

**APPENDIX 33-A  
REGULATORY AND BEST PRACTICES GUIDANCE  
DOCUMENTS APPLICABLE TO ALTERNATIVES  
ASSESSMENTS FOR KSM PROJECT**

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**Appendix 33-A. Regulatory and Best Practices Guidance Documents Applicable to the KSM Project Alternatives Assessments**

Name	Year	Type	Government Level	Aspect of Project Applicable To	Description
<i>Canadian Environmental Protection Act (CEPA)</i>	1999	Act	National	All	Act respecting pollution prevention and the protection of the environment and human health in order to contribute to sustainable development.
<i>BC Environmental Assessment Act</i>	2002	Act	Provincial	All	Applicable to project > 25,000 t of mineral ore per year (so applicable to KSM). Contains broad provisions for the measurement and mitigation of potential adverse effects from mines. Covers waste rock and ML/ARD, and sets up the provisions for the setting up of ambient water quality guidelines in BC by MELP.
<i>Sustainable Development Act</i>	2008	Act	National	All	Precursor to the Federal Sustainable Development Strategy and referenced by the CEAA. Mandated by international commitments such as the Earth Summit in Rio de Janeiro in 1992 and the 2022 World Summit on Sustainable Development in South Africa.
Federal Policy on Land Use	1984	Policy	National	Several	The goal of the policy is "To ensure that federal policies and programs and the management of federal lands contribute to the wise use of Canada's land resources."
Environmental Code of Practice for Metal Mines	2009	Code	National	All	Applies to the complete life cycle of mining, from exploration to mine closure, and environmental management practices are recommended to mitigate the identified environmental concerns. Designed to support the MMER under Fisheries Act and applies to wastewater management and other topics not covered under the MMER that may influence the environmental impact of mining. Sections 3 & 4 provide recommendations to predict acidic drainage and metal leaching and create environmental management plans for water and wastewater management in metal mines. Adopted by Environment Canada.
<i>Environment Management Act</i>	1981	Act	Provincial	All	Covers aspects of environmental pollution, degradation and protection including waste, air quality, greenhouse gases, spill response, remediation, area based management and sets up the provisions for the setting up of ambient water quality guidelines in BC by MELP.
A Reference Guide for the Canadian Environmental Assessment Act: Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects	1994	Guideline	National	Several	This reference guide describes an approach for deciding whether a project is likely to cause significant environmental effects under the Canadian Environmental Assessment Act (Act). Suggests using environmental standards, guidelines and objectives to assess significance.
<i>Mines Act</i>	1996	Act	Provincial	All	Sets up regulations to obtain permits and regulates other aspects pertaining to waste disposal, ML/ARD and other aspects of mining. Regulated by MEM.
Health, Safety and Reclamation Code	1997	Code	Provincial	All	Contains requirements for water quality. Contains requirements for ML/ARD prediction, prevention & reporting. Sections relevant to waste rock are Part 6, mine design and procedures; Part 9, dams and waste emplacements; and Part 10, reclamation and closure.
UN Convention on Biological Diversity	1992	Convention	International	Biodiversity	Commits Canada to conserving biodiversity and recognizing wetland conservation as integral to this goal
<i>Species at Risk Act (SARA)</i>	2002	Act	National	Wildlife	Required under the MMER if a natural body of water frequented by fish is requested for the use of mine waste disposal
Canada Wildlife Act	1985	Act	National	Wildlife	Applies to the protection of animal, plants and other organisms that are wild by nature and their habitat.
<i>Wildlife Act</i>	1982	Act	Provincial	Wildlife	Provisions for the protection of wildlife, including threatened and endangered wildlife, in BC. First act was passed in 1964.
<i>Wildlife Amendment Act</i>	2004	Act	Provincial	Wildlife	Brought in to support the Wildlife Program's role in the conservation and recovery of species at risk in BC.
Wildlife Program	-	Plan	Provincial	Wildlife	Plan to manage BC's wildlife, identifying roles for government, First Nations and the public, and provides a roadmap for goals and priorities of the Ministry and Environmental Stewardship Division.
Ecosystems Program					Plan to manage BC's ecosystems similar to Wildlife Program as a divisional priority.
<i>Environmental Enforcement Act</i>	2010	Act	National	Wildlife/ Birds / Aquatic	To protect water, air, land and wildlife, delivers enforcement on nine different environmental acts in Canada. Set to come into force in 2013.
Standard for Terrestrial Ecosystem Mapping in BC	1998	Standard	Provincial	Terrestrial	Sets standards for TEM mapping in BC
Standard for Predictive Ecosystem Mapping in BC	1999	Standard	Provincial	Terrestrial	Sets standards for PEM mapping in BC
<i>Migratory Birds Convention Act</i>	1994	Act	National	Birds	For the conservation of migratory bird populations and regulating potentially harmful human activities. Sets provisions for permitting of activities affecting migratory birds.
Migratory Birds Regulations	1994	Regulation	National	Birds	Under the Migratory Birds Convention Act, sets out regulations on the protection of migratory birds.
Incidental Take of Migratory Birds in Canada	-	Guideline	National	Birds	Provides guidance for industry and other actors on how to avoid inadvertent disturbance or destruction of migratory bird nests and eggs.
Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat	1971	Treaty	International	Wetlands	Canada is a signatory this intergovernmental Treaty, for the conservation and wise use of wetlands, administered by the Canadian Wildlife Service.
Federal Policy on Wetland Conservation	1991	Policy	National	Wetlands	Policy to implement the wise use of wetlands in Canada.
Federal Policy on Wetland Conservation Implementation Guide	1996	Guideline	National	Wetland	Explains how to implement the Policy under the CEAA. The above mitigation objectives are best achieved using hierarchical sequence of avoidance, minimization and compensation. Use ecological benchmarks to determine significance to see what mitigation is most appropriate.
A Framework for Wetlands Policy in Canada	1987	Guideline	National	Wetlands	Relates to the 'wise land use' of wetlands. Under Ramsar, this is "sustainable utilization for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem."
<i>Fisheries Act</i>	1985	Act	National	Water/Fish	Act to protect fish and fish habitat, that prevents against the input of deleterious substances into bodies of water frequented by fish.
Freshwater Fisheries Program	2007	Program	Provincial	Fish	To conserve the natural diversity of fish and fish habitat and sustainably manage freshwater sport fishing. Is delegated authority, under Fisheries Act, for management of non-salmon freshwater fisheries.
Metal Mining Effluent Regulations (MMER)	2002	Regulation	National	Effluent	Under the <i>Fisheries Act</i> (1985), MMER (SOR/2002-222) provides guidelines on defined deleterious substances in mining drainage and reporting requirements
Schedule 2 Amendment	2002	Regulation	National	Tailing	Required under the MMER if a natural body of water frequented by fish is requested for the use of mine waste disposal
Guidelines for the Assessment of Alternatives for Mine Waste Disposal	2011	Guideline	National	Tailing	Guidance document on how to assess tailing disposal alternatives, published by Environment Canada
Canadian Water Quality Guidelines for the Protection of Aquatic Life	2003	Guideline	National	Water/ Aquatic Life	Ecosystem-based guideline to provide consistent basis to assess water quality condition for: drinking water, recreation/aesthetics, aquatic life (freshwater & marine); and agricultural use. By the Canadian Council of Ministers of the Environment.
Sediment Quality Guidelines for the protection of Aquatic Life	1999	Guideline	National	Water	Put out by Canadian Council of Ministers of the Environment to control sedimentation levels.
A Compendium of Working Water Quality Guidelines (LEL & SEL) for Sediment and the Water Column	2006	Guidelines	Provincial	Water	Tables with guidelines on maximum levels of various substances and sediment.
<i>BC Water Act</i>	1998	Act	Provincial	Water	MELP enforces the provisions of this Act, which regulates the use, storage and diversion of water associated with a mine site.
Technical Guidance on Contaminated Sites-Groundwater Investigation and Characterization	2009	Guideline	Provincial	Water	Report has guidelines for measuring and monitoring water quality parameters
BC Water Quality Criteria	-	Guideline	Provincial	Water	Helps set specific water quality objectives for mine discharge water. Based on this and Waste Management Act, specific water quality objectives for the receiving environment are set. (MELP/MOE)
Principles for Preparing Water Quality Objectives in BC	1986	Guideline	Provincial	Water	Per MOE mandate to manage water quality, these are policy guidelines to set water quality guidelines from water quality criteria.
Forest Practices Code of BC: Community Watershed Guidebook	1996	Guidelines	Provincial	Water	Guidelines are intended to protect watersheds by guiding and regulating forest resources activities.
Draft Water and Air Resource Protection Guidelines for Mine Proponents and Operators	2009	Guideline	Provincial	Water/Air Quality	Baseline monitoring report and guidelines for measuring and monitoring water quality parameters
Sampling Methods and QA	2010	Guidelines	Provincial	Water/Air Quality	BC Field Sampling Manual; BC Environmental Laboratory Manual; Environmental Data Quality Assurance Regulations; BC Environmental Laboratory Technical Advisory Committee
Policy for Metal Leaching and Acid Rock Drainage at Minesites in BC	1998	Policy	Provincial	ML/ARD	MEM and MELP share responsibility to regulate ML/ARD from proposed, new and existing mines.
Draft Acid Rock Drainage Technical Guide.	1990	Guide	Provincial	ML/ARD	Provides guidelines on reducing the risk associated with acid rock drainage. (BC Acid Mine Drainage Task Force)
Guidelines for Metal Leaching and Acid Rock Drainage at Mine sites in BC	1998	Guideline	Provincial	ML/ARD	This document is designed to help mine proponents plan and prepare proposals which include the necessary documentation and consideration of risk relating to ML/ARD. (Price and Errington, MEM)
Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Mine sites in BC	1997	Guideline	Provincial	ML/ARD	This document is related to the one above and is tailored specifically towards best practices techniques in prediction of ML/ARD, outlining common errors, omissions and constraints. (Price)
MEND Manual. Vol. 3 - Prediction	2000	Guideline	Non-gov MEND	ML/ARD	Manual on the best practices for the prediction of ML/ARD.
MEND Manual. Vol. 4 - Prevention and Control	2001	Guideline	Non-gov MEND	ML/ARD	Manual on the best practices for the prevention and control of ML/ARD.

Note that this table is provided as a representative sample rather than as a comprehensive list.

Appendix 33-A. Regulatory and Best Practices Guidance Documents Applicable to the KSM Project Alternatives Assessments

Name	Year	Type	Government Level	Aspect of Project Applicable To	Description
List of Potential Information Requirements in Metal Leaching/Acid Rock Drainage (ML/ARD) Assessment and Mitigation Work	2005	Guideline	Non-gov MEND 5.10	ML/ARD	This is a checklist of important properties and processes to consider in sulphidic drainage chemistry and assessment and mitigation, which is intended to help the practitioner aware of information requirements, and assist reviewers in identifying outstanding factors.
Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials	2009	Manual	Non-gov MEND 1.20.1	ML/ARD	Outlines best practices on ML/ARD and other aspects of drainage chemistry from waste rock at metal mines. (Price)
Canada-wide Standards for Particulate Matter (PM) and Ozone	2000	Standard	National	Air Quality	Sets national air quality criteria standards for PM and ozone.
Clean Air Regulatory Agenda	2006	Agenda	National	Air Quality	Transport sector emissions regulations fall under this agenda.
Part 6 - Clean Air Provisions under Environmental Management Act	2004	Provision	Provincial	Air Quality	Provides general authority to make regulations on fuel emissions and motor vehicle/engine, and burning emission regulations.
BC Air Quality Objectives and Standards	2009	Objective/Standard	Provincial	Air Quality	Criteria limits for contaminants: PM10 <sup>1</sup> , PM2.5, ozone, sulphur dioxide, nitrogen dioxide and carbon monoxide.
Guidance on Application of Provincial Air Quality Criteria for PM2.5	2009	Guidance Document	Provincial	Air Quality	Guide on PM2.5 Air Quality Criteria application in BC.
BC Air Action Plan	2008	Action Plan	Provincial	Air Quality	28 Actions to promote clean transportation and clean industry.
UNFCCC post-Kyoto Framework	2115 - 2020	Protocol/Agreement	International	Climate Change	Negotiations to 2015 on new international climate change mitigation agreement to replace Kyoto Protocol, for implementation towards 2020.
Copenhagen Accord	2009	Agreement	International	Climate Change	Canada signed to GHG emissions target of 17% reduction from 2005 levels by 2020 towards which national regulations under the Clean Air Regulatory Agenda (below) are shaped to meet.
Clean Air Regulatory Agenda (CARA)	2006	Agenda	National	Climate Change	Established in 2006, and administered by Environment Canada, this agenda supports national efforts to reduce GHG and other air pollutant emissions. Transport sector emissions regulations fall under this agenda.
On-Road Vehicle and Engine emission Regulations	2002	Regulation	National	Climate Change	This and newer regulations under the authority of CEPA and the Clean Air Regulatory Agenda, regulate the reduction of vehicle emissions and establishes emission standards.
BC Climate Action Plan	2007	Plan	Provincial	Climate Change	Action plan under which provincial acts regulating emissions are rolling out in order to achieve targets such as 33% GHG <sup>2</sup> reductions by 2020 compared to 2007 levels.
Greenhouse Gas Reduction Act	2008	Act	Provincial	Climate Change	Legislation to authorize hard caps on GHG emissions, reporting underway, but cap currently being negotiated.
GHG Reduction (Vehicle Emissions Standards) Act	2008	Act	Provincial	Climate Change	Will increase automobile fuel efficiency and reduce transport sector fuel emissions
Zero Net Deforestation Act	2010	Act	Provincial	Climate Change	Sets reporting on net deforestation to start in 2012 and achieve net zero deforestation by 2015.
Greenhouse Gas Reporting Regulation	2010	Regulation	Provincial	Climate Change	Under the GHG Reduction Act, sets out GHG reporting requirements for facilities emitting <sup>3</sup> 10,000 t/yr CO <sub>2</sub> e <sup>3</sup> .
Part 6 - Clean Air Provisions under Environmental Management Act	2004	Provision	Provincial	Climate Change	Provides general authority to make regulations on fuel emissions and motor vehicle/engine, and burning emission regulations.
Carbon Tax	2007	Tax	Provincial	Climate Change	Revenue neutral tax to incentivize fuel/emissions reductions.
Waste Management Act	1996	Act	Provincial	Waste	MELP sets discharge limits through this Act that prohibits the introduction of waste which may substantially alter or impair the usefulness of the environment.
Mined Rock and Overburden Piles. Investigation and Design of Mine Dumps - Interim Guidelines	1991	Guideline	Provincial	Waste Rock	Provides guidelines on the design and operation of waste rock piles. (BC Mine Waste Rock Pile Research Committee)
Development of Systematic Waste Disposal Plans for Metal and Non-Metal Mines	1982	Guideline	Non-Gov, USBM	Waste Rock	Guideline on how to develop waste rock dump plans.
Engineering Design Manual for Disposal of Excess Spoil	1989	Guideline	Non-Gov OSM	Waste Rock	Comprehensive manual on design of waste rock dumps.
Pit Slope Manual, Ch 9 - Waste Embankments	1977	Guideline	Non-gov CANMET	Waste Rock	Manual focusing on waste rock dump stability design.
Dam Safety Guidelines	2007	Guideline	Non-gov CDA	Dams	Guidelines on dam safety, pertaining to seismic project design criteria as well, by the Canadian Dam Association.
International Cyanide Management Code	2012	Code	International	Gold extraction	Updated on ongoing basis by the International Cyanide Management Institute.
Navigable Waters Protection Act	1985	Act	National	Access / transport	Minimizes the interference with navigable waters across Canada, and applies to aspects such as road building and other construction that affects navigable waters. Administered through Transport Canada.
Transportation of Dangerous Goods Act	1992	Act	National	Access / transport	For the Safeguarding of transport of dangerous goods and spill prevention and response. Applies to transport of dangerous substances, such as cyanide.
Railway Safety Act	1989	Act	National	Transport of goods	Regulates safety measures for rail transport.
On-Road Vehicle and Engine emission Regulations	2002	Regulation	National	Climate Change Access / transport	Under the authority CEPA regulates the reduction of vehicle emissions and establishes emission standards.
Workplace Hazardous Materials Information System (WHMIS)	-	Standard	National	Materials Handling	A hazard communication standard for the safe workplace handling of substances through the use of material data safety sheets (MSDS). Constantly updated per substance.
Constitution of Canada	1867 - 1982	Constitution	National	Social	Supreme law of Canada that grants executive and legislative power to Senate, House of Commons, Provinces, Judiciary; sets out the Charter of Rights and Freedoms; and sets rights for Aboriginal Peoples.
Constitution Act	1982	Act	National	Social	Act that puts the Constitution into effect.
Canadian Charter of Rights and Freedoms	1982	Charter	National	Social	Act that sets out the rights and freedoms of people in Canada.
Nisga'a Final Agreement Act	2000	Act	Provincial	Aboriginal	Act (via treaty from land claims) that sets out provisions for the management and self governance of Nisga'a people.
Nisga'a Final Agreement	1999	Treaty	Provincial	Aboriginal	Land claims agreement under the Act for the management and self governance of Nisga'a people of Nass River Valley.
Department of Canadian Heritage Act	1995	Act	National	Heritage	Overall Act on Canadian Heritage
Heritage Conservation Act	1996	Act	Provincial	Heritage	Act to conserve provincial heritage sites, objects, buildings, structures and sites; includes First Nations.
Cassiar Iskut-Stikine Land and Resource Management Plan	2000	Plan	Provincial	Social/ Land/Resource	Regional land and resource management plan
Nass South Sustainable Resource Management Plan: Draft	2009	Plan	Provincial	Social/ Land/Resource	Regional land and resource management plan

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