PART F – CONCLUSIONS AND COMMITMENTS

18.0 SUMMARY OF RESIDUAL EFFECTS

Table 18-1 and Table 18-2 summarize the following:

- Potential residual (Table 18-1) and cumulative residual (Table 18-2) environmental effects of the Proposed Project after application of recommended mitigation measures and habitat compensation/offsetting strategies that cannot be completely avoided or mitigated through the re-design or relocation of the Proposed Project, in whole or in part, or through Proponent commitments;
- Whether the Proposed Project is predicted to result in significant adverse environmental, economic, social, heritage, health and other effects; and
- The Proponents' determination that potential residual effects are either "negligible", "not significant" or "significant". Methods for determining the significance of potential residual effects are provided in Volume 2, Part B – Section 4.5.2.3.

Potential effects relating to Aboriginal interests are summarized in Volume 3, Part C.

Table 18-1: Summary of Mitigation Measures by Activity and VC

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
				Environment		
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.1-04	Disturbed areas should be vegetated as soon as possible and where possible by planting and seeding with native trees, shrubs, and grasses.	Changes to Surface Water Quality - Suspended Sediments	Negligible
			M-5.1-05	Disturbed areas adjacent to watercourses should be covered with mulch for sediment control.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3). Measures should be maintained until re-vegetation is achieved.		
			M-5.1-09	Placement of erosion control blankets to keep soil in place.		
			M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).		
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Construction	3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.1-12	Complete isolation of work area is required to ensure waterbodies do not become more alkaline.	Changes to Surface Water Quality - Cementitious (alkaline) Material	Negligible
			M-5.1-13	pH should be monitored in surrounding waterbodies during concrete pouring.		
			M-5.1-14	BMPs should be implemented during setting, mixing, and pouring of concrete to ensure activities meet requirements of applicable legislation.		
			M-5.1-15	Pre-cast concrete structures whenever possible.		
			M-5.1-16	Keep carbon dioxide tank with regulator, hose, and gas diffuser readily available during concrete works.		
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Construction	3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.1-17	Lighting for the purposes of the aggregate mining will not be permitted between dusk to dawn at seasonally appropriate times.	Effects of Artificial Lighting	Negligible
			M-5.1-18	All Lighting nearby waterbodies will have baffles to direct light away from the water surface.		
			M-5.1-19	Limited Lighting will be maintained through the night only for safety purposes.		
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Operations	10. Aggregate mining	M-5.1-01	Implementation of the Fish Habitat Offset Plan (Volume 4, Part G – Section 22.0: Appendix 5.1-B). Extension of the lower segment WC 2 will collect surface flow diverted through loss of the upper segment and will increase the wetted area within the extension and the lower segment of WC 2.	Loss of Habitat	Negligible
			M-5.1-02	Designing the pit lake such that lake elevation can be used to manage hydrostatic pressure through the course of operations so changes to groundwater flow does not lead to a loss of flow within McNab Creek.		
			M-5.1-03	The elevation of the pit lake will be used to manage baseflows in the natural groundwater watercourses below the pit lake.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3). Measures should be maintained at all times around the crushing areas and until vegetation is achieved on the berm.	Changes to Surface Water Quality - Suspended Sediments	Negligible
			M-5.1-08	Fines/silt cakes berm should be vegetated as soon as possible and where possible by planting and seeding with native trees, shrubs, and grasses.		
			M-5.1-09	Placement of erosion control blankets to keep soil in place.		
			M-5.1-11	Crushing area should receive water-misting during dry weather events to reduce dust release.		
			M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).		
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation	M-5.1-17	Lighting for the purposes of the aggregate mining will not be permitted between dusk to dawn at seasonally appropriate times.	Effects of Artificial Lighting	Negligible
			M-5.1-18	All Lighting nearby waterbodies will have baffles to direct light away from the water surface.		
			M-5.1-19	Limited Lighting will be maintained through the night only for safety purposes.		
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Reclamation and Closure	20. Site reclamation	M-5.1-01	Implementation of the Fish Habitat Offset Plan (Volume 4, Part G – Section 22.0: Appendix 5.1-B). Extension of the lower segment WC 2 will collect surface flow diverted through loss of the upper segment and will increase the wetted area within the extension and the lower segment of WC 2.	Loss of Habitat	Negligible
			M-5.1-02	Designing the pit lake such that lake elevation can be used to manage hydrostatic pressure through the course of operations so changes to groundwater flow does not lead to a loss of flow within McNab Creek.		
			M-5.1-03	The elevation of the pit lake will be used to manage baseflows in the natural groundwater watercourses below the pit lake.		
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.1-04	Disturbed areas should be vegetated as soon as possible and where possible by planting and seeding with native trees, shrubs, and grasses.	Changes to Surface Water Quality - Suspended Sediments	Negligible
			M-5.1-05	Disturbed areas adjacent to watercourses should be covered with mulch for sediment control.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3). Measures should be maintained until re-vegetation is achieved.		
			M-5.1-09	Placement of erosion control blankets to keep soil in place.		
			M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).		
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.1-17	Lighting for the purposes of the aggregate mining will not be permitted between dusk to dawn at seasonally appropriate times.	Effects of Artificial Lighting	Negligible
			M-5.1-18	All Lighting nearby waterbodies will have baffles to direct light away from the water surface.		
			M-5.1-19	Limited Lighting will be maintained through the night only for safety purposes.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Anadromous Chum Coho and Cutthroat Trout and their Habitats	Accidents and Malfunctions	16. Refueling and maintenance 21. Toxic and Hazardous Material Spills	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Toxic or hazardous material spills.	Negligible
Resident Cutthroat Trout and their Habitat	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.1-04	Disturbed areas should be vegetated as soon as possible and where possible by planting and seeding with native trees, shrubs, and grasses.	Changes to Surface Water Quality - Suspended Sediments	Negligible
			M-5.1-05	Disturbed areas adjacent to watercourses should be covered with mulch for sediment control.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3). Measures should be maintained until re-vegetation is achieved.		
			M-5.1-09	Placement of erosion control blankets to keep soil in place.		
			M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).		
Resident Cutthroat Trout and their Habitat	Construction	3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.1-12	Complete isolation of work area is required to ensure waterbodies do not become more alkaline.	Changes to Surface Water Quality - Cementitious (alkaline) Material	Negligible
			M-5.1-13	pH should be monitored in surrounding waterbodies during concrete pouring.		
			M-5.1-14	BMPs should be implemented during setting, mixing, and pouring of concrete to ensure activities meet requirements of applicable legislation.		
			M-5.1-15	Pre-cast concrete structures whenever possible.		
			M-5.1-16	Keep carbon dioxide tank with regulator, hose, and gas diffuser readily available during concrete works.		
Resident Cutthroat Trout and their Habitat	Construction	3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.1-17	Lighting for the purposes of the aggregate mining will not be permitted between dusk to dawn at seasonally appropriate times.	Effects of Artificial Lighting	Negligible
			M-5.1-18	All Lighting nearby waterbodies will have baffles to direct light away from the water surface.		
			M-5.1-19	Limited Lighting will be maintained through the night only for safety purposes.		
Resident Cutthroat Trout and their Habitat	Operations	10. Aggregate mining	M-5.1-01	Implementation of the Fish Habitat Offset Plan (Volume 4, Part G – Section 22.0: Appendix 5.1-B). Extension of the lower segment WC 2 will collect surface flow diverted through loss of the upper segment and will increase the wetted area within the extension and the lower segment of WC 2.	Loss of Habitat	Negligible
			M-5.1-02	Designing the pit lake such that lake elevation can be used to manage hydrostatic pressure through the course of operations so changes to groundwater flow does not lead to a loss of flow within McNab Creek.		
			M-5.1-03	The elevation of the pit lake will be used to manage baseflows in the natural groundwater watercourses below the pit lake.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Resident Cutthroat Trout and their Habitat	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3). Measures should be maintained at all times around the crushing areas and until vegetation is achieved on the berm.	Changes to Surface Water Quality - Suspended Sediments	Negligible
			M-5.1-08	Fines/silt cakes berm should be vegetated as soon as possible and where possible by planting and seeding with native trees, shrubs, and grasses.		
			M-5.1-09	Placement of erosion control blankets to keep soil in place.		
			M-5.1-11	Crushing area should receive water-misting during dry weather events to reduce dust release.		
			M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).		
Resident Cutthroat Trout and their Habitat	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation	M-5.1-17	Lighting for the purposes of the aggregate mining will not be permitted between dusk to dawn at seasonally appropriate times.	Effects of Artificial Lighting	Negligible
			M-5.1-18	All Lighting nearby waterbodies will have baffles to direct light away from the water surface.		
			M-5.1-19	Limited Lighting will be maintained through the night only for safety purposes.		
Resident Cutthroat Trout and their Habitat	Reclamation and Closure	20. Site reclamation	M-5.1-01	Implementation of the Fish Habitat Offset Plan (Volume 4, Part G – Section 22.0: Appendix 5.1-B). Extension of the lower segment WC 2 will collect surface flow diverted through loss of the upper segment and will increase the wetted area within the extension and the lower segment of WC 2.	Loss of Habitat	Negligible
			M-5.1-02	Designing the pit lake such that lake elevation can be used to manage hydrostatic pressure through the course of operations so changes to groundwater flow does not lead to a loss of flow within McNab Creek.		
			M-5.1-03	Similarly, the elevation of the pit lake will be used to manage baseflows in the natural groundwater watercourses below the pit lake.		
Resident Cutthroat Trout and their Habitat	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.1-04	Disturbed areas should be vegetated as soon as possible and where possible by planting and seeding with native trees, shrubs, and grasses.	Changes to Surface Water Quality - Suspended Sediments	Negligible
			M-5.1-05	Disturbed areas adjacent to watercourses should be covered with mulch for sediment control.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3). Measures should be maintained until re-vegetation is achieved.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.1-09	Placement of erosion control blankets to keep soil in place.		
			M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Resident Cutthroat Trout and their Habitat	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.1-17	Lighting for the purposes of the aggregate mining will not be permitted between dusk to dawn at seasonally appropriate times.	Effects of Artificial Lighting	Negligible
			M-5.1-18	All Lighting nearby waterbodies will have baffles to direct light away from the water surface.		
			M-5.1-19	Limited Lighting will be maintained through the night only for safety purposes.		
Resident Cutthroat Trout and their Habitat	Accidents and Malfunctions	16. Refueling and maintenance 21. Toxic and Hazardous Material Spills	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Toxic or hazardous material spills.	Negligible
Marine Benthic Communities	Accidents and Malfunctions	22. Aggregate Spills	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Aggregate spills.	Negligible
Marine Benthic Communities	Accidents and Malfunctions	21. Toxic and Hazardous Material Spills	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Toxic or hazardous material spills.	Not Significant
Marine Benthic Communities	Construction	1. Crew and equipment transport	M-5.2-01	Mitigation through design: ▪ Utilize existing disturbed features - installation of barge load-out jetty in low value habitat (existing log dump) ▪ Use of piles instead of fill to reduce seabed disturbance ▪ Height and orientation of walkway/conveyor designed to maximize ambient light penetration ▪ Maintain tree buffer on foreshore to limit noise and dust emissions to marine environment.	Change in Habitat Quality (In-water Works and Propeller Scour)	Negligible
			M-5.1-01	Develop a Fish Habitat Offset Plan to offset unavoidable permanent alteration or destruction of fish habitat from Project works (Volume 4, Part G – Section 22.0: Appendix 5.1-B).		
			M-5.2-02	Develop and adherence to Construction Environmental Management Plan (CEMP; Volume 3, Part E – Section 16.0).		
			M-5.2-03	Develop and adherence to Pile Construction Management Plan (Volume 3, Part E – Section 16.0).		
			M-5.2-04	Environmental monitoring by a qualified EM		
			M-5.2-05	Prevent release of construction debris and deleterious substances into the marine environment.		
			M-5.2-06	Adherence to BMP for Pile Driving and Related Operations (DFO 2003).		
			M-5.2-07	Adherence to Erosion and Sediment Control Plan (Volume 4, Part G – Section 22.0: Appendix 3) during road and other facilities construction, maintenance and upgrade.		
			M-5.2-09	Optimal use of pre-cast concrete for construction and installation of facilities within the intertidal and subtidal zones.		
			M-5.2-10	Concrete will be poured during suitable tides.		
			M-5.2-11	Concrete is not to be poured directly into tidal waters.		
			M-5.2-12	Pumping hoses will be equipped with a shut-off valve to stop flow should a spill occur.		
			M-5.2-13	Short term portable concrete batch plant will be constructed onsite, so no concrete pumping will be conducted by barge.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.2-14	Use of tight-fitting formwork that is lined (e.g., with polyethylene) and that has gasket joints to prevent contact between concrete and tidal water.		
			M-5.2-15	Barriers will be used as appropriate to prevent splashing of the concrete over the forms and into the water or intertidal area during pouring.		
			M-5.2-16	Fast curing concrete intended/formulated for marine applications will be used.		
			M-5.2-17	Following placement of concrete, forms will be left in place isolating the concrete from tidal waters for a minimum of 24 h or time required for the particular material used such that the concrete is cured before it is exposed to tidal waters.		
			M-5.2-18	Wash down of equipment and tools that have come into contact with concrete will be conducted in a designated area away from intertidal drainages so that concrete products are prevented from entering watercourses.		
			M-5.2-19	Excess or spilled concrete will be immediately cleaned up / removed from the intertidal area.		
			M-5.2-20	During removal and storage of creosote pilings, adherence to DFO BMP “Guidelines to Protect Fish and Fish Habitat from Treated Wood Used in Aquatic Environments in the Pacific Region”.		
			M-5.2-21	Vessels involved in in-water works will be positioned in a manner to prevent disturbance to benthic communities and benthic habitats.		
			M-5.2-22	Work crews will monitor the position of barges and account for height of tidal waters, magnitude of prevailing winds, and direction of tidal currents or other factors that may influence vessel positioning.		
			M-5.2-23	Maneuvering of vessels in shallow areas will be minimized in order to avoid propeller scour and potential re-suspension of sediments or physical disturbance to shallow submerged marine vegetation.		
			M-5.2-24	All equipment will be maintained in proper conditions to prevent leaking or spilling of hydrocarbons and other potentially toxic substances in the marine environment.		
			M-5.2-25	All hydrocarbon products, fueling equipment and other chemical substances will be stored and handled in accordance with all applicable legislation, guidelines and BMP’s to prevent their release and toxic effect in the marine environment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.		
			M-5.2-27	During in-water works with potential to result in increased turbidity or suspended sediment, specific water quality performance objectives (based on BC WQG) will be applied at set distances from in-water works. In-water works will be halted if objectives are not achieved. Where objectives cannot be practically met, work areas will be isolated from tidal waters with silt curtains or other silt control measures.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Marine Benthic Communities	Construction	5. Marine loading facility installation 8. Other ancillary marine construction works	M-5.2-44	Prevent release of debris and deleterious substances into the marine environment.	Loss of Habitat	Negligible
			M-5.2-01	Mitigation through design: ▪ Utilize existing disturbed features - installation of barge load-out jetty in low value habitat (existing log dump) ▪ Use of piles instead of fill to reduce seabed disturbance ▪ Height and orientation of walkway/conveyor designed to maximize ambient light penetration ▪ Maintain tree buffer on foreshore to limit noise and dust emissions to marine environment.		
			M-5.1-01	Develop a Fish Habitat Offset Plan to offset unavoidable permanent alteration or destruction of fish habitat from Project works (Volume 4, Part G – Section 22.0: Appendix 5.1-B).		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.		
			M-5.2-02	Develop and adherence to Construction Environmental Management Plan (CEMP; Volume 3, Part E – Section 16.0).		
			M-5.2-03	Develop and adherence to Pile Construction Management Plan (Volume 3, Part E – Section 16.0).		
			M-5.2-04	Environmental monitoring by a qualified EM		
			M-5.2-05	Prevent release of construction debris and deleterious substances into the marine environment.		
			M-5.2-06	Adherence to BMP for Pile Driving and Related Operations (DFO 2003).		
			M-5.2-07	Adherence to Erosion and Sediment Control Plan (Volume 4, Part G – Section 22.0: Appendix 3) during road and other facilities construction, maintenance and upgrade.		
			M-5.2-09	Optimal use of pre-cast concrete for construction and installation of facilities within the intertidal and subtidal zones.		
			M-5.2-10	Concrete will be poured during suitable tides.		
			M-5.2-11	Concrete is not to be poured directly into tidal waters.		
			M-5.2-12	Pumping hoses will be equipped with a shut-off valve to stop flow should a spill occur.		
			M-5.2-13	Short term portable concrete batch plant will be constructed onsite, so no concrete pumping will be conducted by barge.		
			M-5.2-14	Use of tight-fitting formwork that is lined (e.g., with polyethylene) and that has gasket joints to prevent contact between concrete and tidal water.		
			M-5.2-15	Barriers will be used as appropriate to prevent splashing of the concrete over the forms and into the water or intertidal area during pouring.		
			M-5.2-16	Fast curing concrete intended/formulated for marine applications will be used.		
			M-5.2-17	Following placement of concrete, forms will be left in place isolating the concrete from tidal waters for a minimum of 24 h or time required for the particular material used such that the concrete is cured before it is exposed to tidal waters.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.2-18	Wash down of equipment and tools that have come into contact with concrete will be conducted in a designated area away from intertidal drainages so that concrete products are prevented from entering watercourses.		
			M-5.2-19	Excess or spilled concrete will be immediately cleaned up / removed from the intertidal area.		
			M-5.2-20	During removal and storage of creosote pilings, adherence to DFO BMP "Guidelines to Protect Fish and Fish Habitat from Treated Wood Used in Aquatic Environments in the Pacific Region".		
			M-5.2-21	Vessels involved in in-water works will be positioned in a manner to prevent disturbance to benthic communities and benthic habitats.		
			M-5.2-22	Work crews will monitor the position of barges and account for height of tidal waters, magnitude of prevailing winds, and direction of tidal currents or other factors that may influence vessel positioning.		
			M-5.2-23	Maneuvering of vessels in shallow areas will be minimized in order to avoid propeller scour and potential re-suspension of sediments or physical disturbance to shallow submerged marine vegetation.		
			M-5.2-24	All equipment will be maintained in proper conditions to prevent leaking or spilling of hydrocarbons and other potentially toxic substances in the marine environment.		
			M-5.2-25	All hydrocarbon products, fueling equipment and other chemical substances will be stored and handled in accordance with all applicable legislation, guidelines and BMP's to prevent their release and toxic effect in the marine environment.		
			M-5.2-27	During in-water works with potential to result in increased turbidity or suspended sediment, specific water quality performance objectives (based on BC WQG) will be applied at set distances from in-water works. In-water works will be halted if objectives are not achieved. Where objectives cannot be practically met, work areas will be isolated from tidal waters with silt curtains or other silt control measures.		
Marine Benthic Communities	Operations	9. Crew transport 15. Shipping 11. Processing (screening, crushing, washing)	M-5.2-01	Mitigation through design: ▪ Utilize existing disturbed features - installation of barge load-out jetty in low value habitat (existing log dump) ▪ Use of piles instead of fill to reduce seabed disturbance ▪ Height and orientation of walkway/conveyor designed to maximize ambient light penetration ▪ Maintain tree buffer on foreshore to limit noise and dust emissions to marine environment."	Change in Habitat Quality (Propeller Scour)	Negligible
			M-5.2-44	Prevent release of debris and deleterious substances into the marine environment.		
			M-5.2-07	Adherence to Erosion and Sediment Control Plan (Volume 4, Part G – Section 22.0: Appendix 3) during road and other facilities construction, maintenance and upgrade.		
			M-5.2-21	Vessels involved in in-water works will be positioned in a manner to prevent disturbance to benthic communities and benthic habitats.		
			M-5.2-22	Work crews will monitor the position of barges and account for height of tidal waters, magnitude of prevailing winds, and direction of tidal currents or other factors that may influence vessel positioning.		
			M-5.2-23	Maneuvering of vessels in shallow areas will be minimized in order to avoid propeller scour and potential re-suspension of sediments or physical disturbance to shallow submerged marine vegetation.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.2-24	All equipment will be maintained in proper conditions to prevent leaking or spilling of hydrocarbons and other potentially toxic substances in the marine environment.		
			M-5.2-25	All hydrocarbon products, fueling equipment and other chemical substances will be stored and handled in accordance with all applicable legislation, guidelines and BMP's to prevent their release and toxic effect in the marine environment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.		
Marine Benthic Communities	Reclamation and Closure	17. Crew and equipment transport 19. Removal of marine infrastructure	M-5.1-01, M-5.2-01 to M-5.2-27	Maintain mitigation measures implemented during construction.	Change in Habitat Quality (In-water Works and Propeller Scour)	Negligible
Marine Birds	Accidents and Malfunctions	22. Aggregate Spills	M-5.1-20	Adherence to Spill Prevention and Emergency response Plan (SERP).	Aggregate spills.	Negligible
Marine Birds	Accidents and Malfunctions	21. Toxic and Hazardous Material Spills	M-5.1-20	Adherence to Spill Prevention and Emergency response Plan (SERP).	Toxic or hazardous material spills.	Not Significant
Marine Birds	Construction	1. Crew and equipment transport 5. Marine loading facility installation 8. Other ancillary marine construction works	M-9.2-01 to M-9.2-09	Refer to Volume 2, Part B - Section 9.2 (Noise).	Behavioural Disturbance - In-air Noise	Negligible
Marine Birds	Operations	9. Crew transport 14. Marine loading 15. Shipping	M-9.2-01 to M-9.2-09	Refer to Volume 2, Part B - Section 9.2 (Noise).	Behavioural Disturbance - In-air Noise	Negligible
Marine Birds	Reclamation and Closure	17. Crew and equipment transport 19. Removal of marine infrastructure	M-9.2-01 to M-9.2-09	Refer to Volume 2, Part B - Section 9.2 (Noise).	Behavioural Disturbance - In-air Noise	Negligible
Marine Fish	Accidents and Malfunctions	22. Aggregate Spills	M-5.1-20	Adherence to Spill Prevention and Emergency response Plan (SERP).	Aggregate spills.	Negligible
Marine Fish	Accidents and Malfunctions	21. Toxic and Hazardous Material Spills	M-5.1-20	Adherence to Spill Prevention and Emergency response Plan (SERP).	Toxic or hazardous material spills.	Not Significant
Marine Fish	Construction	1. Crew and equipment transport 8. Other ancillary marine construction works 5. Marine loading facility installation	M-5.2-01	Mitigation through design: ▪ Utilize existing disturbed features - installation of barge load-out jetty in low value habitat (existing log dump) ▪ Use of piles instead of fill to reduce seabed disturbance ▪ Height and orientation of walkway/conveyor designed to maximize ambient light penetration ▪ Maintain tree buffer on foreshore to limit noise and dust emissions to marine environment."	Change in Habitat Quality (In-water Works and Propeller Scour)	Negligible
			M-5.1-01	Develop a Fish Habitat Offset Plan to offset unavoidable permanent alteration or destruction of fish habitat from Project works (Volume 4, Part G – Section 22.0: Appendix 5.1-B).		
			M-5.2-02	Develop and adherence to Construction Environmental Management Plan (CEMP; Volume 3, Part E – Section 16.0).		
			M-5.2-03	Develop and adherence to Pile Construction Management Plan (Volume 3, Part E – Section 16.0).		
			M-5.2-04	Environmental monitoring by a qualified EM		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.2-05	Prevent release of construction debris and deleterious substances into the marine environment.		
			M-5.2-06	Adherence to BMP for Pile Driving and Related Operations (DFO 2003).		
			M-5.2-07	Adherence to Erosion and Sediment Control Plan (Volume 4, Part G – Section 22.0: Appendix 3) during road and other facilities construction, maintenance and upgrade.		
			M-5.2-09	Optimal use of pre-cast concrete for construction and installation of facilities within the intertidal and subtidal zones.		
			M-5.2-10	Concrete will be poured during suitable tides.		
			M-5.2-11	Concrete is not to be poured directly into tidal waters.		
			M-5.2-12	Pumping hoses will be equipped with a shut-off valve to stop flow should a spill occur.		
			M-5.2-13	Short term portable concrete batch plant will be constructed onsite, so no concrete pumping will be conducted by barge.		
			M-5.2-14	Use of tight-fitting formwork that is lined (e.g., with polyethylene) and that has gasket joints to prevent contact between concrete and tidal water.		
			M-5.2-15	Barriers will be used as appropriate to prevent splashing of the concrete over the forms and into the water or intertidal area during pouring.		
			M-5.2-16	Fast curing concrete intended/formulated for marine applications will be used.		
			M-5.2-17	Following placement of concrete, forms will be left in place isolating the concrete from tidal waters for a minimum of 24 h or time required for the particular material used such that the concrete is cured before it is exposed to tidal waters.		
			M-5.2-18	Wash down of equipment and tools that have come into contact with concrete will be conducted in a designated area away from intertidal drainages so that concrete products are prevented from entering watercourses.		
			M-5.2-19	Excess or spilled concrete will be immediately cleaned up / removed from the intertidal area.		
			M-5.2-20	During removal and storage of creosote pilings, adherence to DFO BMP “Guidelines to Protect Fish and Fish Habitat from Treated Wood Used in Aquatic Environments in the Pacific Region”.		
			M-5.2-21	Vessels involved in in-water works will be positioned in a manner to prevent disturbance to benthic communities and benthic habitats.		
			M-5.2-22	Work crews will monitor the position of barges and account for height of tidal waters, magnitude of prevailing winds, and direction of tidal currents or other factors that may influence vessel positioning.		
			M-5.2-23	Maneuvering of vessels in shallow areas will be minimized in order to avoid propeller scour and potential re-suspension of sediments or physical disturbance to shallow submerged marine vegetation.		
			M-5.2-24	All equipment will be maintained in proper conditions to prevent leaking or spilling of hydrocarbons and other potentially toxic substances in the marine environment.		
			M-5.2-25	All hydrocarbon products, fueling equipment and other chemical substances will be stored and handled in accordance with all applicable legislation, guidelines and BMP’s to prevent their release and toxic effect in the marine environment.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.		
			M-5.2-27	During in-water works with potential to result in increased turbidity or suspended sediment, specific water quality performance objectives (based on BC WQG) will be applied at set distances from in-water works. In-water works will be halted if objectives are not achieved. Where objectives cannot be practically met, work areas will be isolated from tidal waters with silt curtains or other silt control measures.		
Marine Fish	Construction	8. Other ancillary marine construction works 5. Marine loading facility installation	M-5.2-01	Mitigation through design: ▪ Utilize existing disturbed features - installation of barge load-out jetty in low value habitat (existing log dump) ▪ Use of piles instead of fill to reduce seabed disturbance ▪ Height and orientation of walkway/conveyor designed to maximize ambient light penetration ▪ Maintain tree buffer on foreshore to limit noise and dust emissions to marine environment.	Loss of Habitat	Negligible
			M-5.1-01	Develop a Fish Habitat Offset Plan to offset unavoidable permanent alteration or destruction of fish habitat from Project works (Volume 4, Part G – Section 22.0: Appendix 5.1-B).		
			M-5.2-02	Develop and adherence to Construction Environmental Management Plan (CEMP; Volume 3, Part E – Section 16.0).		
			M-5.2-03	Develop and adherence to Pile Construction Management Plan (Volume 3, Part E – Section 16.0).		
			M-5.2-04	Environmental monitoring by a qualified EM		
			M-5.2-05	Prevent release of construction debris and deleterious substances into the marine environment.		
			M-5.2-06	Adherence to BMP for Pile Driving and Related Operations (DFO 2003).		
			M-5.2-07	Adherence to Erosion and Sediment Control Plan (Volume 4, Part G – Section 22.0: Appendix 3) during road and other facilities construction, maintenance and upgrade.		
			M-5.2-09	Optimal use of pre-cast concrete for construction and installation of facilities within the intertidal and subtidal zones.		
			M-5.2-10	Concrete will be poured during suitable tides.		
			M-5.2-11	Concrete is not to be poured directly into tidal waters.		
			M-5.2-12	Pumping hoses will be equipped with a shut-off valve to stop flow should a spill occur.		
			M-5.2-13	Short term portable concrete batch plant will be constructed onsite, so no concrete pumping will be conducted by barge.		
			M-5.2-14	Use of tight-fitting formwork that is lined (e.g., with polyethylene) and that has gasket joints to prevent contact between concrete and tidal water.		
			M-5.2-15	Barriers will be used as appropriate to prevent splashing of the concrete over the forms and into the water or intertidal area during pouring.		
			M-5.2-16	Fast curing concrete intended/formulated for marine applications will be used.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.2-17	Following placement of concrete, forms will be left in place isolating the concrete from tidal waters for a minimum of 24 h or time required for the particular material used such that the concrete is cured before it is exposed to tidal waters.		
			M-5.2-18	Wash down of equipment and tools that have come into contact with concrete will be conducted in a designated area away from intertidal drainages so that concrete products are prevented from entering watercourses.		
			M-5.2-19	Excess or spilled concrete will be immediately cleaned up / removed from the intertidal area.		
			M-5.2-20	During removal and storage of creosote pilings, adherence to DFO BMP “Guidelines to Protect Fish and Fish Habitat from Treated Wood Used in Aquatic Environments in the Pacific Region”.		
			M-5.2-21	Vessels involved in in-water works will be positioned in a manner to prevent disturbance to benthic communities and benthic habitats.		
			M-5.2-22	Work crews will monitor the position of barges and account for height of tidal waters, magnitude of prevailing winds, and direction of tidal currents or other factors that may influence vessel positioning.		
			M-5.2-23	Maneuvering of vessels in shallow areas will be minimized in order to avoid propeller scour and potential re-suspension of sediments or physical disturbance to shallow submerged marine vegetation.		
			M-5.2-24	All equipment will be maintained in proper conditions to prevent leaking or spilling of hydrocarbons and other potentially toxic substances in the marine environment.		
			M-5.2-25	All hydrocarbon products, fueling equipment and other chemical substances will be stored and handled in accordance with all applicable legislation, guidelines and BMP’s to prevent their release and toxic effect in the marine environment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.		
			M-5.2-27	During in-water works with potential to result in increased turbidity or suspended sediment, specific water quality performance objectives (based on BC WQG) will be applied at set distances from in-water works. In-water works will be halted if objectives are not achieved. Where objectives cannot be practically met, work areas will be isolated from tidal waters with silt curtains or other silt control measures.		
Marine Fish	Construction	8. Other ancillary marine construction works 5. Marine loading facility installation	M-5.2-30	Impact pile driving should not exceed 30 kPa at 10 m from pile. Otherwise, additional mitigation will be implemented such as the use of a vibratory hammer in place of an impact hammer or installation of bubble curtains around the wetted pile.	Mortality/Injury - UW Noise (Pile Driving)	Negligible
			M-5.2-31	Impact pile driving activities will be temporarily suspended if aggregations of fish (e.g., herring or salmonids) are spotted within the immediate work area or if any herring spawn is observed attached to equipment or structures in the water.		
			M-5.2-28	Implementation of ramp-up / soft-start procedure during impact pile driving		
			M-5.2-29	Avoid concurrent multiple underwater noise generating activities (sequence where possible).		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Marine Fish	Operations	9. Crew transport 15. Shipping 11. Processing (screening, crushing, washing) 14. Marine loading	M-5.2-01	Mitigation through design: ▪ Utilize existing disturbed features - installation of barge load-out jetty in low value habitat (existing log dump) ▪ Use of piles instead of fill to reduce seabed disturbance ▪ Height and orientation of walkway/conveyor designed to maximize ambient light penetration ▪ Maintain tree buffer on foreshore to limit noise and dust emissions to marine environment.	Changes in Habitat Quality - Propeller Scour	Negligible
			M-5.2-44	Prevent release of debris and deleterious substances into the marine environment.		
			M-5.2-07	Adherence to Erosion and Sediment Control Plan (Volume 4, Part G – Section 22.0: Appendix 3) during road and other facilities construction, maintenance and upgrade.		
			M-5.2-21	Vessels involved in in-water works will be positioned in a manner to prevent disturbance to benthic communities and benthic habitats.		
			M-5.2-22	Work crews will monitor the position of barges and account for height of tidal waters, magnitude of prevailing winds, and direction of tidal currents or other factors that may influence vessel positioning.		
			M-5.2-23	Maneuvering of vessels in shallow areas will be minimized in order to avoid propeller scour and potential re-suspension of sediments or physical disturbance to shallow submerged marine vegetation.		
			M-5.2-24	All equipment will be maintained in proper conditions to prevent leaking or spilling of hydrocarbons and other potentially toxic substances in the marine environment.		
			M-5.2-25	All hydrocarbon products, fueling equipment and other chemical substances will be stored and handled in accordance with all applicable legislation, guidelines and BMP's to prevent their release and toxic effect in the marine environment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.		
Marine Fish	Reclamation and Closure	19. Removal of marine infrastructure 17. Crew and equipment transport	M-5.1-01 M-5.2-01 to M-5.2-27	Maintain mitigation measures implemented during construction.	Change in Habitat Quality (In-water Works and Propeller Scour)	Negligible
Marine Mammals	Accidents and Malfunctions	22. Aggregate Spills	M-5.1-20	Adherence to Spill Prevention and Emergency response Plan (SERP).	Aggregate spills.	Negligible
Marine Mammals	Accidents and Malfunctions	21. Toxic and Hazardous Material Spills	M-5.1-20	Adherence to Spill Prevention and Emergency response Plan (SERP).	Toxic or hazardous material spills.	Negligible
Marine Mammals	Construction	1. Crew and equipment transport 5. Marine loading facility installation	M-5.2-28	Implementation of ramp-up / soft-start procedure during impact pile driving	Mortality/Injury - UW Noise	Negligible
			M-5.2-29	Avoid concurrent multiple underwater noise generating activities (sequence where possible).		
			M-5.2-32	Monitoring for MM during all impact pile driving activities by a qualified and experienced MMO.		
			M-5.2-33	Implementation of a MM Safety Zone based on injury threshold criteria (180 dB re 1 µPa SPLrms for cetaceans and 190 dB re 1 µPa SPLrms for pinnipeds). The occurrence of MM within the safety zone will trigger specific mitigation actions (e.g., shut-downs).		
			M-5.2-34	Shut-down procedures – impact pile driving will be temporarily suspended when a MM is located within the safety zone until which time it moves outside the safety		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
				zone.		
			M-5.2-35	Conduct a pre-operational search for MM prior to start-up of active impact pile driving. If a MM is spotted within the safety zone during the pre-ops search, the ramp-up procedure will be delayed 20 minutes from the time the MM left the safety zone, or was last sighted in the safety zone		
			M-5.2-36	MMO will periodically verify underwater sound levels in the field using a hydrophone and a real-time sound monitor to confirm that sound levels at the modeled safety zone radius are below the established injury thresholds for MM. If necessary, the safety zone distance will be adjusted accordingly.		
			M-5.2-37	Plan operations during daylight hours to maximize detection ability of MM in Project Area.		
			M-5.2-38	Avoid peak seasonal timing when MMs are most likely to be in or adjacent to the Project Area.		
Marine Mammals	Construction	1. Crew and equipment transport 5. Marine loading facility installation	M-5.2-28	Implementation of ramp-up / soft-start procedure during impact pile driving	Behavioural Disturbance - UW Noise	Not Significant
			M-5.2-29	Avoid concurrent multiple underwater noise generating activities (sequence where possible).		
			M-5.2-32	Monitoring for MM during all impact pile driving activities by a qualified and experienced MMO.		
			M-5.2-33	Implementation of a MM Safety Zone based on injury threshold criteria (180 dB re 1 µPa SPLrms for cetaceans and 190 dB re 1 µPa SPLrms for pinnipeds). The occurrence of MM within the safety zone will trigger specific mitigation actions (e.g., shut-downs).		
			M-5.2-34	Shut-down procedures – impact pile driving will be temporarily suspended when a MM is located within the safety zone until which time it moves outside the safety zone.		
			M-5.2-35	Conduct a pre-operational search for MM prior to start-up of active impact pile driving. If a MM is spotted within the safety zone during the pre-ops search, the ramp-up procedure will be delayed 20 minutes from the time the MM left the safety zone, or was last sighted in the safety zone		
			M-5.2-36	MMO will periodically verify underwater sound levels in the field using a hydrophone and a real-time sound monitor to confirm that sound levels at the modeled safety zone radius are below the established injury thresholds for MM. If necessary, the safety zone distance will be adjusted accordingly.		
			M-5.2-37	Plan operations during daylight hours to maximize detection ability of MM in Project Area.		
			M-5.2-38	Avoid peak seasonal timing when MMs are most likely to be in or adjacent to the Project Area.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Marine Mammals	Construction	1. Crew and equipment transport	M-5.2-39	Speed restrictions for tug-assisted barges in RSA (<12 knots).	Mortality/Injury - Vessel Strikes	Negligible
			M-5.2-40	Vessels will follow established shipping lanes/navigational routes in RSA.		
			M-5.2-41	Vessels will maintain a constant course and constant speed in RSA.		
			M-5.2-42	Project vessels will not approach within 100 m of any MM.		
			M-5.2-43	If MMs approach within 100 m of a Project vessel, the vessel will reduce its speed and, if possible, cautiously move away from the animal. If it is not possible for a vessel to move away from or detour around a stationary MM or group of MM, the vessel will reduce its speed and wait until the animal(s) moves at least 100 m from the vessel prior to resuming speed.	
Marine Mammals	Operations	9. Crew transport 15. Shipping	M-5.2-39 to M-5.2-43	Maintain mitigation measures implemented during construction.	Behavioural Disturbance - UW Noise	Not Significant
Marine Mammals	Operations	9. Crew transport 15. Shipping 14. Marine loading	M-5.2-39 to M-5.2-43	Maintain mitigation measures implemented during construction.	Mortality/Injury - Vessel Strikes	Negligible
Marine Mammals	Reclamation and Closure	17. Crew and equipment transport 19. Removal of marine infrastructure	M-5.2-28, M-5.2-29 M-5.2-32 to M-5.2-38	Maintain mitigation measures implemented during construction.	Behavioural Disturbance - UW Noise	Not Significant
Marine Mammals	Reclamation and Closure	17. Crew and equipment transport 19. Removal of marine infrastructure	M-5.2-39 to M-5.2-43	Maintain mitigation measures implemented during construction.	Mortality/Injury - Vessel Strikes	Negligible
Marine Water and Sediment Quality	Accidents and Malfunctions	22. Aggregate Spills	M-5.1-20	Adherence to Spill Prevention and Emergency response Plan (SERP).	Aggregate spills.	Negligible
Marine Water and Sediment Quality	Accidents and Malfunctions	21. Toxic and Hazardous Material Spills	M-5.1-20	Adherence to Spill Prevention and Emergency response Plan (SERP).	Toxic or hazardous material spills.	Not Significant
Marine Water and Sediment Quality	Construction	5. Marine loading facility installation 8. Other ancillary marine construction works	M-5.1-01	Develop a Fish Habitat Offset Plan to offset unavoidable permanent alteration or destruction of fish habitat from Project works (Volume 4, Part G – Section 22.0: Appendix 5.1-B).	Changes in Habitat Quality (In-water Works and Propeller Scour)	Negligible
			M-5.2-02	Develop and adherence to Construction Environmental Management Plan (CEMP; Volume 3, Part E – Section 16.0).		
			M-5.2-03	Develop and adherence to Pile Construction Management Plan (Volume 3, Part E – Section 16.0).		
			M-5.2-04	Environmental monitoring by a qualified EM		
			M-5.2-05	Prevent release of construction debris and deleterious substances into the marine environment.		
			M-5.2-06	Adherence to BMP for Pile Driving and Related Operations (DFO 2003).		
			M-5.2-07	Adherence to Erosion and Sediment Control Plan (Volume 4, Part G – Section 22.0: Appendix 3) during road and other facilities construction, maintenance and upgrade.		
			M-5.2-09	Optimal use of pre-cast concrete for construction and installation of facilities within the intertidal and subtidal zones.		
			M-5.2-10	Concrete will be poured during suitable tides.		
			M-5.2-11	Concrete is not to be poured directly into tidal waters.		
			M-5.2-12	Pumping hoses will be equipped with a shut-off valve to stop flow should a spill occur.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.2-13	Short term portable concrete batch plant will be constructed onsite, so no concrete pumping will be conducted by barge.		
			M-5.2-14	Use of tight-fitting formwork that is lined (e.g., with polyethylene) and that has gasket joints to prevent contact between concrete and tidal water.		
			M-5.2-15	Barriers will be used as appropriate to prevent splashing of the concrete over the forms and into the water or intertidal area during pouring.		
			M-5.2-16	Fast curing concrete intended/formulated for marine applications will be used.		
			M-5.2-17	Following placement of concrete, forms will be left in place isolating the concrete from tidal waters for a minimum of 24 h or time required for the particular material used such that the concrete is cured before it is exposed to tidal waters.		
			M-5.2-18	Wash down of equipment and tools that have come into contact with concrete will be conducted in a designated area away from intertidal drainages so that concrete products are prevented from entering watercourses.		
			M-5.2-19	Excess or spilled concrete will be immediately cleaned up / removed from the intertidal area.		
			M-5.2-20	During removal and storage of creosote pilings, adherence to DFO BMP “Guidelines to Protect Fish and Fish Habitat from Treated Wood Used in Aquatic Environments in the Pacific Region”.		
			M-5.2-21	Vessels involved in in-water works will be positioned in a manner to prevent disturbance to benthic communities and benthic habitats.		
			M-5.2-22	Work crews will monitor the position of barges and account for height of tidal waters, magnitude of prevailing winds, and direction of tidal currents or other factors that may influence vessel positioning.		
			M-5.2-23	Maneuvering of vessels in shallow areas will be minimized in order to avoid propeller scour and potential re-suspension of sediments or physical disturbance to shallow submerged marine vegetation.		
			M-5.2-24	All equipment will be maintained in proper conditions to prevent leaking or spilling of hydrocarbons and other potentially toxic substances in the marine environment.		
			M-5.2-25	All hydrocarbon products, fueling equipment and other chemical substances will be stored and handled in accordance with all applicable legislation, guidelines and BMP’s to prevent their release and toxic effect in the marine environment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.		
			M-5.2-27	During in-water works with potential to result in increased turbidity or suspended sediment, specific water quality performance objectives (based on BC WQG) will be applied at set distances from in-water works. In-water works will be halted if objectives are not achieved. Where objectives cannot be practically met, work areas will be isolated from tidal waters with silt curtains or other silt control measures.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.2-01	Mitigation through design: ▪ Utilize existing disturbed features - installation of barge load-out jetty in low value habitat (existing log dump) ▪ Use of piles instead of fill to reduce seabed disturbance ▪ Height and orientation of walkway/conveyor designed to maximize ambient light penetration ▪ Maintain tree buffer on foreshore to limit noise and dust emissions to marine environment.		
Marine Water and Sediment Quality	Operations	9. Crew transport 15. Shipping 11. Processing (screening, crushing, washing)	M-5.2-01	Mitigation through design: ▪ Utilize existing disturbed features - installation of barge load-out jetty in low value habitat (existing log dump) ▪ Use of piles instead of fill to reduce seabed disturbance ▪ Height and orientation of walkway/conveyor designed to maximize ambient light penetration ▪ Maintain tree buffer on foreshore to limit noise and dust emissions to marine environment.	Changes in Habitat Quality - (In-Water Works and Propeller Scour)	Negligible
			M-5.2-44	Prevent release of debris and deleterious substances into the marine environment.		
			M-5.2-07	Adherence to Erosion and Sediment Control Plan (Volume 4, Part G – Section 22.0: Appendix 3) during road and other facilities construction, maintenance and upgrade.		
			M-5.2-21	Vessels involved in in-water works will be positioned in a manner to prevent disturbance to benthic communities and benthic habitats.		
			M-5.2-22	Work crews will monitor the position of barges and account for height of tidal waters, magnitude of prevailing winds, and direction of tidal currents or other factors that may influence vessel positioning.		
			M-5.2-23	Maneuvering of vessels in shallow areas will be minimized in order to avoid propeller scour and potential re-suspension of sediments or physical disturbance to shallow submerged marine vegetation.		
			M-5.2-24	All equipment will be maintained in proper conditions to prevent leaking or spilling of hydrocarbons and other potentially toxic substances in the marine environment.		
			M-5.2-25	All hydrocarbon products, fueling equipment and other chemical substances will be stored and handled in accordance with all applicable legislation, guidelines and BMP's to prevent their release and toxic effect in the marine environment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.		
Marine Water and Sediment Quality	Reclamation and Closure	17. Crew and equipment transport 19. Removal of marine infrastructure	M-5.1-01 M-5.2-01 to M-5.2-27	Maintain mitigation measures implemented during construction.	Changes in Habitat Quality - (In-Water Works and Propeller Scour)	Negligible
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.	Habitat loss.	Not Significant
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-01	Identify and retain, where feasible, wildlife habitat features.		
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-10	Maintain vegetation linkages and buffers.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-16	Fall trees away from sensitive habitat.		
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-30	Design and establish amphibian passageways, where appropriate.	Barriers to movement.	
			M-5.3-31	Maintain vegetation linkages and buffers.		
			M-5.3-32	Bury linear features.		
			M-5.3-29	Store equipment in designated areas.		
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-01	Identify and retain, where feasible, wildlife habitat features.	Habitat loss.	Not Significant
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-16	Fall trees away from sensitive habitat.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-18	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-19	Develop and implement a water quality monitoring program in remaining amphibian breeding ponds.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-21	Minimize fugitive dusts from exposed soil, equipment and Project facilities.		
			M-5.3-22	Monitor water quality in the pit lake.		
			M-5.3-23	Limit operational hours to daylight hours. Limit nighttime lighting to where lighting is required for safety and security.		
			M-5.3-24	Night time lights will be fitted with shades to direct light towards the ground.		
			M-5.3-25	Monitor water quality in the Pit Lake and other water bodies in and around the Proposed Project Area.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-30	Design and establish amphibian passageways, where appropriate.	Barriers to movement.	
			M-5.3-29	Store equipment in designated areas.		
			M-5.3-31	Maintain vegetation linkages and buffers.		
			M-5.3-32	Bury linear features.		
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-49	Restrict public access to the Proposed Project Area.		
			M-5.3-51	Develop a wildlife mortality reporting program.		
			M-5.3-52	Obtain a yearly permit to salvage amphibians.		
			M-5.3-53	Limit nighttime road travel.		
			M-5.3-54	Maintain vegetative buffers around all raptor nests and other active bird nests.		
			M-5.3-55	Design the perimeter of the pit lake to allow for an escape route for large mammals.		
			M-5.3-56	Develop a Material Storage, Handling and Waste Management Plan (Volume 3, Part E - Section 16.0).		
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.3-26	Develop and implement a Habitat Compensation Plan to address the loss of amphibian breeding habitat and Roosevelt elk habitat.	Habitat loss.	Not Significant
			M-5.3-27	Reclaim the Proposed Project Area to enhance wildlife habitat.		
			M-5.3-28	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-77	Communication and planning with other proponents within McNab Valley.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Western screech owl	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-17a	Mature forest to be cleared will be surveyed for tree cavities that may provide suitable nesting opportunities for Western screech-owl. A density of potentially suitable nest trees will be estimated for the mature forest that will be cleared.		
			M-5.3-17b	Construct and install nest boxes for Western screech-owl in nearby forest habitat, where appropriate.		
Western screech owl	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-49	Restrict public access to the Proposed Project Area.		
			M-5.3-51	Develop a wildlife mortality reporting program.		
			M-5.3-52	Obtain a yearly permit to salvage amphibians.		
			M-5.3-53	Limit nighttime road travel.		
			M-5.3-54	Maintain vegetative buffers around all raptor nests and other active bird nests.		
			M-5.3-55	Design the perimeter of the pit lake to allow for an escape route for large mammals.		
			M-5.3-56	Develop a Material Storage, Handling and Waste Management Plan (Volume 3, Part E - Section 16.0).		
Common nighthawk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
Common nighthawk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.	Habitat loss.	
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-01	Identify and retain, where feasible, wildlife habitat features.		
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-10	Maintain vegetation linkages and buffers.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-16	Fall trees away from sensitive habitat.		
Common nighthawk	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-49	Restrict public access to the Proposed Project Area.		
			M-5.3-51	Develop a wildlife mortality reporting program.		
			M-5.3-52	Obtain a yearly permit to salvage amphibians.		
			M-5.3-53	Limit nighttime road travel.		
			M-5.3-54	Maintain vegetative buffers around all raptor nests and other active bird nests.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-55	Design the perimeter of the pit lake to allow for an escape route for large mammals.		
			M-5.3-56	Develop a Material Storage, Handling and Waste Management Plan (Volume 3, Part E - Section 16.0).		
Common nighthawk	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-01	Identify and retain, where feasible, wildlife habitat features.	Habitat loss.	
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-16	Fall trees away from sensitive habitat.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-18	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-19	Develop and implement a water quality monitoring program in remaining amphibian breeding ponds.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-21	Minimize fugitive dusts from exposed soil, equipment and Project facilities.		
			M-5.3-22	Monitor water quality in the pit lake.		
			M-5.3-23	Limit operational hours to daylight hours. Limit nighttime lighting to where lighting is required for safety and security.		
			M-5.3-24	Night time lights will be fitted with shades to direct light towards the ground.		
			M-5.3-25	Monitor water quality in the Pit Lake and other water bodies in and around the Proposed Project Area.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Common nighthawk	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.3-26	Develop and implement a Habitat Compensation Plan to address the loss of amphibian breeding habitat and Roosevelt elk habitat.	Habitat loss.	Negligible
			M-5.3-27	Reclaim the Proposed Project Area to enhance wildlife habitat.		
			M-5.3-28	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
Northern goshawk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
Northern goshawk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.	Habitat loss.	
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-01	Identify and retain, where feasible, wildlife habitat features.		
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-04	Minimize clearing through Project planning.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-10	Maintain vegetation linkages and buffers.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-16	Fall trees away from sensitive habitat.		
Northern goshawk	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-49	Restrict public access to the Proposed Project Area.		
			M-5.3-51	Develop a wildlife mortality reporting program.		
			M-5.3-52	Obtain a yearly permit to salvage amphibians.		
			M-5.3-53	Limit nighttime road travel.		
			M-5.3-54	Maintain vegetative buffers around all raptor nests and other active bird nests.		
			M-5.3-55	Design the perimeter of the pit lake to allow for an escape route for large mammals.		
			M-5.3-56	Develop a Material Storage, Handling and Waste Management Plan (Volume 3, Part E - Section 16.0).		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Northern goshawk	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-01	Identify and retain, where feasible, wildlife habitat features.	Habitat loss.	
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-16	Fall trees away from sensitive habitat.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-18	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-19	Develop and implement a water quality monitoring program in remaining amphibian breeding ponds.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-21	Minimize fugitive dusts from exposed soil, equipment and Project facilities.		
			M-5.3-22	Monitor water quality in the pit lake.		
			M-5.3-23	Limit operational hours to daylight hours. Limit nighttime lighting to where lighting is required for safety and security.		
			M-5.3-24	Night time lights will be fitted with shades to direct light towards the ground.		
			M-5.3-25	Monitor water quality in the Pit Lake and other water bodies in and around the Proposed Project Area.		
Northern goshawk	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.3-26	Develop and implement a Habitat Compensation Plan to address the loss of amphibian breeding habitat and Roosevelt elk habitat.	Habitat loss.	Negligible
			M-5.3-27	Reclaim the Proposed Project Area to enhance wildlife habitat.		
			M-5.3-28	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Band-tailed pigeon	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
Band-tailed pigeon	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.	Habitat loss.	
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-01	Identify and retain, where feasible, wildlife habitat features.		
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-10	Maintain vegetation linkages and buffers.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-16	Fall trees away from sensitive habitat.		
Band-tailed pigeon	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-49	Restrict public access to the Proposed Project Area.		
			M-5.3-51	Develop a wildlife mortality reporting program.		
			M-5.3-52	Obtain a yearly permit to salvage amphibians.		
			M-5.3-53	Limit nighttime road travel.		
			M-5.3-54	Maintain vegetative buffers around all raptor nests and other active bird nests.		
			M-5.3-55	Design the perimeter of the pit lake to allow for an escape route for large mammals.		
			M-5.3-56	Develop a Material Storage, Handling and Waste Management Plan (Volume 3, Part E - Section 16.0).		
Band-tailed pigeon	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-01	Identify and retain, where feasible, wildlife habitat features.	Habitat loss.	
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-07	Restrict construction to daylight hours.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-16	Fall trees away from sensitive habitat.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-18	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-19	Develop and implement a water quality monitoring program in remaining amphibian breeding ponds.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-21	Minimize fugitive dusts from exposed soil, equipment and Project facilities.		
			M-5.3-22	Monitor water quality in the pit lake.		
			M-5.3-23	Limit operational hours to daylight hours. Limit nighttime lighting to where lighting is required for safety and security.		
			M-5.3-24	Night time lights will be fitted with shades to direct light towards the ground.		
			M-5.3-25	Monitor water quality in the Pit Lake and other water bodies in and around the Proposed Project Area.		
Band-tailed pigeon	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.3-26	Develop and implement a Habitat Compensation Plan to address the loss of amphibian breeding habitat and Roosevelt elk habitat.	Habitat loss.	Negligible
			M-5.3-27	Reclaim the Proposed Project Area to enhance wildlife habitat.		
			M-5.3-28	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
Marbled murrelet	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
				periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
Marbled murrelet	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.	Habitat loss.	
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-01	Identify and retain, where feasible, wildlife habitat features.		
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-10	Maintain vegetation linkages and buffers.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-16	Fall trees away from sensitive habitat.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Marbled murrelet	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Negligible
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-49	Restrict public access to the Proposed Project Area.		
			M-5.3-51	Develop a wildlife mortality reporting program.		
			M-5.3-52	Obtain a yearly permit to salvage amphibians.		
			M-5.3-53	Limit nighttime road travel.		
			M-5.3-54	Maintain vegetative buffers around all raptor nests and other active bird nests.		
			M-5.3-55	Design the perimeter of the pit lake to allow for an escape route for large mammals.		
			M-5.3-56	Develop a Material Storage, Handling and Waste Management Plan (Volume 3, Part E - Section 16.0).		
Marbled murrelet	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-01	Identify and retain, where feasible, wildlife habitat features.	Habitat loss.	
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-16	Fall trees away from sensitive habitat.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-18	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-19	Develop and implement a water quality monitoring program in remaining amphibian breeding ponds.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-21	Minimize fugitive dusts from exposed soil, equipment and Project facilities.		
			M-5.3-22	Monitor water quality in the pit lake.		
			M-5.3-23	Limit operational hours to daylight hours. Limit nighttime lighting to where lighting is required for safety and security.		
			M-5.3-24	Night time lights will be fitted with shades to direct light towards the ground.		
			M-5.3-25	Monitor water quality in the Pit Lake and other water bodies in and around the Proposed Project Area.		
Marbled murrelet	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.3-26	Develop and implement a Habitat Compensation Plan to address the loss of amphibian breeding habitat and Roosevelt elk habitat.	Habitat loss.	Negligible
			M-5.3-27	Reclaim the Proposed Project Area to enhance wildlife habitat.		
			M-5.3-28	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
Roosevelt elk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.	Habitat loss.	Not Significant
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-01	Identify and retain, where feasible, wildlife habitat features.		
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-10	Maintain vegetation linkages and buffers.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-16	Fall trees away from sensitive habitat.		
Roosevelt elk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-30	Design and establish amphibian passageways, where appropriate.	Barriers to movement.	
			M-5.3-31	Maintain vegetation linkages and buffers.		
			M-5.3-32	Bury linear features.		
			M-5.3-29	Store equipment in designated areas.		
Roosevelt elk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Roosevelt elk	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-01	Identify and retain, where feasible, wildlife habitat features.	Habitat loss.	Not Significant
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-16	Fall trees away from sensitive habitat.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-18	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-19	Develop and implement a water quality monitoring program in remaining amphibian breeding ponds.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-21	Minimize fugitive dusts from exposed soil, equipment and Project facilities.		
			M-5.3-22	Monitor water quality in the pit lake.		
			M-5.3-23	Limit operational hours to daylight hours. Limit nighttime lighting to where lighting is required for safety and security.		
			M-5.3-24	Night time lights will be fitted with shades to direct light towards the ground.		
			M-5.3-25	Monitor water quality in the Pit Lake and other water bodies in and around the Proposed Project Area.		
Roosevelt elk	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-30	Design and establish amphibian passageways, where appropriate.	Barriers to movement.	
			M-5.3-29	Store equipment in designated areas.		
			M-5.3-31	Maintain vegetation linkages and buffers.		
			M-5.3-32	Bury linear features.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Roosevelt elk	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-49	Restrict public access to the Proposed Project Area.		
			M-5.3-51	Develop a wildlife mortality reporting program.		
			M-5.3-52	Obtain a yearly permit to salvage amphibians.		
			M-5.3-53	Limit nighttime road travel.		
			M-5.3-54	Maintain vegetative buffers around all raptor nests and other active bird nests.		
			M-5.3-55	Design the perimeter of the pit lake to allow for an escape route for large mammals.		
			M-5.3-56	Develop a Material Storage, Handling and Waste Management Plan (Volume 3, Part E - Section 16.0).		
Roosevelt elk	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.3-26	Develop and implement a Habitat Compensation Plan to address the loss of amphibian breeding habitat and Roosevelt elk habitat.	Habitat loss.	Not Significant
			M-5.3-27	Reclaim the Proposed Project Area to enhance wildlife habitat.		
			M-5.3-28	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-77	Communication and planning with other proponents within McNab Valley.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Grizzly bear	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Not Significant
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
Grizzly bear	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.	Habitat loss.	
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-01	Identify and retain, where feasible, wildlife habitat features.		
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-10	Maintain vegetation linkages and buffers.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-16	Fall trees away from sensitive habitat.		
Grizzly bear	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-33	Develop and implement a Material Storage, Handling and Waste Management Plan and Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Change in mortality.	Not Significant
			M-5.3-34	Prohibit harassment and feeding of wildlife by Project employees.		
			M-5.3-35	Report wildlife observations.		
			M-5.3-36	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-38	Install amphibian isolation fencing along roadways.		
			M-5.3-39	Clear during avifauna least risk windows; avoid clearing during sensitive wildlife periods.		
			M-5.3-40	Control traffic speeds on roads.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-43	Train staff on Bear Aware™		
			M-5.3-44	Post educational signage.		
			M-5.3-37	All employees and contractors will be prohibited from hunting, including Roosevelt elk and grizzly bear within the LSA.		
			M-5.3-46	Conduct a pre-clearing salvage of amphibians in amphibian ponds within the Proposed Project Area.		
			M-5.3-49	Restrict public access to the Proposed Project Area.		
			M-5.3-51	Develop a wildlife mortality reporting program.		
			M-5.3-52	Obtain a yearly permit to salvage amphibians.		
			M-5.3-53	Limit nighttime road travel.		
			M-5.3-54	Maintain vegetative buffers around all raptor nests and other active bird nests.		
			M-5.3-55	Design the perimeter of the pit lake to allow for an escape route for large mammals.		
			M-5.3-56	Develop a Material Storage, Handling and Waste Management Plan (Volume 3, Part E - Section 16.0).		
Grizzly bear	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	M-5.3-01	Identify and retain, where feasible, wildlife habitat features.	Habitat loss.	
			M-5.3-02	Utilize existing disturbed areas.		
			M-5.3-03	Maintain riparian vegetation, vegetation buffers and other important habitat features.		
			M-5.3-04	Minimize clearing through Project planning.		
			M-5.3-05	Develop a Vegetation Management Plan including an Invasive Plant Species Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-06	Avoid clearing wildlife habitat during sensitive wildlife periods such as breeding and calving periods, bird nesting periods, and Roosevelt elk overwintering.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-07	Restrict construction to daylight hours.		
			M-5.3-08	Limit Proposed Project Area access to a single point, and to employees and contractors.		
			M-5.3-09	Manage noise through implementation of BMPs and mitigation outlined in Volume 2, Part B - Section 9.2.		
			M-5.3-11	Demarcate habitat features to be retained.		
			M-5.3-12	Identify habitat feature (i.e., woody debris) to retain.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-15	Follow appropriate BMPs.		
			M-5.3-16	Fall trees away from sensitive habitat.		
			M-5.3-17	Develop a Wildlife Management Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-18	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		
			M-5.3-19	Develop and implement a water quality monitoring program in remaining amphibian breeding ponds.		
			M-5.3-20	Develop and implement a wildlife monitoring program with the objective of measuring the effectiveness of mitigation and restoration measures on wildlife VCs within the LSA.		
			M-5.3-21	Minimize fugitive dusts from exposed soil, equipment and Project facilities.		
			M-5.3-22	Monitor water quality in the pit lake.		
			M-5.3-23	Limit operational hours to daylight hours. Limit nighttime lighting to where lighting is required for safety and security.		
			M-5.3-24	Night time lights will be fitted with shades to direct light towards the ground.		
			M-5.3-25	Monitor water quality in the Pit Lake and other water bodies in and around the Proposed Project Area.		
Grizzly bear	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.3-26	Develop and implement a Habitat Compensation Plan to address the loss of amphibian breeding habitat and Roosevelt elk habitat.	Habitat loss.	Not Significant
			M-5.3-27	Reclaim the Proposed Project Area to enhance wildlife habitat.		
			M-5.3-28	Develop and implement a progressive Reclamation Plan (Volume 4, Part G – Section 22.0: Appendix 3).		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Construction	1. Crew and equipment transport	M-5.3-67	A site specific Invasive Plant Management Plan will be developed.	Spread of invasive species.	Negligible
			M-5.3-68	Progressive reclamation to be conducted during operation to reduce risk of invasive species establishment.		
			M-5.3-73	A Construction Environment Management Plan (CEMP) will be developed which will include regular inspections of equipment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-75	An independent Environmental Monitor (EM) will be onsite.		
			M-5.3-76	An Operation Environmental Management Plan will be prepared that includes regular scheduled equipment inspections.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 6. Pit development	M-5.3-66	Progressive reclamation to be conducted during operations to reduce ambient dust.	Introduction of dust.	Negligible
			M-5.3-65	An Air Quality and Dust Control Management Plan will be prepared and implemented during construction, operations and reclamation.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 6. Pit development	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Surface runoff.	Negligible
			M-5.3-64	An independent Environmental Monitor (EM) will be onsite during sensitive works.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 6. Pit development	M-5.3-57	Project design aims to utilize disturbed areas and avoid sensitive ecosystems.	Loss of extent.	Not Significant
			M-5.3-58	Activities will be contained within surveyed Project boundary.		
			M-5.3-59	Standing vegetation will be retained for as long as possible.		
			M-5.3-60	Reclamation planning will aim to re-establish functional listed ecosystems at the same proportion at which they were removed, where final design allows.		
			M-5.3-61	Ecological units will be created during the reclamation phase similar to those present prior to Project construction.		
			M-5.3-62	Develop and implement a vegetation monitoring program to assess the success of mine reclamation.		
			M-5.3-77	Communication and planning with other proponents within McNab Valley.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Construction	6. Pit development	M-5.3-69	A Soil Management Plan, including the Reclamation Plan, will be developed and implemented during construction. The Soil Management Plan will be employed during reclamation and closure.	Soil disturbance	Negligible
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Construction	6. Pit development	M-5.3-70	Trees susceptible to windthrow will be removed from treeline edges.	Windthrow.	Negligible
			M-5.3-71	Sensitive receptors (i.e., streams) will be buffered so that impacts are minimized.		
			M-5.3-72	Monitoring of treeline edges will be conducted in order to evaluate potential windthrow effects and adaptive management will be employed, if necessary.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Accidents and Malfunctions	7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0) to manage hydrocarbons and other chemicals during the construction and operational activities.	Introduction of deleterious substances.	Negligible

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Operations	9. Crew transport	M-5.3-68	Progressive reclamation to be conducted during operation to reduce risk of invasive species establishment.	Spread of invasive species.	Negligible
			M-5.3-73	A Construction Environment Management Plan (CEMP) will be developed which will include regular inspections of equipment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-75	An independent Environmental Monitor (EM) will be onsite.		
			M-5.3-76	An Operation Environmental Management Plan will be prepared that includes regular scheduled equipment inspections.		
			M-5.3-67	A site specific Invasive Plant Management Plan will be developed.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Operations	10. Aggregate mining	M-5.3-70	Trees susceptible to windthrow will be removed from treeline edges.	Windthrow.	Negligible
			M-5.3-71	Sensitive receptors (i.e., streams) will be buffered so that impacts are minimized.		
			M-5.3-72	Monitoring of treeline edges will be conducted in order to evaluate potential windthrow effects and adaptive management will be employed, if necessary.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Operations	11. Processing (screening, crushing, washing) 12. Progressive reclamation	M-5.3-65	An Air Quality and Dust Control Management Plan will be prepared and implemented during construction, operations and reclamation.	Introduction of dust.	Negligible
			M-5.3-66	Progressive reclamation to be conducted during operations to reduce ambient dust.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Operations	11. Processing (screening, crushing, washing) 12. Progressive reclamation	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Surface runoff.	Negligible
			M-5.3-64	An independent Environmental Monitor (EM) will be onsite during sensitive works.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Operations	12. Progressive reclamation	M-5.3-68	Progressive reclamation to be conducted during operation to reduce risk of invasive species establishment.	Spread of invasive species.	Negligible
			M-5.3-73	A Construction Environment Management Plan (CEMP) will be developed which will include regular inspections of equipment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-75	An independent Environmental Monitor (EM) will be onsite.		
			M-5.3-76	An Operation Environmental Management Plan will be prepared that includes regular scheduled equipment inspections.		
			M-5.3-67	A site specific Invasive Plant Management Plan will be developed.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Reclamation and Closure	17. Crew and equipment transport 20. Site reclamation	M-5.3-67	A site specific Invasive Plant Management Plan will be developed.	Spread of invasive species.	Negligible
			M-5.3-68	Progressive reclamation to be conducted during operation to reduce risk of invasive species establishment.		
			M-5.3-73	A Construction Environment Management Plan (CEMP) will be developed which will include regular inspections of equipment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-75	An independent Environmental Monitor (EM) will be onsite.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
			M-5.3-76	An Operation Environmental Management Plan will be prepared that includes regular scheduled equipment inspections.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Reclamation and Closure	20. Site reclamation	M-5.3-65	An Air Quality and Dust Control Management Plan will be prepared and implemented during construction, operations and reclamation.	Introduction of dust.	Negligible
			M-5.3-66	Progressive reclamation to be conducted during operations to reduce ambient dust.		
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Reclamation and Closure	20. Site reclamation	M-5.3-69	A Soil Management Plan, including the Reclamation Plan, will be developed and implemented during construction. The Soil Management Plan will be employed during reclamation and closure.	Soil disturbance.	Negligible
Ecosystems at-risk	Construction	1. Crew and equipment transport	M-5.3-67	A site specific Invasive Plant Management Plan will be developed.	Spread of invasive species.	Negligible
			M-5.3-68	Progressive reclamation to be conducted during operation to reduce risk of invasive species establishment.		
			M-5.3-73	A Construction Environment Management Plan (CEMP) will be developed which will include regular inspections of equipment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-75	An independent Environmental Monitor (EM) will be onsite.		
			M-5.3-76	An Operation Environmental Management Plan will be prepared that includes regular scheduled equipment inspections.		
Ecosystems at-risk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 6. Pit development	M-5.3-66	Progressive reclamation to be conducted during operations to reduce ambient dust.	Introduction of dust.	Negligible
			M-5.3-65	An Air Quality and Dust Control Management Plan will be prepared and implemented during construction, operations and reclamation.		
Ecosystems at-risk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 6. Pit development	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Surface runoff.	Negligible
			M-5.3-64	An independent Environmental Monitor (EM) will be onsite during sensitive works.		
Ecosystems at-risk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 6. Pit development	M-5.3-57	Project design aims to utilize disturbed areas and avoid sensitive ecosystems.	Loss of extent.	Not Significant
			M-5.3-58	Activities will be contained within surveyed Project boundary.		
			M-5.3-59	Standing vegetation will be retained for as long as possible.		
			M-5.3-60	Reclamation planning will aim to re-establish functional listed ecosystems at the same proportion at which they were removed, where final design allows.		
			M-5.3-61	Ecological units will be created during the reclamation phase similar to those present prior to Project construction.		
			M-5.3-62	Develop and implement a vegetation monitoring program to assess the success of mine reclamation.		
			M-5.3-77	Communication and planning with other proponents within McNab Valley.		
Ecosystems at-risk	Construction	6. Pit development	M-5.3-69	A Soil Management Plan, including the Reclamation Plan, will be developed and implemented during construction. The Soil Management Plan will be employed during reclamation and closure.	Soil disturbance	Negligible

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Ecosystems at-risk	Construction	6. Pit development	M-5.3-70	Trees susceptible to windthrow will be removed from treeline edges.	Windthrow.	Negligible
			M-5.3-71	Sensitive receptors (i.e., streams) will be buffered so that impacts are minimized.		
			M-5.3-72	Monitoring of treeline edges will be conducted in order to evaluate potential windthrow effects and adaptive management will be employed, if necessary.		
Ecosystems at-risk	Accidents and Malfunctions	7. Other ancillary land-based construction works	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Introduction of deleterious substances.	Negligible
Ecosystems at-risk	Operations	9. Crew transport	M-5.3-68	Progressive reclamation to be conducted during operation to reduce risk of invasive species establishment.	Spread of invasive species.	Negligible
			M-5.3-73	A Construction Environment Management Plan (CEMP) will be developed which will include regular inspections of equipment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-75	An independent Environmental Monitor (EM) will be onsite.		
			M-5.3-76	An Operation Environmental Management Plan will be prepared that includes regular scheduled equipment inspections.		
			M-5.3-67	A site specific Invasive Plant Management Plan will be developed.		
Ecosystems at-risk	Operations	10. Aggregate mining	M-5.3-70	Trees susceptible to windthrow will be removed from treeline edges.	Windthrow.	Negligible
			M-5.3-71	Sensitive receptors (i.e., streams) will be buffered so that impacts are minimized.		
			M-5.3-72	Monitoring of treeline edges will be conducted in order to evaluate potential windthrow effects and adaptive management will be employed, if necessary.		
Ecosystems at-risk	Operations	11. Processing (screening, crushing, washing) 12. Progressive reclamation	M-5.3-65	An Air Quality and Dust Control Management Plan will be prepared and implemented during construction, operations and reclamation.	Introduction of dust.	Negligible
			M-5.3-66	Progressive reclamation to be conducted during operations to reduce ambient dust.		
Ecosystems at-risk	Operations	11. Processing (screening, crushing, washing) 12. Progressive reclamation	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Surface runoff.	Negligible
			M-5.3-64	An independent Environmental Monitor (EM) will be onsite during sensitive works.		
Ecosystems at-risk	Operations	12. Progressive reclamation	M-5.3-68	Progressive reclamation to be conducted during operation to reduce risk of invasive species establishment.	Spread of invasive species.	Negligible
			M-5.3-73	A Construction Environment Management Plan (CEMP) will be developed which will include regular inspections of equipment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-75	An independent Environmental Monitor (EM) will be onsite.		
			M-5.3-76	An Operation Environmental Management Plan will be prepared that includes regular scheduled equipment inspections.		
			M-5.3-67	A site specific Invasive Plant Management Plan will be developed.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Ecosystems at-risk	Reclamation and Closure	17. Crew and equipment transport 20. Site reclamation	M-5.3-67	A site specific Invasive Plant Management Plan will be developed.	Spread of invasive species.	Negligible
			M-5.3-68	Progressive reclamation to be conducted during operation to reduce risk of invasive species establishment.		
			M-5.3-73	A Construction Environment Management Plan (CEMP) will be developed which will include regular inspections of equipment.		
			M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).		
			M-5.3-75	An independent Environmental Monitor (EM) will be onsite.		
			M-5.3-76	An Operation Environmental Management Plan will be prepared that includes regular scheduled equipment inspections.		
Ecosystems at-risk	Reclamation and Closure	20. Site reclamation	M-5.3-65	An Air Quality and Dust Control Management Plan will be prepared and implemented during construction, operations and reclamation.	Introduction of dust.	Negligible
			M-5.3-66	Progressive reclamation to be conducted during operations to reduce ambient dust.		
Ecosystems at-risk	Reclamation and Closure	20. Site reclamation	M-5.3-69	A Soil Management Plan, including the Reclamation Plan, will be developed and implemented during construction. The Soil Management Plan will be employed during reclamation and closure.	Soil disturbance.	Negligible
Plant species at-risk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 6. Pit development 7. Other ancillary land-based construction works	M-5.3-58	Activities will be contained within surveyed Project boundary.	Loss of extent.	Negligible
			M-5.3-59	Standing vegetation will be retained for as long as possible.		
			M-5.3-60	Reclamation planning will aim to re-establish functional listed ecosystems at the same proportion at which they were removed, where final design allows.		
			M-5.3-61	Ecological units will be created during the reclamation phase similar to those present prior to Project construction.		
			M-5.3-62	Develop and implement a vegetation monitoring program to assess the success of mine reclamation.		
			M-5.3-57	Project design aims to utilize disturbed areas and avoid sensitive ecosystems.		
Plant species at-risk	Accidents and Malfunctions	15. Shipping 16. Refueling and maintenance 17. Crew and equipment transport	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Introduction of deleterious substances.	Negligible
Terrain stability	Construction	2. Site preparation, including berm construction	M-5.4-03	Conduct appropriate detailed investigations of terrain stability and geotechnical conditions.	Land-based Mass Movement - Terrain Stability: changes to slope morphology or drainage conditions.	Negligible
			M-5.4-04	Prepare approved engineered design and plans to achieve Proposed Project performance requirements and for mitigation, as required.		
			M-5.4-05	Conduct appropriate onsite assessments to identify connectivity of site earth works to watercourses.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Terrain stability	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-5.4-06	Conduct onsite assessment of terrain stability conditions along watercourse banks and connectivity to planned site activities.	Land-based Mass Movement - Terrain Stability: changes to debris flow-debris flood transport or run out zones.	Negligible
			M-5.4-07	Conduct appropriate debris flow/ flood hazard and effect assessments including hydrotechnical assessments that would include peak discharge and sediment concentration estimates.		
			M-5.4-08	Prepare engineered designs and plans by qualified and experienced professionals for mitigation (e.g., diversion and catchment structures), as required.		
Terrain stability	Operations	10. Aggregate mining	M-5.4-11	Conduct appropriate monitoring and ongoing investigations of terrain stability and geotechnical conditions to achieve Proposed Project performance requirements and for mitigation, as required.	Land-based Mass Movement - Terrain Stability: changes to slope morphology or drainage conditions.	Negligible
Terrain stability	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.4-12	Conduct recommended monitoring and ongoing debris flow/ flood hazard assessments of watercourse side banks and drainage of changing site conditions were warranted.	Land-based Mass Movement - Terrain Stability: changes to debris flow-debris flood transport or run out zones.	Negligible
Terrain stability	Reclamation and Closure	18. Removal of land-based infrastructure 19. Removal of marine infrastructure 20. Site reclamation	M-5.4-14	Based on stockpile location and earth works affecting or indirectly connected to side banks of watercourses, conduct site assessment of terrain stability conditions and soil erosion plans.	Land-based Mass Movement - Terrain Stability: changes to slope morphology or drainage conditions.	Negligible
			M-5.4-15	Includes conducting appropriate onsite assessments to identify connectivity of site earth works to watercourses. For potential debris flow / flood catchment structures, conduct appropriate decommissioning or ongoing monitoring of structures where warranted.		
			M-5.4-16	As required, prepare engineered designs and plans by qualified and experienced professionals for removal or ongoing mitigation of site.		
Earthquakes and tsunamis	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-5.4-01	Conduct detailed geotechnical subsurface investigations (drilling and geophysical programs) where required.	Increased ground movement during earthquake event.	Negligible
			M-5.4-02	Prepare approved engineered design and plans to achieve Proposed Project engineering design and performance requirements and for mitigation, as required by provincial and federal accepted standards		
Earthquakes and tsunamis	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-5.4-01	Conduct detailed geotechnical subsurface investigations (drilling and geophysical programs) where required.	Increased shoreline erosion and offshore debris deposition during earthquake or landslide generated tsunami.	Negligible
			M-5.4-02	Prepare approved engineered design and plans to achieve Proposed Project engineering design and performance requirements and for mitigation, as required by provincial and federal accepted standards		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Earthquakes and tsunamis	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-5.4-01	Conduct detailed geotechnical subsurface investigations (drilling and geophysical programs) where required.	Initiation of submarine landslides.	Negligible
			M-5.4-02	Prepare approved engineered design and plans to achieve Proposed Project engineering design and performance requirements and for mitigation, as required by provincial and federal accepted standards		
Earthquakes and tsunamis	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.4-09	Conduct operations in conformance with detailed geotechnical designs.	Increased ground movement during earthquake event.	Negligible
			M-5.4-10	Monitor performance during operations and update or modify designs if required to achieve Proposed Project performance requirements and for mitigation, as required.		
Earthquakes and tsunamis	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.4-09	Conduct operations in conformance with detailed geotechnical designs.	Increased shoreline erosion and offshore debris deposition during earthquake or landslide generated tsunami.	Negligible
			M-5.4-10	Monitor performance during operations and update or modify designs if required to achieve Proposed Project performance requirements and for mitigation, as required.		
Earthquakes and tsunamis	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.4-09	Conduct operations in conformance with detailed geotechnical designs.	Initiation of submarine landslides.	Negligible
			M-5.4-10	Monitor performance during operations and update or modify designs if required to achieve Proposed Project performance requirements and for mitigation, as required.		
Earthquakes and tsunamis	Reclamation and Closure	18. Removal of land-based infrastructure 19. Removal of marine infrastructure 20. Site reclamation	M-5.4-13	Conduct reclamation and closure in conformance based on detailed geotechnical designs, monitor performance during reclamation and update or modify designs if required to achieve Proposed Project performance requirements and for mitigation, as required.	Increased ground movement during earthquake event.	Negligible
Earthquakes and tsunamis	Reclamation and Closure	18. Removal of land-based infrastructure 19. Removal of marine infrastructure 20. Site reclamation	M-5.4-13	Conduct reclamation and closure in conformance based on detailed geotechnical designs, monitor performance during reclamation and update or modify designs if required to achieve Proposed Project performance requirements and for mitigation, as required.	Increased shoreline erosion and offshore debris deposition during earthquake or landslide generated tsunami.	Negligible
Earthquakes and tsunamis	Reclamation and Closure	18. Removal of land-based infrastructure 19. Removal of marine infrastructure 20. Site reclamation	M-5.4-13	Conduct reclamation and closure in conformance based on detailed geotechnical designs, monitor performance during reclamation and update or modify designs if required to achieve Proposed Project performance requirements and for mitigation, as required.	Initiation of submarine landslides.	Negligible
Climate	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-5.8-01	Major extraction and processing equipment such as the dredger, screens and crusher will be powered by electricity. Extracted and processed material will be transferred around the Project site using a network of electricity-powered conveyors instead of using haul vehicles.	The timescale of activities is too short (approximately two years), and will occur in the near future (2014-2015) therefore considerable climate-infrastructure interaction impacts are not expected.	n/a
			M-5.8-02	Ongoing routine maintenance of vehicles.		
			M-5.8-03	Minimize idling of vehicles and tugs		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Climate	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	M-5.8-01	Major extraction and processing equipment such as the dredger, screens and crusher will be powered by electricity. Extracted and processed material will be transferred around the Project site using a network of electricity-powered conveyors instead of using haul vehicles.	The timescale of activities is too short (approximately two years), and will occur in the near future (2014-2015) therefore considerable climate-infrastructure interaction impacts are not expected.	n/a
			M-5.8-02	Ongoing routine maintenance of vehicles.		
			M-5.8-03	Minimize idling of vehicles and tugs		
Climate	Reclamation and Closure	17. Crew and equipment transport 18. Removal of land-based infrastructure 19. Removal of marine infrastructure 20. Site reclamation	M-5.8-01	Major extraction and processing equipment such as the dredger, screens and crusher will be powered by electricity. Extracted and processed material will be transferred around the Project site using a network of electricity-powered conveyors instead of using haul vehicles.	The timescale of activities is too short (approximately two years), and will occur in the near future (2014-2015) therefore considerable climate-infrastructure interaction impacts are not expected.	n/a
			M-5.8-02	Ongoing routine maintenance of vehicles.		
			M-5.8-03	Minimize idling of vehicles and tugs		
Surface Water Flow	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing)	M-5.1-01	Implementation of the Fish Habitat Offset Plan (Volume 4, Part G – Section 22.0: Appendix 5.1-B). Extension of the lower segment WC 2 will collect surface flow diverted through loss of the upper segment and will increase the wetted area within the extension and the lower segment of WC 2.	Changes in surface water flow.	Negligible
Surface Water Flow	Reclamation and Closure	20. Site reclamation	M-5.1-01	Implementation of the Fish Habitat Offset Plan (Volume 4, Part G – Section 22.0: Appendix 5.1-B). Extension of the lower segment WC 2 will collect surface flow diverted through loss of the upper segment and will increase the wetted area within the extension and the lower segment of WC 2.	Changes in surface water flow.	Negligible
Water Quality	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.5-01	Proposed Project design elements	Changes to Water Quality – Suspended Sediments	Negligible
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
Water Quality	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.5-03	Material Storage, Handling and Waste Management Plan (Volume 3, Part E – Section 16.0)	Changes to Water Quality – Spills	Negligible
			M-5.5-04	Site specific Spill Prevention and Emergency Response Plan (Volume 3, Part E – Section 16.0)		
Water Quality	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.5-01	Proposed Project design elements	Changes to Water Quality – Suspended Sediments	Negligible
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
Water Quality	Operations	11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 16. Refueling and maintenance	M-5.5-03	Material Storage, Handling and Waste Management Plan (Volume 3, Part E – Section 16.0)	Changes to Water Quality – Spills	Negligible
			M-5.5-04	Site specific Spill Prevention and Emergency Response Plan (Volume 3, Part E – Section 16.0)		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Water Quality	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.5-01	Proposed Project design elements	Changes to Water Quality – Suspended Sediments	Negligible
			M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).		
Water Quality	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.5-03	Material Storage, Handling and Waste Management Plan (Volume 3, Part E – Section 16.0)	Changes to Water Quality – Spills	Negligible
			M-5.5-04	Site specific Spill Prevention and Emergency Response Plan (Volume 3, Part E – Section 16.0)		
Aquatic Health	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Direct Toxicity-Related Effects	Negligible
			M-5.5-03	Material Storage, Handling and Waste Management Plan (Volume 3, Part E – Section 16.0)		
Aquatic Health	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Nutrient Enrichment-Related Effects	Negligible
Aquatic Health	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Direct Toxicity-Related Effects	Negligible
			M-5.5-03	Material Storage, Handling and Waste Management Plan (Volume 3, Part E – Section 16.0)		
Aquatic Health	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Nutrient Enrichment-Related Effects	Negligible
Aquatic Health	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Direct Toxicity-Related Effects	Negligible
			M-5.5-03	Material Storage, Handling and Waste Management Plan (Volume 3, Part E – Section 16.0)		
Aquatic Health	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.1-06	Develop and implement an Erosion and Sediment Control Plan (See Volume 4, Part G – Section 22.0: Appendix 3).	Nutrient Enrichment-Related Effects	Negligible
Groundwater Flow	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing)	M-5.6-01	Limit excavation to the southern portion of the delta/fan.	Changes in groundwater flow.	Negligible
			M-5.6-02	Implementation of a progressive Reclamation Plan (Volume 4, Part G - Section 22.0: Appendix 3).		
Groundwater Quality	Operations	10. Aggregate mining 12. Progressive reclamation	M-5.6-04	Fines deposited around the northern and eastern perimeter of the property but each year's deposition will be limited to small surface area. Fines will be mixed with a growing medium and seeded.	Changes in groundwater quality.	Negligible
			M-5.6-02	Implementation of a progressive Reclamation Plan (Volume 4, Part G - Section 22.0: Appendix 3).		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Groundwater Quality	Reclamation and Closure	20. Site reclamation	M-5.6-04	Fines deposited around the northern and eastern perimeter of the property but each year's deposition will be limited to small surface area. Fines will be mixed with a growing medium and seeded.	Changes in groundwater quality.	Negligible
			M-5.6-02	Implementation of a progressive Reclamation Plan (Volume 4, Part G - Section 22.0: Appendix 3).		
Groundwater Flow	Accidents and Malfunctions	10. Aggregate mining 11. Processing (screening, crushing, washing)	M-5.6-03	Set overflow structure at 5.2m.	Changes in groundwater flow.	Negligible
Groundwater Quality	Accidents and Malfunctions	10. Aggregate mining 12. Progressive reclamation 20. Site reclamation	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Changes in groundwater quality.	Negligible
Air Quality Indicators	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).	Fugitive particulate concentrations from construction activities: Bulldozing, material handling (material drops), fugitive road dust, and wind erosion from un-vegetated dyke and berms.	Negligible (NO_2, SO_2) to Not Significant (PM, TSP)
			M-5.7-02	Establish an on-site Air Quality and Meteorological Monitoring Program.		
			M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).		
Air Quality Indicators	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping	M-5.7-08	Material handling will be partially enclosed with or without water (mist) spray.	Fugitive particulate concentrations from material handling (material drops).	Negligible (NO_2, SO_2) to Not Significant (PM, TSP)
Air Quality Indicators	Operations	11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage	M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).	Fugitive particulate concentrations from fugitive road dust.	Negligible (NO_2, SO_2) to Not Significant (PM, TSP)
Air Quality Indicators	Operations	11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping	M-5.7-02	Air Quality and Meteorological Monitoring.	Project activities will result in air emissions, which may cause changes in air concentrations and atmospheric deposition rates. Fuel combustion will result in air emissions.	Negligible (NO_2, SO_2) to Not Significant (PM, TSP)
Air Quality Indicators	Operations	11. Processing (screening, crushing, washing)	M-5.7-04	Processing plant crushing units will be partially enclosed.	Fugitive particulate concentrations from processing plant crushing units.	Negligible (NO_2, SO_2) to Not Significant (PM, TSP)
Air Quality Indicators	Operations	11. Processing (screening, crushing, washing) 13. Stockpile storage	M-5.7-05	Watering of 10 mm crushed gravel and 20 mm crushed gravel stockpiles.	Fugitive particulate concentrations from wind erosion off the10 mm crushed gravel and 10 mm crushed gravel stockpiles.	Negligible (NO_2, SO_2) to Not Significant (PM, TSP)

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Air Quality Indicators	Operations	11. Processing (screening, crushing, washing)	M-5.7-06	Processing plant dry screening units will be partially enclosed.	Fugitive particulate concentrations from processing plant dry screening units.	Negligible (NO2, SO2) to Not Significant (PM, TSP)
Air Quality Indicators	Operations	11. Processing (screening, crushing, washing)	M-5.7-07	Processing plant wet screening process.	Fugitive particulate concentrations from processing plant wet screening.	Negligible (NO2, SO2) to Not Significant (PM, TSP)
Air Quality Indicators	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.7-01	Develop and implement an Air Quality and Dust Control Management Plan (Volume 3, Part G - Section 16.0) that will detail measures to control fugitive particulates (e.g. watering and speed control).	Fugitive particulate concentrations from reclamation and closure activities: Bulldozing, material handling (material drops), fugitive road dust, and wind erosion from un-vegetated dyke and berms.	Negligible (NO2, SO2) to Not Significant (PM, TSP)
Economic						
Regional Economic Development	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-6.1-01	Local hiring and procurement policies and practices.	Goods and services business and contracting opportunities for local businesses.	n/a
Regional Economic Development	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	M-6.1-01	Local hiring and procurement policies and practices.	Goods and services business and contracting opportunities for local businesses.	n/a
Labour Market	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Positive	n/a	Employment and income generating opportunities for local residents.	n/a

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Labour Market	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	Positive	n/a	Employment and income generating opportunities for local residents.	n/a
Local Government Revenue	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Positive	n/a	Local and regional governments would receive taxes and fees in association with construction and operation of the Proposed Project.	n/a
Local Government Revenue	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	Positive	n/a	Local and regional governments would receive taxes and fees in association with construction and operation of the Proposed Project.	n/a
Real Estate	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-6.1-02	Explore electricity distribution infrastructure and apply for a suitable interconnection to the BC Hydro 138 kV transmission line in order to potentially offer access to BC Hydroelectricity service to McNab Creek Strata real estate owners. If this electricity service is realized for strata owners then reliance on generators would be diminished along with their associated noise and air emissions.	Reduced value of McNab Creek Strata real estate	Not Significant
			M-6.1-03	Implementation of an Access Management Plan to provide special access to certain parts of BURNCO's private property pursuant to discussions between BURNCO and strata residents on access arrangements.		
			M-6.1-04	Ongoing engagement with McNab Creek Strata residents regarding issues of benefit and concern.		
			M-9.2-01 to M-9.2-09	Measures outlined in Section 9.2 Noise.		
			M-7.4-01 to M-7.4-10	Measures outlined in Section 7.4 Visual Resources.		
			M-5.7-01 to M-5.7-08	Measures outlined in Section 5.7 Air Quality.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Real Estate	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	M-6.1-02	Explore electricity distribution infrastructure and apply for a suitable interconnection to the BC Hydro 138 kV transmission line in order to potentially offer access to BC Hydroelectricity service to McNab Creek Strata real estate owners. If this electricity service is realized for strata owners then reliance on generators would be diminished along with their associated noise and air emissions.	Reduced value of McNab Creek Strata real estate	Not Significant
			M-6.1-03	Implementation of an Access Management Plan to provide special access to certain parts of BURNCO's private property pursuant to discussions between BURNCO and strata residents on access arrangements.		
			M-6.1-04	Ongoing engagement with McNab Creek Strata residents regarding issues of benefit and concern.		
			M-9.2-01 to M-9.2-09	Measures outlined in Section 9.2 Noise.		
			M-7.4-01 to M-7.4-10	Measures outlined in Section 7.4 Visual Resources.		
			M-5.7-01 to M-5.7-08	Measures outlined in Section 5.7 Air Quality.		
Social						
Housing and Accommodations	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-6.1-01	Local hiring and procurement policies and practices. Local hiring of workforce will assist in reducing in-migration and out-migration, and associated effects on housing.	Workers sourced from outside the LSA could lead to increase demand on local housing and/or temporary accommodation, and affect housing availability and affordability	Negligible
Housing and Accommodations	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	M-6.1-01	Local hiring and procurement policies and practices. Local hiring of workforce will assist in reducing in-migration and out-migration, and associated effects on housing.	Workers sourced from outside the LSA could lead to increase demand on local housing and/or temporary accommodation, and affect housing availability and affordability	Negligible
Housing and Accommodations	Reclamation and Closure	17. Crew and equipment transport 18. Removal of land-based infrastructure 19. Removal of marine infrastructure 20. Site reclamation	M-6.1-01	Local hiring and procurement policies and practices. Local hiring of workforce will assist in reducing in-migration and out-migration, and associated effects on housing.	Change in demand for housing and temporary accommodation affecting housing affordability and availability	Negligible

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Emergency Services	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Construction activities requiring direct use of local emergency services. Change in demand for emergency services exceeding service supply/capacity	Negligible
			M-7.1-02	Develop and implement an Emergency Response Plan (Volume 3, Part G - Section 16.0).		
			M-7.1-03	Develop and implement an Access Management Plan (Volume 3, Part G - Section 16.0).		
			M-7.1-04	Aggregate transport will occur by experienced barge and tug operators that implement an Environmental Management System (EMS) that is in conformance with ISO 14001:2004.		
Emergency Services	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	M-5.1-20	Develop and implement a Spill Prevention and Emergency Response Plan (Volume 3, Part E - Section 16.0).	Operational activities requiring direct use of local emergency services. Change in demand for emergency services exceeding service supply/capacity	Negligible
			M-7.1-02	Develop and implement an Emergency Response Plan (Volume 3, Part G - Section 16.0).		
			M-7.1-03	Develop and implement an Access Management Plan (Volume 3, Part G - Section 16.0).		
			M-7.1-04	Aggregate transport will occur by experienced barge and tug operators that implement an Environmental Management System (EMS) that is in conformance with ISO 14001:2004.		
Marine Navigation	Construction	1. Crew and equipment transport 5. Marine loading facility installation 8. Other ancillary marine construction works	M-7.2-01	Consult with CCG, PPA, HPP, BC Ferries and Squamish Terminals along with other stakeholders regarding potential interference to identify operating practices or vessel route options that should be adopted.	Interference with navigation use and navigability due to Project-related vessel traffic	Not Significant
			M-7.2-02	Investigate further passage routing options to avoid busy recreational waters and BC Ferries routes particularly during the summer months.		
			M-7.2-03	Marine transportation management plan will include a procedure for marine stakeholders to consult with the proponent regarding special events such as, yacht races, regattas and marine based festivals.		
			M-7.2-04	Limit the number of water taxi movements traversing through Thornbrough Channel and to avoid peak recreational boating times, where possible.		
			M-7.2-05	Marine transportation management plan.		
Marine Navigation	Construction	5. Marine loading facility installation 8. Other ancillary marine construction works	M-7.2-06	Project marine control zone will be marked using buoys subject to TC requirements.	Interference with navigation use and navigability due to Project-related infrastructure	Negligible
			M-7.2-07	Project-related infrastructure will incorporate recommendations of the Navigation Protection Program review process.		
			M-7.2-08	Dark sky shielded features will be installed in the Project area, where technically possible.		
			M-7.2-09	Relevant authorities will be notified so that Notices to Mariners and Notices to Shipping can be issued.		
			M-7.2-10	CHS navigational charts and other appropriate nautical publications will be updated to show the terminal and other marine features, where appropriate.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Marine Navigation	Operations	9. Crew transport 15. Shipping	M-7.2-01	Consult with CCG, PPA, HPP, BC Ferries and Squamish Terminals along with other stakeholders regarding potential interference to identify operating practices or vessel route options that should be adopted.	Interference with navigation use and navigability due to Project-related vessel traffic	Not Significant
			M-7.2-02	Investigate further passage routing options to avoid busy recreational waters and BC Ferries routes particularly during the summer months.		
			M-7.2-03	Marine transportation management plan will include a procedure for marine stakeholders to consult with the proponent regarding special events such as, yacht races, regattas and marine based festivals.		
			M-7.2-04	Limit the number of water taxi movements traversing through Thornbrough Channel and to avoid peak recreational boating times, where possible.		
			M-7.2-05	Marine transportation management plan.		
Marine Navigation	Operations	9. Crew transport 15. Shipping	M-7.2-06	Project marine control zone will be marked using buoys subject to TC requirements.	Interference with navigation use and navigability due to Project-related infrastructure	Negligible
			M-7.2-07	Project-related infrastructure will incorporate recommendations of the Navigation Protection Program review process.		
			M-7.2-08	Dark sky shielded features will be installed in the Project area, where technically possible.		
			M-7.2-09	Relevant authorities will be notified so that Notices to Mariners and Notices to Shipping can be issued.		
			M-7.2-10	CHS navigational charts and other appropriate nautical publications will be updated to show the terminal and other marine features, where appropriate.		
Marine Navigation	Reclamation and Closure	17. Crew and equipment transport 19. Removal of marine infrastructure	M-7.2-01	Consult with CCG, PPA, HPP, BC Ferries and Squamish Terminals along with other stakeholders regarding potential interference to identify operating practices or vessel route options that should be adopted.	Interference with navigation use and navigability due to Project-related vessel traffic	Not Significant
			M-7.2-02	Investigate further passage routing options to avoid busy recreational waters and BC Ferries routes particularly during the summer months.		
			M-7.2-04	Limit the number of water taxi movements traversing through Thornbrough Channel and to avoid peak recreational boating times, where possible.		
			M-7.2-05	Marine transportation management plan.		
Marine Navigation	Reclamation and Closure	17. Crew and equipment transport 19. Removal of marine infrastructure	M-7.2-06	Project marine control zone will be marked using buoys subject to TC requirements.	Interference with navigation use and navigability due to Project-related infrastructure	Negligible
			M-7.2-07	Project-related infrastructure will incorporate recommendations of the Navigation Protection Program review process.		
			M-7.2-08	Dark sky shielded features will be installed in the Project area, where technically possible.		
			M-7.2-09	Relevant authorities will be notified so that Notices to Mariners and Notices to Shipping can be issued.		
			M-7.2-10	CHS navigational charts and other appropriate nautical publications will be updated to show the terminal and other marine features, where appropriate.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Harvesting Fish and Wildlife	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-9.2-01 to M-9.2-09	Measures outlined in Section 9.2 Noise.	Change in Quality of Environmental Setting	Not significant
			M-7.4-01 to M-7.4-10	Measures outlined in Section 7.4 Visual Resources.		
			M-5.7-01 to M-5.7-08	Measures outlined in Section 5.7 Air Quality.		
			M-7.2-01 to M-7.2-10	Measures outlined in Section 7.2 Marine Transportation.		
Harvesting Fish and Wildlife	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	M-7.3-01	Barges will be loaded only on weekdays.	Change in Quality of Environmental Setting	Not significant
			M-9.2-01 to M-9.2-09	Measures outlined in Section 9.2 Noise.		
			M-7.4-01 to M-7.4-10	Measures outlined in Section 7.4 Visual Resources.		
			M-5.7-01 to M-5.7-08	Measures outlined in Section 5.7 Air Quality.		
			M-7.2-01 to M-7.2-10	Measures outlined in Section 7.2 Marine Transportation.		
Recreation and Tourism	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-9.2-01 to M-9.2-09	Measures outlined in Section 9.2 Noise.	Change in Quality of Environmental Setting	Not significant
			M-7.4-01 to M-7.4-10	Measures outlined in Section 7.4 Visual Resources.		
			M-5.7-01 to M-5.7-08	Measures outlined in Section 5.7 Air Quality.		
			M-7.2-01 to M-7.2-10	Measures outlined in Section 7.2 Marine Transportation.		
Recreation and Tourism	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	M-7.3-01	Barges will be loaded only on weekdays.	Change in Quality of Environmental Setting	Not significant
			M-9.2-01 to M-9.2-09	Measures outlined in Section 9.2 Noise.		
			M-7.4-01 to M-7.4-10	Measures outlined in Section 7.4 Visual Resources.		
			M-5.7-01 to M-5.7-08	Measures outlined in Section 5.7 Air Quality.		
			M-7.2-01 to M-7.2-10	Measures outlined in Section 7.2 Marine Transportation.		
Visual Quality	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-7.4-01	Minimize removal of vegetation and topsoil to ensure that existing natural vegetation is retained and incorporated into site design.	The temporary construction of infrastructure and the installation of land-based and marine-based infrastructure will introduce built structures to the existing landscape.	Not significant
			M-7.4-02	Dust suppression techniques should be in place at all times during construction.		
			M-7.4-03	Keep the scale and size of infrastructure components and layout concentrated.		
			M-7.4-04	Any desired planting programs for vegetative screening of land-based structure should be considered as results will not be immediately effective.		
			M-7.4-05	Preserve the level of structure contrast of infrastructure components by re-finishing and maintaining external surfaces as required.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
Visual Quality	Operations	10. Aggregate mining 12. Progressive reclamation 13. Stockpile storage 14. Marine loading	M-7.4-02	Dust suppression techniques should be in place at all times during construction.	The operation of land-based and marine-based infrastructure and night-time security lighting will present built structures and lighting conditions to the existing landscape.	Not significant
			M-7.4-06	Maintain natural screening to decrease the visibility of extraction and processing activity.		
			M-7.4-07	Re-contour and re-vegetate throughout Operation if possible.		
			M-7.4-08	Planting of berms and temporary planting.		
			M-7.4-09	Keep the height of stockpiles low to avoid their visibility above existing screening.		
			M-7.4-10	Negative lighting impacts can be mitigated by installing fixtures that reduce light 'spillage' beyond the direct area of illumination.		
Heritage						
Heritage Resources	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-8.1-01	Implement Heritage Resource Chance Find Management Plan (Part E, Section 16.0) that provides management recommendations for avoidance, systematic data recovery or monitoring, in the event that undetected heritage resources are encountered during project activities.	Changes to heritage resource integrity, context and accessibility, if present.	Not significant
Heritage Resources	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 15. Shipping	M-8.1-01	Implement Heritage Resource Chance Find Management Plan (Part E, Section 16.0) that provides management recommendations for avoidance, systematic data recovery or monitoring, in the event that undetected heritage resources are encountered during project activities.	Changes to heritage resource integrity, context and accessibility, if present.	Not significant
Heritage Resources	Reclamation and Closure	17. Crew and equipment transport 18. Removal of land-based infrastructure	M-8.1-01	Implement Heritage Resource Chance Find Management Plan (Part E, Section 16.0) that provides management recommendations for avoidance, systematic data recovery or monitoring, in the event that undetected heritage resources are encountered during project activities.	Changes to heritage resource integrity, context and accessibility, if present.	Not significant
Health Effects						
People	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works 10. Aggregate mining	M-5.7-01 to M-5.7-08	Measures outlined in Air Quality section.	Risk to human health from exposure. HHRA Methodology includes air quality, particulate matter and multimedia effects.	Negligible to Not Significant
			M-9.1-01	Confirmation that a Health and Safety Plan for workers covers the mitigation of exposure of workers to dust and particulate matter.		

VC	Phase	Activity	No.	Mitigation	Potential Effect	Significance
People	Operations		M-5.7-01 to M-5.7-08	Measures outlined in Air Quality section.	Risk to human health from exposure. HHRA Methodology includes air quality, particulate matter and multimedia effects.	Negligible to Not Significant
			M-9.1-01	Confirmation that a Health and Safety Plan for workers covers the mitigation of exposure of workers to dust and particulate matter.		
People	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	M-5.7-01 to M-5.7-08	Measures outlined in Air Quality section.	Risk to human health from exposure. HHRA Methodology includes air quality, particulate matter and multimedia effects.	Negligible to Not Significant
			M-9.1-01	Confirmation that a Health and Safety Plan for workers covers the mitigation of exposure of workers to dust and particulate matter.		
Noise Levels	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	M-9.2-01	Limit construction activity to daytime hours.	Increase in noise levels.	Negligible
			M-9.2-02	Schedule significant noise-causing activities to reduce disruption to nearby residents.		
			M-9.2-03	Position heavy equipment muster points at least 500 m from any receptor.		
			M-9.2-04	Fit equipment with standard mufflers or silencers and keep in good working order.		
			M-9.2-05	Use acoustical screening from existing on-site barriers.		
Noise Levels	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	M-9.2-06	Construct the McNab Creek Flood Protection Dyke approximately 830 m long and 5 m high berm on the north side of the aggregate pit.	Increase in noise levels.	Negligible
			M-9.2-07	Construct the Pit Lake Containment Berm, approximately 800 m long and 9 m high berm on south side of the aggregate pit.		
			M-9.2-08	Construct a Processing Area Dirt Berm, approximately 230 m long and 9 m high berm on the east side of the processing plant.		
			M-9.2-09	Dry screens and crusher in the processing plant will be housed in fabric enclosures.		
			M-9.2-01	Limit operation activity to daytime hours.		
Noise Levels	Reclamation and Closure	17. Crew and equipment transport 18. Removal of land-based infrastructure 19. Removal of marine infrastructure 20. Site reclamation	M-9.2-01	Limit reclamation and closure activity to daytime hours.	Increase in noise levels.	Negligible
			M-9.2-02	Schedule significant noise-causing activities to reduce disruption to nearby residents.		
			M-9.2-03	Position heavy equipment muster points at least 500 m from any receptor.		
			M-9.2-04	Fit equipment with standard mufflers or silencers and keep in good working order.		

Table 18-2: Summary of Predicted Cumulative Residual Effects

VC	Phase	Activity	Potential Cumulative Residual Effect	Mitigation Number	Add'l Mitigation	Significance
Marine Mammals	Construction	1. Crew and equipment transport 5. Marine loading facility installation 8. Other ancillary marine construction works	Behavioural disturbance of marine mammals from Project-generated underwater noise (i.e., pile driving / vessel operations / barge loading)	None	None	Not Significant
Marine Mammals	Operations	9. Crew transport 14. Marine loading 15. Shipping	Behavioural disturbance of marine mammals from Project-generated underwater noise (i.e., pile driving / vessel operations / barge loading)	None	None	Not Significant
Marine Mammals	Reclamation and Closure	17. Crew and equipment transport 19. Removal of marine infrastructure	Behavioural disturbance of marine mammals from Project-generated underwater noise (i.e., pile driving / vessel operations / barge loading)	None	None	Not Significant
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	Barriers to movement	M-5.3-77	Communication and planning with other proponent within McNab Valley	Not Significant
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	Change in mortality	M-5.3-77 M-5.3-78	Communication and planning with other proponent within McNab Valley Access management planning with other proponents within McNab Valley	Not Significant
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	Habitat loss	M-5.3-77 M-5.3-78	Communication and planning with other proponent within McNab Valley Access management planning with other proponents within McNab Valley	Not Significant
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	Barriers to movement	M-5.3-77	Communication and planning with other proponent within McNab Valley	Not Significant
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	Change in mortality	M-5.3-77 M-5.3-78	Communication and planning with other proponent within McNab Valley Access management planning with other proponents within McNab Valley	Not Significant
Amphibian species at risk (i.e., red-legged frog, western toad, Pacific tailed frog)	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 16. Refueling and maintenance	Habitat loss	M-5.3-77 M-5.3-78	Communication and planning with other proponent within McNab Valley Access management planning with other proponents within McNab Valley	Not Significant
Roosevelt elk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	Barriers to movement	M-5.3-77 M-5.3-78	Communication and planning with other proponent within McNab Valley Access management planning with other proponents within McNab Valley	Not Significant

VC	Phase	Activity	Potential Cumulative Residual Effect	Mitigation Number	Add'l Mitigation	Significance
Roosevelt elk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	Change in mortality	M-5.3-77	Communication and planning with other proponents within McNab Valley	Not Significant
Roosevelt elk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	Habitat loss	M-5.3-77	Communication and planning with other proponents within McNab Valley	Not Significant
Roosevelt elk	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading	Barriers to movement	M-5.3-77 M-5.3-78	Communication and planning with other proponent within McNab Valley Access management planning with other proponents within McNab Valley	Not Significant
Roosevelt elk	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading	Change in mortality	M-5.3-77	Communication and planning with other proponents within McNab Valley	Not Significant
Roosevelt elk	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading	Habitat loss	M-5.3-77	Communication and planning with other proponents within McNab Valley	Not Significant
Grizzly bear	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	Change in mortality	M-5.3-77	Communication and planning with other proponents within McNab Valley	Significant
Grizzly bear	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 6. Pit development 7. Other ancillary land-based construction works	Habitat loss	M-5.3-77 M-5.3-78	Communication and planning with other proponent within McNab Valley Access management planning with other proponents within McNab Valley	Significant
Grizzly bear	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading	Change in mortality	M-5.3-77	Communication and planning with other proponents within McNab Valley	Significant
Grizzly bear	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading	Habitat loss	M-5.3-77 M-5.3-78	Communication and planning with other proponent within McNab Valley Access management planning with other proponents within McNab Valley	Significant

VC	Phase	Activity	Potential Cumulative Residual Effect	Mitigation Number	Add'l Mitigation	Significance
Environmentally sensitive ecosystems (wetlands, riparian ecosystems, old growth forest)	Construction	3. Processing area installation, including conveyors and materials handling system)	Loss of extent	M-5.3-77	Communication and planning with other proponents within McNab Valley	Not Significant
Ecosystems at-risk	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 5. Marine loading facility installation 6. Pit development	Loss of extent	M-5.3-77	Communication and planning with other proponents within McNab Valley	Not Significant
Ecosystems at-risk	Operations	10. Aggregate mining	Loss of extent	M-5.3-77	Communication and planning with other proponents within McNab Valley	Not Significant
Air Quality Indicators	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Increase in PM2.5 – 24-hour Increase in PM2.5 – Annual Increase in PM10 – 24-hour Increase in TSP – 24-hour Increase in TSP – Annual	None	None	Negligible
Air Quality Indicators	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping	Increase in PM2.5 – 24-hour Increase in PM2.5 – Annual Increase in PM10 – 24-hour Increase in TSP – 24-hour Increase in TSP – Annual	None	None	Negligible
Air Quality Indicators	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	Increase in PM2.5 – 24-hour Increase in PM2.5 – Annual Increase in PM10 – 24-hour Increase in TSP – 24-hour Increase in TSP – Annual	None	None	Negligible
Real Estate	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Change in real estate value	None	None	Not Significant
Real Estate	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	Change in real estate value	None	None	Not Significant
Marine Navigation	Construction	1. Crew and equipment transport	Interference with navigation use and navigability due to Project-related vessel traffic	None	None	Not Significant
Marine Navigation	Operations	15. Shipping	Interference with navigation use and navigability due to Project-related vessel traffic	None	None	Not Significant
Marine Navigation	Reclamation and Closure	17. Crew and equipment transport	Interference with navigation use and navigability due to Project-related vessel traffic	None	None	Not Significant

VC	Phase	Activity	Potential Cumulative Residual Effect	Mitigation Number	Add'l Mitigation	Significance
Harvesting Fish and Wildlife	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Change in quality of environmental setting	None	None	Not significant
Harvesting Fish and Wildlife	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	Change in quality of environmental setting	None	None	Not significant
Recreation and Tourism	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Change in quality of environmental setting	None	None	Not significant
Recreation and Tourism	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading 15. Shipping 16. Refueling and maintenance	Change in quality of environmental setting	None	None	Not significant
Visual Quality	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Change in visual quality	None	None	Not significant
Visual Quality	Operations	10. Aggregate mining 12. Progressive reclamation 13. Stockpile storage 14. Marine loading	Change in visual quality	None	None	Not significant
Heritage Resources	Construction	1. Crew and equipment transport 2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Changes to heritage resource integrity, context and accessibility, if present	None	None	Negligible

VC	Phase	Activity	Potential Cumulative Residual Effect	Mitigation Number	Add'l Mitigation	Significance
Heritage Resources	Operations	9. Crew transport 10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 15. Shipping	Changes to heritage resource integrity, context and accessibility, if present	None	None	Not Significant
Heritage Resources	Reclamation and Closure	17. Crew and equipment transport 18. Removal of land-based infrastructure	Changes to heritage resource integrity, context and accessibility, if present	None	Non	Negligible
People	Construction	2. Site preparation, including berm construction 3. Processing area installation, including conveyors and materials handling system) 4. Substation construction and connection 5. Marine loading facility installation 6. Pit development 7. Other ancillary land-based construction works 8. Other ancillary marine construction works	Human Health - Air Quality Human Health - Particulate Matter	None	None	Negligible
People	Operations	10. Aggregate mining 11. Processing (screening, crushing, washing) 12. Progressive reclamation 13. Stockpile storage 14. Marine loading	Human Health - Air Quality Human Health - Particulate Matter	None	None	Negligible
People	Reclamation and Closure	18. Removal of land-based infrastructure 20. Site reclamation	Human Health - Air Quality Human Health - Particulate Matter	None	None	Negligible

19.0 SUMMARY OF COMMITMENTS AND ASSURANCES

Table 19.1 below presents a summary of all commitments and assurances made by the Proponent within the EAC Application/EIS. The Summary of Commitment and Assurance will be subject to further review and refinement based on comments provided by regulatory agencies, Aboriginal groups and the public during the formal review of the EAC Application/EIS.

Table 19.1: BURNCO's Commitments for the BURNCO Aggregate Project

No.	Conditions	Project Phase	Source of Condition	Responsibility	Measurement of Condition
1.	**Project Design, Construction and Operations**				
C-1.1	The Proposed Project will be designed, located, constructed and operated in accordance with a Certified Project Description.	Pre-Construction Construction Operations Reclamation and Closure	EAC Application / EIS Review.	BCEAO	Compliance Management Plan
2.	**Permitting**				
C-2.1	The Proponent will acquire permits, approvals and authorizations that are required for the Proposed Project to proceed.	Pre-Construction Construction Operations Reclamation and Closure	Statutory Requirements	Various	Compliance Management Plan
3.	***Sḵwx̱wú7mesh* Nation Aboriginal Rights, including Current Use**				
C-3.1	The Proponent will work with the *Sḵwx̱wú7mesh* Nation to develop a mechanism for their involvement in the development, approval and implementation of mitigation, monitoring and supplemental studies[1].	Pre-Construction Construction Operations Reclamation and Closure	Direct discussions between *Sḵwx̱wú7mesh* Nation and the Proponent Volume 3, Part C – Section 11	*Sḵwx̱wú7mesh* Proponent	Details of agreement to be negotiated through ongoing discussions between the Nation and the Proponent.
C-3.2	The Proponent will support the *Sḵwx̱wú7mesh* Nation's ongoing Marine Use Planning process as mutually agreed.	Pre-Construction Construction Operations	Direct discussions between *Sḵwx̱wú7mesh* Nation and the Proponent Volume 3, Part C – Section 11	*Sḵwx̱wú7mesh* Proponent	Details of agreement to be negotiated through ongoing discussions between the Nation and the Proponent.
C-3.3	The Proponent will work with the *Sḵwx̱wú7mesh* Nation to develop a practical communication protocol to enable safe use of project areas for marine and terrestrial harvesting activities.	Pre-Construction Construction Operations Reclamation and Closure	Direct discussions between *Sḵwx̱wú7mesh* Nation and the Proponent Volume 3, Part C – Section 11	*Sḵwx̱wú7mesh* Proponent	Details of agreement to be negotiated through ongoing discussions between the Nation and the Proponent. Mutually agreeable marine/terrestrial resource harvesting will be specified as an objective of the agreement.
C-3.4	The Proponent will place the long-term ecological function McNab Creek as a management priority and an objective of all associated Environmental Management Programs.	Pre-Construction Construction Operations Reclamation and Closure	Direct discussions between *Sḵwx̱wú7mesh* Nation and the Proponent Volume 3, Part C – Section 11	*Sḵwx̱wú7mesh* Proponent	Compliance Management Plan, including monitoring and adaptive management.
C-3.5	The Proponent will work with the *Sḵwx̱wú7mesh* Nation to honour kw'ech'tenm, including but not limited to a plaque or other signage.	Pre-Construction	Direct discussions between *Sḵwx̱wú7mesh* Nation and the Proponent Volume 3, Part C – Section 11	*Sḵwx̱wú7mesh* Proponent	Details of agreement to be negotiated through ongoing discussions between the Nation and the Proponent.
4.	**Tsleil-Waututh Nation Aboriginal Rights, including Current Use**				
C-4.1	The Proponent will provide the Tsleil-Waututh Nation with opportunities to review and provide input to the Access Management Plan described in Volume 3, Part E - Section 16.0.	Pre-Construction	Volume 3, Part C – Section 11	Tsleil-Waututh Proponent	Details to be negotiated through ongoing discussions between the Nation and the Proponent.
C-4.2	The Proponent will work with the Tsleil-Waututh Nation to develop a practical protocol for communicating real-time information on construction and operations activities, including movement of Proposed Project-associated vessels, which may affect opportunities or access to pursue fishing, hunting and cultural activities in the Proposed Project Area.	Pre-Construction Construction	Volume 3, Part C – Section 11	Tsleil-Waututh Proponent	Details to be negotiated through ongoing discussions between the Nation and the Proponent.
C-4.3	The Proponent will consult with the Tsleil-Waututh Nation on measures that could reduce effects of visual changes from the Proposed Project on the quality of use experience and on cultural	Pre-Construction	Volume 3, Part C – Section 11	Tsleil-Waututh Proponent	Details to be negotiated through ongoing discussions between the

[1] Includes management plans, follow-up monitoring programs, fish habitat offsetting program and other similar programs.

No.	Conditions	Project Phase	Source of Condition	Responsibility	Measurement of Condition
	activities and transmission of culture and history within Howe Sound.				Nation and the Proponent.
C-4.4	The Proponent will consult with the Tsleil-Waututh Nation to identify locations within Howe Sound where members may conduct practices related to intangible culture heritage, timing of such practices, if relevant, and measures that would reduce effects from the Proposed Project on the ability to conduct those practices.	Pre-Construction	Volume 3, Part C – Section 11	Tsleil-Waututh Proponent	Details to be negotiated through ongoing discussions between the Nation and the Proponent.
5.	**McNab Creek Strata Engagement**				
C-5.1	The Proponent will establish a mutually agreeable mechanism for engaging with the McNab Creek Strata owners regarding issues of benefit and concern.	Construction Operations	Volume 2, Part B – Section 6.1	Proponent McNab Creek Strata owners	Details to be negotiated through ongoing discussions between the Proponent and the McNab Creek Strata owners.
C-5.2	Implementation of an Access Management Plan to provide special access to certain parts of BURNCO's private property pursuant to discussions between the Proponent and the McNab Creek Strata owners on access arrangements.	Construction Operations	Volume 2, Part B – Section 6.1	Proponent McNab Creek Strata owners	Details to be negotiated through ongoing discussions between the Proponent and the McNab Creek Strata owners.
C-5.3	The Proponent will explore electricity distribution infrastructure and apply for a suitable interconnection to the BC Hydro 138 kV transmission line in order to potentially offer access to BC Hydroelectricity service to McNab Creek Strata owners.	Construction Operations	Volume 2, Part B – Section 6.1	Proponent McNab Creek Strata owners	Details to be negotiated through ongoing discussions between the Proponent and the McNab Creek Strata owners.
6.	**Environmental Management**				
C-6.1	The Proponent will develop and implement Construction and Operational Environmental Management Programmes in accordance with the EAC Application/EIS. Qualified Professionals must develop and supervise the implementation of the following component plans: ▪ Erosion and Sediment Control Plan; ▪ Soil Management Plan; ▪ Material Storage, Handling and Waste Management (including solid waste management and re-fueling procedures); ▪ Access Management Plan; ▪ Pile Construction Management Plan; ▪ Vegetation Management Plan (Tree and Vegetation Clearing); ▪ Invasive Plant Species Management Plan ▪ Fisheries Habitat Protection and Mitigation Plan; ▪ Wildlife Protection Plan; ▪ Air Quality and Dust Control Plan; ▪ Noise Management Plan; ▪ Heritage Resource Chance Find Management Plan; ▪ Marine Transport Management Plan; ▪ Access Management Plan; ▪ Pit Slope Stability Monitoring Plan; ▪ Reclamation and Effective Closure Plan; ▪ Emergency Reponses Plan; ▪ Spill Prevention and Emergency Response Plan; and ▪ Health and Safety Plan. The Proponent must provide the Construction Environmental Management Programme to BCEAO, CEA Agency, DFO, FLNR, MEM, and the Skwxwú7mesh Nation no less than 30 days prior to the planned date to commence Construction. The Proponent must provide the operation environmental management plan to BCEAO, CEA Agency, DFO FLNR, MEM, and the Skwxwú7mesh Nation no less than 60 days prior to the planned date to commence Operations. The Proponent must develop and implement the plans to the satisfaction of the BCEAO.	Plan Development: Pre-Construction. Plan Implementation: Construction Operations	Volume 3, Part E – Section 16.0	BCEAO CEA Agency Proponent *Sḵwx̱wú7mesh* DFO FLNRO MEM MoE	Plan acceptance and approval by relevant agencies Compliance Management Plan.

No.	Conditions	Project Phase	Source of Condition	Responsibility	Measurement of Condition
C-6.2	The Proponent will develop and implement an Environmental Monitoring and Follow-up Programme, including adaptive management, in accordance with the EAC Application/EIS. This includes monitoring of: ▪ Fish and Fish Habitat; ▪ Terrestrial Wildlife and Vegetation; ▪ Surface Water Resources; ▪ Groundwater Resources; and ▪ Air Quality and Meteorology. Qualified Professionals must develop and supervise the implementation of the Environmental Monitoring and Follow-up Programme. The Proponent must provide the Environmental Monitoring and Follow-up Programme to BCEAO, CEA Agency, DFO FLNR, MEM, and the *Skwxwú7mesh* Nation no less than 30 days prior to the planned date to commence Construction. The Proponent must develop and implement the Environmental Monitoring and Follow-up Programme to the satisfaction of the BCEAO.	Plan Development: Pre-Construction. Plan Implementation: Construction Operations	Volume 3, Part E – Section 17.0	BCEAO CEA Agency Proponent *Sḵwx̱wú7mesh* DFO FLNRO MEM MoE	Monitoring programme acceptance and approval by relevant agencies Compliance Management Plan.
7. Fish Habitat Offset Plan					
C-7.1	The Proponent will develop and implement a Fish Habitat Offset Plan that describes measures intended to offset potential effects of the Proposed Project and how they will result in a net benefit for fish and fish habitat. The Fish Habitat Offset Plan will incorporate freshwater and marine habitat offsetting. A Qualified Professional must develop and supervise the implementation of the Fish Habitat and Offset Plan. The Proponent must provide the Fish Habitat Offset Plan to BCEAO, CEA Agency, DFO, and the *Skwxwú7mesh* Nation no less than 30 days prior to the planned date to commence Construction. The Proponent must develop and implement the Environmental Monitoring and Follow-up Programme to the satisfaction of the BCEAO.	Pre-Construction Construction	Volume 2, Part B – Section 5.1;and Volume 4, Part G – Section 22.0: Appendix 5.1-B.	BCEAO CEA Agency DFO *Sḵwx̱wú7mesh* Proponent	Compliance Management Plan
8. Compliance Management and Reporting					
C-8.1	The Proponent will submit a report to BC EAO Compliance and Enforcement staff on the status of compliance with the Certificate Conditions, at the following times: ▪ At least 30 days prior to the start of Construction; ▪ On or before January 31 in each year after the start of Construction; ▪ At least 30 days prior to the start of Operations; ▪ On or before January 31 in each year after the start of Operations; ▪ At least 30 days prior to the start of Closure and Reclamation; ▪ On or before January 31 in each year after the start of Closure and Reclamation; and ▪ Within 30 days of completing Closure and Reclamation.	Pre-Construction Construction Operations Reclamation and Closure	Volume 3, Part C – Section 19	Proponent BCEAO CEA Agency	Compliance Reporting

20.0 CONCLUSION

BURNCO Rock Products Ltd. is proposing to construct and operate a sand and gravel mine within the Lower McNab Valley, approximately 22 kilometres (km) west-southwest of Squamish and 35 km northwest of Vancouver. Based on preliminary volume estimates, the aggregate resource is projected to be approximately 20 million tonnes of sand and gravel (1,000,000 tonnes per year on average). The expected lifespan of the Proposed Project is 16 years.

Sorted aggregate products will be conveyed from the plant to sand and gravel barges via a barge-loading facility adjacent to the marine foreshore to the south of the pit, which is located within an existing foreshore lease and log dump area at the southwest corner of the Property. Barged aggregate products will be delivered to existing facilities owned and operated by the Proponent in either Burnaby or Langley along established barge shipping routes and marine navigation channels.

BURNCO understands that an objective of the federal and provincial EA processes is to promote sustainable development while minimizing effects to five pillars (environmental, economic, social, heritage and health), as well as on Aboriginal groups' rights and interests. The *Canadian Environmental Assessment Act* (CEAA) defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Project-related environmental, social, economic and cultural sustainability issues were identified by considering aspects linked to Project site infrastructure, layout, planning, design and operations. BURNCO will support sustainable development of the Proposed Project by designing, constructing, operating, and reclaiming the Proposed Project by incorporating the following practices:

- Environmental Sustainability:
  - A contained footprint and aggregate pit closure plan that limits residual effects on soils, vegetation and plants, wildlife, aquatic resources, fish communities and fish habitats;
  - A reduced environmental footprint through use of a shortened aggregate barging route from source to processing facilities;
  - Water recycling process;
  - Progressive reclamation of the aggregate pit site at project closure, including removal of infrastructure that is not essential for post-closure management and monitoring and returning disturbed land to its previous use where possible;
  - Use of electrical power;
  - Management of lands not involved in aggregate pit site as private forest lands, and accommodation of other industrial or transportation uses or needs of neighbouring property owners; and,
  - Management and long-term stewardship for forest, fisheries, wildlife and water resources on the property.
- Economic Sustainability:
  - Maximizing employment and business opportunities, and associated income benefits to local communities though hiring of appropriately skilled personnel;

- Adding economic diversity to the local and regional economy and increase government revenues (taxes, fees), especially when the aggregate pit is in full operation to supply demands for sand and gravel to BURNCO's plants in Metro Vancouver; and,
- While aggregate pit closure will conclude direct and indirect economic benefits, the Reclamation and Effective Closure Plan developed by BURNCO in conjunction with communities and First Nations to will minimize adverse effects by providing opportunities to upgrade skills, working with other regional employers to find replacement jobs and identifying new opportunities for economic development.

- Social Sustainability:
  - Supporting individual capacity and skill development (including transferable skills) through training, potentially prioritized for local residents and First Nations;
  - Supporting local business capacity such that their skill base is strengthened and can be applied elsewhere in the economy (i.e., supporting longer term economic diversification and stability); and,
  - Supporting First Nations' sustainable development goals through consultation processes.
- Cultural Sustainability:
  - Preserving cultural heritage and any structure or site that is of archaeological significance; and,
  - Maintenance of access to traditional territories and accommodation of traditional culture and customs in the Proposed Project Area.

Federal and provincial EA reviews provide an integrated process for the evaluation, feedback and development of Proposed Projects by identifying and assessing potential adverse environmental, economic, social, heritage and health effects (i.e., five pillars), mitigation to avoid or reduce those effects through redesign and operational improvements, and the significance of the potential residual effects after mitigation. BURNCO is committed to avoiding, reducing or otherwise mitigating potential effects of the Proposed Project through design features, best management practices and other measures described in Section 18. This EAC Application/EIS provides technically and economically feasible mitigation measures which first avoid and second reduce potential adverse effects across each of the five pillars, assessed as valued components (VCs). VCs were assessed for all phases of the Proposed Project lifecycle (construction, operations, reclamation and closure), including Proposed Project activities, accidents and malfunctions and cumulative effects.

The conclusion of the assessment is that, with the application of design considerations and identified mitigation, no significant adverse effects will result from the Proposed Project.

Net cumulative residual effects for grizzly bear were determined to be significant as they contribute to the factors limiting the population, which is likely sensitive to imposed stresses. However, the Proposed Project is unlikely to contribute to the factor limiting the grizzly bear population in the RSA (i.e., mortality).

Anticipated benefits from the Proposed Project including local, provincial and national expenditures, employment opportunities, and tax revenue, as well as ecological benefits resulting from fish habitat offsets and other features of the Proposed Project.

Potential effects on Aboriginal Rights, including current use, as a result of Proposed Project activities were identified for S*kwxwú7mesh* Nation (Volume 3, Part C - Section 11.3.3.2) and Tsleil-Waututh Nation (Volume 3, Part C - Section 11.4.3). Following implementation of the recommended mitigation measures described in

Volume 3, Part C - Section 11.3.4 for S*kwxwú7mesh* Nation Aboriginal Rights and Volume 3, Part C - Section 11.4.5 for Tsleil-Waututh Nation Aboriginal Rights, residual effects will remain. In the case of S*kwxwú7mesh* Nation Aboriginal Rights, the measurable residual effects following mitigation are considered not significant. No measurable residual effects are expected on Tsleil-Waututh Aboriginal Rights, including current use, following mitigation. The results of the effects assessment on Aboriginal Rights, including current use, are summarized in Volume 3, Part C – Section 14.0: Table 14-1 for S*kwxwú7mesh* Nation and Volume 3, Part C – Section 14.0: Table 14-2 for Tsleil-Waututh Nation. It is predicted that potential effects on Aboriginal rights, including current use, will be addressed by identified mitigation and ongoing engagement.

The assessment has considered concerns and issues raised by Aboriginal groups, the pubic, stakeholders and regulators that have been submitted to BURNCO through written submissions and other consultation opportunities described in Volume 1, Part A – Section 3.2 and 3.3. Comments and feedback from the Squamish (S*kwxwú7mesh*) Nation, Tsleil-Waututh Nation and other identified Aboriginal groups were also considered in preparing the assessment. BURNCO will continue consultations with Aboriginal groups, and to provide opportunities for meaningful participation by the public and other stakeholders in the review of the Proposed Project. BURNCO is committed to ongoing engagement with the McNab Creek Strata residents regarding issues of benefit and concern.

BURNCO undertook a thorough environmental assessment of the Proposed Project that promotes sustainable development while avoiding, reducing or otherwise mitigating potential environmental, economic, social, heritage and health effects. This EAC Application/EIS complies with the requirements of the Section 11 order, issued June 1, 2010, the Section 13 order amending the Section 11 order issued on January 5, 2013 and the Section 13 order amending the Section 11 order issued on April 13, 2015.

This EAC Application/EIS also complies with the AIR/EIS Guidelines approved on December 16, 2014.

BURNCO will continue to work with public, stakeholders, government agencies, First Nations, and local residents to bring forward a successful project that will provide benefits to local communities, First Nations, local resources, the environment and the Province of British Columbia. BURNCO understands the need to successfully complete subsequent permitting/authorization processes prior to proceeding with the Proposed Project construction, operation, reclamation and closure. These permits are summarized in Volume 1, Part A – Section 2.11.

BURNCO requests that the BC Minister of the Environment issue an Environmental Assessment Certificate for the Proposed Project and the federal Minister of the Environment's issue a favourable Environmental Assessment Decision Statement.