 of the Application/EIS.	Gitanyow First Nation
81	Effects on food, social, and ceremonial fishing rights, Pacific salmon, and economic fishery interests; effects on fishing activities at the confluence of the Meziadin and Nass rivers	Potential effects on fish and aquatic habitat are assessed in Chapter 15 of the Application/EIS. Chum, pink salmon, oolichan, and lake trout are excluded from the assessment as they are present in the fisheries baseline study area. Predicted results of fish and aquatic habitat effects assessment conclude that there will be no effects on food, social, and ceremonial fishing rights and economic fishery interests. Meziadin and Nass rivers are outside of the water quality and fisheries baseline study areas. These rivers are a significant distance from the Project area.	Gitanyow First Nation Gitanyow wilp Wii'litsxw Gitxsan First Nation
82	Include Mehan Lake in fisheries studies	Mehan Lake is located upstream of the Project and outside of the fisheries baseline study area.	Skii km Lax Ha
83	Monitoring fish compensation projects	Proposed Fish Habitat Compensation projects will be monitored to evaluate their success. Monitoring plans for proposed compensation projects are provided in Chapter 15 of the Application/EIS.	Skii km Lax Ha
84	Sockeye spawning in Teigen Creek, Teigen Lake, and Treaty Creek	Sockeye have been observed spawning in Teigen Creek from the Hodkin Creek confluence (several kilometres downstream of the lake outlet) to the Snowbank Creek confluence. Previous incidental observation data in 2008 and 2009 indicates sockeye spawn in Teigen Creek upstream of the South Teigen confluence. Prior to 2010, sockeye were observed (< 5 individuals) in Teigen Creek upstream of the South Teigen confluence during the same time as the chinook spawning run. No sockeye were observed during sockeye and chinook salmon spawning surveys conducted in Teigen Creek in 2010 which indicates the sockeye run size is small.	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Fish and Aquatic Habitat (cont'd)</b>			
85	Effects to fish due to dam breach	Potential environmental effects due to a dam breach are evaluated in Chapter 35 of the Application/EIS.	Tahltan Nation
86	Importance of Todedada Creek for coho and sockeye spawning	Coho and sockeye spawning surveys were conducted in 2010 to identify spawning locations, habitat use and to estimate run size of coho and sockeye salmon in East Todedada Creek. Estimated size of the sockeye and coho run is 60 individuals and 15 for the sockeye run.	Tahltan Nation
87	Effects on Teigen Creek fisheries values	Seabridge has designed the Project to accommodate aboriginal concerns related to potential impacts to the Teigen Creek fishery. Fisheries studies were completed over four years in Teigen Creek in 2008, 2009, 2010, and 2011. Fisheries baseline reports will be included in the Chapter 15 of the Application/EIS.	Tahltan Nation
88	Chinook compensation in South Teigen Creek	2010 and 2011 fieldwork focused on identifying and collecting fish and aquatic habitat data to identify potential compensation projects. Proposed fish compensation projects are provided in Chapter 15 of the Application/EIS. One proposed fish compensation site is located on Teigen Creek.	Tahltan Nation
<b>Terrestrial Ecosystems and Wetlands</b>			
89	Effects on Gitanyow pine mushroom picking areas	Mapping of potential pine mushroom habitat in the Project area, along with incorporation of local knowledge, identified pine mushroom habitat in the area of the Coulter Creek access road. This road is outside of the Gitanyow traditional territory. Potential effects on pine mushroom habitat may occur during the construction and use of the road. Mitigation strategies include minimizing road dust, potential for wind throw and completing routine invasive species inventories (including monitoring) along road and forest edges.	Gitanyow First Nation
90	Use of native or agronomic seed mixes	The goal is to achieve, over time, native re-vegetation using native seed wherever practical. Native seed may be purchased commercially, harvested nearby or produced on site, depending upon circumstances at the time.	Gitanyow First Nations

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Terrestrial Ecosystems and Wetlands (cont'd)</b>			
91	Effects on sustainability of wildlife, berries, and medicines	Potential effects on cultural plants, including berries and medicinal plants, were assessed at the ecosystem level. This assessment considered the potential of the land base to support berry producing shrubs and wildlife. It is not feasible to complete an assessment at an individual species level, unless there is a close association between a specific plant species and a mappable ecosystem (i.e., Devil's club). Expected effects include direct habitat loss from vegetation clearing and potential habitat degradation from dust deposition, wind throw along new edges and introduction of invasive species. Potential measures to mitigate effects include minimizing vegetation clearing / disturbance within ecosystems identified as having high potential to support berry-producing or medicinal plants, completing routine invasive species inventories (including monitoring) along road and forest edges.	Gitanyow First Nation, and wilp Wii'litsxw
92	Introduction of invasive plants	Ground disturbance from the Project during construction will create open areas for invasive plant species. Project roads and the transmission line corridor will also provide suitable habitat for invasive plants. A Terrestrial Ecosystems Management and Monitoring Plan, which includes an Invasive Plant Management Plan, appended to Chapter 26 of the Application/EIS. Measures to mitigate the introduction of invasive plants includes minimizing the size of clearings, re-vegetating areas as soon as possible, minimizing soil erosion and ensuring vehicles and equipment restrict travel and operation to designated roads.	Gitxsan Nation, Tahltan Nation, Gitanyow First Nation
93	Plans for timber in WSF area	A timber cruise of the area has been done and Seabridge will discuss timber removal and related issues with the BC Ministry of Forests, Lands and Natural Resource Operations.	Tahltan Nation
<b>Wildlife and Wildlife Habitat</b>			
94	Moose and moose habitat, including winter range, critical habitat, and calving areas	Seabridge conducted a moose study using standard methodologies (RISC 2002) to assess critical habitat, which is early and late winter. There is no standard for moose surveys other than for winter. Habitat suitability modelling was used to identify potential winter moose habitat in the wildlife regional study area (RSA). Potential effects on moose are assessed in Chapter 18 of the Application/EIS.	Gitanyow First Nation, Tahltan Nation
95	Initiate moose collaring program to understand migration	A moose collaring program or telemetry survey is not warranted based on the understanding and knowledge of the region and the size and location of the moose population in the Project area. The moose baseline studies for the KSM Project followed the RISC (2002) survey standards. For the Application/EIS, it was assumed that moose use the major drainages in the study areas, such as the Bell-Irving, Teigen, Treaty, Unuk and Bowser drainages, when moving between their seasonal ranges.	Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Wildlife and Wildlife Habitat</b>			
96	Effects on moose in the winter when there are 15-ft high snow drifts along the road which trap moose	Seabridge-controlled access roads will be managed to avoid trapping moose. For example, refuge areas will be ploughed along the road during the winter and gaps in snow banks along roads will be created to allow escape for wildlife.	Gitanyow First Nation
97	Displacement of moose	Moose may be displaced from habitat as a result of disturbances. Habitat modelling has been conducted to identify highly suitable habitat into which moose may move. Moose may habituate to anthropogenic disturbances and temporarily alter habitat use without abandoning habitat long-term (Singer and Doherty 1985; Andersen, Linnell, and Langvatn 1996).	Gitanyow First Nation
98	Effects on mountain goats	Effects on mountain goats (habitat loss, disruption of movement, direct mortality, indirect mortality, sensory disturbance, attractants, and chemical hazards) are assessed in Chapter 18 of the Application/EIS.	Gitanyow First Nation
99	Displacement of goats	Mountain goats may be displaced from habitat as a result of disturbances. Habitat modelling has been used to identify highly suitable habitat into which mountain goats may move. Mountain goats have been observed to temporarily abandon habitat following resource development, but have re-colonized when development ceased (Foster and Rahe 1983). Goats may also habituate to anthropogenic disturbances and temporarily alter habitat use without abandoning habitat long-term (Singer and Doherty 1985; Andersen, Linnell, and Langvatn 1996). The potential effects of displacement of goats are assessed in the Application/EIS.	Gitanyow First Nation
100	Goat survey methods	Goat surveys followed BC standards (RISC 2002) which include ways to avoid adverse effects on goats. Surveyors obtained a permit from BC MOE and followed protocol to minimize disruption.	Gitanyow First Nation
101	Development of a mountain goat population estimate and whether DNA work has been conducted	The population estimate for mountain goats in the KSM RSA is 230 goats (average density of 0.2 goat/km <sup>2</sup> of capable habitat). There are no sightability models for mountain goats in BC (RISC 2002; Ayotte 2005); therefore, the uncorrected counts are considered to be an index of the population size. The methods used to inventory mountain ungulates adhered to the aerial survey protocol described by RISC (RISC 2002). Methods and effort were equal to surveys conducted for other projects in the region (e.g., Galore Creek and NTL (Rescan 2006, 2009)). DNA sampling to estimate numbers of individual goats was attempted at Galore Creek in 2006; however, there was a high failure rate (78% failure), which was attributed to the low quality of DNA in shed hair samples (Mowat 2006), and therefore this method was not attempted for the KSM Project.	Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Wildlife and Wildlife Habitat (cont'd)</b>			
102	Compare grizzly concentrations, population density, and ranges to other areas	Comparisons of grizzly bear concentrations and ranges are presented in the grizzly bear DNA baseline report appended to Chapter 18 of the Application/EIS.	Gitanyow First Nation
103	Minimize bear-human conflicts	A bear management plan has been in place at the Project site since 2008. It is designed to minimize human-bear interactions. A detailed plan will be prepared for the construction and operations phases of the Project. A summary of this plan is included in Chapter 18 of the Application/EIS.	Gitanyow First Nation
104	Effects on marten, wolverine, ferrets, and ermine	Because prey species (small mammals) and habitat requirements for wolverine, ferrets, and ermine (i.e., forest habitat) are similar to prey and habitat requirements of marten, the potential effects on these species are captured by the marten assessment in Chapter 18 of Application/EIS.	Gitanyow First Nation
105	Wildlife habitat loss	The effect of habitat loss was assessed for 11 VCs: moose, mountain goats, grizzly bears, black bears, American martens, hoary marmots, bats, raptors, wetland birds (within cavity nesting, riverine, and wetland habitats), forest and alpine birds, and western toads. Changes to the design of the Project were implemented to avoid loss of important habitat when alternatives were available (e.g., habitat loss was minimized in the Saddle Area by placing the tunnel underground, and in the PTMA by moving the processing plant out of wetland habitat).	Gitanyow First Nation, Tahltan Nation, Gitksan Nation
106	Direct loss of caribou habitat, and concern regarding effects from disease	Caribou were excluded from the EA because the Project area is not within current caribou range. Some individuals may disperse into the area (evidenced by a shed antler found near the Project pit area). However, no caribou were observed during surveys. This area may be part of the historical caribou range, but that herd has since been extirpated.	Gitksan Nation
107	Effects of wildlife in the Cranberry Connector	The Cranberry Connector falls outside of the Project area so it is not included in the Application/EIS.	Gitksan Nation
108	Effects on groundhogs (important to Skii km Lax Ha history and regalia)	Hoary marmots (groundhogs) are considered a VC. Potential residual effects of direct mortality and habitat loss are predicted for hoary marmots; however, with mitigation, these residual effects are considered not significant (minor).	Skii km Lax Ha
109	Moose breeding areas, particularly in the area of the Teigen Creek Access Road.	Seabridge is no longer considering access along the Teigen Creek Valley. Access to the TMF is now proposed along the Treaty Creek Valley.	Tahltan Nation

(continued)



**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Wildlife and Wildlife Habitat (cont'd)</b>			
110	Concern the proposed access roads will cut off moose movement	The effect of roads acting as barriers to moose movement is assessed in Chapter 18 of the Application/EIS. Seabridge-controlled access roads will be maintained to avoid trapping moose. Refuge areas will be ploughed along the road during the winter and gaps in snow banks along roads will be created to allow escape for wildlife.	Tahltan Nation
111	Groundhog distribution to assist determination of grizzly bear habitat	Hoary marmot habitat suitability models were used to help identify grizzly bear habitat.	Tahltan Nation
112	Cross-contamination between sample sites from toads that may be affected with fungus	Seabridge used an established provincial method for sterilizing equipment and personal gear. The MOE standard protocol used to avoid transmission of disease to amphibians (MOE 2008) was forwarded to the Tahltan Nation along with confirmation that it is being used on the Project site.	Tahltan Nation
113	New road construction will open up the backcountry to hunters and predators	Under the Traffic and Road Use Management Plan, the Coulter Creek and Treaty Creek access roads will be gated to control access and prevent unauthorised entry.	Tahltan Nation
114	Effects of predators as new right-of-ways will alter migration routes	Chapter 18 of the Application/EIS considers this issue. Roads can facilitate movement and act as travel routes for both prey animals and predators such as wolves, indirectly increasing predation on ungulate prey. Road creation in high-quality moose habitat, particularly when clearing roads in the winter, can also increase predator access into areas occupied by moose, increasing predator-induced mortality of moose.	Tahltan Nation
115	Effects on mountain goats	Mountain goats have limited home ranges. It is unlikely that the Project will affect mountain goats in Gitanyow traditional territory, as it is located some distance away. The importance of mountain goat for Gitanyow culture and subsistence is considered in the Gitanyow desk-based TK/TU report (appended to Chapter 30 of the Application/EIS).	wilp Wii'litsxw
116	Effects on beavers	Beavers are not included in the EA because populations are considered stable and not at risk. Potential effects of the Project on important habitats, specifically beaver dams, are protected under a separate permitting process under the BC <i>Wildlife Act</i> (1996b). Other potential effects of the Project on beaver would be captured by analyses of changes in wetland habitat within the waterfowl assessment.	wilp Wii'litsxw

(continued)

**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Wildlife and Wildlife Habitat</b>			
117	Effects on marmots and rabbits (relied upon in the winter)	Potential effects on marmots include habitat loss, direct mortality, and chemical hazards. Most of the high-quality marmot habitat that will be removed or altered during the life of the Project will occur in the Mine Site near the pits and RSFs (approximately 3,845 ha [29.6% of available habitat mapped in the Local Study Area]). During road construction and pit excavations, there is potential for destruction of marmot burrows. Development of the Kerr, Mitchell, and Sulphurets pits and the construction of haul roads will remove two marmot colonies and their inhabitants (see Chapter 18 of the Application/EIS for detailed assessment). Rabbits were not included in the EA because populations are considered stable and not at risk.	wilp Wii'litsxw
118	Effects to Gitanyow hunting, trapping, moose	Moose found in the Project area may move into the Gitanyow traditional territory. Potential effects on moose from traffic activity along Highway 37 is assessed in Chapter 18 of the Application/EIS.	Gitanyow First Nation
<b>Social</b>			
119	Interest in capacity development, training	Seabridge is developing close links with local/regional post-secondary education institutions to ensure that appropriate training and apprenticeship programs and student spaces are in place programs are in place to facilitate worker preparedness. Seabridge contributed \$100,000 to the BC Aboriginal Mine Training Association (BC AMTA) in 2011. The BC AMTA is focused on providing skills upgrading and training relevant to the mining sector for Aboriginal people in BC. During construction and operation, Seabridge is considering offering college and university bursaries to Aboriginal and non-Aboriginal communities.	Gitanyow First Nation Gitxsan Nation Skii km Lax Ha Tahltan Nation wilp Wii'litsxw
120	Socio-economic and cultural indicators used to measure effects should be consistent across all projects.	Seabridge collaborated with other project proponents working in the Tahltan traditional territory to ensure consistency of approach in the development of socio-economic and cultural indicators.	Tahltan Nation

*(continued)*

**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Economic</b>			
121	Economic benefits from mine-related business and employment	The Project will provide an estimated 1,800 direct jobs on site and 2,510 indirect jobs in BC during the 5-year construction period. The Project will provide 1,040 direct jobs on site and 1,840 indirect jobs operations jobs in BC during the 51.5 year mine life. The Project is anticipated to have positive economic benefits for local communities and the region. Seabridge will procure goods and services from the region where supplies meet procurement requirements and are competitive with other suppliers in terms of quality and price.	Gitanyow First Nation, Gitksan Nation, Tahltan Nation, Skii km Lax Ha, wilp Wii'litsxw
122	Expectation to have the first right of refusal on employment opportunities related to the Project.	The Project will provide employment and income benefits to qualified local and regional workers. There will be no first right of refusal on employment opportunities.	Skii km Lax Ha
123	Importance of preserving the environment, which supports Gitksan Nation's tourism industry.	The Project partly overlaps an area of wilp Skii km Lax Ha's traditional territory. Social and economic baseline studies did not reveal any Skii km Lax Ha or Gitksan tourism activities within the Project study area and, as such no effects are anticipated.	Gitksan Nation
<b>Heritage and Archaeology</b>			
124	Effects to culturally important sites	The Project is located outside Gitanyow traditional territory, and is not expected to affect Gitanyow culturally important sites.	Gitanyow Hereditary Chiefs Office

*(continued)*

**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Heritage and Archaeology (cont'd)</b>			
125	Concern that Skii km Lax Ha artifacts have been found in their territory and they have not been notified, nor had the opportunity to determine where they will be stored	Archaeological site forms, submitted to the BC Archaeology Branch, describe the archaeological sites recorded in the Project area. This information is available from the Archaeology Branch upon request. The Royal BC Museum is typically the repository for any recovered artifacts.	Skii km Lax Ha
126	Consideration of heritage sites including cabins and burial sites in the Project area	The Archaeological Impact Assessment (AIA) for the Project focused on identifying sites, including burial sites within the Project footprint protected under the BC <i>Heritage Conservation Act</i> (1996a). Cabins that post-date 1846 are not protected under the <i>Act</i> . No burial sites or pre-1846 cabins were identified within the Project footprint. Two post-1846 cabins were identified.	Skii km Lax Ha
127	High potential for Skii km Lax Ha cultural artifacts in Gilbert Lake area and interest in how artifacts will be mapped	Maps of artifact find locations have been submitted to the BC Archaeology Branch along with the site forms. Copies of the maps and site forms are available from the BC Archaeology Branch upon request. The Gilbert Lake area will not be affected by the Project.	Skii km Lax Ha
128	Conduct archaeological work in accordance with Tahltan archaeological standards	Seabridge's archaeology team obtained and reviewed Tahltan standards. For those parts of the Project footprint that fall within the Tahltan traditional territory these standards were considered and helped to inform the archaeological assessment. Archaeology work for the Project as a whole has been conducted in accordance with the BC <i>Heritage Conservation Act</i> (1996a) and permit issued pursuant to the <i>Act</i> .	Tahltan Nation
129	Importance of high-elevation land use in Tahltan territory	Alpine and sub-alpine areas within the Project footprint were investigated during the Archaeological Impact Assessment (AIA). The results of the AIA will be provided in the Application/EIS.	Tahltan Nation
130	Include ice patch archaeology in the EA	Ice patches within the Project footprint were investigated during the AIA and the results will be provided in the Application/EIS.	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Land Use</b>			
131	Subsistence activities including hunting, trapping (including along the Highway 37 corridor, Cranberry River to the cabin on Skowhill Creek), fishing, and gathering (plants, berries, mushrooms).	Chapte3 23 of the Application/EIS assesses potential effects of the Project on subsistence activities, including trapping, hunting and fishing and gathering. This assessment is based on traditional use information provided by Aboriginal groups and desk-based research using publicly available reports.	Skii km Lax Ha
132	Gilbert Lake and Treaty Creek an area with high potential for Skii Km Lax Ha use	Gilbert Lake is located near the confluence of Treaty and Todedada creeks (the Project has no infrastructure in this area). The Gilbert Lake area will not be affected by the Project. Use of the Treaty Creek area by the Skii km Lax Ha is unknown.	Skii km Lax Ha
133	Confirmation of Skii km Lax Ha cabin sites in Project area	Skii km Lax Ha cabin sites are located at Skowill Creek and Spruce Creek. Skowill Creek is located to the east of the Bell-Irving River, outside of the Land and Resource Use Study Area, and will not be affected by the Project. The Spruce Creek cabin is downstream from Bowser Lake and will not be affected by the Project.	Skii km Lax Ha
134	Fishing activities have traditionally occurred at the confluence of the Meziadin and Nass rivers.	The Meziadin River and Meziadin Lake are approximately 70km downstream from where Treaty Creek enters the Bell-Irving system. Fishing activities will not be impacted by the Project	Wilp Wii'litsxw
<b>Human Health</b>			
135	Effects to drinking water supply and sites, including the area downstream of the Project	Seabridge has committed to meeting the BC guidelines for the protection of freshwater aquatic life, which are more stringent than BC MOE drinking water quality guidelines (BC MOE 2010). It is not anticipated that the KSM Project will cause effects on either drinking water quality or quantity downstream.	Gitanyow First Nation, wilp Wii'litsxw, Gitxsan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Project Traffic</b>			
136	Effects on public safety	Project traffic may contribute to an increase in risks to public safety along highways 37 and 37A due to increased traffic and increased probability of traffic accidents. Seabridge drivers will be required to complete safety training.	Gitanyow First Nation, Tahltan Nation
137	Effects on ungulate winter range (UWR) in Cranberry area	Approved Mountain Goat UWR U-6-002 overlaps the wildlife RSA—including the Project area—and high-elevation habitat adjacent to Highway 37. This UWR is at high elevations so it is not impacted by traffic. There is another Mountain Goat UWR U-6-006 located along the highway, south of Meziadin Junction. This UWR will not be impacted by the Project.	Gitanyow First Nation
138	Option to transporting ore down south side of Treaty Creek	Access to the TMF is now proposed along the Treaty Creek Valley. This change was made as a result of comments from the KSM Project EA Working Group.	Skii km Lax Ha
139	Increased traffic on Highway 37	The largest increases in Project-related traffic are expected during the operation phase. A 40% increase (approximately 89 one way trips per day) is expected along Highway 37 between the Treaty Creek access road junction and Meziadin Junction, and a 15% increase (approximately 36 one way trips per day) is expected along Highway 37A. Increases along other highway segments and during the other Project phases range between 1 and 11%. However, these increases are proportionally higher than they would have been in the 1980s and 1990s, when overall traffic volumes were higher.	Skii km Lax Ha, Gitanyow First Nation
140	Fuel transportation plan and volume	Fuel handling, transportation, and storage facilities and activities will be consistent with the BC <i>Mines Act</i> Health, Safety and Reclamation Code for Mines in British Columbia (MEMNG 2008) and the Ministry of Water, Land and Air Protection’s publication <i>A Field Guide to Fuel Handling, Transportation and Storage</i> (MWLAP 2002). All fuel storage vessels will include secondary containment, and all transfer stations will have concrete spill pads complete with oil/water separators during operations. Tanks and sumps will have high-level alarms. All transfers from tank trucks to tanks at the Treaty OPC will be done using enclosed lines, hoses, and pumps. All storage and transfer locations will also be equipped with appropriate spill kits. An inspection schedule will be developed for each fuel storage site, taking into account the volume of fuel stored at each site and the respective risks related to that storage. Inspections will include tanks, pipelines, connections, valves, gauges and meters, sumps and separators, and inventory records. Inspections will be recorded and filed with the Mine Manager. Fuel transfer procedures will include management practices to ensure no overtopping of tanks or spillage (see Chapter 26 of the Application/EIS for Spill Prevention and Emergency Response Plan and Dangerous Goods and Hazardous Material Management Plan).	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Project Traffic (cont'd)</b>			
141	Data gaps in traffic report related to wildlife kills	Information on wildlife mortality due to vehicle collisions is compiled in the Wildlife Accident Reporting System (WARS) database, which is maintained by BC Ministry of Transportation and Infrastructure (BC MOTI). There are several limitations to the WARS data, including under-representation of wildlife mortalities and lack of information regarding locations of accidents. Despite these limitations, the Project is using WARS data, with appropriate caution, as it is the best available information.	Tahltan Nation
142	Commercial vehicle pull-outs near areas of interest	The BC Ministry of Transportation and Infrastructure is responsible for highways 37 and 37A. BC MOTI advised at the July 2012 working group meeting that it is considering increasing the number of rest areas along the highway, in consultation with Aboriginal groups.	Tahltan Nation
143	Cumulative effects of Project traffic on Nass moose	Potential Project traffic impacts to moose between the Cranberry Junction and Kitwanga have been modelled for the Nass moose population. A moose/vehicle collision model was imbedded into a population dynamics model to emulate the fraction of moose mortality that can be explained by vehicle collisions. Assuming a base harvest rate of 50 bulls from 2012 onward, and assuming traffic patterns for the operation of the KSM Project, results of the analysis indicate that the Nass moose population are sustainable. This model showed that the Nass moose population could tolerate an increase in mortality rates of 2.46% (from vehicles or otherwise), which translates to an additional loss of 12.7 moose of the estimated 517 moose comprising the Nass population. Detailed results of the KSM Project traffic model with respect to moose effects is appended to Chapter 22 of the Application/EIS.	Gitanyow First Nation
144	Effects of hazardous materials transportation	<p>Materials and supplies required for the mine operation will be transported by licenced haulage contractors in accordance with the requirements of the federal <i>Transportation of Dangerous Goods Act (1992b)</i>, provincial requirements and in compliance with a Dangerous Goods and Hazardous Materials Management Plan (see Chapter 26).</p> <p>Dangerous goods and hazardous materials are expected to include reagents, batteries, material for explosive manufacture, and certain construction materials. Waste materials transported off-site will be segregated, inventoried, and tracked in a manner consistent with federal and provincial legislation and regulations. A secure storage area will be established on site with appropriate controls to manage spillages. Hazardous materials will be labelled and stored in appropriate containers prior to shipment to approved off-site disposal facilities.</p>	Gitanyow First Nations
145	Timely spill response times	Seabridge has committed to establish spill response stations at points along highways 37 and 37A. Locations of these stations will be identified in consultation with the BC MOTI, Nisga'a Nation and First Nations.	Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<i>Project Traffic (cont'd)</i>			
146	Additional information requested on travel peak times	The KSM Project will operate year round, 24 hours per day, resulting in a consistent traffic volume, rather than following a diurnal (morning and evening rush hour) cycle. The Highways 37 and 37A Traffic Effects Assessment report is based on daily and annual average traffic volumes. Additional information on cumulative potential peak traffic times are being developed to update and provide additional information for the highways 37 and 37A Traffic Effects Assessment.	Gitanyow First Nation
147	Need to identify important salmon bearing streams, creeks, rivers that are crossed by Highways 37 and 37A (e.g., Hannah Creek, Tintina Creek, Cranberry crossings, Bell-Irving River, Brown Bear Creek, Kitwanga River, Nass River).	Important salmon bearing streams, creeks, rivers that are crossed by highways 37 and 37A are identified in the KSM Project Highway 37 and 37A Traffic Effects Assessment report, which is appended to Chapter 22 in the Application/EIS.	Gitanyow First Nation
148	Effects of increased traffic and the Project on traditional medicines	The Mine Site and PTMA are located outside of the Gitanyow traditional territory, although Project traffic on highways 37 and 37A will pass through it. Trucks utilizing this route will be covered to reduce the potential for fugitive dust emissions from the haul bed of the truck. Potential effects of air quality are discussed with respect to vegetation and the people who consume edible plants in the study area north of Gitanyow territory, closer to the Project. Monitoring of plant tissue metals concentrations will allow for adaptive management opportunities by identifying whether additional mitigation is needed to control dust. Literature suggests most effects are expected within 100 m of road surface (US EPA 1995).	wilp Wii'litsxw
149	Trucks should be equipped with GPS to log when and where moose are spotted and location of road kills. Based on this information, maps could be produced identifying these spots. Good signage could be placed at these spots.	A tracking system will be in place to monitor and report moose sightings and road kills, and signs will be placed along the Project-controlled access roads where moose are most commonly sighted. A Traffic and Access Management Plan is provided in Appendix 26 of the Application/EIS.	Gitanyow First Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Project Traffic (cont'd)</b>			
150	Collaboration of companies to consider regional habitat enhancement	Effects of highway traffic on terrestrial habitat are the responsibility of BC MOTI and other provincial ministries. Seabridge would consider participating in government-led initiatives.	Gitanyow First Nation
<b>Accidents, Malfunctions and Geohazards</b>			
151	Effects of flood on water management facilities	As required under the CEAA (1992a) accidents and malfunctions and effects of the environment on the project (i.e., natural hazards) must be considered for a comprehensive study. The design of water management facilities is based on a design capacity of a 1:200-year flood event. Water will not be discharged from the TMF unless the water quality meets regulated discharge criteria. Both the North TMF Spillway and the Southeast TMF spillway are designed to route the PMF for the entire TMF so the PMF can still be route if either spillway is blocked.	Gitanyow First Nation
152	Effects of earthquakes, avalanches and floods creating risks for the safe operation of the mine, particularly the TMF.	As required under the CEAA (1992a) accidents and malfunctions and effects of the environment on the Project (i.e., natural hazards) must be considered in the federal comprehensive study EA process. Chapter 35 of the Application/EIS identifies the likelihood and consequence of a failure (i.e., accident, malfunction, natural hazard, or an unplanned event) occurring. Natural hazards leading to a catastrophic failure of the TMF and other key mine components (Water Storage Dam, tunnels, Water Treatment Plant, process plant area, etc.) are considered not likely. The TMF is designed as an extreme consequence facility according to the Canadian Dam Association Dam Safety guidelines (Canadian Dam Association 2007). The tailing dams and other water storage facilities are designed to meet or exceed the Maximum Credible Earthquake (approximate magnitude 7.0 earthquake at the site).	Tahltan Nation

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (continued)**

No.	Issue	Seabridge Response	Raised By
<b>Accidents, Malfunctions and Geohazards (cont'd)</b>			
153	Risk of avalanches due to blasting and associated effects on TMF and wildlife	<p>As required under CEEA (1992a), accidents and malfunctions and effects of the environment on the Project (i.e., natural hazards) must be considered in the federal comprehensive study EA process. Chapter 35 of the Application/EIS identifies the likelihood and consequence of a failure (i.e., accident, malfunction, natural hazard, or an unplanned event) occurring.</p> <p>A comprehensive geohazards assessment has been completed, including an assessment of avalanche risks. Where risks have been identified appropriate mitigation has been included in the facilities design (e.g., situating project components outside of known avalanche chute areas, proactive blasting to release unconsolidated snow prior to working in higher risk areas) (see Avalanche Management Plan appended to Chapter 4 in the Application/EIS). Procedures to prevent impacts to wildlife during avalanche control activities will be implemented and are considered in the Application/EIS. Additional freeboard (50 m) above the PMF event has been incorporated into the design of the TMF and WSD to accommodate avalanche-induced waves. Avalanche protection measures for health and safety purposes (e.g., snow sheds, deflection berms, ditches, splitters, reinforced structures and buried pipelines) will be undertaken during all Project phases.</p>	Gitanyow First Nation
<b>Closure and Reclamation</b>			
154	Closure and decommissioning plans	<p>A Closure and Reclamation plan is provided in Chapter 27 of the Application/EIS. The five-year closure phase will see the Project site decommissioned and reclaimed. The TMF impoundments will be covered with riprap, and rip rap will be placed around the edges of supernatant ponds. A growth medium will be spread on exposed beach areas, and trees will be planted on impoundment crests. Spillways will direct surplus water to Treaty and Teigen Creeks. The process plant and other structures at the Treaty OPC not required for post-closure will be dismantled and removed. Similarly, structures at the Mine Site not required for post-closure will be dismantled and removed. Portions of the RSFs will be resloped to 26° below 1,100 masl and to angle of repose above that elevation. Benches and resloped areas will be covered with a growth medium. Access roads and site roads not required for post-closure will be deactivated. The Mitchell Pit Closure Dam will be constructed and the pit allowed to flood. Closure channels will be constructed to manage runoff flows in excess of diversion tunnel capacities.</p>	Gitanyow Hereditary Chiefs Office

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**Table N.1. Summary of Issues raised by First Nations during the Pre-Application Review Stage (completed)**

No.	Issue	Seabridge Response	Raised By
<b>Closure and Reclamation (cont'd)</b>			
155	TMF closure plan	<p>The TMF dam face will be covered with coarse rock to reduce potential for erosion, and then covered by about 50 cm of till or overburden as a growth medium. The dam face will be benched to provide road access for long-term monitoring and to reduce slope length. Dam face slopes and benches not used for road access will be re-vegetated. Drainage structures on the benches will be used to direct water away from the slopes. The dam crest will be covered with 60 cm of till or overburden and seeded with the intention of creating a wildlife corridor to cross the valley. A layer of till starting at 50-cm thickness will be placed on the beaches, gradually thinning out towards the open water. Vegetation, including willow, will be planted in the drier parts of the beach. Sedges will be planted in the wetter areas. Water from the TMF pond will only be discharged once it meets permitted discharge criteria. Water will flow into both North Treaty and South Teigen creeks to re-establish flows. A Reclamation and Closure Plan is included in Chapter 27 of the Application/EIS.</p>	Gitanyow First Nation

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