Comment ID #	EIS Guidelines Reference	Comment	Reviewer	Link to Section 5 effect
1	Part 2, Section 1.3 (Project Location), page 13	Add the following to more fully describe the elements of the project setting that may affect water quality: - current **and historic** land use **in and adjacent to** the area;	ECCC	5(1)(a)(i) Fish and fish habitat
2	Part 2, Section 3.1 (Project components), page 15	Add the following to more fully describe the project components that may affect water quality: - maps, at an appropriate scale, of the project location, the project components, boundaries of the proposed site with UTM coordinates, the major existing **and proposed** infrastructure, adjacent land uses, and any important environmental features. - storage areas for explosives, **fuels, chemicals, contaminated soils, wastewater, solid wastes,** and hazardous wastes;	ECCC	5(1)(a)(i) Fish and fish habitat
3	Part 2, Section 3.2 (Project activities), page 16	Add the following to describe project duration and future plans: - **The EIS will include information regarding the designed project lifespan and the potential for future expansion or modification.**	ECCC	5(1)(a)(i) Fish and fish habitat 5(1)(a) (iii) Migratory birds
4	Part 2, Section 3.2.1 (Site preparation and construction), page 16	Revise the following to address the potential for metal leaching and acid rock drainage, which has implications for water quality: - borrow materials requirements (source**,** ~~and~~ quantity, **and characterization**)	ECCC	5(1)(a)(i) Fish and fish habitat
5	Part 2, Section 6.1.2 (Geology and geochemistry), page 21	Add the following to characterize the typical potential sources of metal leaching and acid rock drainage: - the geochemical characterization of **road cuts, blast materials, and** excavated materials such as waste rock and potential construction material **(e.g. borrow materials)** in order to predict **and avoid** metal leaching and acid rock drainage ;	ECCC	5(1)(a)(i) Fish and fish habitat

6	Part 2, Section 6.1.4 (Groundwater and Surface Water), pages 22-23	Add the following to more fully characterize the local and regional hydrogeology: - the groundwater **quantity, quality,** flow patterns and rates; - a delineation and characterization of groundwater - surface water interactions including the locations of groundwater discharge to surface water and surface water recharge to groundwater**, and interactions with respect to water quality and quantity**; **- the potential for leaching of contaminants from current and historic storage sites, disposal sites, infrastructure, soils, and organic matter;** **- the effects of the following on surface water, groundwater and sediment quality:** **o current and historic land use in and adjacent to the area;** **o current and historic storage, treatment and disposal sites (including dumps, landfills, landfarms, septic tanks, wastewater systems, and fuel/chemical storage sites)** **o current and historic pipelines and drilling operations in and adjacent to the project area;** **o current and historic groundwater wells;** **o current and historic known or suspected contaminants including contaminated soils, sources of metal leaching and acid rock drainage, and spills / releases in and adjacent to the project area;** **- all groundwater wells that may affect or be affected by the project;**	ECCC	5(1)(a)(i) Fish and fish habitat
7	Part 2, Section 6.1.4 (Groundwater and Surface Water), page 22	These items relate to water quality changes and should be moved to Section 6.2.2 (Predicted changes to groundwater and surface water). Also, revise the following to more fully characterize the predicted changes: - temperature changes in surface water as a result of water diversion and retention; - changes to surface water quality, **relative to baseline,** including **changes in** seasonal **and inter-annual variation, and** changes in **surface** runoff entering watercourses; - **changes to sediment quality, relative to baseline;** - temporal **and spatial** changes in groundwater **quantity, quality, and** flow (e.g., seasonal and long term changes in water levels);	ECCC	5(1)(a)(i) Fish and fish habitat

8	Part 2, Section 6.1.4 (Groundwater and Surface Water), pages 23	Revise the following to more fully describe the hydrology and water quality of the Elbow River watershed: - hydrology **and water quality** of the Elbow River watershed, including; ⋮ - any seasonal water quality data (e.g. water temperature, turbidity, pH, dissolved oxygen, suspended ~~sediments~~ **solids (TSS)**, chemistry, nutrient**s** ~~load~~, **metals, methyl mercury, dissolved/total organic carbon, BOD/CBOD, pesticides, aquatic indicators, sediment quality)** and analytical interpretation at several representative local stream and water body monitoring stations established at the project site; **-seasonal and inter-annual variation of baseline surface water quality;** **- baseline sediment quality;** **- comparision of baseline datasets against applicable guidelines and standards, including the identification of any exceedances and trends;** - any local and regional potable surface water resource; and - ice formation and break-up processes on the Elbow River.	ECCC	5(1)(a)(i) Fish and fish habitat
9	Part 2, Section 6.1.6 (Migratory birds and their habitat), page 24	Add the following to more fully describe the baseline conditions for migratory birds: – abundance, distribution**, movements, seasonal habitat use and presence,** and life stages of migratory and non-migratory birds (including waterfowl, raptors, shorebirds, marsh birds and other land birds) likely to be affected in the project area based on existing information, or surveys, as appropriate, to provide current field data; and	ECCC	5(1)(a) (iii) Migratory birds

10	Part 2, Section 6.2.2 (Changes to Groundwater and Surface Water), pages 28	Add the following to more fully describe the changes to groundwater and surface water: - changes to **suspended solids (TSS)**, turbidity, oxygen level, water temperature, **pH, dissolved oxygen,** ice regime, water quality, **including metals, methyl mercury, nutrients, dissolved/total organic carbon, BOD/CBOD, pesticides, aquatic indicators, sediment quality;** - changes to water quality in the Elbow River **and in** ~~or any~~ associated tributaries. **- changes to surface water, groundwater and sediment quality associated with project interactions with:** **o current and historic land use in and adjacent to the area;** **o current and historic storage, treatment and disposal sites;** **o current and historic pipelines and drilling operations in and adjacent to the Project area;** **o current and historic groundwater wells;** **o current and historic known and suspected contaminants;** ~~**and**~~ **- changes to water quality and sediment quality associated with project-related:** **o erosion and sedimentation;** **o ammonium nitrate explosives;** **o excavation, blasting, and stock-piling of materials and wasterock;** **o wastes, wastewater, fuels, chemicals, hazardous materials, contaminated soils;** **o spills and releases;** **o metal leaching and acid rock drainage;** **- changes to water quality and sediment quality should flood event(s) exceed capacity of the reservoir system;**	ECCC	5(1)(a)(i) Fish and fish habitat
11	Part 2, Section 6.2.3 (Changes to Terrestrial Landscape), page 28	Add the following to more fully describe the changes to migratory bird habitat: - changes to migratory and non-migratory bird habitat, with a distinction made between the two birds category, including losses, **gains,** structural changes and fragmentation of riparian habitat (aquatic grassbeds, intertidal marshes) of terrestrial environments and wetlands frequented by birds (types of cover, ecological unit of the area in terms of quality, quantity, diversity, distribution and functions.	ECCC	5(1)(a) (iii) Migratory birds

12	Part 2, Section 6.3.1 (Fish and Fish Habitat), pages 29	Add and revise the following to more fully describe the predicted effects on fish and fish habitat: - the potential risk of ~~methylmercury~~ production, **increase, interaction,** and accumulation **of contaminants, including methylmercury,** in fish habitat and fish; - water quality **and sediment quality** changes as a result of storing water in, and releasing water from, the off-stream reservoir; - the effects of changes to the aquatic environment on fish and their habitat, including; - **changes to groundwater recharge/discharge areas and any changes to groundwater infiltration areas;** **- changes to water quality and ice regime in the Elbow River and in associated tributaries.** **- changes to surface water, groundwater and sediment quality associated with project interactions with:** **o current and historic land use in and adjacent to the area;** **o current and historic storage, treatment and disposal sites;** **o current and historic pipelines and drilling operations in and adjacent to the project area;** **o current and historic groundwater wells;** **o current and historic known and suspected contaminants;** **- changes to water quality and sediment quality associated with project-related:** **o erosion and sedimentation;** **o ammonium nitrate explosives;** **o excavation, blasting, and stock-piling of materials and wasterock;** **o wastes, wastewater, fuels, chemicals, hazardous materials, contaminated soils;** **o spills and releases;** **o metal leaching and acid rock drainage;** **- changes to water quality and sediment quality should flood event(s) exceed**	ECCC	5(1)(a)(i) Fish and fish habitat
13	Part 2 Section 6.3.2 (Migratory Birds), page 30	Add and revise the following to more fully describe predicted effects to migratory birds: - any potential for direct migratory bird mortality**,** ~~or~~ morbidity **or nest destruction**; - changes to the environment that may affect migration patterns**,** ~~and~~ flyways**, local movement and seasonal habitat use**; - any direct habitat loss **or gain**, including a discussion of ecosystem availability and ecological context; **- water quality and risk of exposure to contaminants;** - indirect effects caused by increased disturbance (e.g. noise, light, presence of workers, electrical transmission lines) **on** relative abundance**,** movements, and losses or changes in migratory bird habitat, considering the critical breeding and migration periods for the birds.	ECCC	5(1)(a) (iii) Migratory birds

14	Part 2, Section 6.6.1 (Effects of potenial accidents or malfunctions), page 34	Add the following to more fully describe the assessment of potential accidents or malfunctions: Taking into account the lifespan of different project components, the proponent will identify the probability of potential accidents and malfunctions related to the project, including an explanation of how those events were identified, potential consequences (including the environmental effects as defined in section 5 of CEAA 2012), the plausible worst case scenarios **and alternative accident scenarios** and the effects of these scenarios. This assessment will include an identification of the magnitude of an accident and/or malfunction, including the quantity, mechanism, rate, form and characteristics of the contaminants and other materials likely to be released into the environment during the accident and malfunction events and would potentially result in an adverse environmental effect as defined in section 5 of CEAA 2012. **The assessment should cover all seasons of the year, take into account site-specific conditions and sensitivities, and consider likely pathways to aquatic areas and water bodies frequented by fish and migratory birds.** The EIS will describe the safeguards that have been established to protect against such occurrences and the contingency and emergency response procedures in place if such events do occur. **Detailed descriptions of the contingency and response plans will be presented[1].** **[1] The Canadian Standards Assoc. publication entitled Emergency Preparedness and Response, CAN/CSA-Z731-03, is a recommended reference for use in contingency and response plan development.**	ECCC	5(1)(a)(i) Fish and fish habitat 5(1)(a) (iii) Migratory birds 5(1)(c) Aboriginal peoples
15	Part 2, Section 6.6.3 (Cumulative Effects Assessment), page 35	Add sub-bullet in last paragraph to ensure cumulative effects assessment includes **"Migratory Birds"**	ECCC	5(1)(a) (iii) Migratory birds
16	Part 2, Section 6.6.3) Cumulative Effects Assessment), page 36	Add the following to reflect engagement of Indigenous groups in cumulative effects assessment: The proponent is encouraged to consult with key stakeholders and **Indigenous groups** prior to the finalizing the choice of VCs and the appropriate boundaries to assess cumulative effects.	ECCC	5(1)(c) Aboriginal peoples

17	Part 2, Section 8.2 (Monitoring), page 39	Add and revise the following to more fully describe the monitoring program: - description of the characteristics of the monitoring program where foreseeable (e.g., **baseline/ reference/ project monitoring,** location of interventions, **sampling design, map of monitoring stations, rationale for selected monitoring stations,** planned protocols, **quality assurance and quality control measures**, list of measured parameters, analytical methods employed, schedule, **summary data,** human and financial resources required); **- identification of applicable guidelines and standards, and action levels that will trigger specific management actions;** **- description of how the monitoring program will be used to (i) compare project conditions against baseline and reference conditions, EIS predictions, and guidelines/standards, (ii) assess whether mitigation measures are effective, and (iii) identify and assess environmental changes and potential impacts.** - guidelines for preparing monitoring reports (number, content, frequency, format) that will be sent to the authorities concerned.	ECCC	5(1)(a)(i) Fish and fish habitat 5(1)(a) (iii) Migratory birds